

OIL LEVEL CONTROL SYSTEM

Sporlan's Oil Level Control System Components were developed to offer the refrigeration industry an oil level control system of the highest quality. The heart of the system is the Oil Level Control which when matched with the Oil Reservoir and Oil Differential Check Valve maintains a minimum oil level in the compressor crankcase during all phases of system operation.

Oil Reservoirs

Sporlan oil reservoirs are holding vessels for stand-by oil necessary for the operation of a commercial refrigeration or air conditioning system. The oil reservoir is shipped with service valves so the vessel can be isolated from the rest of the system.

Features and Benefits

- Sightglass ports with float ball indicators for oil level monitoring
- 3/8" male flare rotalock valves shipped with oil reservoir allow for easy adjustment when piping into system
- 3/8" male flare vent port – for connection to the suction line
- Mounting studs and brackets
- 35 bar maximum working pressure
- Powder coating passes 500 hour ASTM salt spray

Specifications

MODEL NO.	TOTAL CAPACITY liters	'A' CAPACITY liters	'B' CAPACITY liters	NUMBER of SIGHT-GLASSES	LENGTH mm	SHELL DIAMETER mm
POR-2	7.6	2.8	2.8	2	457	152
POR-3	11.4	2.8	5.7	3	584	152
POR-4	15.1	2.8	10.4	3	914	152

'A' capacity is the capacity to the first sightglass.
 'B' capacity is the capacity between the two sightglasses for the POR-2 and the top and bottom sightglasses for the POR-3 and POR-4.

Oil Differential Check Valve

Types OCV-5, OCV-10, OCV-20 and OCV-30

The Sporlan Oil Level Differential Check Valve (OCV) is installed on the 3/8" SAE fitting on top of the OR-1-1/2, and allows pressure

Selection & Specifications

MODEL NUMBER	PRODUCT TYPE	FLANGE TYPE	COMPRESSOR MANUFACTURER and MODEL	CONFIGURATION TOP VIEW
OL-60CH	6.2 bar Max Differential	3 bolt	See page 61 for compressor adaptor requirements.	
OL-60XH		3 bolt		
OL-60ZH		4 bolt		
OL-60FH		3 bolt		
OL-60HH-6		3 bolt		
OL-60NH-2		3 bolt		
S-OL	Sightglass	Included with adaptor kits on page 61 (except AOL-R) or may be purchased separately.		

27.5 bar M.R.P.
 For complete information consult your nearest Sporlan Wholesaler or email europecold@parker.com and request Bulletin 110-10 and 110-10-1.

to be relieved from the reservoir to the suction as required to maintain a pressure in the reservoir at a preset level above the suction pressure. The pressure differential created by the OCV assures oil flow from the reservoir to the Oil Level Control providing there is adequate oil in the reservoir.

The OCV will only relieve pressure from the reservoir in excess of its fixed set point. Systems with fluctuating suction pressure as a result of compressor unloaders, staging or other suction line controls must be fitted with an OCV with a differential greater than the suction pressure fluctuation to assure oil flow from the oil reservoir through the oil level control to the compressor crankcase.

Sporlan offers OCV's with a 0.35 bar, 0.7 bar and 1.4 bar fixed differential setting. However, Sporlan recommends the use of an OCV-20 or OCV-30 on all field built up applications.

MODEL NO.	PRESSURE DIFFERENTIAL SETTING – bar
OCV-5	0.35
OCV-10	0.70
OCV-20	1.4
OCV-30	2.1

Oil Level Controls

The purpose of the Sporlan Oil Level Control is to regulate the flow of oil to the compressor crankcase to maintain a minimum oil level as specified by the compressor manufacturer for any given application. The Oil Level Control is adjustable between 1/2 sightglass and 1/4 sightglass at any pressure differential between 0.35 and 6.2 bar. As the level of oil is lowered in the compressor crankcase by being pumped out, the float of the Oil Level Control is lowered and opens a needle valve allowing oil to flow from the oil reservoir to the compressor crankcase.



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Compressor Adaptor Requirements

COMPRESSOR MANUFACTURER	COMPRESSOR MODEL NUMBER	COMPRESSOR ATTACHMENT PATTERN	SPORLAN ADAPTOR KIT NUMBER	SEALING METHOD	SIGHTGLASS
Bitzer	2 KC, 2JC, 2HC, 2GC, 2 FC, 2EC, 2DC, 2CC, 4FC, 4EC, 4DC, 4CC	1-1/8" Thread	AOL-MA/TE	Use seal provided	Use sightglass provided with adaptor
	4VC, 4TC, 4PC, 4NC	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	None	Use seal provided	Use sightglass from compressor
	4J, 4H, 4G, 6J, 6H, 6G, 6F	4 Bolt, 50 mm B.C.	None with the OL-60ZH control	Use seal provided with control	Use sightglass from compressor
	8GC, 8FC	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
Bock	HA3-5, HG3-5, AM/F2-5	4 Bolt, 50 mm B.C.	AOL-BO ①	Use Teflon tape	Use sightglass provided with adaptor
	HA8, HG6	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
	F...				
Bristol	—	15/16" – 20 Thread	AOL-BR/TR	Use seal provided	Use sightglass provided with adaptor
Carrier	EA, ER	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
	6E Front	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	None		Use sightglass from compressor
	DA, DR, 5F, 5H, 6D, 6E	1-1/2" – 18 Thread	AOL-C		Use sightglass provided with adaptor
Copeland	Over 17 kW	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
	Under 3.7 kW ②	1-1/8" – 12 Thread	AOL-A	Use seal from compressor	Use sightglass provided with adaptor
	8R, 3D Front, 2D, 4D, 6D	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
	8D	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	Use control with standard length arms with AOL-R-1 adaptor. Use sightglass from compressor		
Dorin	4 cyc-15 HP	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	Contact Sporlan		
Dunham-Bush	Big 4	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
Frascold	All models	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
Maneurop	MT..., LT...	1-1/8" – 18 Thread	AOL-MA/TE	Use seal provided	Use sightglass provided with adaptor
Prestcold	E, C	42 mm Thread	AOL-P	Use Teflon tape	Use sightglass provided with adaptor
Tecumseh	P, R, S, PA, RA, SA, CK, CM, CH, CG	1-1/8" – 12 Thread	AOL-A	Use seal from compressor	Use sightglass provided with adaptor
	—	1-1/8" – 18 Thread	AOL-MA/TE	Use seal provided	
Trane	M, R	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
	K	3/4" NPT	AOL-K-1	Use Teflon tape	Use sightglass provided with adaptor
	—	15/16" – 20 Thread	AOL-BR/TR	Use seal provided	
York	GC, GS, JS	3 Bolt, 1-7/8" B.C. (47.6 mm B.C.)	AOL-R-1	Use seal provided	Use sightglass from compressor
Sporlan Sightglass S-OL Provided with all adaptor kits except the AOL-R-1, but can be purchased separately in kit form.			K-OL Kit	Kit includes: S-OL sightglass, quad ring, O-ring, 3 screws, and 3 locknuts.	

Note: Shipping wt. is 1.8 kg for oil level controls and 0.46 kg for adaptors.

① The OL-60ZH control is a possible option on select models. Use sightglass from compressor.

② Some compressor models have a smaller diameter port than the arm diameter of the oil level control. This situation can mislead the control in the amount of oil that is actually in the compressor. It is advisable the selection and adjustment of the control be reviewed in this situation.



SERIES OIL FILTER

Design Benefits

- Virtually eliminates the need for oil changes due to suspended particulate in circulation
- Unsurpassed filtering efficiency
99% removal of 3 micron sized particles
98% removal of 2 micron sized particles
- Element utilizes a pleated design for maximum surface area
- Unsurpassed filtration capacities
- High flow capacities with low pressure drop
- Filter element utilizes an O-ring seal
- Inert microglass filter material ensures lubricant compatibility
- Dimensions allow for easy replacement of current filter

The Sporlan Catch-All or SF-283-F Suction Filter has been used for many years as an oil filter in refrigeration rack systems with mineral or alkylbenzene oil.



With the use of the new polyolester (POE) oils, system chemistry changed. Unlike mineral and alkylbenzene oils, POE oil has solvent-like tendencies. POE oil has the ability to suspend and recirculate small, solid contaminants left from system installation or retrofit. Analysis of POE oil samples taken from actual systems have shown the oil to suspend and recirculate a high concentration of 2-20 micron sized particles, with the largest percentage between 2-10 microns. Although some particles are smaller than bearing tolerances, studies have shown bearing life can still be affected. Bearing wear depends upon the size, hardness, and concentration of particles in circulation. To effectively remove these small particles, Sporlan developed a new type of oil filter.

The **OF Series Oil Filters** are designed to be 99% efficient in removing 3 micron sized particles and yet have sufficient flow capacity at a low pressure drop. The unsurpassed filtration ability of the oil filters will assure clean POE, mineral or alkylbenzene oil is returned to the compressors. Clean oil ensures proper operation of the oil level control and minimizes compressor wear. The Sporlan OF Series Oil Filters were designed to virtually eliminate the need for oil changes resulting from suspended solid contaminants in circulation.

Specifications

UNIT	DESCRIPTION	CONNECTIONS	FILTERING AREA cm ²	OVERALL LENGTH mm	SHELL DIAMETER mm	UL RATED WORKING PRESSURE – bar
OF-303-T	Oil Filter	3/8" SAE Flare	2097	246	76	34.5
OF-303-BP-T	Oil Filter with Bypass Feature			270		
ROF-413-T*	Replaceable Oil Filter	Field Support		206	89	27.5

*An OFE-1 Replaceable Filter Element must be purchased separately. The A-175-1 mounting bracket can be used for the ROF-413T Replaceable Oil Filter.
Note: The OF Series Oil Filters are not suitable for use on ammonia systems