Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	W6FA-K	Useful superheat	100%
Refrigerant	R717	Motor speed	1450 /min
Reference temperature	Dew point temp.	Drive	Coupling (1:1)
Liq. subc. (in condenser)	0 K	Capacity control	100%
Suct. gas superheat	1,00 K		

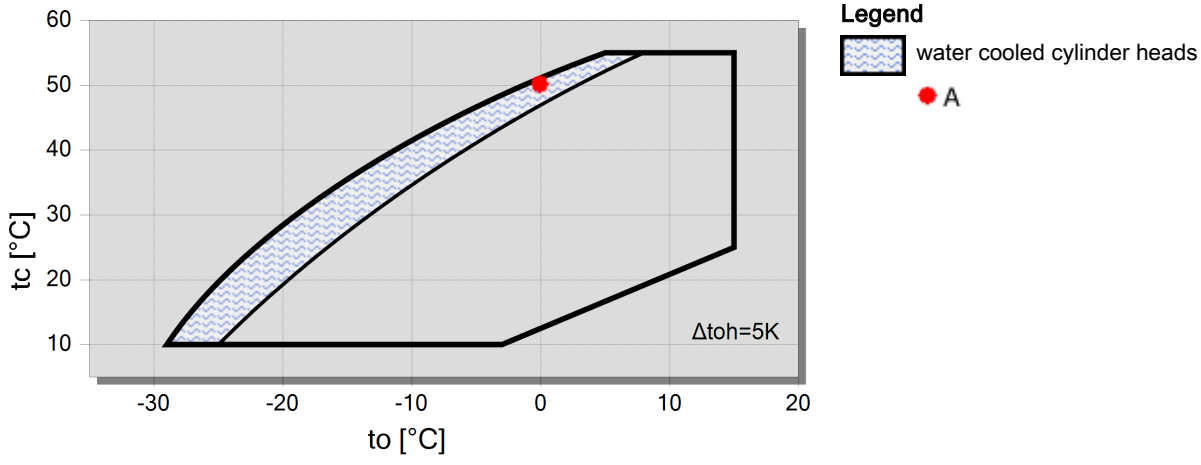
Result

Q [W]	Cooling capacity	COP [-]	COP/EER
Q* [W]	Cooling capacity *	COP* [-]	COP/EER *
P [kW]	Power input	m [kg/h]	Mass flow
Qc [W]	Condenser capacity	n [/min]	Compr. speed

tc	to	15°C	10°C	5°C	0°C	-5°C	-10°C	-15°C	-20°C
30°C	Q [W]	251046	208182	170450	137351	108419	83213	61318	--
	Q* [W]	248472	206076	168743	135986	107346	82391	60712	
	P [kW]	19,78	21,7	22,8	23,0	22,4	21,0	19,02	
	Qc [W]	270823	229904	193211	160305	130774	104237	80337	
	COP [-]	12,69	9,58	7,49	5,98	4,85	3,96	3,22	
	COP* [-]	12,56	9,49	7,41	5,92	4,80	3,92	3,19	
	m [kg/h]	795	662	544	440	349	269	199,7	
	n [/min]	1450	1450	1450	1450	1450	1450	1450	
40°C	Q [W]	236900	195858	159564	127531	99296	74417	--	--
	Q* [W]	234569	193956	158030	126314	98352	73710		
	P [kW]	29,3	29,9	29,7	28,6	26,7	24,0		
	Qc [W]	266177	225803	189256	156107	125950	98401		
	COP [-]	8,09	6,54	5,37	4,46	3,73	3,10		
	COP* [-]	8,01	6,48	5,32	4,42	3,69	3,07		
	m [kg/h]	783	650	532	427	334	252		
	n [/min]	1450	1450	1450	1450	1450	1450		
50°C	Q [W]	223094	183683	148584	117299	--	--	--	--
	Q* [W]	221003	181983	147222	116231				
	P [kW]	37,8	37,0	35,3	32,6				
	Qc [W]	260877	220669	183837	149940				
	COP [-]	5,90	4,97	4,21	3,59				
	COP* [-]	5,85	4,92	4,18	3,56				
	m [kg/h]	772	638	519	411				
	n [/min]	1450	1450	1450	1450				

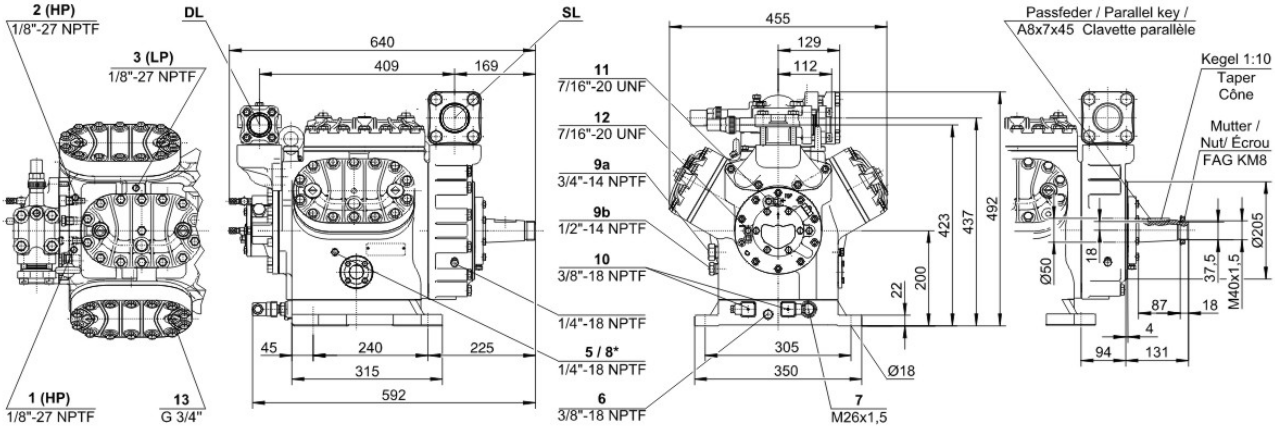
-- No calculation possible (see message in single point selection)
*According to EN12900 (5K suction gas superheat, 0K liquid subcooling)

Application Limits Standard W6FA



Technical Data: W6FA-K

Dimensions and Connections



Technical Data

Technical Data	
Displacement (1450 RPM 50Hz)	151,6 m3/h
Displacement (1750 RPM 60Hz)	183,0 m3/h
No. of cylinder x bore x stroke	6 x 82 mm x 55 mm
Allowed speed range	900 .. 1750 1/min
Weight	161 kg
Max. pressure (LP/HP)	19 / 25 bar
Connection suction line	NW 50
Connection discharge line	NW 40
Oil type NH3	Reniso KC68 (Standard)
Extent of delivery (Standard)	
Oil charge	5,0 dm3
Protective charge	Standard
Suction shut-off valve	Standard
Discharge shut-off valve	Standard
Pressure relief valve	Standard
Water-cooled cylinder heads	Standard
Available Options	
Coupling (..-K) w. A/C + medium	KK620 [<22kW] / KK630 [<45kW] (Option)
Coupling (..-K) w. low temp.	KK625 [<22kW] / KK630 [<45kW] (Option)
Coupling housing	Option
Motor pulley (..-S)	190, 210, 230 mm (Option)
V-belts	5 x SPA (Option)
Discharge gas temperature sensor	Option (incl. INT69VS)
Start unloading	Option
Connection cooling water	R 3/4"
Capacity control	100-66-33% (Option)
Oil service valve	Option
Crankcase heater	140 W (Option)
Oil pressure monitoring	MP55A (Option)

Open-Type Reciprocating Compressors

Motor Selection

The required driving motor is selected for starting conditions at direct start as well as at star-delta- or PW-start with start unloading (bypass + check valve). The starting conditions refer to the following defined operation points resp. to the maximum application limit of the compressor. Should the evaporation- or the condensing temperature of the plant be higher at the start, an individual motor selection is necessary.

Evaporation temperature for motor selection				
	HH	H	M	L
R134a	+20 °C	+12,5 °C	-5 °C	-20 °C
R404A / R507A R407F / R407A		+7,5 °C	-5 °C	-20 °C
R22		+12,5 °C	-5 °C	-20 °C
NH_3	+15 °C	+10 °C	-5 °C	

The stated motor data refer to IEC motors at which the pull-up torque does not fall below 90 % of the max. torque. In addition the following starting torques (referring to direct starting torque) must be reached:

* 2-cylinder compressors 220 %
* 4-cylinder compressors 180 %
* 6-cylinder compressors 160 %

Should the motor not fulfil these criteria, an individual selection is also necessary.

Condenser capacity

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

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.