AC&R Product Catalogue

Table of Contents

Policy Statement

As a responsible Company, Henry Technologies makes every effort to ensure that its products are manufactured to the highest quality standards and are fit for purpose.

Our published technical data relates to the performance of our products within known and established operational parameters. This information has been determined by rigorous testing, proven application in the field and empirical evidence over a significant period of time.

With industry changes in such areas as the use of new refrigerants, lubricants and new system designs, our products are continuously being applied to both new and different applications. Where possible, we will assist in these developments at the research and design stages and will readily submit our products for trial by our customers to determine their suitability. However, it remains the responsibility of the system designer to ensure that all products used in a system are suitable for the application and that they are compatible with each other.

As a component manufacturer it is impossible for Henry Technologies to make recommendations for every conceivable type of application. However, our technical personal can offer a wealth of experience to assist the system designer.

For details of our product warranty cover please refer to our standard terms and conditions of sale. Copies available on request.

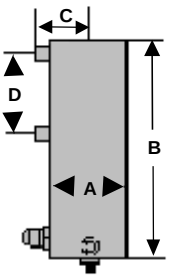
Oil Separators

Helical Oil Separators

Helical Oil Separators: Henry Technologies, the leader in Oil Control Systems, puts oil separator efficiency at a new high. The helical oil separator features a centrifugal flow path achieving up to 99% efficiency of oil separation with low pressure drop. Testing by an independent laboratory found that only 0.006% oil by volume was being discharged into the system after leaving a helical oil separator.

How the Helical Oil Separator Functions: Upon separator entry, refrigerant gas containing oil in aerosol form, encounters the leading edge of the helical flighting. The gas/oil mixture is centrifugally forced along the spiral path of the helix causing heavier oil particles to spin to the perimeter, where impingement with a screen layer occurs. The screen layer serves dual functions as an oil stripping and draining medium. Separated oil flows downward along the boundary of the shell through a baffle and into the oil collection area at the bottom of the separator. The specially engineered baffle isolates the oil collection area and eliminates oil re-entrantment by preventing turbulence. Virtually oil free refrigerant gas exits through a fitting just below the lower edge of the helical flighting. A float activated oil return valve allows the captured oil to return to the crankcase or oil reservoir, thereby completing the oil circuit. Our patented mechanical design offers high oil separation efficiency, plus the following advantages not found in a Coalescing Oil Separator:

- Low pressure drop throughout the entire range of velocities found in a refrigeration system.
- No clogging elements because of too much oil in the system.
- No oil blowout at start-up from oil left in a coalescing element.



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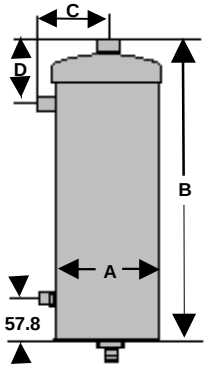

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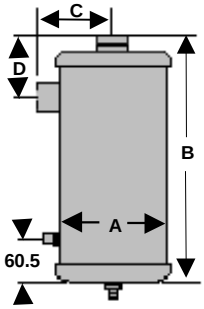

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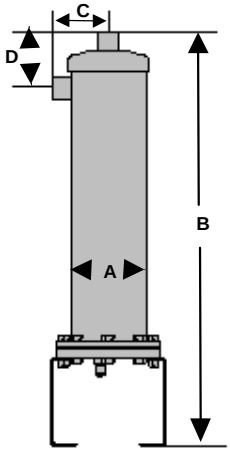

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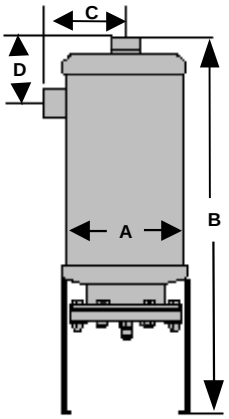

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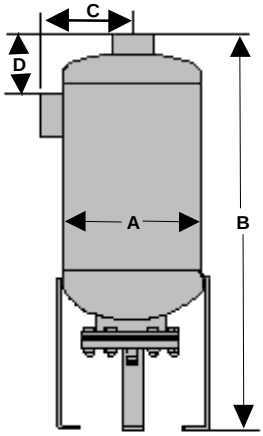


S-5411-S-5414

Part No.	Size Conn	Dimensions in mm.				Max m ³/h	Pre-Charge Amount(cl)	CE Cat
		A	B	C	D			
S-5180	1/4"ODS	64	162	45	54	1.27	11	SEP
S-5181	3/8"ODS	64	191	45	84	1.7	11	SEP
S-5182-CE	1/2"ODS	102	330	70	62	2.55	40	CAT I
S-5185-CE	5/8"ODS	102	381	70	62	6.8	40	CAT I
S-5187-CE	7/8"ODS	102	432	76	75	10.2	40	CAT I
S-5188-CE	1 1/8"ODS	102	483	76	78	13.6	40	CAT 1
S-5190-CE	1 3/8"ODS	152	381	108	94	18.7	114	CAT 1
S-5192-CE	1 5/8"ODS	152	432	108	100	23.8	114	CAT I
S-5194-CE	2 1/8"ODS	152	432	108	107	37.4	114	CAT I
S-5285-CE	5/8" ODS	102	513	70	67	6.8	71	CAT I
S-5287-CE	7/8" ODS	102	563	76	78	10.2	71	CAT I
S-5288-CE	1 1/8" ODS	102	614	76	80	13.6	71	CAT 1
SN-5290-CE	1 3/8"ODS	152	508	108	94	18.7	71	CAT I (CAT II)
SN-5292-CE	1 5/8"ODS	152	559	108	100	23.8	71	CAT I (CAT II)
SN-5294-CE	2 1/8"ODS	152	559	108	107	37.4	71	CAT I (CAT II)
S-5411-CE	1 5/8"ODS	219	650	148	164	37.4	71	CAT III
S-5412-CE	2 1/8"ODS	219	650	148	170	49.3	71	CAT III
S-5413-CE	2 5/8"ODS	273	758	183	201	102.0	71	CAT III
S-5414-CE	3 1/8"ODS	324	831	215	229	159.8	71	CAT IV

MWP = 31 Barg

All capacities are based on 38°C condensing temperature & 18°C suction temperature.

Oil return connection is a standard 3/8" Flare.

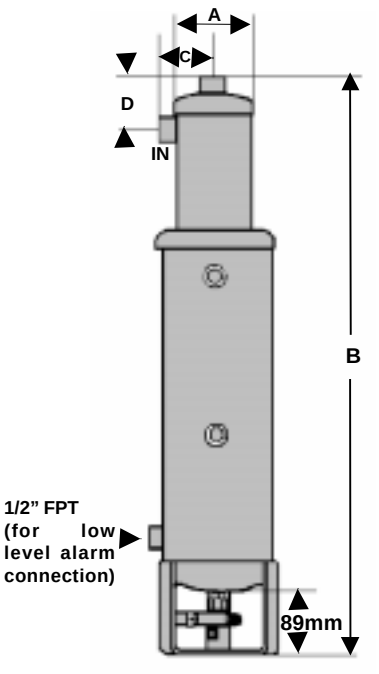
10mm ODS is available by adding suffix 'X'.

A suffix 'M' denotes metric connections where available.

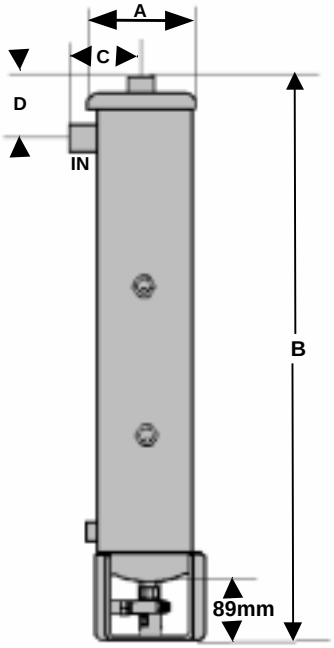
Brackets indicates classification for ammonia use

Oil Separator

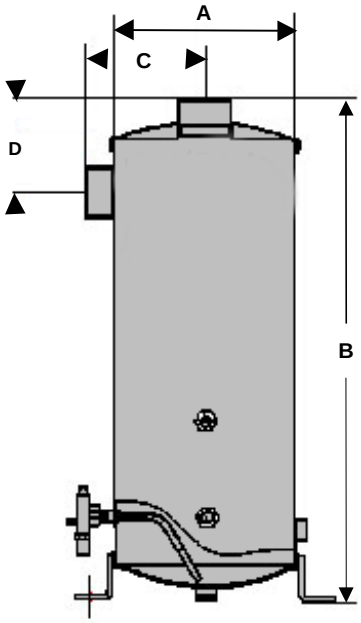
Helical Oil Separator/Reservoirs



S-5380's



S-5390's



S-5420's

Variations on connection positions and reservoir height are available on request.

Designed for use on high pressure systems, this range of combined separator/reservoirs eliminates the need for a separate oil reservoir and associated valving. The oil level regulator selected must be suitable for a high pressure system. Details are available on request.

MWP = 31 Barg

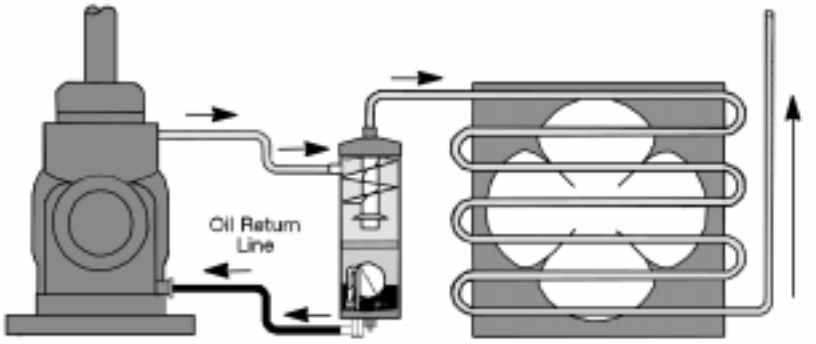
Part No	Size Conn.	Dimensions in (mm)				Max Capacity in Kw of Refrigeration at Evaporator Temperature (Nominal)						Max Discharge M^3/H	Oil Capacity	CE Cat
						R-134a		R-22		R404A/R507				
		A	B	C	D	-40°C	5°C	-40°C	5°C	-40°C	5°C			
S-5387-6L-CE	7/8 ODS	102	699	76	78	15.8	19.4	24.6	28.2	23.0	30.0	10.2	5.7L	CAT II
S-5388-6L-CE	1 1/8 ODS	102	682	76	78	21.1	26.4	31.7	37.0	29.8	38.7	13.6	5.7L	CAT II
S-5388-CE	1 1/8 ODS	102	813	76	78	21.1	26.4	31.7	37.0	29.8	38.7	13.6	7.6L	CAT II
S-5390-CE	1 3/8 ODS	152	851	108	92	28.2	35.2	45.8	49.3	42.2	52.8	18.7	7.6L	CAT II
S-5392-CE	1 5/8 ODS	152	900	108	99	38.7	45.8	56.3	63.4	52.8	66.8	23.8	7.6L	CAT II
S-5394-CE	2 1/8 ODS	152	900	117	106	63.4	73.8	88.0	106	84.4	109	37.4	7.6L	CAT II
S-5422-CE	2 1/8ODS	220	698	148	170	77.4	95.0	123	137	109	144	49.3	7.6L	CAT II
S-5423-CE	2 5/8 ODS	273	790	183	201	162	197	250	282	225	292	102	11.4L	CAT III
S-5424-CE	3 1/8 ODS	324	783	215	229	253	310	394	447	352	461	160	15.1L	CAT III

Oil Separators

Helical Capacity Data

Part No.	Capacity in Kw of Refrigeration At Evaporator Temperature(Nominal)°C										Max Discharge Volume M3/H
	R-134a		R-22		R-717		R404A/507		R-407C		
	-40	5	-40	5	-40	5	-40	5	-40	5	
S-5180	1.8	2.6	2.6	3.5	-	-	2.6	3.5	2.8	3.5	1.27
S-5181	2.6	3.5	3.5	5.3	-	-	3.5	5.3	3.9	4.4	1.7
S-5182-CE	3.5	5.3	5.3	7.0	-	-	5.3	7.0	5.6	6.7	2.55
S-5185-CE	10.6	14.1	15.8	19.4	-	-	14.1	19.4	15	17.6	6.8
S-5187-CE	15.8	19.4	24.6	28.2	-	-	23.0	30.0	22.4	26.7	10.2
S-5188-CE	21.1	26.4	31.7	37	-	-	29.8	38.7	29.9	35.2	13.6
S-5190- CE	28.2	35.2	44.8	49.3	-	-	42.2	52.8	41.5	49.2	18.7
S-5192-CE	38.7	45.8	56.3	63.4	-	-	52.8	66.9	52.7	62.4	23.8
S-5194-CE	63.4	73.8	88.0	106	-	-	84.4	109	82.6	98.5	37.4
S-5285-CE	10.6	14.1	15.8	19.4	-	-	14.1	19.4	15	17.6	6.8
S-5287-CE	15.8	19.4	24.6	28.2	-	-	23.0	30.0	22.4	26.7	10.2
S-5288-CE	21.1	26.4	31.7	37.0	-	-	29.8	38.7	29.9	35.2	13.6
SN-5290-CE	28.2	35.2	44.8	49.3	59.8	63.3	42.2	52.8	41.5	49.2	18.7
SN-5292-CE	38.7	45.8	56.3	63.4	77.4	80.9	52.8	66.9	52.7	62.4	23.8
SN-5294-CE	63.4	73.8	88.0	106	120	127	84.4	109	82.6	98.5	37.4
S-5411-CE	63.4	73.8	88.0	106	120	127	84.4	109	82.6	98.5	37.4
S-5412-CE	77.4	95.0	123	137	158	169	109	144	109	130	49.3
S-5413-CE	162	197	250	281	331	345	225	292	225	267	102.0
S-5414-CE	253	310	394	447	517	542	352	461	352	419	159.8

Oil Separator Selection



Selecting the size of an Oil Separator: Although Oil Separator catalogues show capacity in KW, the actual capacity of a system may vary widely from the horsepower size of the compressor. The selection of an oil separator should be first done by comparing the system load to the rated capacities of the oil separator using the charts provided. The ultimate deciding factor should be the maximum discharge volume. Understanding the total system capacity and percentage of full load run time can also be helpful in selecting the oil separator. In cases where the max. discharge has been exceeded by only a minimal amount and the system has unloading characteristics, select the smaller oil separator.

Where and how to install an Oil Separator: Before the oil separator is installed an initial charge of oil should be added to it. This amount is held in the sump of the oil separator. Refer to the AC&R Oil Separator Instruction Sheet for the proper amount of oil.

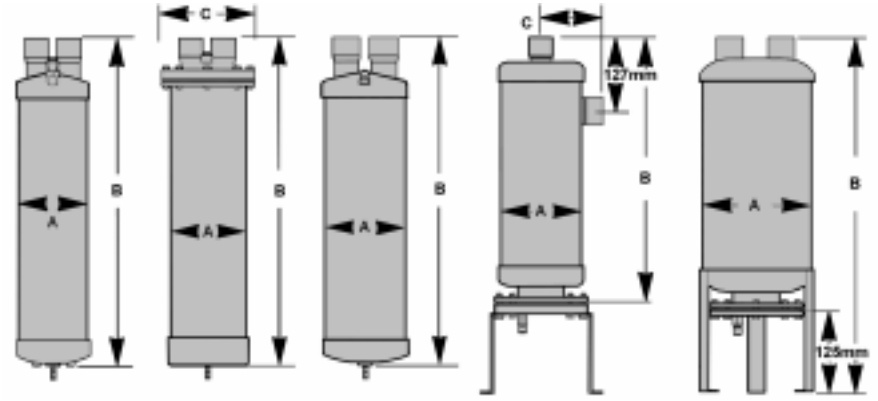
CAUTION: Oil Precharge is important. Failure to precharge separator sump may result in damage to the oil return float mechanism. Use the same type of oil that is in the compressor crankcase. The oil separator should be installed reasonably close to the compressor in the discharge line between the compressor and the condenser. To prevent refrigerant from condensing in the oil separator during the off cycle of the system, we recommend a check valve be installed between the condenser and oil separator outlet connection. Proper piping practices must also be followed. The oil separator must be mounted securely in a vertical position. A line must be run from the oil return fitting (3/8" flare) to the compressor crankcase (see above) or oil reservoir if an oil control system is being used.

Oil Separators

Conventional Oil Separators

How the Conventional Oil Separator functions: Refrigerant gas from the compressor containing oil in aerosol form enters the separator and passes through the inlet baffling. As it passes through the inlet screen, the fine particles collide with one another and form heavier particles that impinge on the surface of the shell wall. The gas then passes through the outlet screen where there is a final separation. The oil free gas escapes through the outlet fitting and goes to the condenser. The separated oil falls to the bottom of the separator where a float operated needle valve returns the oil to the crankcase or oil reservoir in the same way as the Helical Oil Separator.

MWP = 31 Barg



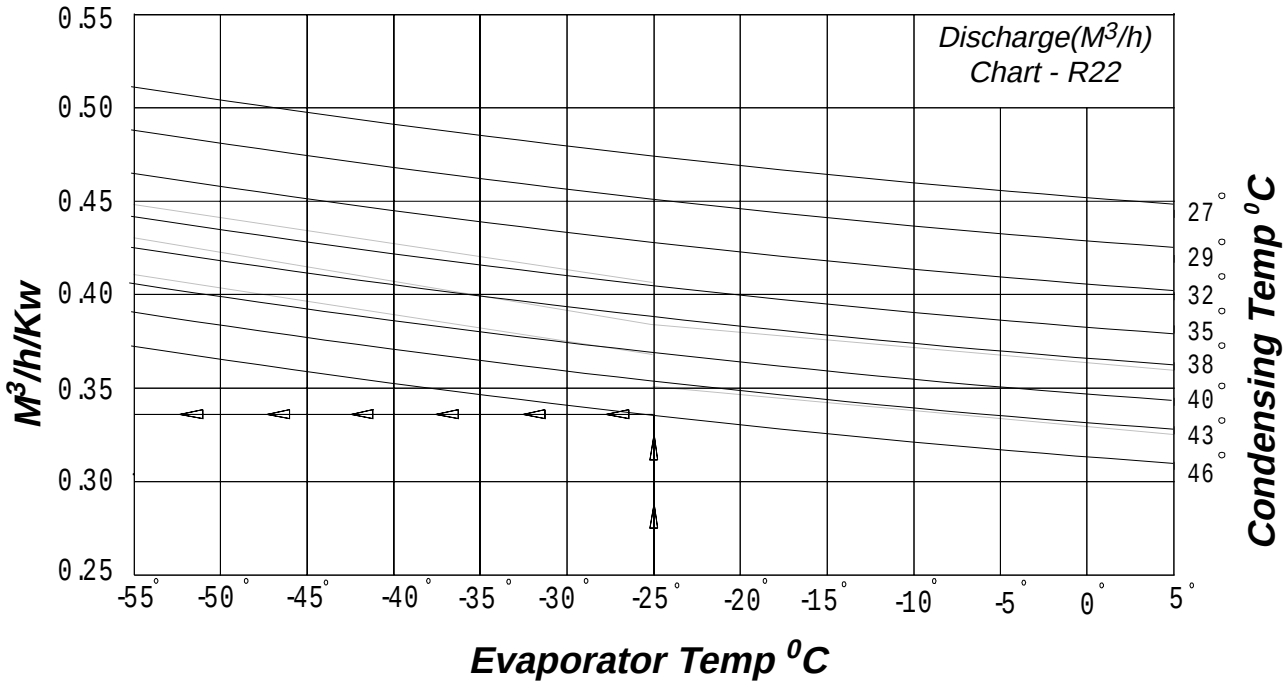
S-5500's **S-5800's** **S-5600's** **S-5700's** **S-1900's**

Part No.	Size Conn.	Dimensions(mm)			Capacity in kW of Refrigeration At Evaporator Temperature(Nominal)°C								Max Discharge Volume M3/H	Pre Charge Amount(cl)	CE Cat
					R-134a		R-22		R404A/507		R-407				
		A	B	C	-40	5	-40	5	-40	5	-40	5			
S-5580	1/4 ODS	102	208	-	2.0	2.5	3.1	3.5	2.9	3.7	2.9	3.5	1.3	34	SEP
S-5581	3/8 ODS	102	208	-	2.7	3.3	4.2	4.7	3.8	4.9	3.9	4.6	1.7	34	SEP
-5582	1/2 ODS	102	260	-	4.0	4.9	6.3	7.1	5.7	7.4	5.8	7.0	2.6	34	SEP
S-5585-CE	5/8 ODS	102	362	-	10.7	13.1	16.8	19.0	15.2	19.7	15.5	18.6	6.8	34	CAT I
S-5587-CE	7/8 ODS	102	451	-	16.1	19.7	25.1	28.4	22.8	29.5	23.3	27.8	10.2	34	CAT I
S-5588-CE	1 1/8 ODS	102	533	-	21.4	26.2	33.5	37.8	30.4	39.3	31.1	37.1	13.6	34	CAT I
S-5590-CE	1 3/8 ODS	102	540	-	26.8	32.8	42.0	47.3	38.0	49.2	38.9	46.4	17.0	34	CAT I
S-5882	1/2 ODS	102	260	140	4.0	4.9	6.3	7.1	5.7	7.4	5.8	7.0	2.6	34	SEP
S-5885-CE	5/8 ODS	102	362	140	10.7	13.1	16.8	18.9	15.2	19.7	15.5	18.6	6.8	34	CAT I
S-5887-CE	7/8 ODS	102	451	140	16.1	19.7	25.1	28.4	22.8	29.5	23.3	27.8	10.2	34	CAT I
S-5888-CE	1 1/8 ODS	102	533	140	21.4	26.2	33.5	37.8	30.4	39.3	31.1	37.1	13.6	34	CAT I
S-5890-CE	1 3/8 ODS	102	540	140	26.8	32.8	42.0	47.3	38.0	49.2	38.9	46.4	17.0	34	CAT 1
S-5687-CE	7/8 ODS	152	282	-	20.1	24.6	31.4	35.4	28.5	36.9	29.1	34.8	12.8	85	CAT I
S-5688-CE	1 1/8 ODS	152	391	-	24.1	29.5	37.7	42.5	34.2	44.2	35.0	41.8	15.3	85	CAT I
S-5690-CE	1 3/8 ODS	152	397	-	29.5	36.1	46.1	52.0	41.8	54.1	42.7	51.0	18.7	85	CAT I
S-5692-CE	1 5/8 ODS	152	473	-	37.5	45.9	58.6	66.1	53.2	68.8	54.4	65.0	23.8	85	CAT II
S-5694-CE	2 1/8 ODS	152	486	-	60.2	73.7	94.3	106	85.6	110	87.4	104	38.3	85	CAT II
S-5792-CE	1 5/8 ODS	152	514	108	37.5	45.9	58.6	66.1	53.2	68.8	54.4	66.0	23.8	57	CAT II
S-5794-CE	2 1/8 ODS	152	516	114	60.2	73.7	94.3	106	85.6	110	87.4	104	38.3	57	CAT II
S-1901-CE	1 5/8 ODS	203	533	-	48.2	58.9	75.4	84.0	68.4	88.5	69.9	83.5	30.6	57	CAT II
S-1902-CE	2 1/8 ODS	203	533	-	72.3	88.5	113	127	102	132	104	125	45.9	57	CAT II
S-1903-CE	2 5/8 ODS	254	546	-	131	160	205	231	186	240	190	227	83.3	57	CAT II
S-1904-CE	3 1/8 ODS	305	654	-	182	222	284	321	258	334	264	315	115	57	CAT II

S-5500's, S-5800's, S-5600's, S-5700's - Connections are nickel plated steel. S-1900's - Connections are copper plated steel.
Oil flow rate @ 12 bar differentials 3 litres per min.

All the capacities shown are based on 38°C condensing temperature, 18°C suction temperature and on connection size being the same as the compressor discharge valve. We recommend for parallel compressor systems application our S-5700 and S-1900 series oil separators. If operating capacity is larger than the systems cooling load, size oil separator to the operating capacity. Connection conventional oil separators are fitted with a standard 3/8 flare oil return connection.

Discharge Selection Charts



How to calculate Discharge Volume

Example:

135 Kw R-22 system
-25°C Evaporator Temp.
46°C Condensing Temp.

From the R-22 Chart, follow the -25°C evaporator temperature line to the intersection of the 46°C condensing temperature line. Extend a line horizontally from this point to the M^3/h/kW factor. Multiply the factor by the total Kw refrigeration duty to equal the discharge volume m^3/h.

Example:

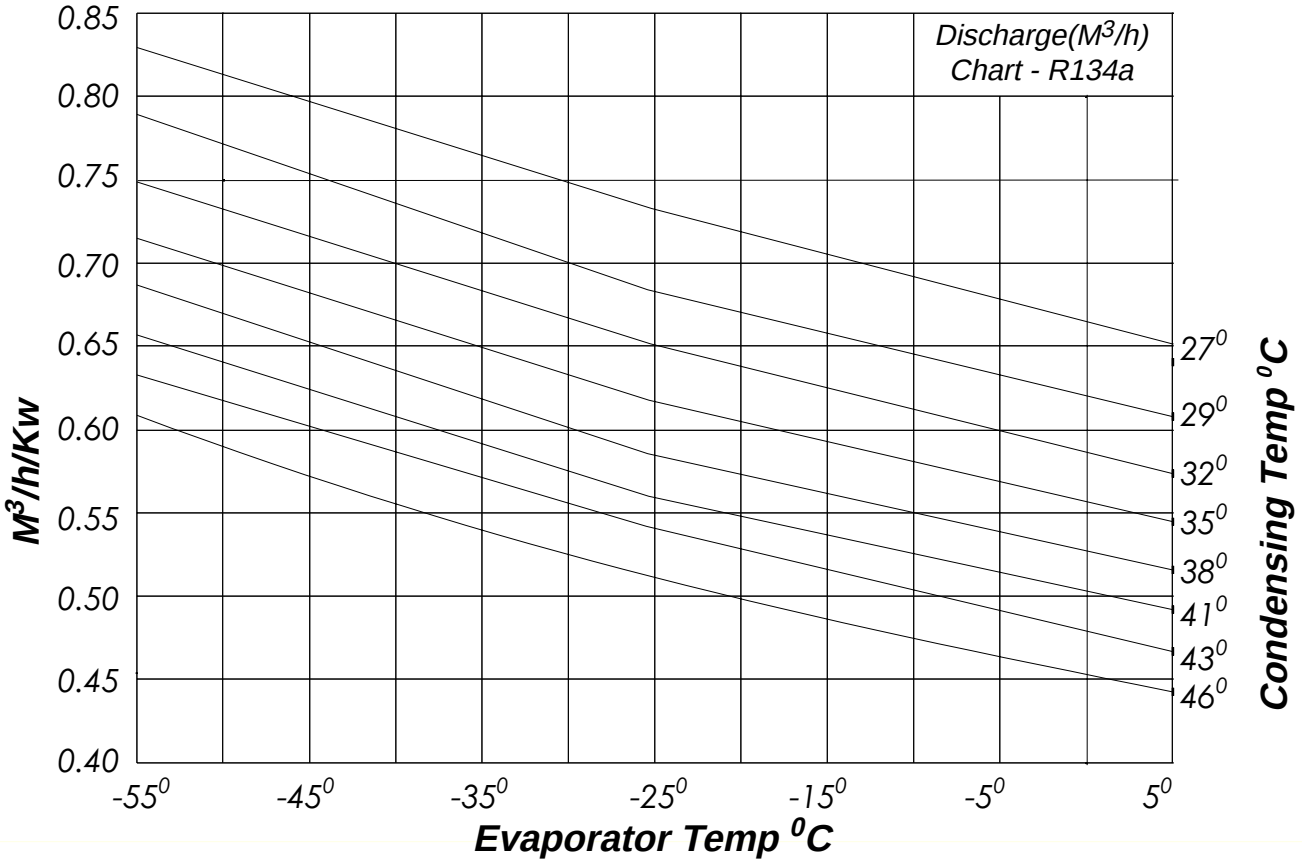
0.34 m3/h/KW x 135Kw = 45.9 m^3/h

Using the discharge volume table select a separator with maximum discharge greater than the above.

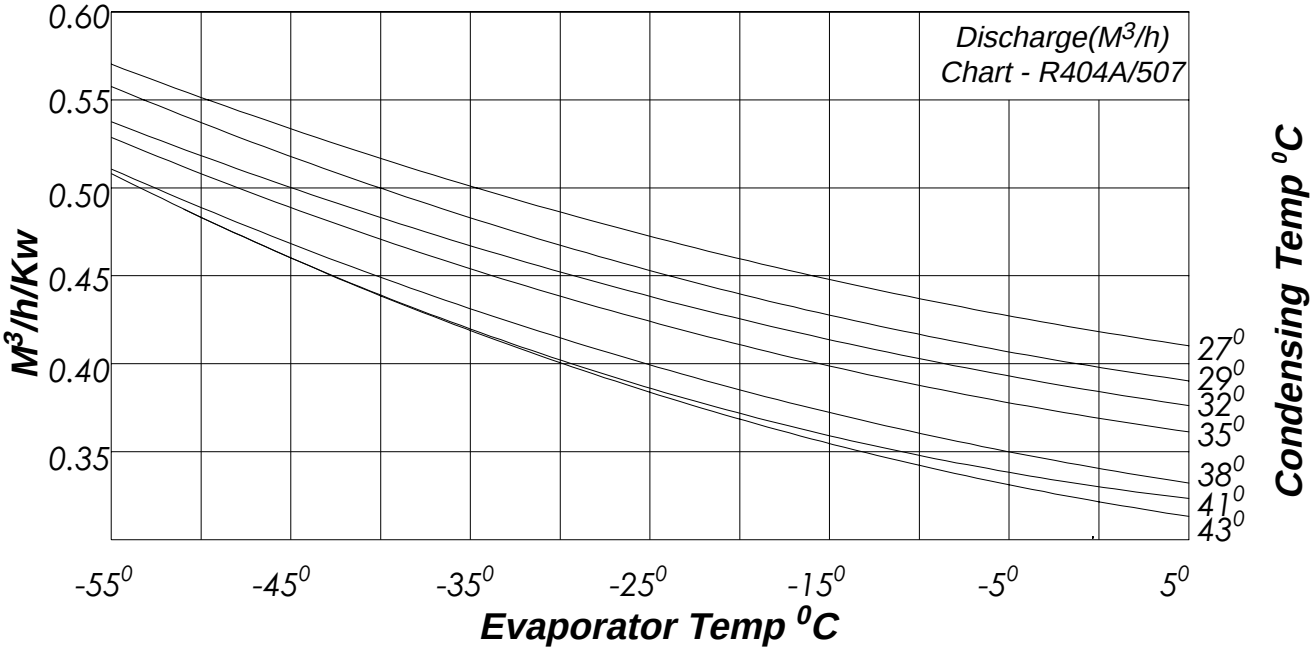
Oil Separator Selected: S-5412-CE

Discharge Selection Charts

Refrigerant R134a

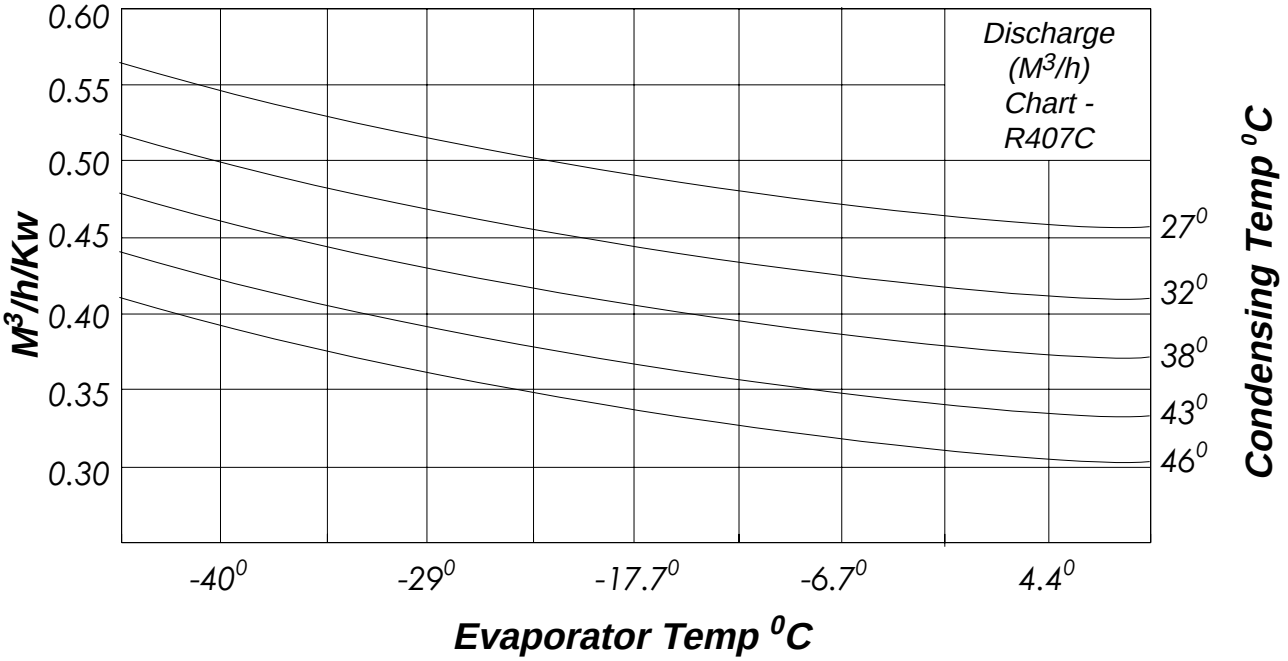


Refrigerant R404A/R507

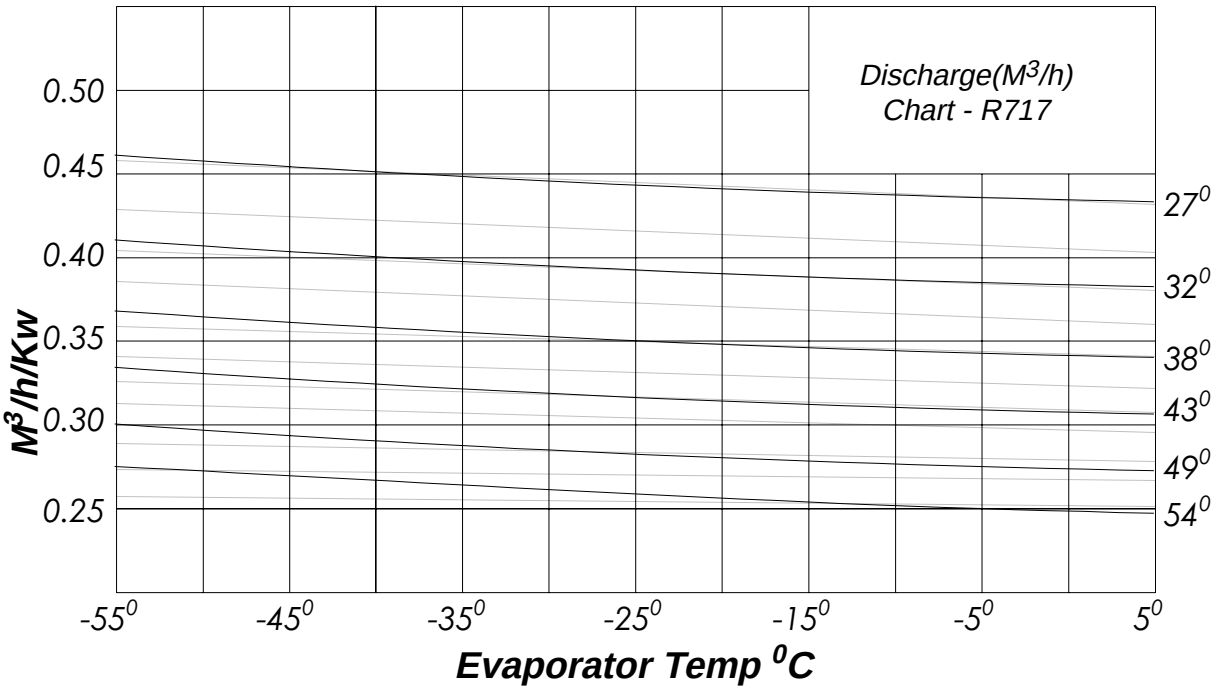


Discharge Selection Charts

Refrigerant R407C



Refrigerant R717



Oil Level Regulators

Fixed & Adjustable Regulators

The oil level regulator controls the oil level in the compressor crankcase with a float operated valve.

Oil level regulators are designed to attach directly to the sight glass housing on compressor crankcases. Adapter kits are available for compressors that have a different sight glass configuration. The sight glass from the compressor or that supplied with an adapter kit, bolts to the second regulator flange for visual observation of the oil level.

The oil supply line from the reservoir is connected to the flare fitting on top of the regulator. These regulators often feature a flare equalization connection that allows the crankcases to be interconnected. This maintains the same pressure in all of the crankcases including any compressor that is running.

The equalisation connection, set at the half sight glass level helps prevent overfilling of the regulators caused by oil returning down the suction line to an idle compressor. If a regulator fills above half sight glass, the oil will be picked up by the equalisation connection and sent to the running compressor crankcase.

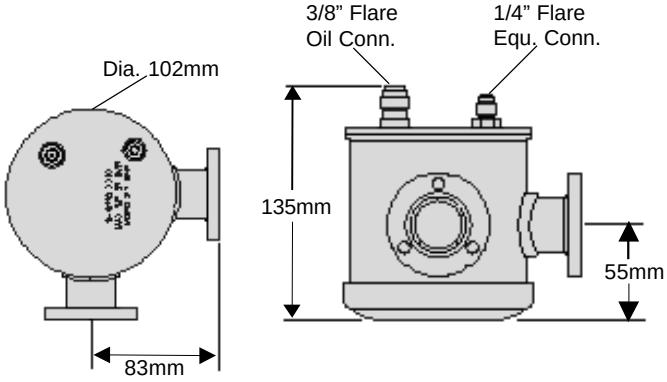
Adjustable regulators include an adjustment mechanism to raise or lower the oil set point. Our exclusive design eliminates the need to shut down the system in order to adjust the oil regulator.

S-9211/S-9121 Fixed Level Regulator

Part Number	Oil Level	Pressure Differential	Connection Size	CE Cat
S-9211	1/2 Sight Glass	0.35 - 2.1 Bar	3 Bolt 1 7/8"B.C	SEP
S-9121	1/4 Sight Glass	0.35 - 2.1 Bar	3 Bolt 1 7/8"B.C	SEP

Max WP 31 bar

With equalisation connection

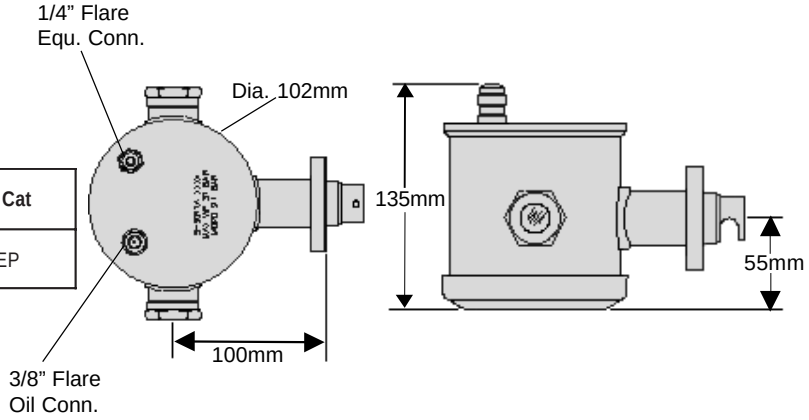


S-9211A Fixed Level Regulator

Designed for use with Bitzer compressors

Part Number	Oil Level	Pressure Differential	Connection Size	CE Cat
S-9211A	1/2 Sight Glass	0.35 - 2.1 Bar	4 Bolt 50mm B.C.	SEP

Max WP 31 bar

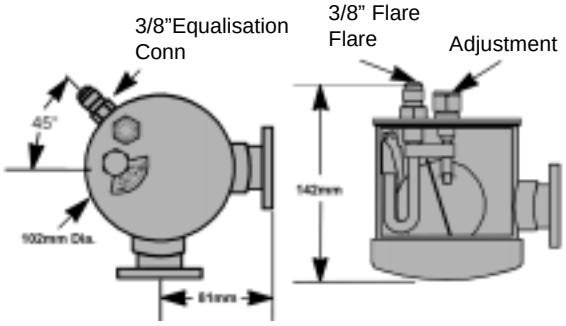


Oil Level Regulators

S-9130 Adjustable Regulator

Part Number	Oil Level	Pressure Differential	Connection Size	CE Cat
S-9130	1/4 - 5/8 Sight Glass	0.35 - 6.1 Bar	3 Bolt 1 7/8" B.C.	SEP

Max WP 31 bar

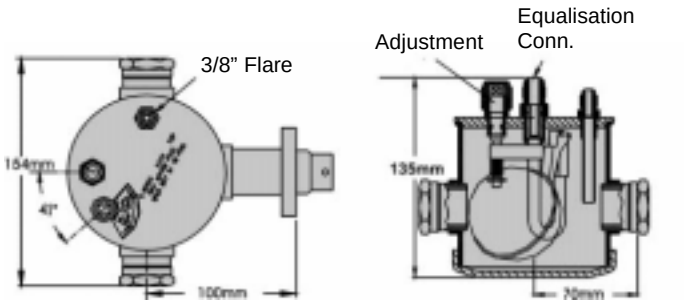


S-9191A Adjustable Regulator

Designed for use with Bitzer compressors

Part Number	Oil Level	Pressure Differential	Connection Size	CE Cat
S-9191A	1/4 -5/8 Sight Glass	0.35 - 6.1 Bar	4 Bolt 50mmB.C.	SEP

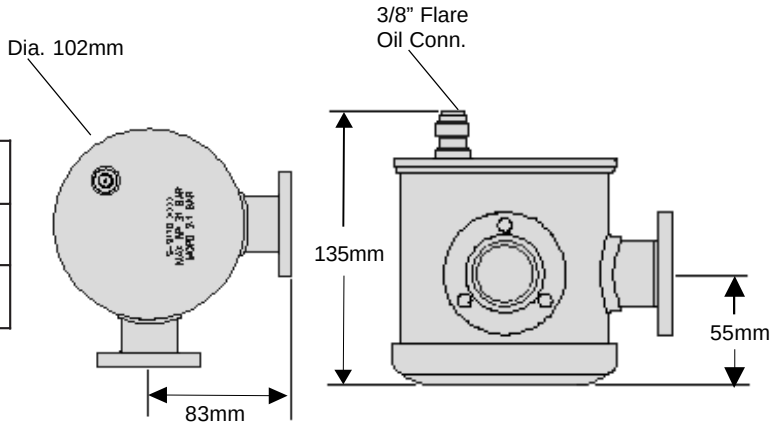
Max WP 31 bar



S-9110/20 Fixed Level Regulator

Part Number	Oil Level	Pressure Differential	Connection Size	CE Cat
S-9110	1/2 Sight Glass	0.35 - 2.1 Bar	3 Bolt 1 7/8" B.C.	SEP
S-9120	1/4 Sight Glass	0.35 - 2.1 Bar	3 Bolt 1 7/8" B.C.	SEP

Max WP 31 bar



Electro-Mechanical Regulators

Electro-Mechanical Features

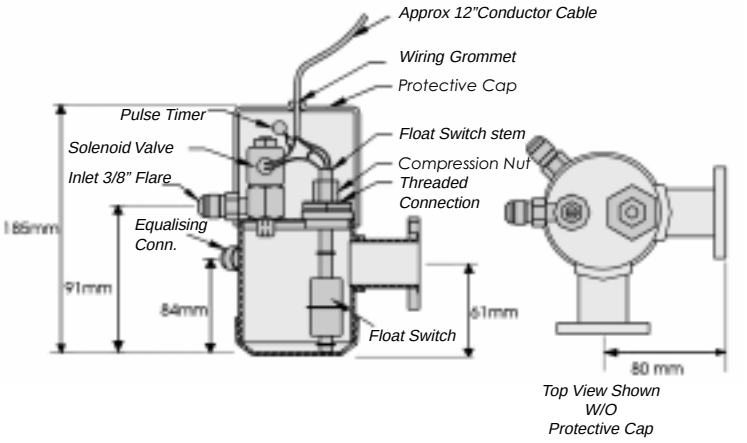
The AC&R Electro-Mechanical Oil Level Regulators S-9030 and S-9040R provide a simple means of controlling oil level through the use of a float switch and a solenoid valve. A magnetic reed float switch closes upon the reduction of oil level in the oil regulator body. This action energizes the solenoid valve thereby feeding oil into the regulator body.
A further low level alarm reed switch can be utilised to isolate the compressor, thus preventing seizure.

Features:
. Maximum working pressure of 31 Bar.
. Complete oil level control without variations in pressure drop.
. 3/8" Flare normally closed solenoid valve 1.6mm Orifice.
. Adjustable oil level.
. Low level alarm circuit (dry contacts).
. Solenoid Valve 24V AC - 6W.
. Equalization connection 3/8" Flare.(S-9030 only)
. Reliable float switch operation, 24 V AC-20VA pilot duty.
All major components replaceable.

S-9030 Electro-Mech Regulator

The S-9030 is designed to bolt directly to the three bolt sight glass housing found on many compressor crankcases. Adapter kits are available for compressors that have a different sight glass configuration. The sight glass from the compressor, or from an adapter kit, bolts to the second regulator flange for visual observation of the oil level. The oil level is adjustable from 3/8 to 3/4 sight glass.
Operating Differential 0.35 - 20.7 bar.

A pulse timer is incorporated to control the oil injection on high pressure systems.
CE Category - SEP



S-9040R Electro-Mechanical Regulator

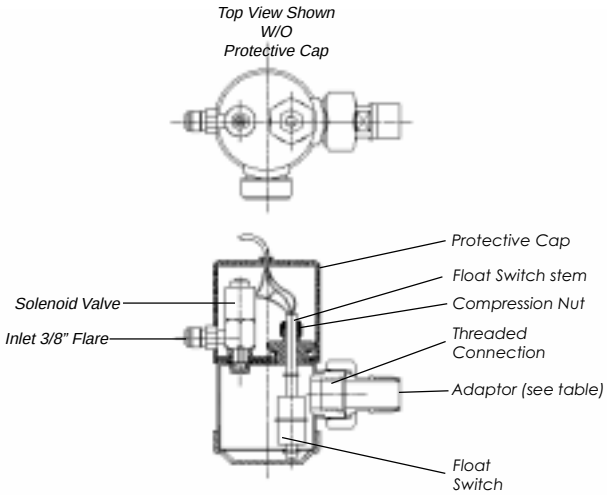
The S-9040R regulators can be fitted to a variety of compressors which have threaded sight glass connections.

All adaptors feature a quick and easy method of fitting to the compressor and regulator.

The regulator can be installed with left or right hand viewing options. Oil level is adjustable between 1/2 and 3/4 sight glass.

Regulator	Compressor	Operating Differential	CE Cat
S-9040R	Copeland Scroll	0.35-6.2 bar	SEP
S-9040R	Bitzer Scroll	0.35-6.2 bar	SEP
S-9040RHP	As above	0.35-20.7 bar	SEP
***S-9040RA**	Bitzer Octagon	0.35-6.2 bar	SEP

** Also available for high pressure systems - contact Henry Technologies for information.*



Oil Level Regulators

Optronic

The Optronic Oil Level Regulator is designed to control the oil level in the compressor crankcase using proven optical sensor technology.

The stand alone regulator is suitable for both low and high pressure oil management control systems. The oil level is regulated at 1/2 sight glass using a pulse timer. When a low oil condition is detected, there is a 15 second time delay prior to oil feed to ensure stability and prevent overfill. Oil is then pulsed into the compressor at 3 second on / off intervals. If demand is not satisfied after 2 minutes of oil feed, a low level alarm is initiated by means of a fail safe electrical contact. During the alarm condition the regulator will continue to pulse feed oil. The alarm will automatically reset if the oil level returns to a ½ sight glass. The alarm contact can be used to shut down the compressor in the event of a low oil level condition.

The Optronic regulator is fitted to the sight glass housing on the compressor and has an integral sight glass that allows visual inspection of the crankcase oil level.

Specification

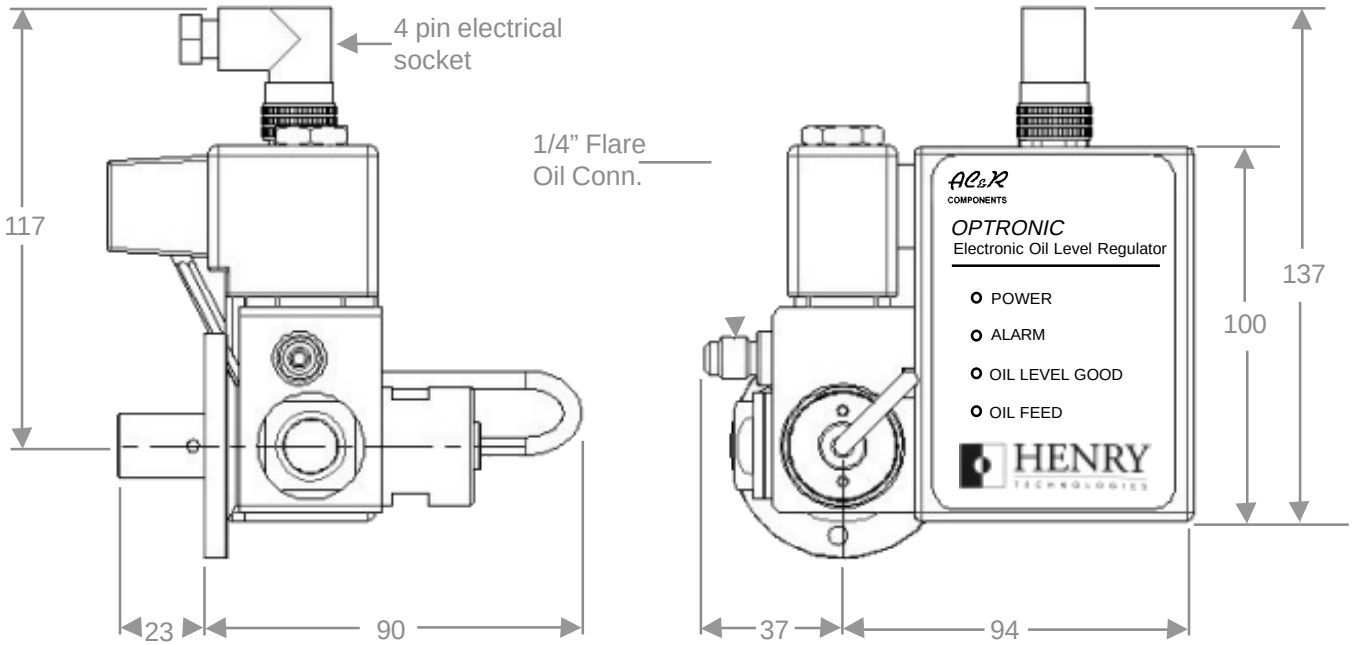
Max Working Pressure:	35 bar
Max Differential Pressure:	24 bar
Operating Temp Range:	-25^{O}C to $+80^{O}$C
Supply Voltage(Conns 1& 2):	24V AC 50 / 60HZ
Operating current (solenoid):	0.5 Amps
Alarm Contact (Conns 3 & 4):	Volt free, normally open*
Alarm Contact Rating:	24V DC@2A, 120V AC@2A
Electrical connection:	4 Pin M12 circular, IEC60947-5-2
Protection class:	IP 41
Status LED's:	4
Oil supply line:	1/4" Flare
Weight:	1.2 kg

*The alarm contacts are closed when power is applied.

The Optronic regulator meets the requirements of the Pressure Equipment Directive. The regulator is 'CE' marked in accordance with the EMC Directive.

The 3/4" NPT adaptor kit and electrical socket are supplied with each regulator. Adaptors for other regulators are available on request.

Optronic Reference	Sight Glass Connection	Compressor Type
OP-01	3/4" NPT	Copeland Scroll
		Bitzer Scroll



Oil Level Regulators

Regulator Adapter Kits

Sight Glass Oil Level	Compressor Model	Sight Glass Configuration	Adapter Kit Part Number	CE Cat
1/2	Bitzer	4 Bolt 2" B.C.	**3-033-253**	**SEP**
1/2	Bitzer Octagon (for 3 bolt regulator)	1 1/8" - 18 Thread	**3-033-262**	**SEP**
1/2	Bitzer Octagon (using electro-mechanical regulator S-9040R)	1 1/8" - 18 Thread	**3-033-257**	**SEP**
1/2	Bitzer Scroll (using electro-mechanical regulator S-9040R)	3/4" NPT Thread	**A4190**	**SEP**
1/2	Bock	4 Bolt 1 31/32" B.C.	**3-033-244**	**SEP**
1/2	Bristol	15/16" -20 Thread	**3-033-242**	**SEP**
1/4	Carrier (DA, DR, 5F, 5H, O6D)	1 1/2-18 Thread	**3-033-204**	**SEP**
1/4	Carrier models EA, ER, OBE & OBCC	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/4	Copeland (model "8R & 8D")	3 Bolt 1 7/8" B.C.	**3-033-212**	**SEP**
1/4	Copeland Discus 4R, 6R, 9R, MD, MR, NR	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/2	Copeland (under 5 Tons)Coplematic HA,KA, EA, 3A, LA, ER & 3R	1 1/8"-12 Thread	**3-033-202**	**SEP**
1/4	Copeland (older model)	4 Bolt 2 1/8" B.C.	**3-033-207**	**SEP**
1/2	Copeland scroll (for 3 bolt regulator)	3/4" NPT Thread	**3-033-218**	**SEP**
1/2	Copeland Scroll (using electro-mechancial regualtor S-9040R)	3/4" NPT Thread	**A4190**	**SEP**
1/2	Copeland Scroll (3 Way)	3/4" NPT Thread	**3-033-251**	**SEP**
1/4	Copeland(model 8DP3 3.25" long)	3 bolt 1 7/8" B.C.	**3-033-254**	**SEP**
1/2	Dunham-Bush (model "D")	4 Bolt 2 1/8" B.C.	**3-033-203**	**SEP**
1/2	Dunham-Bush Big 4	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/2	Frascold (all models)	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/2	Grasso Thermtrol	1" NPT Thread	**3-033-228**	**SEP**
1/2	Maneurop	1 1/8" -18 Thread	**3-033-246**	**SEP**
1/2	Maneurop (using electro-mechanical regulator S-9040R)	1 1/8" - 18 Thread	**3-033-260**	**SEP**
1/2	Prestcold (C, E, R, L & LG)	42mm Thread	**3-033-216**	**SEP**
1/2	Prestcold (model "K")	1 1/8"-12 Thread	**3-033-202**	**SEP**
1/2	Royce(all models)	3/4" NPT Thread	**3-033-218**	**SEP**
1/2	Schnacke-Grasso	1 1/4" NPT Thread	**3-033-219**	**SEP**
1/2	Schnacke-Grasso	2" x 16 Thread	**3-033-205**	**SEP**
1/2	Tecumseh(P,R,S,PA,RA,SA,CK,CM,CH,CG)	1 1/8"-12 Thread	**3-033-202**	**SEP**
1/2	Trane	5 Bolt 2 1/2"B.C.	**3-033-206**	**SEP**
1/2	Trane M,R	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/2	Trane (model K)	3/4" NPT Thread	**3-033-218**	**SEP**
Any	Universal Adapter Kit	Any	**3-033-217**	**SEP**
1/2	Vilter	1 1/2" NPT Thread	**3-033-208**	**SEP**
1/2	Vilter	2" NPT Thread	**3-033-209**	**SEP**
1/2	York GC, GS, JS	3 Bolt 1 7/8" B.C.	**3-033-201***	**SEP**
1/2	York	1" NPT Thread	**3-033-228**	**SEP**
Any	2 x 1/4 Flare Equalisation Extension (82mm long)	3 bolt 1 7/8" B.C.	**3-033-221**	**SEP**
Any	1 x 1/4" Flare Equalisation Extension (82mm ong)	3 bolt 1 7/8" B.C.	**3-033-226**	**SEP**
Any	Sight Glass Adpator Kit (83mm long)	3 bolt 1 7/8" B.C.	**3-033-245**	**SEP**

** Kit 3-033-201 included with all oil level regulators.*

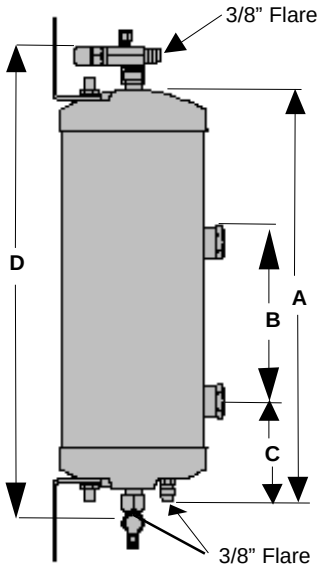
Note: For compressors not listed above, a universal adaptor kit is available Catalog No. 3-033-217. This adaptor kit has a 3 hole flange to mount to the regulator. The compressor end of the kit is a 1 1/4" OD steel tube. The existing compressor sight glass gland or flange must be bored out or bushed down to accept the 1 1/4" tube. The tube is then brazed or welded to the reworked gland or flange and installed on the compressor. A sight glass, seals & hardware are included in the kit. Do not operate ANY regulator at 1/4 sight glass or below, when using an adaptor with an inside diameter smaller than the regulator flange port.

Oil Level Control

Oil Reservoir

The Oil Reservoir is the holding vessel for stand-by oil necessary for the operation of the AC&R Oil Control System. It has two sight glass ports to observe the oil level inside the vessel. The valve on top of the Oil Reservoir receives oil from the Oil Separator, and the bottom valve distributes oil to the Oil Level Regulators. The valves are back-seating and have a 1/4 inch flare connection, allowing the addition or removal of oil from the reservoir.

High pressure gas returns with the oil from the Oil Separator to the Oil Reservoir. Pressure can build up in the Oil Reservoir and adversely affect the Oil Regulators. To prevent this, a vent valve and line is installed from the top of the Oil Reservoir to the suction line. This permits the pressure in the Oil Reservoir to be maintained at a set level above the compressor crankcase.



MWP = 31 Barg

Part Number	Capacity in litres			Dim. (mm)	CE Cat
	A	B	C	D	
S-9109-CE	7.0	2.8	3.0	507	CAT II
S-9108U-CE	11.0	7.0	3.0	735	CAT II
S-9108-CE	15.0	5.3 x 2	3.0	964	CAT II

Oil Reservoir Selection

The size of the oil reservoir is determined by the number of compressors employed, the sump oil charge, operating conditions, etc. The following chart is intended as an aid to selection, and is based on field experiance.

Oil Reservoir Type	Capacity in litres		No of Comps.	Vh(m^3 /hr)	No of Comps.	Vh(m^3 /hr)	No of Comps.	Vh(m^3 /hr)
	Gallons	Litres						
S-9109-CE	2	7.0	2	4 - 65	3	4 - 45	4	4 - 30
S-9108U-CE	3	11.0	2	65 - 130	3	45 - 90	4	30 - 60
S-9108-CE	4	15.0	2	130 - 150	3	90 - 120	4	60 - 90

Vh = Compressor Displacement (theoretical)

NB. Where booster systems are employed please contact the factory.

New System Start-Up

On start-up of a new parallel system, oil should be added to the oil reservoir to the upper sight glass port, NOT ABOVE IT. It is commonly accepted that in a new refrigeration system, some oil will be absorbed by the refrigerant as the system becomes balanced out. After two hours of operation, the Oil Reservoir, if necessary, should again be filled to the upper sight glass, and also after two days, by which time the entire refrigeration system should be balanced out . The Oil Reservoir must be observed on each service call. No oil should be added again until the oil level falls below the lower sight glass port.

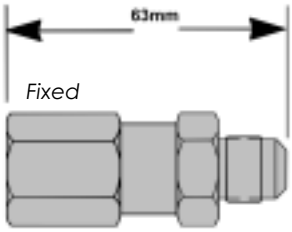
Existing System Start-Up

When installing this Oil Control System on a parallel system that has been in operation for some time, the amount of oil should be added cautiously. With the efficiency of the new oil separator, the oil return may be sufficient to fill the Oil Reservoir to the lower sight glass port only. Observe for one day. After the second day, if the oil level has not risen to the upper sight glass, add oil. If the oil level has risen above the upper sight glass port, remove the excess oil from the Oil Reservoir.

Oil level Control

Pressure Valves

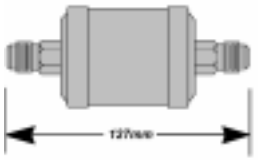
We recommend the use of a Reservoir Pressure Valve with our Oil Reservoirs. Mount the valve on the 3/8" male flare suction vent on top of the Oil Reservoir.
The Pressure Valves maintain a positive pressure differential in the Oil Reservoir over the crankcase pressure. This positive pressure will ensure an adequate oil supply to the Oil Level Regulators.



Part	Pressure Range	Connection Size	CE Cat
S-9104	0.3 bar Fixed.	3/8" Female x 3/8" Male Flare	SEP
S-9104H	1.4 bar Fixed.	3/8" Female x 3/8" Male Flare	SEP

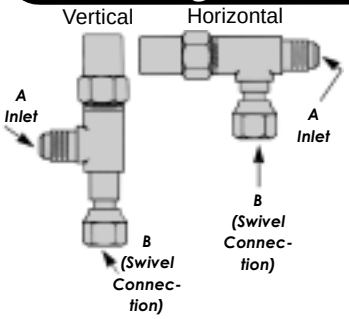
Strainer S-9105

AC&R's Oil Line Strainer protects the Oil Level Regulator by removing foreign matter such as dirt, metal particles, etc. to prevent foreign material from plugging the small orifice of the Oil Level Regulator.
It will also prevent foreign material from entering the compressor. The strainer's 100 mesh screen provides adequate straining with low pressure drop.



Part Number	Screen Data	Connection Size	CE Cat
S-9105	100mesh x 71 sq.cm	3/8" Flare	SEP
S-9105x	100mesh x 71 sq.cm	3/8" ODS	SEP

Oil Regulator Shut Off Valves

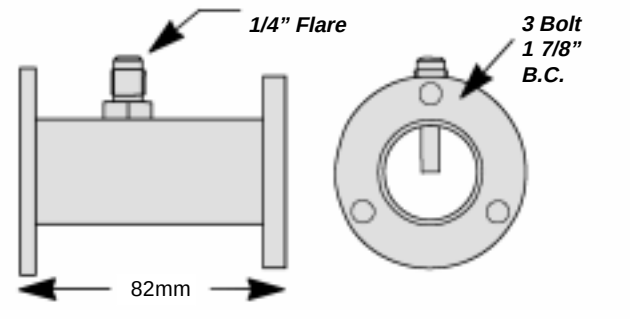


These brass valves mount on the oil inlet connections and equalization line connections of our Oil Level Regulators. The valves allow each Oil Level Regulator to be isolated if service is required on a Compressor, Oil level Regulator, Oil Line Filter-Drier or Strainer. All models have a female swivel connection which allows 360° positioning of the male connection for most convenient mounting of the Oil Line or equalization lines.

Part Number	A	B	Type	CE Cat
S-9106E	1/4"Flare	1/4" Fem. Flare	Vertical	SEP
S-9106H	3/8"Flare	3/8" Fem. Flare	Horizontal	SEP
S-9106V	3/8"Flare	3/8" Fem. Flare	Vertical	SEP
S-9106EH	1/4" Flare	1/4" Fem. Flare	Horizontal	SEP

Equalisation Adapter Kit

This kit, with its 1/4" male flare connection, allows non-equalized Oil Level Regulators to be interconnected (equalized) at a fraction of the cost of replacing the regulators of an existing system. The 1/4" flare fitting reaches down to the centre-line of the sight glass. The kit comes with all the necessary hardware to mount it to the Oil Level Regulator and compressor.
Part No 3-033-226
CE Cat - SEP

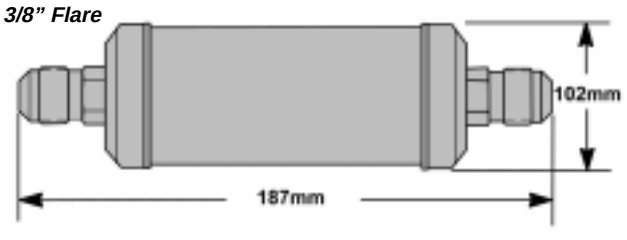


Oil Filters & Driers

S-4004 Oil Filter

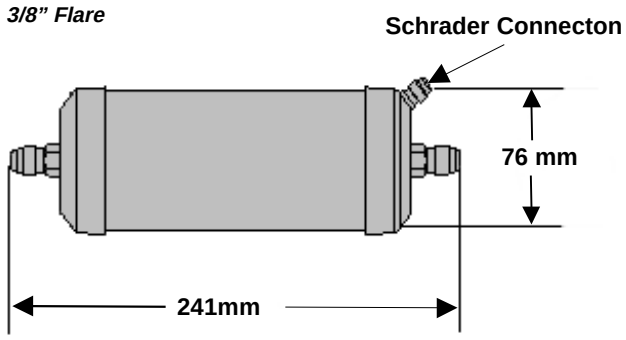
Features

- AC&R Components S- 4004 Oil Filter removes foreign material from the oil as it passes thorough the filter. The filter easily captures any debris that may be in the system, such as dirt, metal chips, etc. (particle retention 10 micron).
- The S-4004 or S-4005 is required on all Electronic Oil Level Controllers to protect the solenoid manifold.

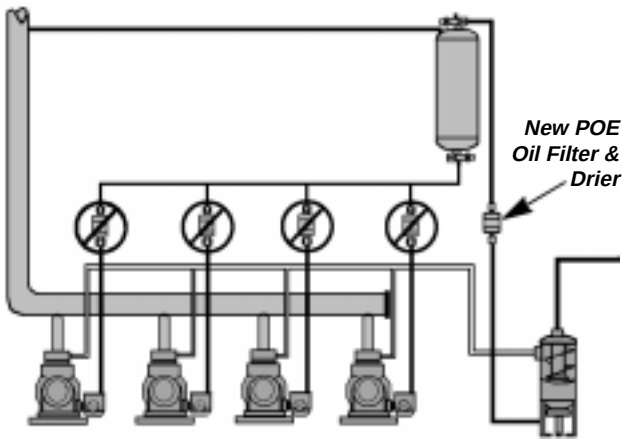


The S-4004 is available in a solder version by ordering with an 'S' suffix (S-4004S)
CE Category - S-4004 & S-4004S - SEP

S-4005 Oil Filter & Drier



CE Category - S-4005 - SEP



The use of Polyolester Oil (POE) is required for use with the new HFC refrigerants. However, there are some drawbacks.

* POE oil is more hygroscopic. It absorbs moisture at a much greater rate than mineral oils. Moisture in any system can produce harmful conditions.

* POE oil is a potent solvent, capable of cleaning up pipe scale, sludge, and other system contaminants.

In order to trap these contaminants and moisture, frequent changing of the liquid and suction line filter-driers is recommended. Because the contaminants and moisture can return with the POE oil to the compressor's crankcase, why not clean the oil at its source?

AC&R Components, Inc. has developed the POE Oil Filter & Drier for POE oil return on systems using Oil Separators and Oil Control Systems.

This is not a refrigerant Filter Drier. It is designed to operate with very low pressure drop in a 100% oil environment.

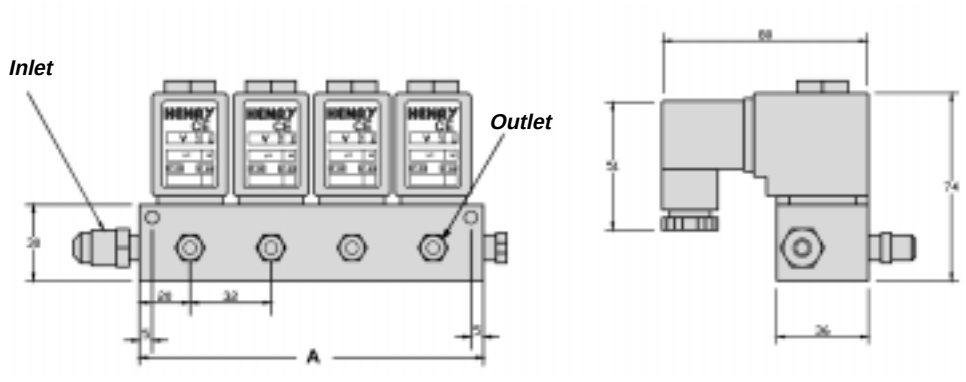
The "New" POE Oil Filter & Drier, Catalog No. S-4005, was designed to clean and dry POE oil as it is returned to the compressor crankcase (or Oil Reservoir in parallel systems). Clean and dry POE oil ensures the proper operation of the float assemblies in the Oil Separator and the Oil Level Regulators and protects the compressor.

The S-4005 POE Filter Drier features:

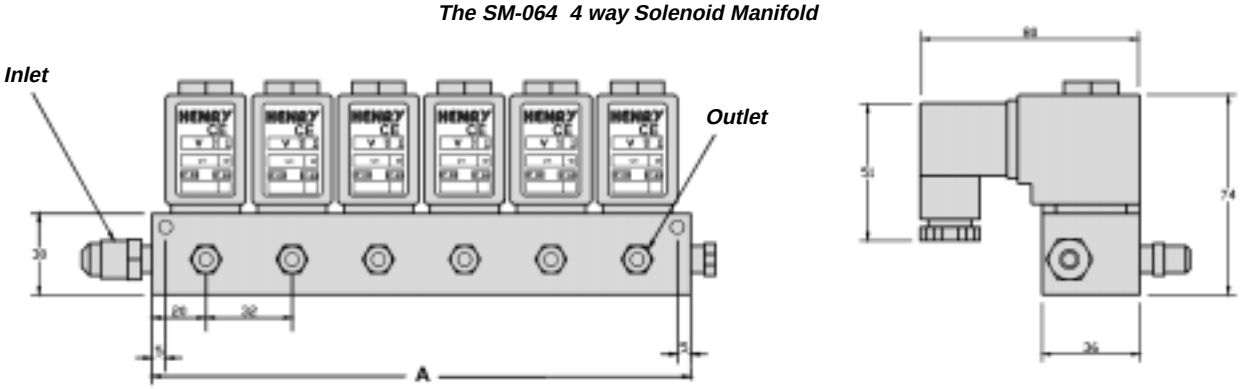
1. Extra large filter area: 2097 square cm's, to ensure clean-up of the oil.
2. Filled with 131 cc of XH9 desiccant, the recommended desiccant for high moisture removal from POE oil.
3. High flow capacity with low pressure drop.
4. Same connection size as oil return line from Oil Separator (3/8" male flare).
5. UL approved.
6. No need to install multiple strainers to each oil level regulator.
7. Also suitable for use with Alkybenzene and Mineral Oil.
8. 1/4" Schrader connection to enable pressure drop to be checked.

Solenoid Valve Manifolds

The SM-064 & SM-069 Manifolds



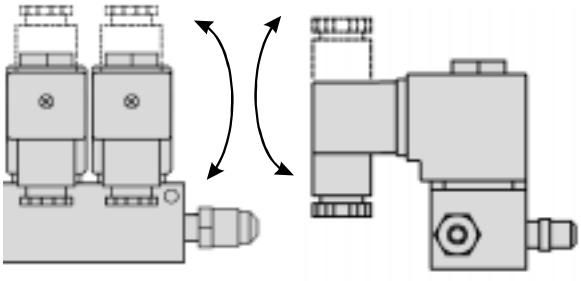
The SM-064 4 way Solenoid Manifold



The SM-069 6 way Solenoid Manifold

The SM-064 and SM-069 solenoid Manifold can be used for either Oil or Liquid control.

When used in conjunction with an AC&R Electronic Oil Level Controller the Solenoid Manifold feeds oil to the compressor crankcase when the Controller requests oil.



The DIN connectors enable versatile wiring connection.

Design Features

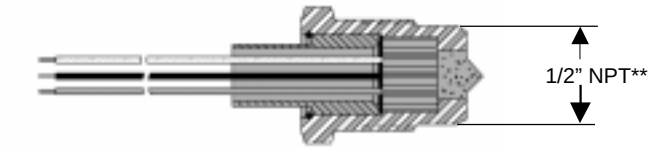
- Suitable for HCFCs , HFCs and Oil
- CE marked (LVD and EMC Directives)
- Maximum Working Pressure 50 bar
- Maximum Operating Pressure Differential 35 bar
- Ambient Temperature Range -25°C to +60°C
- Seal Temperature Constant 110°C, Intermittent, 130°C
- Orifice size 2mm
- Inlet Brass 3/8" Flare
- Outlet Brass 1/4" Flare
- Voltage 24 Volts AC
- Frequency 50 - 60 Hz
- Wattage 8VA per Coil
- Enclosure Rating IP 65
- Electrical Connection - DIN connector

Part No	A (mm)	No of Outlets	Inlet Conns.	Outlet Conns.	Voltage	Weight (kg)	CE Cat
SM-064	135	4	3/8" Flare	1/4" Flare	24 V AC	1.47	SEP
SM-069	198	6	3/8" Flare	1/4" Flare	24 V AC	2.17	SEP

Level Switches

S-9400 Series Level Switch

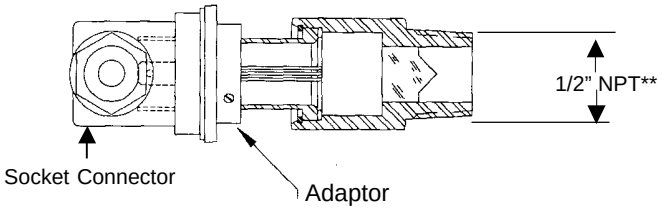
- Switches Solid-State relay for liquid sensing
- No contact level sensing
- Serviceable without loss of refrigerant
- Works with oil, refrigerants, water, or any non-hazardous, non-corrosive fluid
- Glass prism in contact with fluid medium
- Industry approved for Nema 4 and 4 X for Watertight
- Meets UL Standard #873 & #207 File Numbers E141577 & SA672C



** Part Number	Voltage	Resistive Rating	Contacts with Liquids Present	Wire Colour Codes	Replacement Module Number	*Min/Max Fluid Temperature °C		CE Cat
S-9400	120V 50/60 Hz	.5 Amp	N.C.	Yellow & White	2-044-012	-40°C	99°C	SEP
S-9400A	120V 50/60 Hz	.5 Amp	N.O.	Yellow & White/Stripe	2-044-017	-40°C	99°C	SEP
S-9420	208/240V 50/60 Hz	.25 Amp	N.C.	Red & White	2-044-015	-40°C	93°C	SEP
S-9420A	208/240V 50/60 Hz	.25 Amp	N.O.	Red White/Stripe	2-044-018	-40°C	93°C	SEP
S-9424	24V AC/DC	.5 Amp	N.C.	Orange & White	2-044-013	-40°C	99°C	SEP
S-9424A	24V AC/DC	.5 Amp	N.O.	Orange & White/Stripe	2-044-020	-40°C	99°C	SEP

**Actual fluid temperature not tank temperature. NOTE: Load is to be wired between black lead and coloured lead. Replacement sight glass. Part#3-020-063.*
***A 1" NPT connection is available for the S-9400 series by ordering with a "-1" suffix (i.e. S-9424-1).*

S-9400DN Series Level Switch



** Part Number	Voltage	Resistive Rating	Contacts with Liquids Present	Replacement Module Number	* Min/Max Fluid Temperature°C		CE Cat
S-9424DN	24V AC/DC	0.5 Amp	N.C.	2-044-013	-40°C	99°C	SEP
S-9420DN	208 / 240V 50/60Hz	0.25 Amp	N.C	2-044-015	-40°C	93°C	SEP
S-9424-3/4 UK	24V AC/DC	0.5 Amp	N.C	2-044-013	-40°C	99°C	SEP

**Actual fluid temperature not tank temperature. NOTE: Load is to be wired between black lead and coloured lead. Replacement sight glass. Part #3-020-063. S-9424-3/4 UK is supplied with electrical plug less the socket connector.*
*** Other versions available on request*

Specifications

Mounting	Horizontal Only
Switch Inductive Ratings	36 va Pilot Duty Rated
Contacts, Power Off	Normally Open (N.O.)
Contact Life	Over 1 Million Cycles at Rated Electrical Load
Pressure Rating	83 bar Working, 414 bar Burst
Power for Operation	3.5 ma AC, 5.5 ma DC
Minimum Load	2 ma (without bleed resistor)

Level Switches

Replacements / Electrical Connection

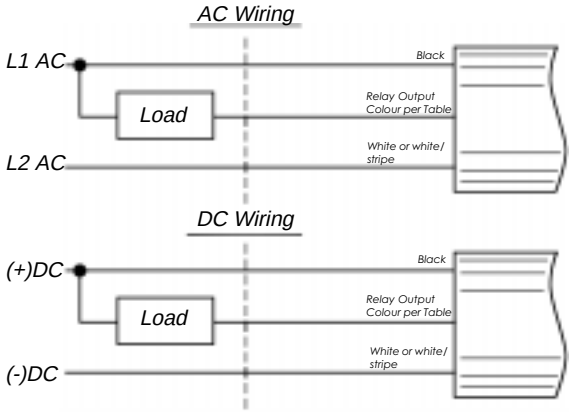
Relay Module Replacement:

1. Disconnect the power at the at the fuse box.
2. Remove wiring box from the Retainer
3. Remove the IRR 4000-93 Ring with an IRR P-101 or equivalent retaining ring pliers.
4. Remove the Retainer.
5. Pull out the Relay Module by the leads.
6. Verify the voltage rating.
7. Install new Relay Module.
8. Re-assemble the Retainer, Ring and wiring.

Application Wiring:

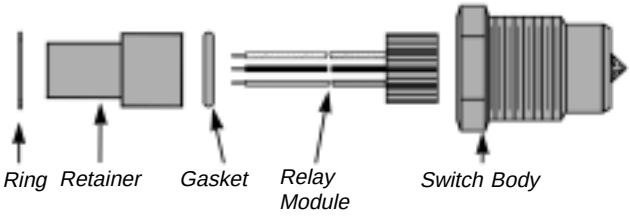
Wiring diagrams for both AC and DC applications are shown below. The 3 wire switching circuits shown can be used in a number of applications. Some of the possible wiring applications include:

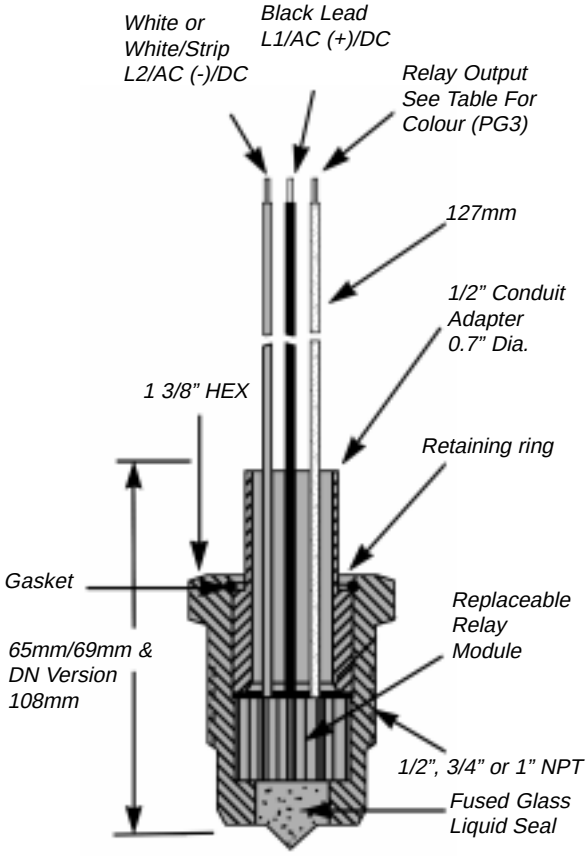
– Solenoid valve operation for oil control in a refrigerant recovery/reclaim/recycle unit.
– Indicate high or low level by means of relay contact operation to a system controller.
– Operate a relay to switch a high amperage load based on a level condition.
– Switch a load through a time delay based on a level condition.



NOTE: L1 & L2 may be interchanged between Black & White leads for AC wiring applications only

Disasssembled View



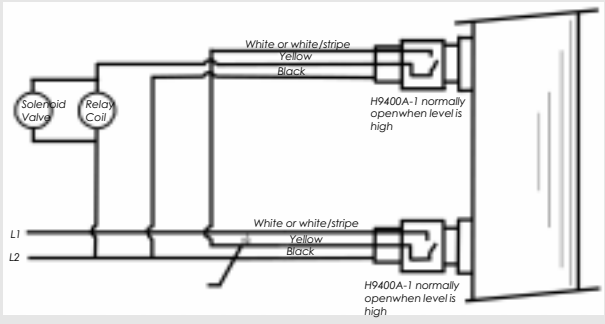


Example :

Differential control of Liquid Level Using S-9400 Level Switch
Operation

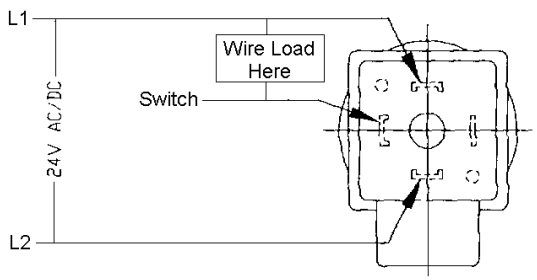
· Turn on Solenoid Valve when level goes below lower S-9400

· Turn off solenoid valve when level goes above upper S-9400

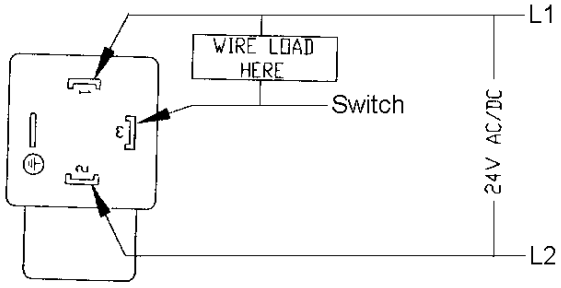


Level Switches

S-9400DN Electrical Connection



Sensor Adapter



Bottom View DIN Socket

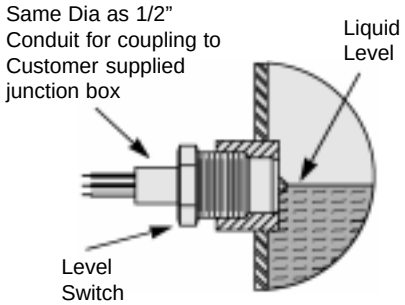
Wire Connections
L1 - 1
L2 - 2
Switch - 3

Construction, Operation and Application

Construction: The switch consists of a sturdy Nickel-plated steel body with a built-in fused glass prism. This allows liquid to be optically detected by a solid state opto-electronic module. The solid state module is encapsulated in moisture-proof epoxy. It can be easily replaced without disturbing the system. The fused glass prism provides chemical resistance to all refrigerants and high pressure ability to withstand typical burst pressures. The switch can be installed on any location in the refrigeration system where the temperatures do not exceed the rating in the Table on page 21. This includes oil separators, oil reservoirs and refrigerant receivers. The electrical connection end is suitable for 1/2" conduit.

Operation: The S-9400 Series Level Switches use light reflecting from a conical glass prism as a means of detecting the absence of a fluid at the level of the glass cone. When no fluid covers the lower half of the cone, infra-red light from the module reflects from the mirror-like inner surface of the cone back to a light detector signaling the electronic module to switch the relay. When fluid covers the lower half of the glass cone, the light from the module passes into the fluid. This absence of light is detected by the module which switches the relay into the opposite direction. The module provides a .06/.10 differential distance from the cone point down.

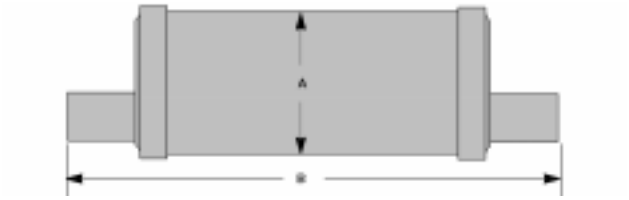
The S-9400 Series Level Switch is intended to be mounted horizontally on the side of a Liquid Level Column in a 1" NPT fitting in the Switch Cap. The Level Switch can be installed without disassembly. A pipe sealant satisfactory for the intended fluid must be applied to the 1" NPT threads A 1-3/8" deep socket wrench must be used during installation. Tighten the pipe threads 1 to 1-1/4 full turns past free thread engagement. Test the pipe joint for external leakage to meet applicable standards. For electrical safety, Level Switch types which use an AC power supply must be used on grounded equipment.



Note - These switches can be used on various applications where liquid is used, for example: receivers, compressor crankcases, oil reservoirs and level columns.

Discharge line Mufflers

Selection / Application



Part Number	Size Conn.	Dimensions(mm)		CE Cat
		A(dia)	B	
S-6302M	6mmODS	76	197	SEP
S-6303M	10mmODS	76	197	SEP
S-6304	1/2"ODS	76	197	SEP
S-6305	5/8"ODS	76	197	SEP
S-6307	7/8"ODS	76	246	SEP
S-6311	1 1/8"ODS	76	246	SEP
S-6405	5/8"ODS	102	172	SEP
S-6406	3/4"ODS	102	178	SEP
S-6407	7/8"ODS	102	178	SEP
S-6411-CE	1 1/8"ODS	102	337	CAT I
S-6413-CE	1 3/8"ODS	102	349	CAT I
S-6415-CE	1 5/8"ODS	102	464	CAT I
S-6415M-CE	42mmODS	102	464	CAT I
S-6621-CE	2 1/8"ODS	152	533	CAT I
S-6625-CE	2 5/8"ODS	152	533	CAT I
S-6631-CE	3 1/8"ODS	152	567	CAT I

MWP = 31.0 Barg

Purpose and Design

The purpose of a muffler is to reduce noise due to gas pulsation's by allowing the gas to expand in the muffler chambers, smoothing out the flow. Mufflers have internal baffles designed for minimum pressure drop. These baffles change the velocity of the discharge gasses passing through the muffler. This results in a dampening effect on high frequency sound waves in the gasses on high speed compressors. This also irons out the pulsating waves in low speed compressors. Note: A muffler is not designed to eliminate vibrations.

Selecting the Size of Muffler

Select a muffler with a connection size that matches or exceeds the line size of the discharge line. There are no tonnage ratings for mufflers, since the muffler will remove pulsations from the discharge regardless of flow.

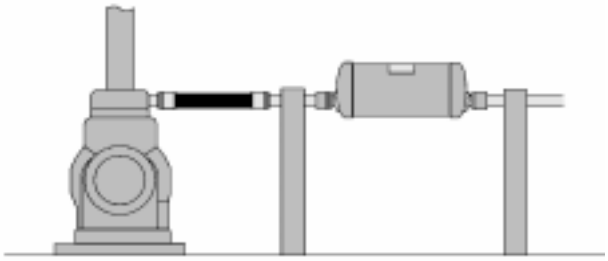
Installation

Mufflers with offset connector fittings permit vertical, horizontal, or angle mounting when properly installed. Install the muffler on the discharge as close to the compressor as possible to reduce noise in the discharge line. All catalog mufflers are bi-directional, therefore there is no inlet or outlet. When mounted in the horizontal or angle position the side with the label must be on the top center to insure proper flow of the oil. The outlet should be lower than the inlet when possible, or the muffler may collect oil from the discharge and fill up, reducing its muffling ability and cause loss of oil in the compressor crankcase.

Mufflers that are mounted vertically will not trap oil. A vibration eliminator should be installed between the compressor discharge valve and the muffler to prevent vibration from being transmitted to the line. A support must be installed between the vibration eliminator and muffler. This support must be wide enough so as not to act as a pivot point and transmit the vibration load. If this support is omitted, the pressure line could go into vibration due to the weight of the muffler.

Correct location of the support (Figure #1)

1. Support between metallic hose and muffler (not on the muffler body)
2. Support behind the muffler.



A single muffler may be installed on a common discharge line, but some customers prefer to install one muffler per compressor on parallel racks (see Figure #2).

4" and 6" diameter (102 and 152 mm) mufflers include a 1/8" pipe fitting on one end for pressure relief devices as required by UL207. A pipe plug is installed.

Mufflers will only remove noise due to discharge gas pulsation's. If the noise is due to vibration of the compressor or lines, vibration eliminators should be added to the discharge lines and possible the suction lines.

If leaks are discovered around the muffler connections after the system has been running for some time, replace the muffler and ensure that the muffler has been sufficiently supported to prevent vibration and weight problems. AC&R brazing and reinforcing techniques for mufflers are regularly fatigue tested to insure that mufflers can with stand the rigorous discharge conditions, but excessive vibration can caused fatigue failure in the discharge line, muffler fittings, or the adjoining areas.

Vibration Eliminators

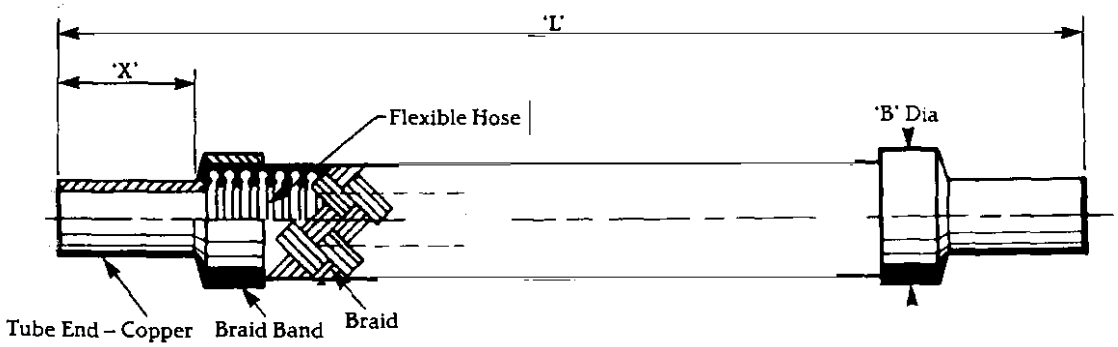
Selection / Application

Features

- Stainless steel corrugated hose and braid
- 304 stainless steel wire braid brazed onto stainless steel ferrules
- Copper ends brazed onto ferrules
- Range of 1/4” to 4 1/8”
- UL Listed - SA11882
- Large Hose ID
- BS EN ISO 9001 Quality Management System
- Individually leak tested
- Suitable for both mobile and static applications

Applications

Vibration Eliminators are especially designed to absorb the destructive forces of noise and vibration found in refrigeration and air conditioning pipework.



*Part Number	To suit tube OD in	Length 'L' (mm)	Pipe end length 'X' (mm)	Hose ID (mm)	Stainless Steel Brazed		CE Cat
					Max OD 'B' (mm)	Max Working Pressure	
VE-1/4-CB	1/4	191	16	6	14	27.6 bar	SEP
VE-3/8-CB	3/8	210	16	6	14	27.6 bar	SEP
VE-1/2-CB	1/2	229	19	10	19	27.6 bar	SEP
VE-5/8-CB	5/8	248	20	13	24	27.6 bar	SEP
VE-3/4-CB	3/4	254	29	13	24	27.6 bar	SEP
VE-7/8-CB	7/8	292	30	19	31	27.6 bar	SEP
VE-1-1/8-CB	1 1/8	330	33	25	38	27.6 bar	SEP
VE-1-3/8-CB	1 3/8	375	37	32	48	27.6 bar	SEP
VE-1-5/8-CB-CE	1 5/8	432	48	38	55	27.6 bar	CAT I
VE-2-1/8-CB-CE	2 1/8	508	60	51	70	27.6 bar	CAT I
VE-2-5/8-CB-CE	2 5/8	610	76	64	83	22.8 bar	CAT I
VE-3-1/8-CB-CE	3 1/8	686	89	76	97	22.8 bar	CAT I
VE-3-5/8-CB-CE	3 5/8	686	102	89	126	22.8 bar	CAT I
VE-4-1/8-CB-CE	4 1/8	838	114	102	136	22.8 bar	CAT I

**For metric connections, please contact the factory for details*

Suction Line Accumulators

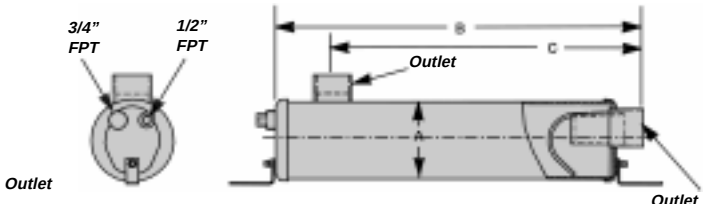
Horizontal Accumulators

The refrigeration compressor is designed to compress vapor only. A suction line accumulator prevents compressor damage from a sudden surge of liquid refrigerant and oil which could enter the compressor from the suction line. The suction line accumulator is a temporary reservoir for this mixture, designed to meter both the liquid refrigerant and oil back to the compressor at an acceptable rate. This prevents damage to the reed valves, pistons, rods, and crank shafts. Accumulators range in size from 4" to 12 3/4" in diameter. All vessels over 6" inside diameter are designed and manufactured in accordance with Section Vlll of the ASME Code and are marked with the U or UM Code symbol. Accumulators 6" outside diameter and under are copper brazed, UL listed, and equipped with copper or copper plated fittings.

All AC&R Components Inc. accumulators feature a rust resistant finish which meets a 500 hour salt spray test. This is important to suction line accumulators, where moisture and condensation can result in excessive corrosion. Accumulators have a metering ejector device that picks up liquid, vaporizes it, and returns it to the compressor. This prevents liquid slugging and controls oil return. Vertical accumulators protect the return orifice with a screen assembly, and also feature a 182°C fusible relief device in the S-7000 Series. Selection of a suction line accumulator should be made on the basis of the following three capabilities. The accumulator should have an adequate liquid holding capacity, which can vary with the system. Normally this should not be less than 50% of the system charge. If possible this value should be checked based on actual tests. A second consideration should be the ability of the accumulator to perform without adding excessive pressure drop to the system. The recommended maximum capacity shown in the following tables are based on a pressure drop equivalent to 1/2°C. These ratings are those of the accumulator, based on oil return through the accumulator, and will be modified by the length of the suction line and compressor displacement.

Finally an accumulator should have the capability of returning liquid at the proper rate and under a range of load conditions.

Accumulators should have a Heat Element added on low temperature applications (-18°C and below) such as the S-9111 or S-9112 to help boil off liquid refrigerant and raise the oil temperature to help facilitate oil flow.



Maximum WP 20.8 bar ***S-7600 Series***

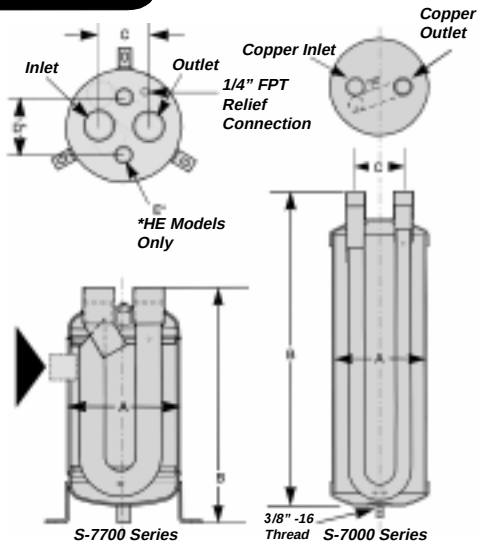
Liquid accumulators of this design should not be used when the temperature of the liquid refrigerant is less than -10°C in the accumulator. The S-76 series accumulators have a 1/2" FPT connection for liquid injection and a 3/4" FPT connection for hot gas bypass. These connections can also be used for a relief device as required by UL 207.

Part No.	Size Connection ODS	Dimensions (mm)			Refrigerant Holding Capacity.			Recommended kw of refrigerant at Suction Evaporating Temp									Volume Litres	CE Cat
								R-134a			R-22			R-404a/507				
		A	B	C	R-134a	R-22	R-404A/507	5^0	-7^0	-18^0	5^0	-7^0	-18^0	5^0	-7^0	-18^0		
S-7615-CE	1 5/8"	152	711	546	10.6	10	8.8	53	35	22	102	70	44	100	57	41	11	CAT II
S-7621-CE	2 1/8"	152	933	768	14.4	13	11.9	101	69	44	176	106	88	173	117	81	14	CAT II
S-7625-CE	2 5/8"	152	1270	1105	21.2	19	17.6	176	123	81	334	229	158	328	217	145	20	CAT II

Suction Line Accumulators

Vertical Accumulators

PartNumber			ODSC-onn.	Dimensions(mm)				ODS	Wt. Kgs	CE Cat
				A	B	C	D	E		
S-7043	-	S-7043HP	5/8"	102	162	48	N/A	N/A	1.8	SEP
S-7044	-	S-7044HP	1/2"	102	264	48	N/A	3/8"	2.4	SEP
S-7045	S-7045HE	S-7045HP	5/8"	102	264	64	64	3/8"	2.4	SEP
S-7046	S-7046HE	S-7046HP	3/4"	102	264	64	64	3/8"	2.4	SEP
S-7057-CE	S-7057HE-CE	S-7057HP-CE	7/8"	127	330	57	70	1/2"	4	CAT I
S-7061-CE	S-7061HE-CE	S-7061HP-CE	1 1/8"	152	381	76	73	5/8"	7	CAT I
S-7063-CE	S-7063HE-CE	S-7063HP-CE	1 3/8"	152	630	76	73	5/8"	10	CAT II
S-7065-CE	S-7065HE-CE	S-7065HP-CE	1 5/8"	152	630	76	73	3/4"	10	CAT II
S-7721-CE	S-7721HE-CE	-	2 1/8"	219	588	89	140	7/8"	18	CAT II
S-7722*-CE	S-7722HE-CE	-	2 1/8"	219	588	89	140	7/8"	18	C AT II
S-7725-CE	S-7725HE-CE	-	2 5/8"	273	578	118	140	1 3/8"	20	CAT II
S-7726*-CE	S-7726HE-CE	-	2 5/8"	273	578	118	140	1 3/8"	20	CAT II
S-7731-CE	S-7731HE-CE	-	3 1/8"	324	635	140	149	1 3/8"	50	CAT III
S-7732*-CE	S-7732HE-CE	-	3 1/8"	324	635	140	149	1 3/8"	50	CAT III
S-7741-CE	S-7741HE-CE	-	4 1/8"	406	902	Contact Factory		2 5/8"	89	CAT III
S-7742-CE	-	-	4 1/8"	508	1130			N/A	140	CAT IV

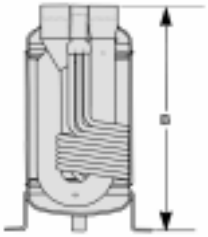


Optional 1" FPT conn. is available on S-7700 series for installation of an S-9400 type Liquid Level Switch

Heat Exchanger models available by adding an HE suffix.
Heat Exchanger models Feature a boil out coil to boil off any liquid refrigerant in the bottom of the accumulator.
Heat Pump models available by adding suffix "HP".

* I" F.P.T. level switch conn. installed.

MWP = 31 Barg for models up to S-7726-CE
MWP = 27.5 Barg for S-773 & S-774 Series

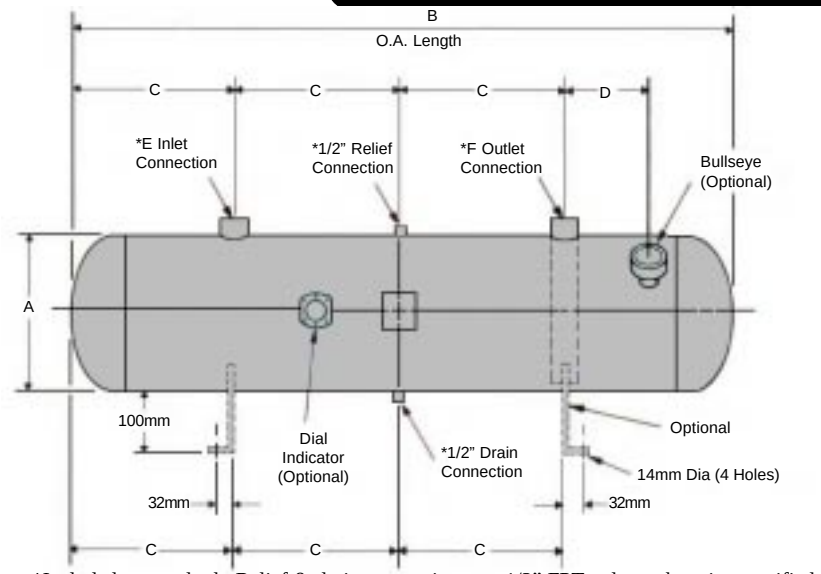


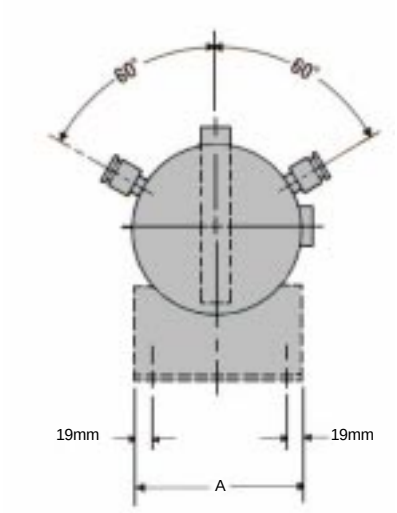
Heat Exchange models feature a boil out coil to boil off liquid refrigerant in the bottom of the accumulator. The ODS connection
size of the boil out coil is shown in column E.

Part Number	Refrigerant Holding Cap. (Kgs at -18 ° C)				Recommended kw of refrigerant at Suction Evaporating Temp															Vol. Litres
					R-134a					R-22					R-404a/R507					
	R134A	R-22	R-507		5°	-7°	-18°	-29°	-40°	5°	-7°	-18°	-29°	-40°	5°	-7°	-18°	-29°	-40°	
S-7043	1	1	0.7	MAX	3.2	2.3	1.5	1	0.6	6.3	4.5	3.1	2.1	1.3	6.3	4.3	2.8	1.8	1.1	1L
				MIN	0.7	0.6	0.5	0.4	0.3	0.9	0.8	0.7	0.6	0.7	0.9	0.7	0.6	0.5	0.4	
S-7044	2	1.9	1.7	MAX	1.6	1.2	0.8	0.5	0.6	3.2	2.3	1.6	1	0.7	3.1	2.2	1.5	0.9	0.6	1.6L
				MIN	0.3	0.2	0.2	0.2	0.1	0.5	0.4	0.3	0.2	0.2	0.5	0.3	0.3	0.2	0.2	
S-7045	2	1.9	1.7	MAX	3.2	2.3	1.5	1	0.6	6.4	4.5	3.1	2.1	1.3	6.3	4.3	2.8	1.8	1.1	1.6L
				MIN	0.7	0.6	0.5	0.4	0.3	0.9	0.8	0.7	0.6	0.4	0.9	0.7	0.6	0.5	0.4	
S-7046	2	1.9	1.7	MAX	4.5	3.1	2.1	1.4	0.8	8.8	6.2	4.2	2.8	1.8	8.7	5.9	3.8	2.5	1.5	1.6L
				MIN	0.9	0.7	0.6	0.5	0.4	1.2	1	0.8	0.7	0.6	1.3	1	0.8	0.6	0.5	
S-7057-CE	4.2	3.9	3.5	MAX	7.7	5.4	3.6	2.3	1.4	15.2	10.7	7.1	4.7	3	14.9	10.2	6.5	4.2	2.6	3L
				MIN	1.3	1.1	0.9	0.7	0.6	1.8	1.6	1.3	1.1	0.9	1.8	1.5	1.2	1	0.7	
S-7061-CE	5.8	5.4	4.9	MAX	16.3	11.4	7.3	4.8	2.9	32	22.8	14.4	9.7	6.1	31.4	21.7	13.2	8.6	5.2	5L
				MIN	2.1	1.8	1.5	1.2	1	3	2.5	2.2	1.8	1.4	2.9	2.4	2	1.6	1.2	
S-7063-CE	9.9	9.1	8.3	MAX	27.8	18.8	12	7.6	4.7	54.9	37.7	23.8	15.6	10	53.9	35.9	21.8	13.8	8.6	8L
				MIN	4.4	3.7	3.1	2.5	2	6.1	5.1	4.4	3.6	2.9	6	4.9	4	3.2	2.5	
S-7065-CE	9.9	9.1	8.3	MAX	49.3	33.8	21.1	13.4	8.2	96.8	67.6	41.5	27.4	17.5	95	64.1	38	24.3	15	8L
				MIN	7.6	6.3	5.3	4.4	3.5	10.5	8.8	7.6	6.4	5.1	10.3	8.4	7	5.7	4.4	
S-7721-CE	14.7	13.6	12.3	MAX	109	70.4	49.3	26.4	17.6	204	141	91.5	63.4	42.2	201	134	84.5	56.3	35.2	15L
				MIN	14.1	12.3	10.6	8.8	7	21.1	19.4	15.8	14.1	10.6	21.1	17.6	14.1	12.3	8.8	
S-7722-CE	14.7	13.6	12.3	MAX	109	70.4	49.3	26.4	17.6	204	141	91.5	63.4	42.2	201	134	84.5	56.3	35.2	15L
				MIN	14.1	12.3	10.6	8.8	7	21.1	19.4	15.8	14.1	10.6	21.1	17.6	14.1	12.3	8.8	
S-7725-CE	22	20	18.2	MAX	172	113	75.7	42.2	22.9	313	215	144	98.6	54.6	308	204	132	88	47.5	22L
				MIN	21.1	19.4	15.8	12.3	3.5	31.7	29.9	24.6	22.9	5.3	31.7	28.2	22.9	21.1	5.3	
S-7726-CE	22	20	18.2	MAX	172	113	75.7	42.2	22.9	313	215	144	98.6	54.6	308	204	132	88	47.5	22L
				MIN	21.1	19.4	15.8	12.3	3.5	31.7	29.9	24.6	22.9	5.3	31.7	28.2	22.9	21.1	5.3	
S-7731-CE	36.4	33.2	30	MAX	253	194	130	84.5	33.4	465	324	215	141	82.7	456	308	197	125	70.4	36L
				MIN	35.2	31.7	24.6	22.9	5.3	54.6	45.8	40.5	33.4	8.8	52.8	44	37	29.9	8.8	
S-7732-CE	36.4	33.2	30	MAX	253	194	130	84.5	33.4	465	324	215	141	82.7	456	308	197	125	70.4	36L
				MIN	35.2	31.7	24.6	22.9	5.3	54.6	45.8	40.5	33.4	8.8	52.8	44	37	29.9	8.8	
S-7741-CE	62	61	55	MAX	401	259	156	107	69.7	792	510	306	211	137	757	503	320	201	116	50L
				MIN	109	89.4	75.7	59.8	47.2	151	125	109	86.6	31.7	174	113	73.9	45.8	24.6	
S-7742-CE	127	126	114	MAX	401	259	156	107	69.7	792	510	306	211	137	757	503	320	201	116	100L
				MIN	109	89	76	60	47.2	151	125	109	87	32	174	113	74	46	25	

Liquid Refrigerant Receivers

Horizontal Liquid Receivers





MWP = 28.0 Barg

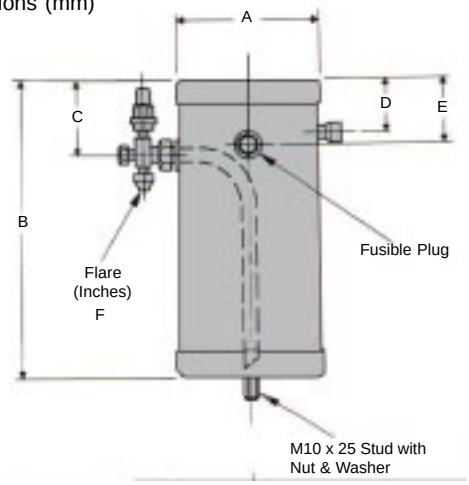
*Included as standard. Relief & drain connections are 1/2" FPT unless otherwise specified.

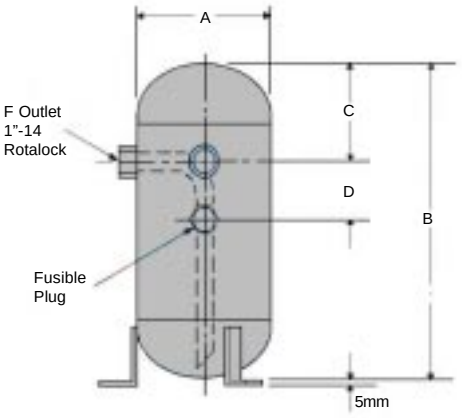
Model	Volume Litres	Pumpdown Capacity Kg	Dimensions				Inlet E NPT	Outlet F NPT	Weight Kg	CE Cat
			A	B	C	D				
HR-0724-CE	13	13	177	609	152	59	3/4"	1/2"	14	CAT II
HR-0736-CE	20	20		914	228	135			20	CAT II
HR-0748-CE	27	27		1219	305	212	1"	3/4"	27	CAT II
HR-0772-CE	40	40		1828	457	364			40	CAT II
HR-0824-CE	20	21	219	609	152	10			19	CAT II
HR-0836-CE	30	31		914	228	86			28	CAT II
HR-0848-CE	40	41		1219	305	163	1 1/4"	1"	35	CAT III
HR-0860-CE	50	51		1524	381	239			43	CAT III
HR-0884-CE	71	72		2133	533	391			54	CAT III
HR-1036-CE	47	48	273	914	228	61			45	CAT III
HR-1048-CE	63	64		1219	305	138			58	CAT III
HR-1060-CE	79	81		1524	381	214			70	CAT III
HR-1084-CE	111	113		2133	533	366	1 1/2"	1"	96	CAT IV
HR-10108-CE	142	145		2743	686	518	2" SW	1 1/4"	108	CAT IV
HR-1236-CE	66	67	323	914	228	36			57	CAT III
HR-1248-CE	88	90		1219	305	113			72	CAT III
HR-1272-CE	132	135		1828	457	265			102	CAT IV
HR-1296-CE	176	179		2438	609	417	2 1/2" SW	1 1/2"	125	CAT IV
HR-12120-CE	219	224		3048	762	570			140	CAT IV
HR-12132-CE	241	246		3353	838	646			147	CAT IV
HR-1436-CE	80	82	355	914	228	23			84	CAT III
HR-1448-CE	107	109		1219	305	100			109	CAT IV
HR-1472-CE	161	164		1828	457	252			158	CAT IV
HR-1496-CE	214	218		2438	609	404			208	CAT IV
HR-14120-CE	268	273		3048	762	557			233	CAT IV
HR-14132-CE	295	301		3353	838	633			245	CAT IV

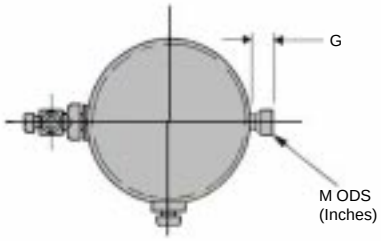
Liquid Refrigerant Receivers

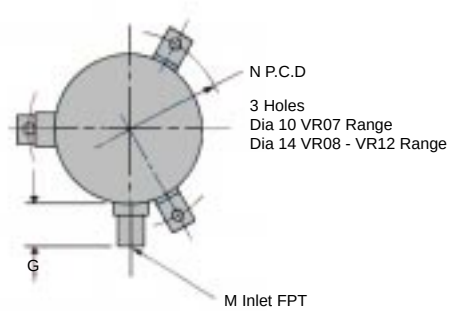
Vertical Liquid Receivers

Dimensions (mm)









MWP = 28.0 Barg

Above dimensions apply only to LR Series

Above dimensions apply only toVR Series

Model	Pumpdown Capacity Kg	Volume Litres	A	B	C	D	E	F	G	M	N	Weight Kg	CE Cat
LR100-CE	1.63	1.60	102	228	82	38	44	3/8"	22	3/8"	-	2.41	CAT I
LR140-CE	1.83	1.80	102	254	82	38	44	3/8"	22	3/8"	-	2.57	CAT I
LR250-CE	2.75	2.70	127	254	82	60	68	3/8"	22	3/8"	-	3.92	CAT I
LR350-CE	4.90	4.80	152	304	82	60	68	1/2"	25	1/2"	-	6.97	CAT I
LR450-CE	7.45	7.30	152	457	82	60	68	1/2"	25	1/2"	-	8.66	CAT II
VRO7014-CE	6.80	6.70	177	355	110	50	-	1"-14	18	1/2"	210	9.40	CAT II
VR07016-CE	7.80	7.70	177	406	110	50	-	1"-14	18	1/2"	210	10.50	CAT II
VR07020-CE	9.80	9.60	177	507	110	50	-	1"-14	18	1/2"	210	12.65	CAT II
VR07024-CE	11.80	11.60	177	609	110	50	-	1"-14	18	1/2"	210	14.82	CAT II
VR07030-CE	14.50	14.20	177	762	110	50	-	1"-14	18	1/2"	210	18.06	CAT II
VR07038-CE	18.50	18.20	177	964	110	50	-	1"-14	18	1/2"	210	22.40	CAT II
VR08012-CE	9.80	9.40	219	304	150	0	-	1"-14	18	1/2"	282	12.58	CAT II
VR08016-CE	13.50	13.20	219	406	150	0	-	1"-14	18	1/2"	282	16.46	CAT II
VR10018-CE	24.20	23.70	273	456	167	0	-	1"-14	25	1"	336	28.85	CAT II
VR10024-CE	32.20	31.60	273	609	167	0	-	1"-14	25	1"	336	36.62	CAT II
VR12018-CE	33.70	33.00	323	456	203	0	-	1"-14	25	1"	389	34.41	CAT III
VR12024-CE	44.90	44.00	323	609	203	0	-	1"-14	25	1"	389	44.33	CAT III

Pumpdown capacity shown is for R22 based on condensing temperature of 40°C.
For R404A multiply pumpdown capacity by 0.845.
O.E.M Models available on request

Liquid Refrigerant Receivers

Selection Data

AC&R offer a complete line of horizontal high pressure liquid refrigerant receivers. Sizes range from 177mm dia x 609mm long to 355mm dia x 3353mm long with R22 storage capacities of 11.83kg to 972 kg with maximum working pressure of 28 bar (406 P.S.I). The vertical receivers cover a range from 102mm dia x 228mm long to 323mm dia x 609mm with storage capacities of 1.35kg to 39.6kg with maximum working pressure of 28 bar (406 P.S.I).

Capacity

Receiver storage capacities (kg) are based on the liquid occupying no more than 90% of the internal volume when the temperature of the refrigerant is 40°C. Note; pumpdown capacities shown in data tables are based on R22. For R404A multiply by 0.845.

Selection

The storage capacity of the receiver selected should always be greater than the calculated operative charge of the system plus the refrigerant sealing charge obtained from table 2. (Shown as a percentage of pump down capacity) (data table).Receivers should be selected based on the operating charge for all system components including the liquid lines. It is usual to add a small percentage to cover the refrigerant in long runs of suction and discharge lines etc. It is essential that the maximum operating charge be determined, eg winter charge in an air cooled condenser having flooded head pressure control, this being much greater than normal summer charge.

The sealing charge is the amount of refrigerant required to cover the liquid outlet connection so that gas will not be blown into evaporator(s). The sealing charge is based on R22 liquid at 40°C.

Receivers are manufactured under strict quality control. Various manufacturing codes are available on request.

Standard AC&R receivers are constructed for use with flurocarbon refrigerants. Receivers for ammonia are available on request. In additon to the receiver range we offer the following accessories; rotalock valves, adaptors, mounting brackets, and compressor mounting plates.

Engineering Data

The following sizes are based on average close-coupled medium temperature systems.

Re-check selections for maximum permissable pressure drop or velocity.

Table 1: Typical Receiver Connection Sizes

Maximum Capacities in Kilowatts											
Connection Sizes											
Refrigerant		5/8"	3/4"	7/8"	1 1/8"	1 3/8"	1 5/8"	2 1/8"	2 5/8"	3 1/8"	4"
R12	Inlet	10	17	25	38	60	84	147	228	327	612
	Outlet	14	25	38	76	133	218	450	809	1280	2363
R22	Inlet	10	17	28	46	70	98	172	267	380	686
	Outlet	21	31	56	112	197	313	647	1115	1836	3710
R502	Inlet	9	12	17	31	49	70	119	186	264	492
	Outlet	16	25	42	84	151	239	492	876	1400	2638

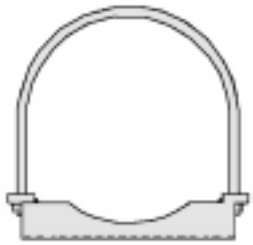
Table 2: Sealing Charge - Guide

Typical Maximum Sealing Charge Shown As % Of Pumpdown (Kg)									
Shell Diameter	Connection Sizes								
	5/8"	3/4"	7/8"	1 1/8"	1 3/8"	1 5/8"	2 1/8"	2 5/8"	3 1/8"
177	11%	11%	22%	22%			-	-	-
219	7%	7%	15%	15%	15%		-	-	-
273	6%	6%	10%	10%	10%	15%	15%	-	-
324	5%	5%	7%	7%	7%	11%	11%	15%	15%
355		4%	8%	8%	8%	10%	10%	13%	13%

Receiver Acessories

Liquid Level Gauges / Bracket Kits

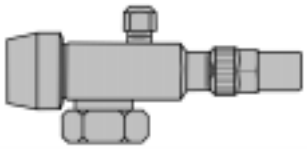
Part No.	Receiver Dia.	CE Cat.
S-9450-CE	219mm	CAT IV
S-9451-CE	273mm	CAT IV
S-9452-CE	323mm	CAT IV
S-9453-CE	355mm	CAT IV
S-9454-CE	406mm	CAT IV
S-9455-CE	457mm	CAT IV
S-9456-CE	508mm	CAT IV



Designed for Horizontal Mounting Only

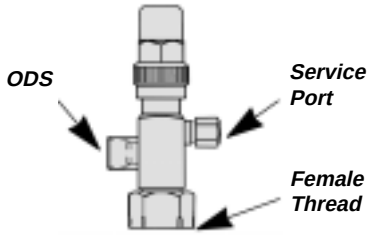
Part No.	Receiver Dia.
3-019-905	127mm
3-019-906	152mm
3-019-908	219mm
3-019-910	273mm

Horizontal / Vertical Rotalock Valves



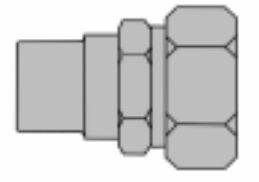
Part No.		ODS	Thread	CE Cat
ODS	Flare			
48396-P	48287-P	1/4"	3/4" - 16	SEP
48397-P	2-030-122	3/8"	3/4" - 16	SEP
48511-P	A8544	1/2"	1" - 14	SEP
48294-P	A8548	5/8"	1" - 14	SEP
48295-P	-	7/8"	1 1/4" - 12	SEP
48461-P	-	1 1/8"	1 1/4" - 12	SEP
24320-P	-	1 3/8"	1 3/4" - 12	SEP

Gaskets Supplied Separately

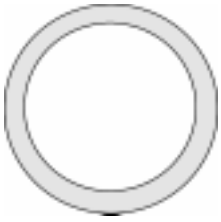


Part No.	Thread.	ODS.	CE Cat
3-030-140	1"-14	1/2"	SEP
3-030-141	1 1/4"-12	7/8"	SEP
3-030-142	1 1/4"-12	1 1/8"	SEP
3-030-143	1 3/4"-12	1 3/8"	SEP
3-030-150	1"-14	5/8"	SEP

Rotalock Straight Adapters / Gaskets



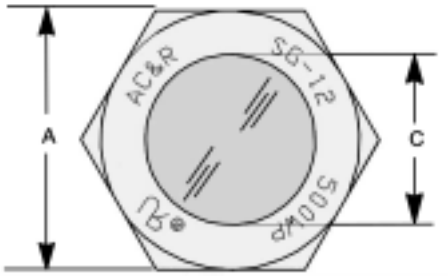
Part No.	I.D. Conn.	Coupling Size	CE Cat
24683	1/4"	3/4" - 16	SEP
24246	3/8"	1" - 14	SEP
24247	1/2"	1" - 14	SEP
24248	5/8"	1" - 14	SEP



Part No.	Use With Thread Size
A8604	3/4" - 16
A8605	1" - 14
A8624	1 1/4" - 12
24593	1 3/4" - 12

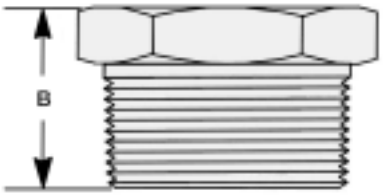
Sight Glasses

The SG - 1000's & The SG-1100's



Clear Lens

Reflex Lens



Clear Lens with Floating ball

These sight glasses are available in three basic styles; Clear Lens; Reflex Lens and Clear Lens with floating ball. All sight glasses feature a nickel plated steel body, hermetically sealed viewing lens, 34.5 bar maximum working pressure. These sight glasses are suitable for most standard refrigerants, and other industrial fluids non-corrosive to glass and steel

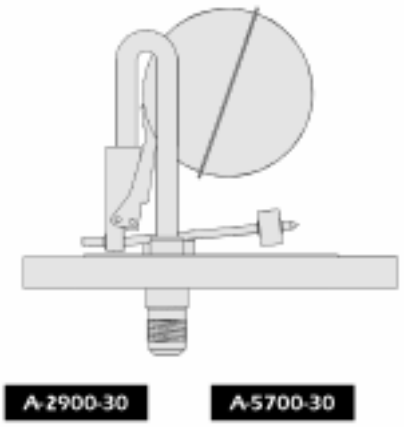
The SG -1000s & SG-1100s are rated for a maximum temperature of 260°C. The SG- 1200's are rated for a maximum temperature of 148°C. The SG-1100's reflex lens appears dark when liquid is present and light when liquid is absent.

Part No			Thread Size MPT	Dimensions (mm)			CE Cat*
Clear	Reflex	Clear W/Ball*		Hex A	B	Dia. C	
SG-1004	**SG-1104**	**SG-1204**	1/2"	23.9	22.9	14.2	SEP
SG-1006	**SG-1106**	**SG-1206**	3/4"	28.5	26.9	19.1	SEP
SG-1008	**SG-1108**	**SG-1208**	1"	35.1	33.5	23.9	SEP
SG-1010-CE	**SG-1110-CE**	**SG-1210**	1 1/4"	44.5	31.8	30.2	SEP (CAT Ⅱ)
SG-1012-CE	**SG-1112-CE**	**SG-1212-CE**	1 1/2"	50.8	35.8	33.3	CAT I (CAT Ⅱ)
SG-1016-CE	**SG-1116-CE**	**SG-1216-CE**	2"	63.5	32.5	41.4	CAT I (CAT Ⅱ)

*SG-12 Series are not suitable for use with ammonia
Brackets indicates classification for ammonia use

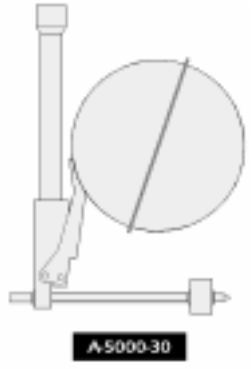
Replacement Components

Oil Separators



A-2900-30 Replacement Float Assembly + Gasket.
For use with the S-2900, S-5410 & SN -5290 series Oil Separators. Add suffix “X” for 3/8” ODS.
Add suffix “BW” for Butt Welded oil return.

A-5700-30 Replacement float Assembly + Gasket.
For use with the S-5700 series Oil Separator. Add suffix “X” for 3/8” ODS.

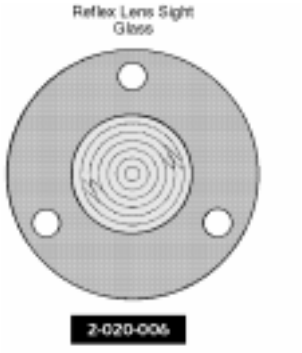


A-5000-30 Replacement Float Assembly + Gasket.
For use with the S-5800 series Oil Separator.

2-023-001 Replacement Gasket.
For S-5200, S-1900, S-5700 & S-5800 series Oil Separators.

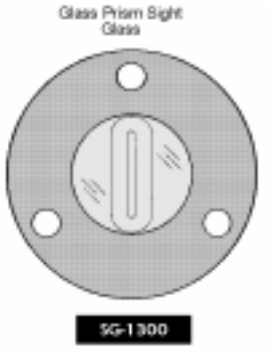
3-010-301 Replacement Screen Cartridge.
For use with the S-5700 series Oil Separator.

Oil Level Regulators



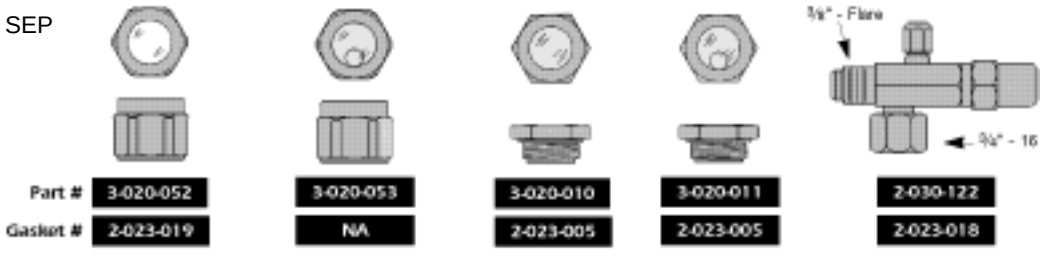
2-020-006 Reflex Lens Sight glass

SG-1300 Sight Glass Kit. Includes:
Glass Prism Sight Glass.
O-ring - **Part No. - 2-023-002**
Quad ring **Part No. - 2-023-003**
CE Cat - SEP



Oil Reservoir

CE Cat - SEP

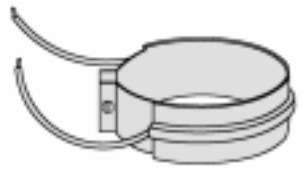


Female Thread Style Sight Glass *Male Thread Style Sight Glass* *Roto-Loc Valve*

Heat Elements

Selection / Application

Heat elements add heat to oil separators to prevent migration of refrigerant to the vessel during off cycles of the compressor. Four Inch diameter heat bands can be installed on the sump of the **S-5200, S-1900 and S-5700** series Oil separators. Heat elements can also be used on suction line accumulators to warm the oil and allow oil return to the compressor on low temperature applications.



Part No.	Diameter	Wattage	Volts
S-9101	4"	25W	110V AC
S-9111	4"	25W	220V AC
S-9112	6"	50W	220V AC