

SUCTION LINE ACCUMULATORS SA SERIES

The main purpose of a Suction Line Accumulator is to prevent a sudden surge of liquid refrigerant or oil from returning down the suction line and into a compressor. The suction line accumulator is a temporary reservoir for liquid refrigerant and oil.

The accumulator is designed to meter both the liquid refrigerant and oil back to the compressor at a controlled rate. This prevents compressor damage. By metering the liquid refrigerant and oil back to the compressor, the accumulator also helps maintain system efficiency and proper crankcase oil levels.

Applications

Suction line accumulators are installed in air conditioning and refrigeration systems where a sudden surge of liquid down the suction line is possible. The product range is designed for use with HCFC, HFC and CO₂ refrigerants, along with their associated oils.

How it works

Refrigerant vapour from the evaporator enters the suction line accumulator, along with any liquid refrigerant oil. The outlet side of each accumulator is designed to allow refrigerant vapour to return to the compressor. The vapour return is achieved by a special U tube arrangement. On certain models, a tube within a tube arrangement is used as an alternative. Liquid is held at the bottom of the accumulator and is metered to the compressor via a screened orifice at the bottom of the tube. Metering of liquid will only occur when the compressor is running.

Main Features

- Prevents liquid slugging
- Controlled liquid return
- Large flow capacity
- Low pressure drop
- Screen protected orifice
- Solid copper connections
- Powder-coated finish
- Cost effective

Technical Specification

MWP = 31 barg

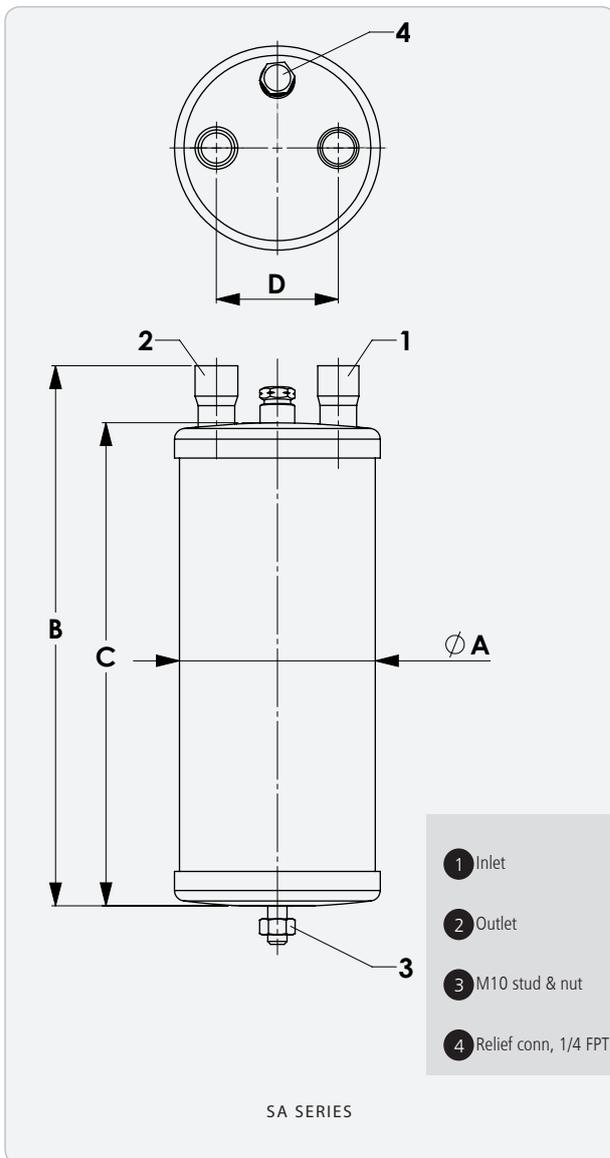
Allowable operating temperature = -30°C to +50°C

Materials of Construction

The shell and end caps are made from carbon steel. Branch connections are made from copper.



Part No	Conn Size (inch)	Dimensions (mm)				Weight (kg)	CE Cat
		Ø A	B	C	D		
SA-7044	1/2 ODS	102	163	138	63.5	2	SEP
SA-7045S	5/8 ODS	102	167	138	63.5	2	SEP
SA-7045	5/8 ODS	102	278	249	63.5	2.9	Cat I
SA-7046	3/4 ODS	102	281	249	63.5	2.9	Cat I
SA-7056	3/4 ODS	127	252	222	70	3.6	Cat I
SA-7057S	7/8 ODS	127	256	222	70	3.6	Cat I
SA-7057	7/8 ODS	127	378	344	70	5.1	Cat I
SA-7051	1 1/8 ODS	127	476	438	70	6.3	Cat I
SA-7053	1 3/8 ODS	127	479	438	75	6.3	Cat I
SA-7065	1 5/8 ODS	152	678	633	75	13	Cat II



SUCTION LINE ACCUMULATORS

Selection Guidelines

The accumulator should have adequate holding capacity. Normally, this should not be less than 50% of the total system charge.

The system designer should check that the minimum and maximum system refrigeration capacities are within the limits of the accumulator. The maximum kW capacities are based on accumulator pressure loss and oil return. The pressure loss is equivalent to a maximum of 1/2°C. The minimum kW capacities are to ensure proper oil return.

Example:

Refrigerant R404A

System maximum refrigerant capacity = 12 kW

Evaporating temperature = -18°C

System charge = 8 kg

Recommended accumulator is model SA-7051 with a refrigerant holding capacity of 5.4 kg and a maximum rating of 13.2 kW.

Additional Selection Information

Two accumulators can be piped in series to increase holding capacity. Oil will be metered from one accumulator to the next to ensure proper oil flow to the compressors. Adding a second identical accumulator will effectively double the holding capacity of a single accumulator.

Piping two identical accumulators in parallel will double the kW capacity. Two identical accumulators must be used.

On low temperature systems (-18°C and below) a heater band should be installed to help boil off the liquid refrigerant and aid oil flow. Do not add too much heat or there is a risk of overheating the compressors.

Installation - Main Issues

1. Install the accumulator after the suction line filter.
2. A pressure relief device connection is fitted at the top of the vessel. The user must ensure that the vessel is protected from over-pressure.
3. Heater bands should be installed at the bottom of the accumulator.

Part No	Refrigerant Holding Capacity (kg at -18°C)			Recommended kW of refrigerant at Suction Evaporating Temp (°C)															
	R134a	R407F	R404A	R134a					R407F					R404A/R507					
				5°	-7°	-18°	-29°	-40°	5°	-7°	-18°	-29°	-40°	5°	-7°	-18°	-29°	-40°	
SA-7044	1	1	0.9	MAX	1.6	1.2	0.8	0.5	0.6	5.8	3.9	2.6	1.6	1	3.1	2.2	1.5	0.9	0.6
				MIN	0.3	0.2	0.2	0.2	0.1	1.7	1.1	0.7	0.5	0.3	0.5	0.3	0.3	0.2	0.2
SA-70455	1	1	0.9	MAX	3.2	2.3	1.5	1	0.6	10.5	7.1	4.7	2.9	1.7	6.3	4.3	2.8	1.8	1.1
				MIN	0.7	0.6	0.5	0.4	0.3	2.4	1.6	1	0.7	0.4	0.9	0.7	0.6	0.5	0.4
SA-7045	2.1	2	1.9	MAX	3.2	2.3	1.5	1	0.6	10.5	7.1	4.7	2.9	1.7	6.3	4.3	2.8	1.8	1.1
				MIN	0.7	0.6	0.5	0.4	0.3	2.4	1.6	1	0.7	0.4	0.9	0.7	0.6	0.5	0.4
SA-7046	2.1	2	1.9	MAX	4.5	3.1	2.1	1.4	0.8	14.4	9.7	6.4	4	2.4	8.7	5.9	3.8	2.5	1.5
				MIN	0.9	0.7	0.6	0.5	0.4	3.2	2.2	1.4	0.9	0.5	1.3	1	0.8	0.6	0.5
SA-7056	2.8	2.7	2.5	MAX	4.5	3.1	2.1	1.4	0.8	14.4	9.7	6.4	4	2.4	8.7	5.9	3.8	2.5	1.5
				MIN	0.9	0.7	0.6	0.5	0.4	3.2	2.2	1.4	0.9	0.5	1.3	1	0.8	0.6	0.5
SA-7057S	2.7	2.6	2.4	MAX	7.7	5.4	3.6	2.3	1.4	24.2	16.3	10.7	6.7	4	14.9	10.2	6.5	4.2	2.6
				MIN	1.3	1.1	0.9	0.7	0.6	4.9	3.3	2.2	1.4	0.8	1.8	1.5	1.2	1	0.7
SA-7057	4.6	4.4	4.1	MAX	7.7	5.4	3.6	2.3	1.4	24.2	16.3	10.7	6.7	4	14.9	10.2	6.5	4.2	2.6
				MIN	1.3	1.1	0.9	0.7	0.6	4.9	3.3	2.2	1.4	0.8	1.8	1.5	1.2	1	0.7
SA-7051	6.1	5.8	5.4	MAX	16.3	11.4	7.3	4.8	2.9	49.8	33.4	22.1	13.8	8.2	31.4	21.7	13.2	8.6	5.2
				MIN	2.1	1.8	1.5	1.2	1	7.5	5	3.3	2.1	1.2	2.9	2.4	2	1.6	1.2
SA-7053	6.1	5.8	5.4	MAX	27.8	18.8	12	7.6	4.7	82.1	55.1	36.4	22.8	13.4	53.9	35.9	21.8	13.8	8.6
				MIN	4.4	3.7	3.1	2.5	2	15.8	10.6	7	4.4	2.6	6	4.9	4	3.2	2.5
SA-7065	13.1	12.4	11.5	MAX	49.3	33.8	21.1	13.4	8.2	145	97.4	64.4	40.2	23.7	95	64.1	38	24.3	15
				MIN	7.6	6.3	5.3	4.4	3.5	28.7	19.3	12.7	8	4.7	10.3	8.4	7	5.7	4.4

The information contained in this brochure is correct at the time of publication.

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It remains the responsibility of the system designer to ensure all products used in the system are suitable for the application.

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

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