



Selection: Semi-hermetic Screw Compressors HS

Input Values

Compressor model	HSK8581-160	Operating mode	Standard
Refrigerant	R404A	Power supply	400V-3-50Hz
Reference temperature	Dew point temp.	Useful superheat	100%
Liq. subc. (in condenser)	0 K	Additional cooling	Automatic
Suct. gas superheat	10/00 K	Max. discharge gas temp.	80/0 °C

Result

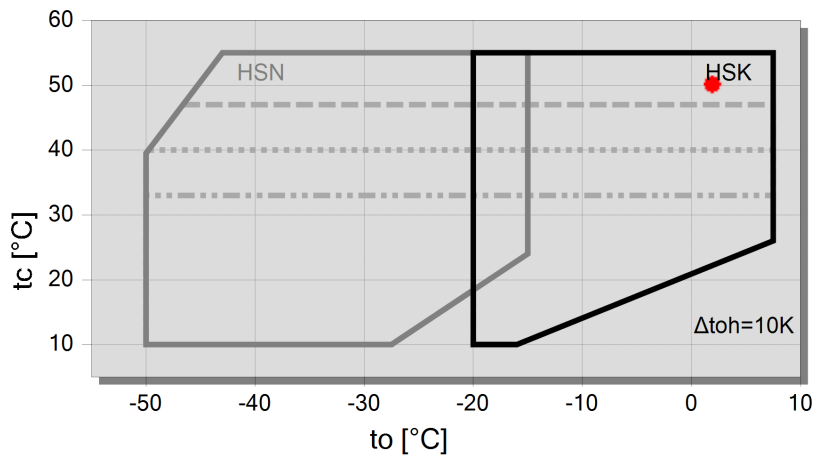
Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	5°C	2°C	-1°C	-4°C	-7°C	-10°C	-13°C	-16°C
30°C	Q [W]	554075	498676	447834	401226	358549	319521	283867	251336
	P [kW]	102/3	100/5	98/5	96/5	94/4	92/3	90/4	88/6
	I [A]	169/8	167/0	164/0	160/8	157/6	154/5	151/5	148/8
	COP [-]	5/42	4/96	4/55	4/16	3/80	3/46	3/14	2/84
	mLP [kg/h]	14816	13499	12277	11143	10091	9117	8215	7379
	mHP [kg/h]	14816	13499	12277	11143	10091	9117	8215	7379
	Qac [kW]	--	--	--	--	--	--	--	--
	tcu [°C]	29/6	29/6	29/6	29/6	29/6	29/6	29/6	29/6
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
40°C	Q [W]	476718	428042	383417	342555	305184	271051	239911	211541
	P [kW]	120/4	118/2	116/1	113/9	111/9	109/9	108/2	106/7
	I [A]	198/2	194/8	191/4	188/0	184/8	181/7	179/0	176/6
	COP [-]	3/96	3/62	3/30	3/01	2/73	2/47	2/22	1/98
	mLP [kg/h]	14483	13187	11983	10866	9830	8868	7977	7152
	mHP [kg/h]	14483	13187	11983	10866	9830	8868	7977	7152
	Qac [kW]	--	--	--	--	--	--	--	--
	tcu [°C]	39/6	39/6	39/6	39/6	39/6	39/6	39/6	39/6
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
50°C	Q [W]	393477	352081	314194	279564	247953	219141	192914	169078
	P [kW]	144/5	142/2	139/9	137/7	135/8	134/0	132/5	131/4
	I [A]	237	233	229	226	223	220	218	216
	COP [-]	2/72	2/48	2/25	2/03	1/83	1/64	1/46	1/29
	mLP [kg/h]	14012	12745	11568	10474	9459	8517	7643	6833
	mHP [kg/h]	14012	12745	11568	10474	9459	8517	7643	6833
	Qac [kW]	--	--	--	--	--	5/74	13/70	21/8
	tcu [°C]	49/7	49/7	49/7	49/7	49/7	49/7	49/7	49/7
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--

-- No calculation possible (see message in single point selection)

*According to EN12900 (10K suction gas superheat, 0K liquid subcooling)

Application Limits Standard HSK8581-160



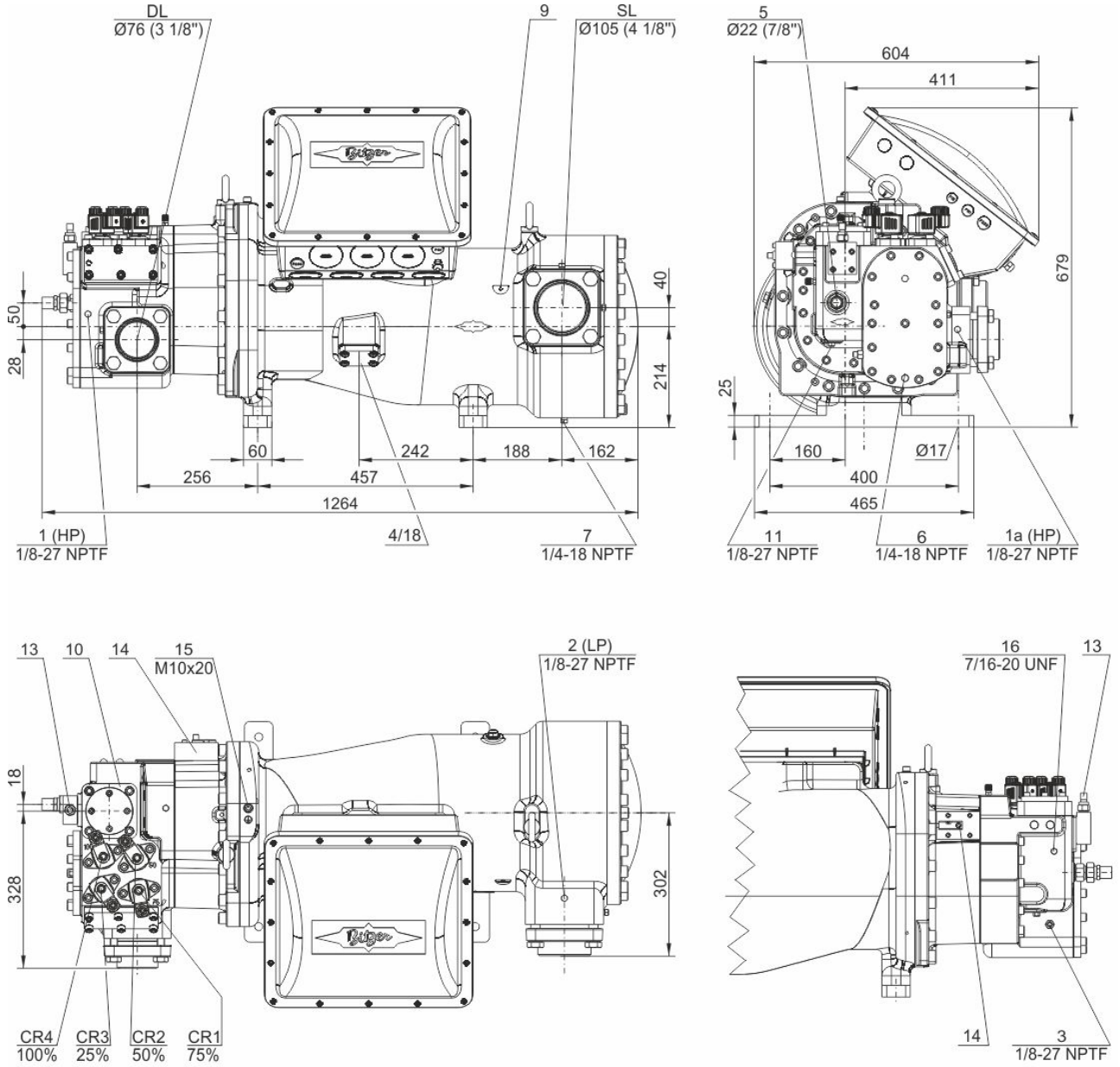
Legend

- max. tc for frequencies = 20Hz
- max. tc for frequencies = 25Hz
- max. tc for frequencies = 35Hz
- A



Technical Data: HSK8581-160

Dimensions and Connections





Technical Data

Technical Data

Displacement (2900 RPM 50 Hz)	470 m ³ /h
Displacement (3500 RPM 60 Hz)	567 m ³ /h
Weight	605 kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	DN 100
Connection discharge line	76 mm - 3 1/8"
Adapter/shut-off valve for ECO	28 mm - 1 1/8" (Option)
Adapter for liquid injection	22 mm - 7/8" (Option)
Oil type R22	B150SH, B100 (Option)
Oil type R134a/R404A/R507A/R407A/R407F	BSE170
Oil type R448A/R449A/R454C	BSE170

Motor data

Motor version	1
Motor voltage (more on request)	380-415V PW-3-50Hz
Max operating current	274.0 A
Starting current (Rotor locked)	729.0 A D / 1114.0 A DD
Max. Power input	162/0 kW

Extent of delivery (Standard)

Discharge gas temperature sensor	Standard
Start unloading	Standard
Oil flow control	SE-B3 (Standard)
Motor protection	SE-E1 + SE-B3 (Standard), SE-E3 (Standard for 660-690V)
Capacity control	100-75-50% or 100-50% (Standard)
Enclosure class	IP54

Available Options

Suction shut-off valve	Option
Discharge shut-off valve	Option
ECO connection with shut-off valve	Option
Motor protection	SE-i1 (200-690V)

Sound measurement



Semi-hermetic Screw Compressors HS

HSK = Application for air-conditioning and medium temperature cooling.

HSN = Application for low temperature cooling.

Notes regarding application limits (see "Limits")

- * Ranges are valid for standard operation and at full-load conditions.
- * With high pressure conditions, part-load operation is partly limited (see application limits in applications manual SH-100).
- * With Economizer operation the maximum admissible evaporation temperature is shifted by 10K downward (otherwise there is a danger of excessive compression and overload of the motor because of a higher mass flow). At pull-down conditions from higher evaporation temperatures, the ECO injection must remain closed until the evaporation temperature is below the maximum admissible value and a stable operation is achieved (e.g. control of the ECO solenoid valve by means of a low pressure cut-out). The use of the ECO-system with higher evaporation temperatures requires individual consultation with Bitzer.

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- * Capacity control with ECO operation at the same time is limited to one single regulating step (CR 75%). At CR 50% the ECO injection should be closed.

Data for sound emission

Data are based on 50Hz application (IP-units 60Hz) and R404A.

Sound pressure level: values are based on open air test sites with semi-spherical sound emissions at 1 meter distance. For further information see Technical Information "Sound Data".

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
Connection for high pressure switch (HP)
- 1a Additional high pressure connection (HP)
Not suitable for pressure switch or pressure transmitter!
- 1b Connection for high pressure transmitter (HP)
- 2 Low pressure connection (LP)
Connection for low pressure switch
- 2a Additional low pressure connection (LP)
- 2b Connection for low pressure transmitter (LP)
- 2c Low pressure connection for the minimum pressure differential control valve
- 3 Connection for discharge gas temperature sensor (HP)
- 4 Connection for economiser (ECO)
HS.85: ECO valve with connection line (option)
OS.85, OS.95, OS.105, HS.95: ECO valve (option)
- 5 Connection/valve for oil injection
- 6 Oil pressure connection
- 7 Oil drain (compressor or motor housing)
- 7a Oil drain (suction gas filter)
- 7b Oil drain from shaft seal (maintenance connection)
- 7c Oil drain hose (shaft seal)
- 8 Threaded bore for foot fastening
- 9 Threaded bore for pipe fixture (ECO and LI lines)
- 10 Maintenance connection for oil filter
- 11 Oil drain (oil filter)
- 13 Oil filter monitoring
- 14 Oil flow switch
- 15 Earth screw for housing
- 16 Pressure blow-off (oil filter chamber)
- 17 Maintenance connection for shaft seal
- 18 Liquid injection (LI)
- 19 Compressor module
- 20 Slider position indicator
- 21 Oil level switch
- 22 Oil pressure transmitter



- 23 Connection for oil and gas return (for systems with flooded evaporator adaptor optional)
- 24 Access to oil circulation restrictor
- 25 Oil inlet for shaft seal cooling
- 26 Oil outlet for shaft seal cooling
- 27 Temperature sensor in the shaft seal
- 28 Vibration sensor connection
- SL Suction gas line
- DL Discharge gas line

Dimensions can show tolerances according to EN ISO 13920-B.