



Selection: Semi-hermetic Screw Compressors HS

Input Values

Compressor model	HSN8571-125	Operating mode	Economiser
Refrigerant	R404A	Power supply	400V-3-50Hz
Reference temperature	Dew point temp.	Useful superheat	100%
Liq. subc. (in condenser)	0 K	Additional cooling	Automatic
Auto. subcooling	Auto	Max. discharge gas temp.	80,0 °C
Suct. gas superheat	10,00 K		

Result

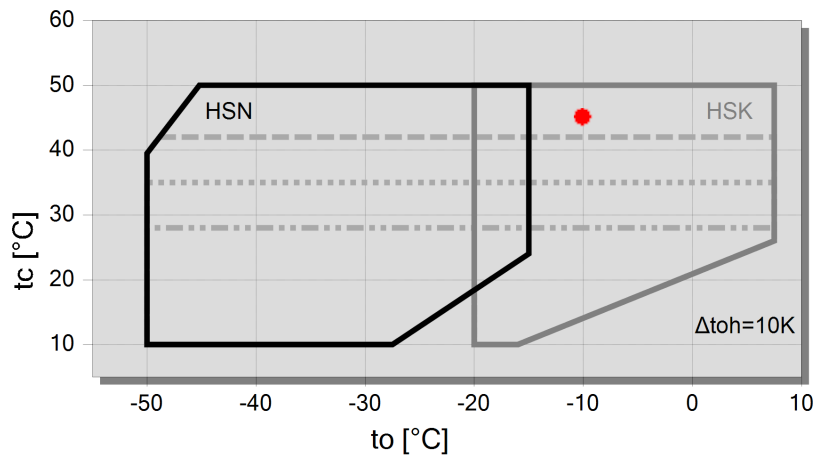
Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	-15°C	-20°C	-25°C	-30°C	-35°C	-40°C	-45°C	-50°C
30°C	Q [W]	259184	218074	182156	150882	123739	100261	80028	62670
	P [kW]	92,0	86,5	81,3	76,7	72,6	69,2	66,7	65,2
	I [A]	154,2	146,0	138,5	131,7	125,8	121,0	117,5	115,3
	COP [-]	2,82	2,52	2,24	1,97	1,70	1,45	1,20	0,96
	mLP [kg/h]	6581	5469	4504	3672	2959	2351	1837	1405
	mHP [kg/h]	7480	6420	5473	4628	3876	3210	2621	2102
	Qac [kW]	--	--	--	--	--	--	6,64	15,37
	tcu [°C]	17,34	14,08	10,56	6,76	2,66	-1,77	-6,53	-11,66
	pm [bar(a)]	7,58	6,86	6,15	5,45	4,75	4,08	3,45	2,85
	Qsc [kW]	33,9	35,4	35,6	34,5	32,5	29,9	26,7	23,1
40°C	Q [W]	236035	198193	165140	136318	111228	89426	70522	--
	P [kW]	107,0	101,1	96,0	91,5	87,5	83,9	80,7	
	I [A]	176,6	167,8	160,2	153,4	147,5	142,2	137,5	
	COP [-]	2,21	1,96	1,72	1,49	1,27	1,07	0,87	
	mLP [kg/h]	6413	5302	4339	3510	2799	2195	1683	
	mHP [kg/h]	7738	6635	5648	4765	3977	3274	2648	
	Qac [kW]	--	--	--	--	9,09	17,15	24,8	
	tcu [°C]	23,5	20,2	16,47	12,42	7,99	3,16	-2,13	
	pm [bar(a)]	9,09	8,24	7,38	6,52	5,67	4,83	4,03	
	Qsc [kW]	45,3	44,9	43,4	40,8	37,5	33,5	29,2	
50°C	Q [W]	206853	173080	143505	117593	94874	74933	57410	--
	P [kW]	127,1	121,1	115,7	110,8	106,0	101,1	95,8	
	I [A]	207	198,0	189,8	182,3	175,1	167,7	159,9	
	COP [-]	1,63	1,43	1,24	1,06	0,90	0,74	0,60	
	mLP [kg/h]	6116	5011	4055	3232	2528	1928	1421	
	mHP [kg/h]	7915	6770	5741	4816	3982	3230	2549	
	Qac [kW]	9,00	15,89	23,0	30,0	36,7	42,8	47,9	
	tcu [°C]	30,5	26,9	22,9	18,47	13,51	7,98	1,76	
	pm [bar(a)]	11,04	10,00	8,93	7,84	6,75	5,67	4,61	
	Qsc [kW]	54,5	52,4	49,3	45,3	40,5	35,2	29,4	

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

*According to EN12900 (10K suction gas superheat, liquid subcooling in Economiser with 5K temperature difference)

Application Limits ECO HSN8571-125



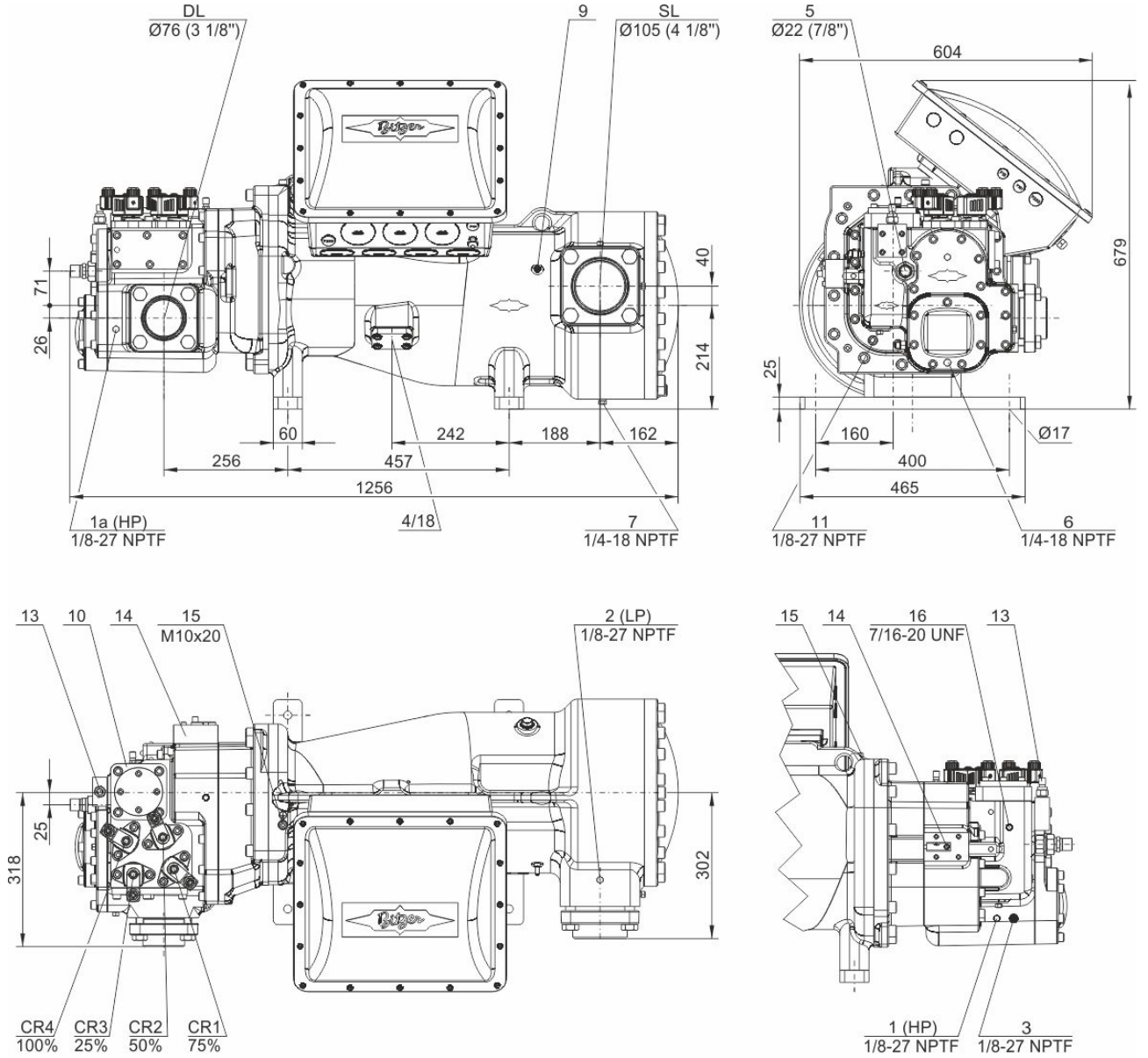
Legend

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



Technical Data: HSN8571-125

Dimensions and Connections





Technical Data

Technical Data

Displacement (2900 RPM 50 Hz)	410 m ³ /h
Displacement (3500 RPM 60 Hz)	495 m ³ /h
Weight	610 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)
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	216.0 A
Starting current (Rotor locked)	612.0 A D / 943.0 A DD
Max. Power input	132,0 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.