Selection: 2-stage Semi-hermetic Reciprocating Compressors

Input Values

Compressor model	S6H-20.2Y	Suction gas temperature	20,00 °C
Refrigerant	R507A	Useful superheat	100%
Reference temperature	Dew point temp.	Power supply	400V-3-50Hz
Operating mode	with sub cooler		

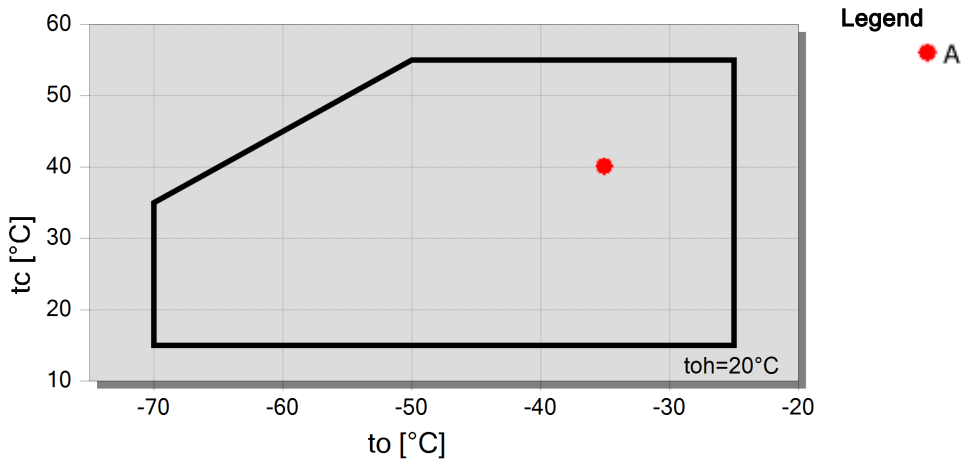
Result

Q [W]	Cooling capacity	COP [-]	COP/EER
Q* [W]	Cooling capacity *	COP* [-]	COP/EER *
P [kW]	Power input	mLP [kg/h]	Mass flow LP
I [A]	Current	pm [bar(a)]	Intermed. pressure
Qc [W]	Condenser capacity		

tc	to	-25°C	-30°C	-35°C	-40°C	-45°C	-50°C	-55°C	-60°C
30°C	Q [W]	33151	28648	24420	20473	16843	13581	10725	8291
	Q* [W]	28594	23904	19696	15956	12685	9885	7549	5647
	P [kW]	16,54	15,13	13,75	12,40	11,10	9,85	8,66	7,53
	I [A]	27,4	25,3	23,4	21,6	19,80	18,18	16,71	15,40
	Qc [W]	49686	43773	38165	32875	27945	23432	19382	15816
	COP [-]	2,00	1,89	1,78	1,65	1,52	1,38	1,24	1,10
	COP* [-]	1,73	1,58	1,43	1,29	1,14	1,00	0,87	0,75
	mLP [kg/h]	718	597	490	395	313	243	185,6	138,6
	pm [bar(a)]	7,15	6,26	5,43	4,66	3,96	3,33	2,77	2,29
40°C	Q [W]	31795	27491	23404	19591	16114	13017	10316	7997
	Q* [W]	25336	21076	17282	13947	11068	8632	6608	4951
	P [kW]	18,65	17,01	15,42	13,90	12,43	11,02	9,67	8,38
	I [A]	30,4	28,0	25,8	23,6	21,6	19,69	17,95	16,38
	Qc [W]	50441	44498	38827	33487	28541	24034	19985	16380
	COP [-]	1,71	1,62	1,52	1,41	1,30	1,18	1,07	0,95
	COP* [-]	1,36	1,24	1,12	1,00	0,89	0,78	0,68	0,59
	mLP [kg/h]	716	592	483	388	307	239	182,4	136,4
	pm [bar(a)]	7,77	6,82	5,94	5,13	4,40	3,73	3,13	2,59
50°C	Q [W]	30451	26256	22336	18729	15463	12543	9942	--
	Q* [W]	21635	17970	14725	11894	9461	7396	5651	
	P [kW]	20,7	18,89	17,12	15,40	13,75	12,17	10,65	
	I [A]	33,6	30,8	28,2	25,7	23,4	21,2	19,21	
	Qc [W]	51192	45151	39451	34131	29218	24714	20594	
	COP [-]	1,47	1,39	1,30	1,22	1,12	1,03	0,93	
	COP* [-]	1,04	0,95	0,86	0,77	0,69	0,61	0,53	
	mLP [kg/h]	708	584	476	382	303	236	179,9	
	pm [bar(a)]	8,46	7,45	6,52	5,67	4,89	4,18	3,52	

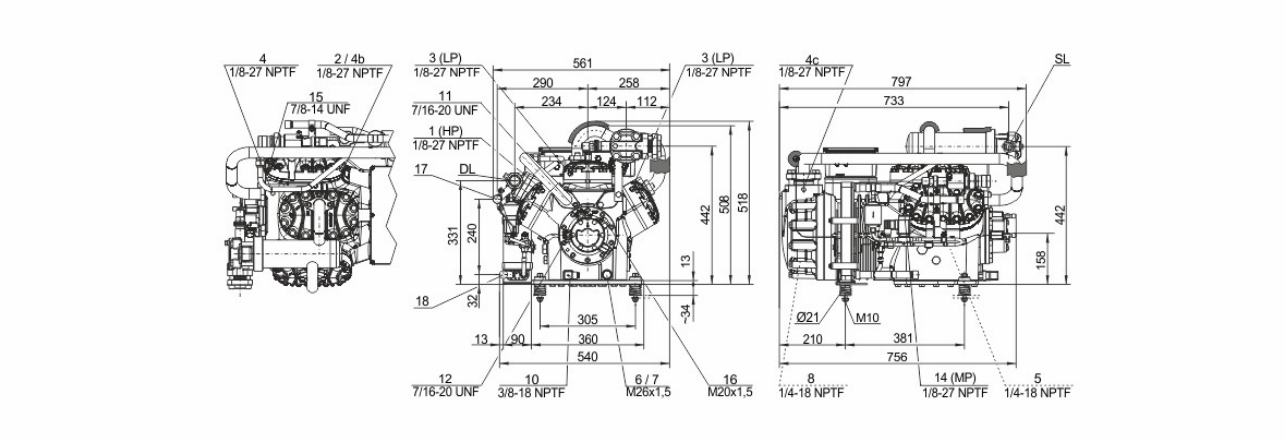
-- No calculation possible (see message in single point selection)
*According to EN12900 (20°C suction gas temp., 0K liquid subcooling)

Application Limits


60
50
40
30
20
10
tc [°C]
-70
-60
-50
-40
-30
-20
to [°C]
toh=20°C
Legend
A

Technical Data: S6H-20.2Y

Dimensions and Connections



Technical Data

Technical Data	
Displacement (1450 RPM 50Hz)	73.60 / 36.90 m³/h
Displacement (1750 RPM 60Hz)	88.83 / 44.53 m³/h
No. of cylinder x bore LP/HP x stroke	6 x 70/ 70 mm x 55 mm
Weight	220 kg
Max. pressure (LP/MP/HP)	19 / 19 / 28 bar
Connection suction line	42 mm - 1 5/8"
Connection discharge line	35 mm - 1 3/8"
Oil type R404A/R507A	BSE32 (Standard)
Oil type R448A/R449A/R454C	BSE32 (Standard)
Oil type R22	B5.2 (Option)
Motor data	
Motor voltage (more on request)	380-420V PW-3-50Hz
Max operating current	37.0 A
Winding ratio	50/50
Starting current (Rotor locked)	97.0 A Y / 158.0 A YY
Max. Power input	21,8 kW
Extent of delivery (Standard)	
Motor protection	SE-B2 (Standard)
Enclosure class	IP54 (Standard), IP66 (Option)
Vibration dampers	Standard
TX valve for liquid injection	Standard
Sight glass	Standard
Filter Drier	Standard
Solenoid valve	Standard
Oil charge	4.75 dm3
Available Options	
Crankcase heater	140 W (Option)
Oil pressure monitoring	MP54 (Option), Delta P II(Option)
Oil service valve	Option
Discharge gas temperature sensor	Option
CIC (only for R22,instead of TX valve for LI)	Option
Liquid sub cooler (also mounted)	Option

2-stage Semi-hermetic Reciprocating Compressors

Note

For R22 / R407F / R448A / R449A applications the CIC-system can be used instead of a thermostatic post-injection valve.
For R404A / R507A applications the use of the CIC-system is not recommended.

Condensing capacity

Condensing capacity: The condensing capacity can be calculated with or without heat rejection. This option can be set in the menu Program ☐ Optionen. The heat rejection is constantly 5% of the power consumption. The condensing capacity is to be found in the line Condensing cap. (with HR) resp. Condensing capacity.

Legend of connection positions according to "Dimensions":

1 High pressure connection (HP)
2 Connection for discharge gas temperature sensor (HP) (for 4VE(S)-6Y .. 4NE(S)-20(Y) connection for CIC sensor as alternative)
3 Low pressure connection (LP)
4 CIC system: injection nozzle (LP)
4b Connection for CIC sensor
4c Connection for CIC sensor (MP / operation with liquid subcooler)
5 Oil fill plug
6 Oil drain
7 Oil filter (magnetic screw)
8 Oil return (oil separator)
8* Oil return with NH3 and insoluble oil
9 Connection for oil and gas equalization (parallel operation)
9a Connection for gas equalization (parallel operation)
9b Connection for oil equalization (parallel operation)
10 Oil heater connection
11 Oil pressure connection +
12 Oil pressure connection –
13 Cooling water connection
14 Intermediate pressure connection (MP)
15 Liquid injection (operation without liquid subcooler and with thermostatic expansion valve)
16 Connection for oil monitoring (opto-electrical oil monitoring "OLC-K1" or differential oil pressure switch "Delta-PII")
17 Refrigerant inlet at liquid subcooler
18 Referigerant outlet at liquid subcooler
19 Clamp space
20 Terminal plate
21 Maintenance connection for oil valve
22 Pressure relief valve to the atmosphere (discharge side)
23 Pressure relief valve to the atmosphere (suction side)
SL Suction gas line
DL Discharge gas line
Dimensions can show tolerances according to EN ISO 13920-B.