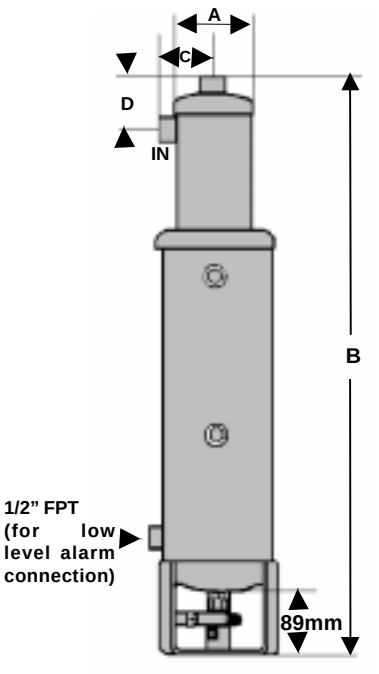
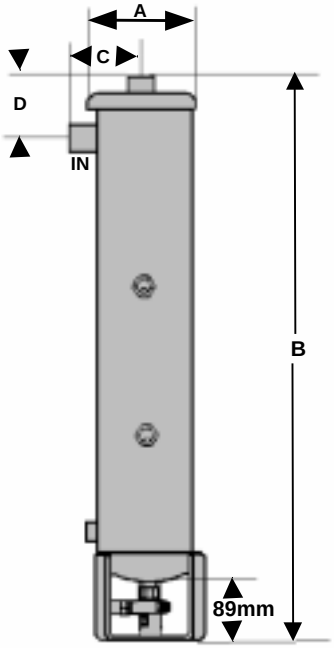
Oil Separator

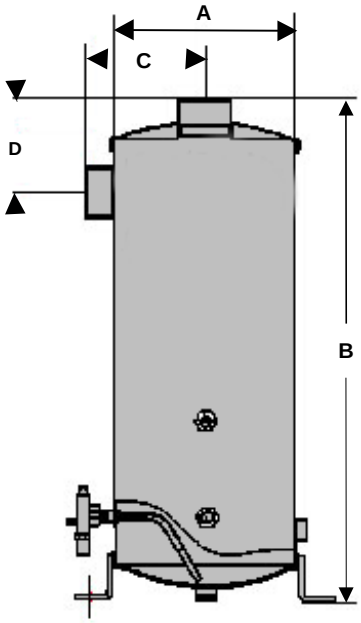
Helical Oil Separator/Reservoirs



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

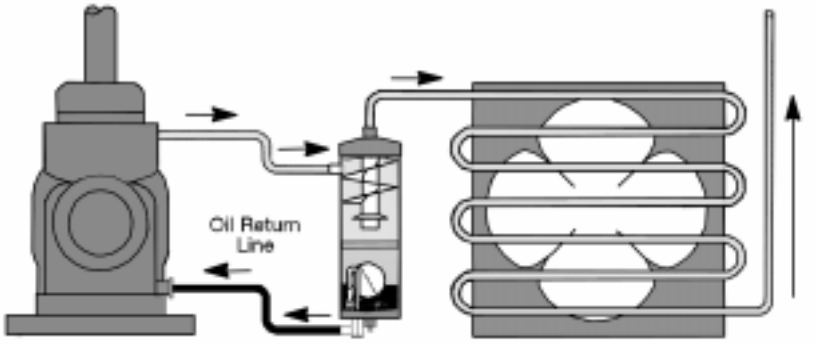
Part No	Size Conn.	Dimensions in (mm)				Max Capacity in Kw of Refrigeration at Evaporator Temperature (Nominal)						Max Discharge M^3/H	Oil Capacity	CE Cat
						R-134a		R-22		R404A/R507				
		A	B	C	D	-40°C	5°C	-40°C	5°C	-40°C	5°C			
S-5387-6L-CE	7/8 ODS	102	699	76	78	15.8	19.4	24.6	28.2	23.0	30.0	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.

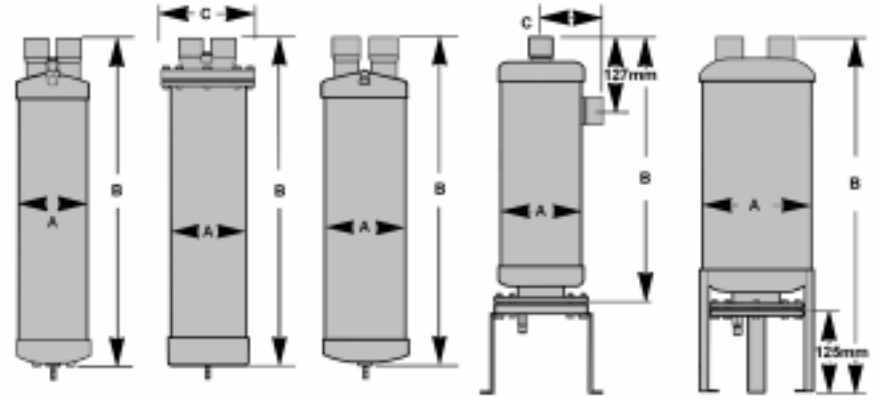
CAUTION: Oil Precharge is important. Failure to precharge separator sump may result in damage to the oil return float mechanism. Use the same type of oil that is in the compressor crankcase. The oil separator should be installed reasonably close to the compressor in the discharge line between the compressor 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**

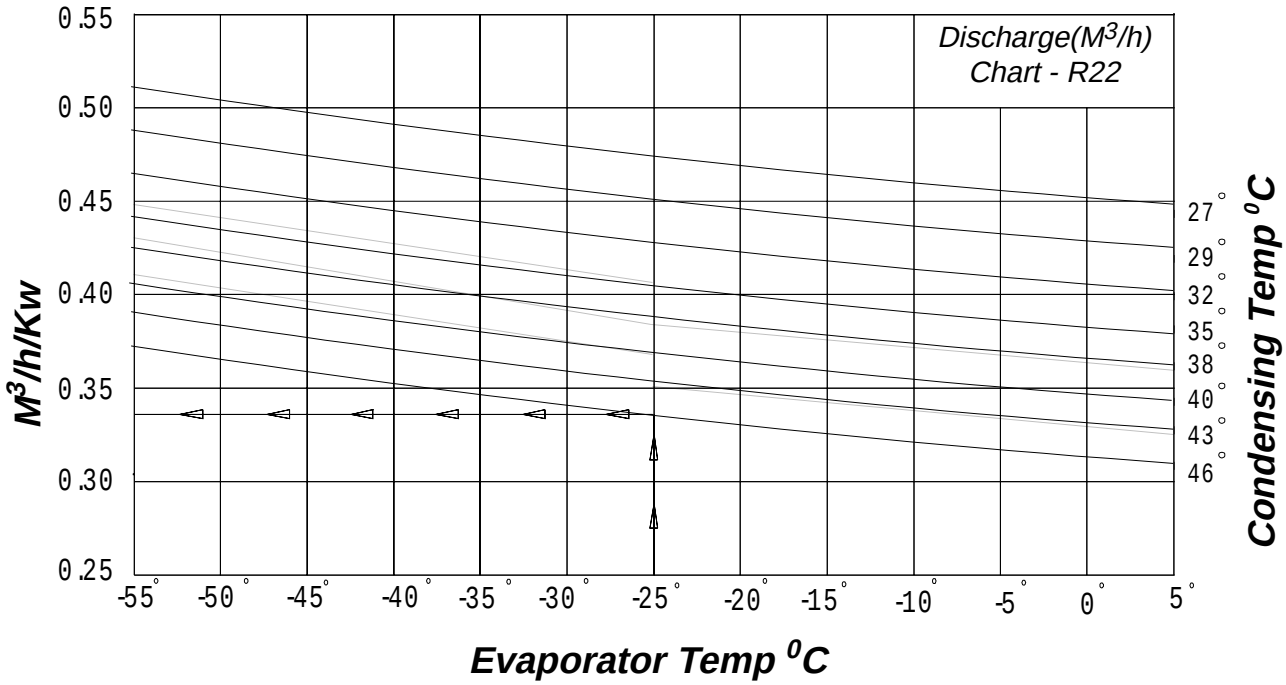
Part No.	Size Conn.	Dimensions(mm)			Capacity in kW of Refrigeration At Evaporator Temperature(Nominal)°C								Max Discharge Volume M3/H	Pre Charge Amount(cl)	CE Cat
					R-134a		R-22		R404A/507		R-407				
		A	B	C	-40	5	-40	5	-40	5	-40	5			
S-5580	1/4 ODS	102	208	-	2.0	2.5	3.1	3.5	2.9	3.7	2.9	3.5	1.3	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.

Oil Separators

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:

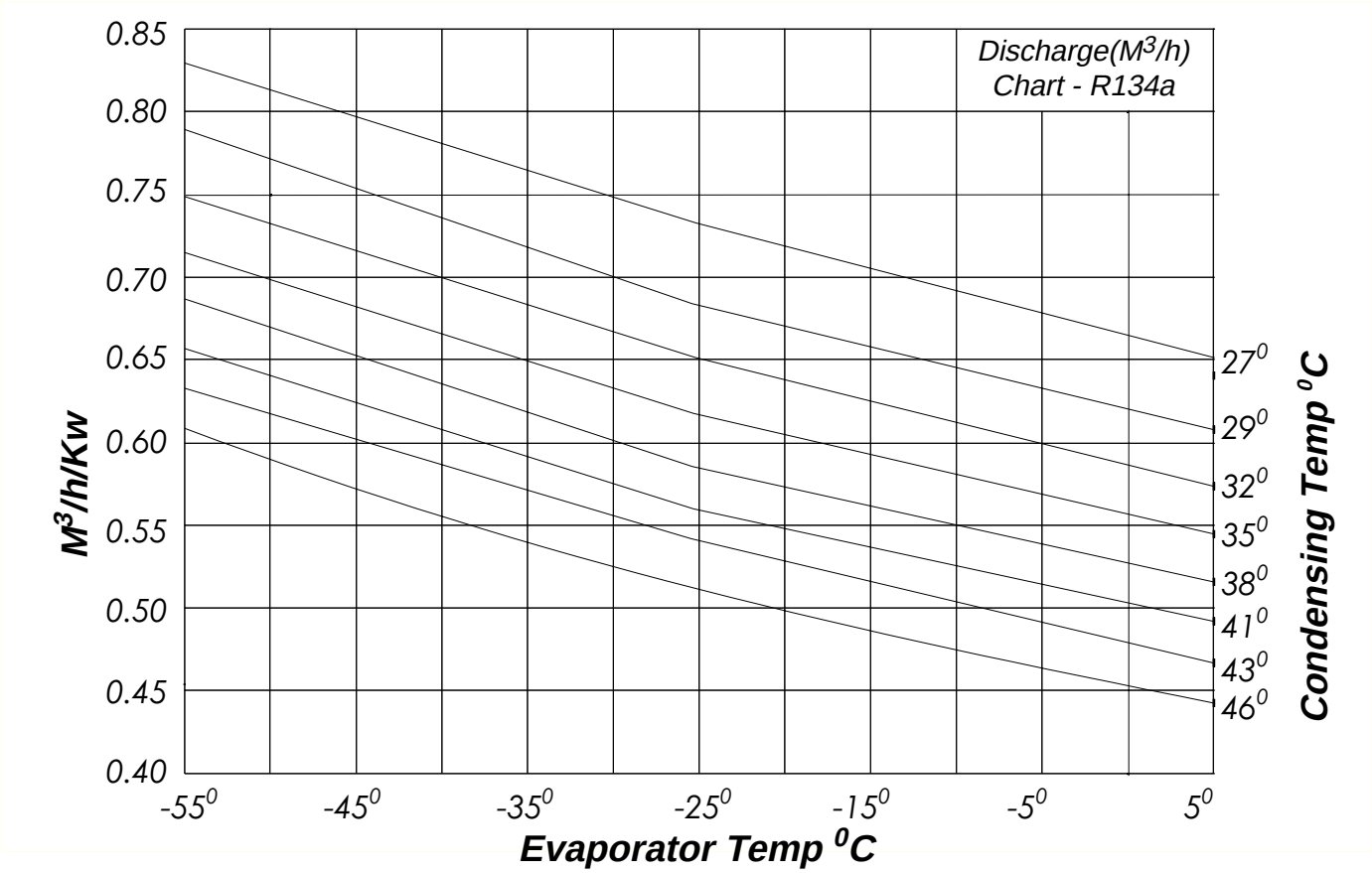
0.34 m3/h/KW x 135Kw = 45.9 m^3/h

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

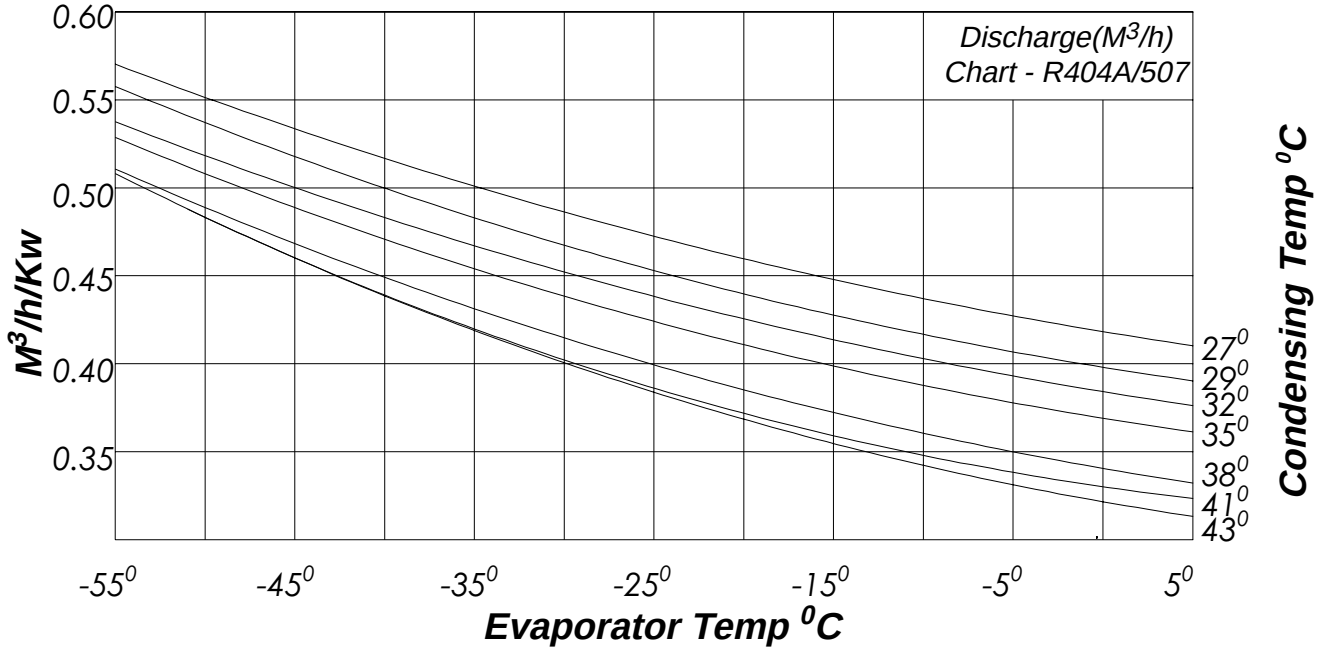
Oil Separator Selected: S-5412-CE

Discharge Selection Charts

Refrigerant R134a

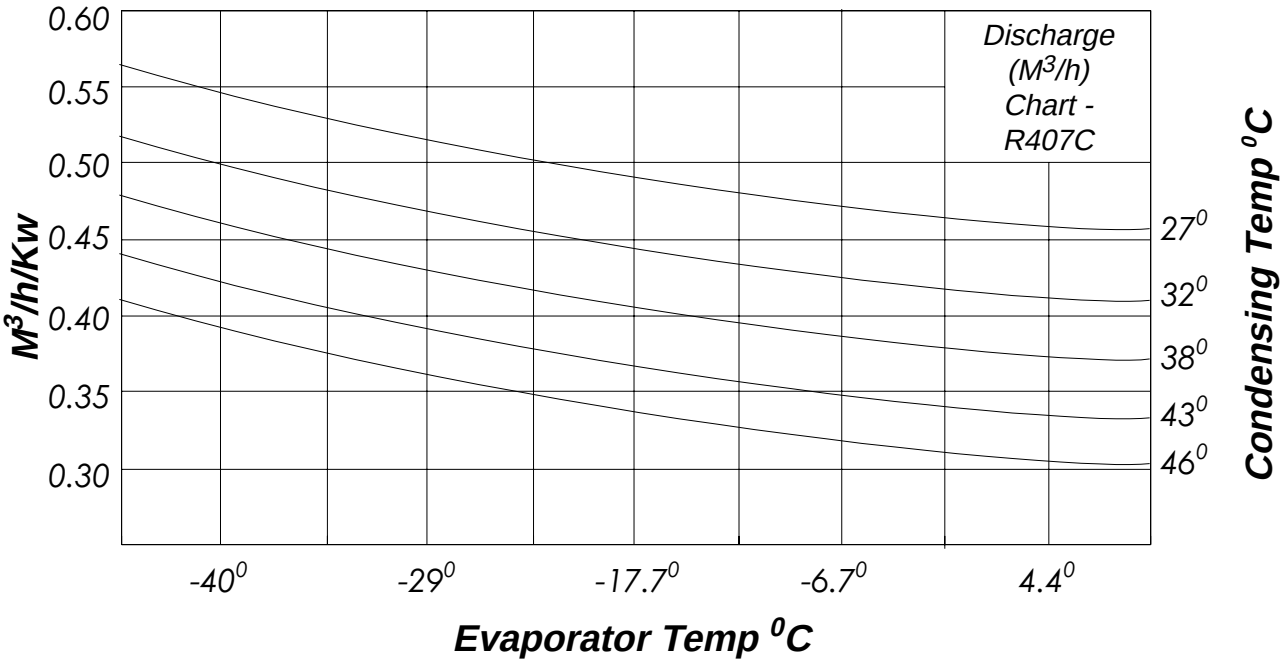


Refrigerant R404A/R507



Discharge Selection Charts

Refrigerant R407C



Refrigerant R717

