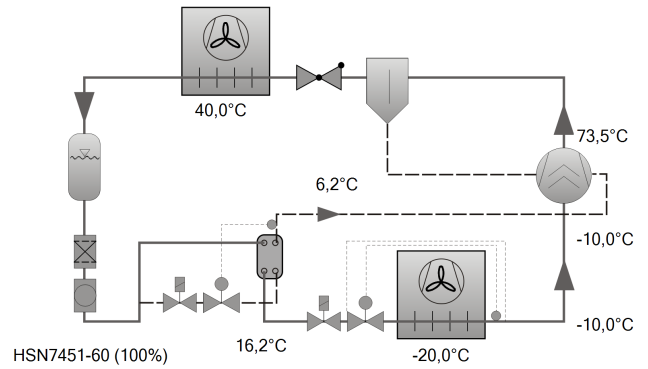




Selection: Semi-hermetic Screw Compressors HS

Input Values

Compressor model	HSN7451-60
Refrigerant	R404A
Reference temperature	Dew point temp.
Evaporating SST	-20,00 °C
Condensing SDT	40,0 °C
Liq. subc. (in condenser)	0 K
Auto. subcooling	Auto
Suct. gas superheat	10,00 K
Operating mode	Economiser
Power supply	400V-3-50Hz
Useful superheat	100%
Additional cooling	Automatic
Max. discharge gas temp.	80,0 °C

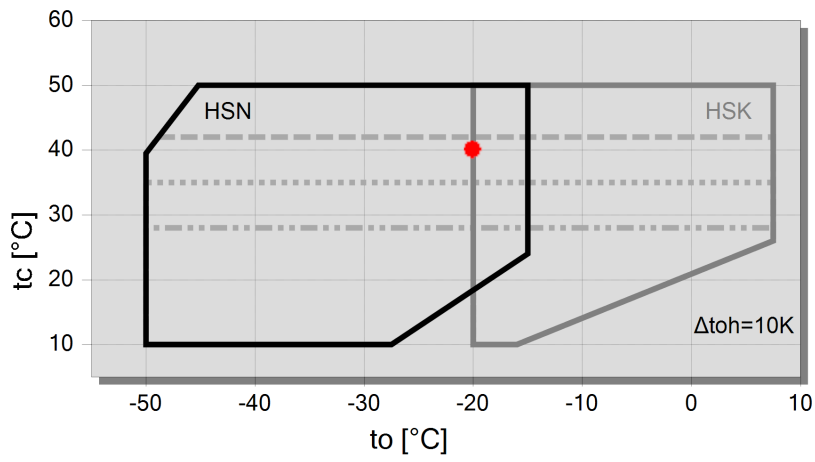


Result

Compressor	HSN7451-60-40P
Capacity steps	100%
Cooling capacity	101,4 kW
Cooling capacity *	104,4 kW
Evaporator capacity	101,4 kW
Power input	52,4 kW
Current (400V)	83,8 A
Voltage range	380-415V
Condenser capacity	153,8 kW
COP/EER	1,94
COP/EER *	1,98
Mass flow LP	2598 kg/h
Mass flow HP	3392 kg/h
Operating mode	Economiser
Liquid temp. (sc)	16,16 °C
Mass flow ECO	794 kg/h
sub cooler load	26,3 kW
sat. ECO Temp.	6,16 °C
ECO pressure	7,31 bar(a)
Oil volume flow	1,87 m³/h
Cooling method	--
Discharge gas temp. w/o cooling	73,5 °C

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

Application Limits ECO HSN7451-60



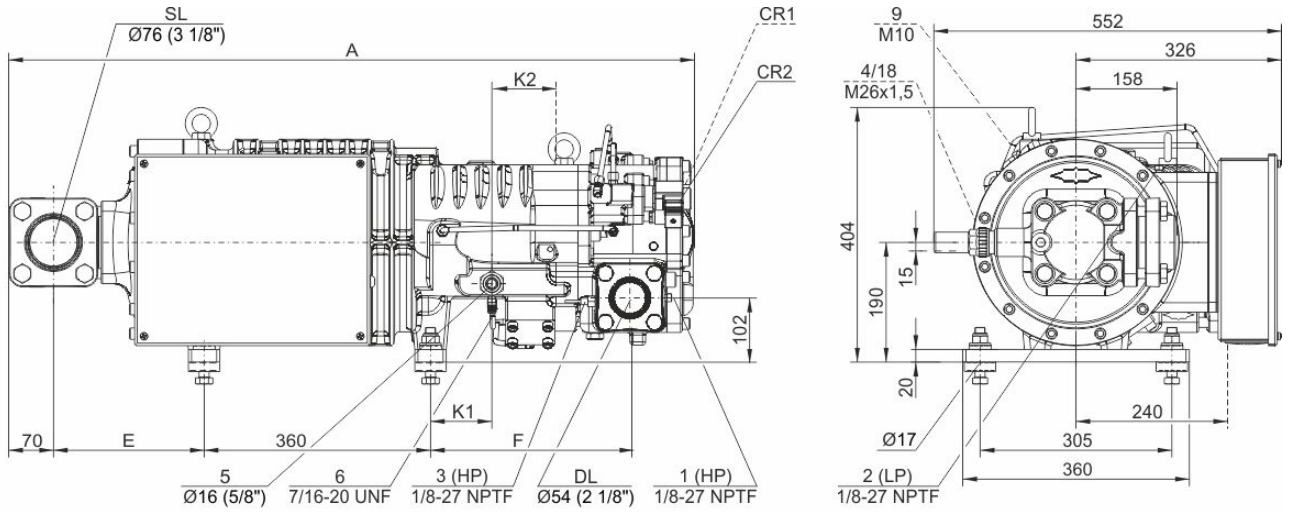
Legend

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



Technical Data: HSN7451-60

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

Technical Data

Displacement (2900rpm 50 Hz)	192 m ³ /h
Displacement (3500rpm 60 Hz)	232 m ³ /h
Weight	297 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	98.0 A
Starting current (Rotor locked)	267.0 A D / 449.0 A DD
Max. power input	65,0 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)	86,5 dB(A)
Sound pressure level @ 1m (-35°C / 40°C)	78,5 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.

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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".