



## Selection: Semi-hermetic Screw Compressors HS

### Input Values

Compressor model	HSN7471-75	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

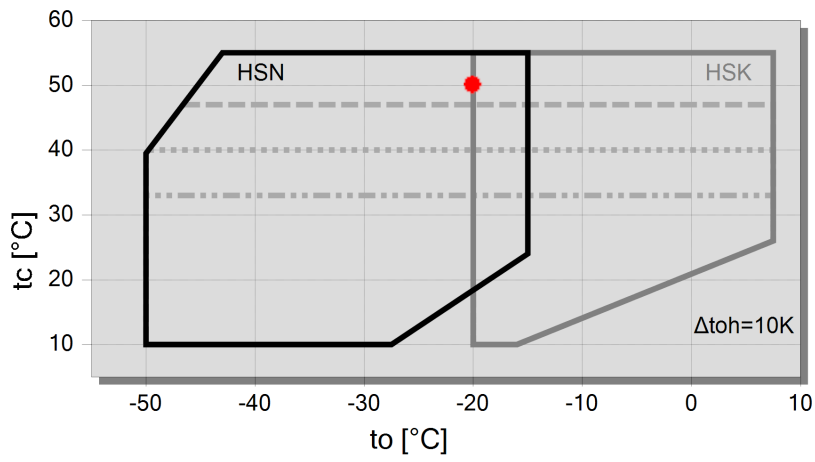
Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C	-40°C	-45°C
<b>30°C</b>	Q [W]	--	134659	108924	87160	68884	53656	41077	30788
	P [kW]	--	51/4	48/2	45/2	42/4	39/8	37/4	35/1
	I [A]	--	82/7	78/0	73/6	69/4	65/6	62/1	59/0
	COP [-]	--	2/62	2/26	1/93	1/62	1/35	1/10	0/88
	mLP [kg/h]	--	3934	3262	2678	2174	1741	1372	1059
	mHP [kg/h]	--	3934	3262	2678	2174	1741	1372	1059
	Qac [kW]	--	--	--	--	--	0/73	5/37	9/47
	tcu [°C]	--	29/6	29/6	29/6	29/6	29/6	29/6	29/6
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
<b>40°C</b>	Q [W]	--	114721	92300	73423	57650	44581	33855	25145
	P [kW]	--	59/4	55/8	52/4	49/2	46/4	43/9	41/9
	I [A]	--	94/7	89/3	84/2	79/5	75/3	71/6	68/6
	COP [-]	--	1/93	1/65	1/40	1/17	0/96	0/77	0/60
	mLP [kg/h]	--	3857	3193	2616	2119	1693	1330	1023
	mHP [kg/h]	--	3857	3193	2616	2119	1693	1330	1023
	Qac [kW]	--	--	--	1/71	6/36	10/68	14/69	18/48
	tcu [°C]	--	39/6	39/6	39/6	39/6	39/6	39/6	39/6
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
<b>50°C</b>	Q [W]	--	92430	73661	57942	44884	34136	25381	18331
	P [kW]	--	69/2	65/3	61/6	58/2	55/4	53/2	51/9
	I [A]	--	109/4	103/5	97/9	92/9	88/6	85/4	83/4
	COP [-]	--	1/33	1/13	0/94	0/77	0/62	0/48	0/35
	mLP [kg/h]	--	3710	3059	2494	2006	1587	1230	928
	mHP [kg/h]	--	3710	3059	2494	2006	1587	1230	928
	Qac [kW]	--	10/32	14/17	17/77	21/3	24/7	28/4	32/3
	tcu [°C]	--	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 HSN7471-75



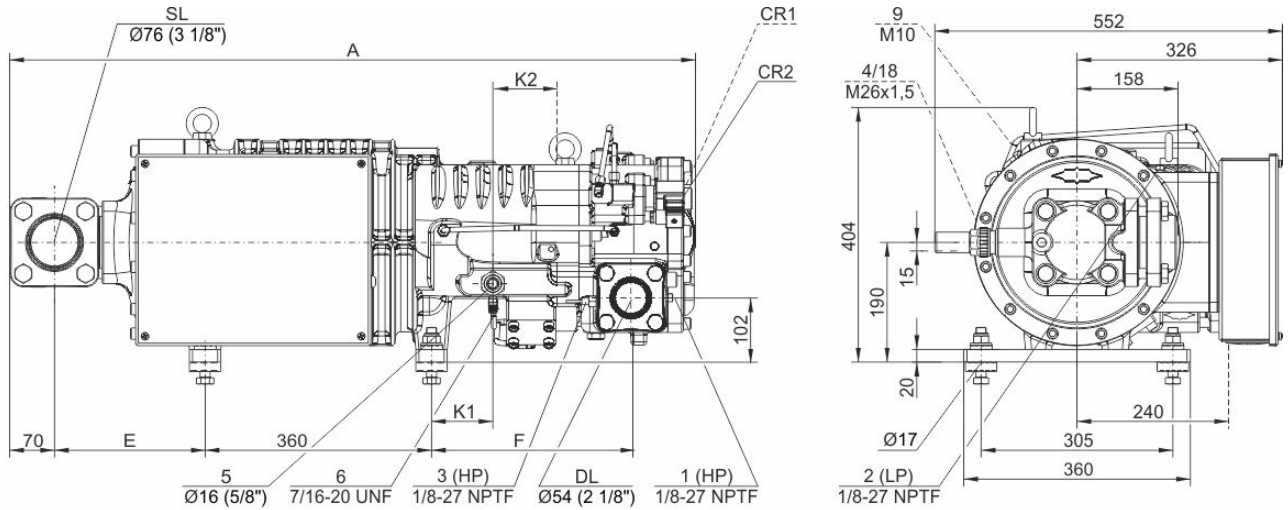
**Legend**

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



## Technical Data: HSN7471-75

### Dimensions and Connections



Model	A	E	F	K1	K2
	mm	mm	mm	mm	mm
HS.7451, HS.7461	1021	186	295	76	109
HSK7471-70, HSN7471-75	1034	186	318	98	97
HSK7471-90	1087	238	318	98	97



## Technical Data

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Displacement (2900 RPM 50 Hz)	250 m <sup>3</sup> /h
Displacement (3500 RPM 60 Hz)	302 m <sup>3</sup> /h
Weight	326 kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	76 mm - 3 1/8"
Connection discharge line	54 mm - 2 1/8"
Adapter/shut-off valve for ECO	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	144.0 A
Starting current (Rotor locked)	350.0 A D / 585.0 A DD
Max. Power input	85/0 kW

### Extent of delivery (Standard)

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

### Available Options

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

### Sound measurement

Sound power level (-35°C / 40°C)	87,5 dB(A)
Sound pressure level @ 1m (-35°C / 40°C)	79,5 dB(A)



## 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.

### HS 64/74

- \* 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.