

BOCK® HGX22e/160-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R449A



Subject:

Performance data

Application: Refrigeration & AC

Refrigerant	R449A	Compressor refrigeration capacity	6.19 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	6.19 kW
Power supply	50 Hz, 400 V	Power consumption	2.81 kW
Supply frequency	50 Hz	Current draw (400 V)	5.16 A
Evaporating temperature	-10.0 °C	Coefficient of performance (COP/EER)	2.20
<i>Evaporating pressure (abs.)</i>	<i>3.58 bar</i>	Condensing capacity	9.00 kW
Condensing temperature	45.0 °C	Mass flow	0.045 kg/s
<i>Condensing pressure (abs.)</i>	<i>18.75 bar</i>	Discharge end temperature	85.8 °C ¹⁾
Suction gas superheat	8 K		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

Preliminary capacity data.

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- 1) The stated value of the discharge end temperature is a mere calculated value. Additional cooling and heat dissipation are not considered. Deviations (particularly in deep freezing applications) from the real measured discharge temperature during operation are possible.

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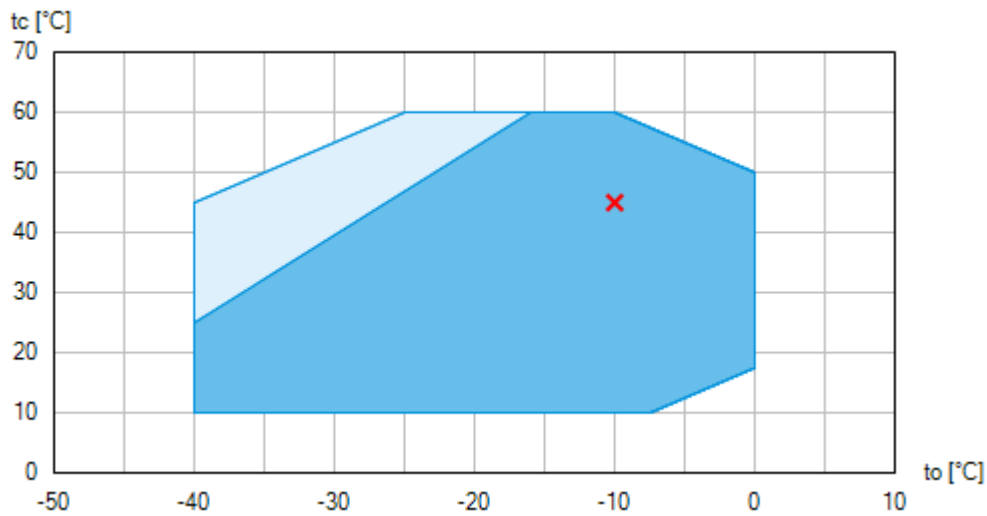
Engine: 220-240V Δ / 380-420V Y -3- 50Hz



Refrigerant: R449A



Subject:

Operating limits



-  Unlimited application range
-  Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation. Axis values refer to dew point (saturated vapour line).

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Refrigerant: R449A



Subject:

Technical data

Number of cylinders / Bore / Stroke	2 / 50 mm / 40 mm
Displacement 50/60 Hz (1450/1740 ¹ /min)	13,70 / 16,40 m ³ /h
Voltage ¹⁾	220-240V Δ / 380-420V Y -3- 50Hz
	265-290V Δ / 440-480V Y -3- 60Hz
Max. working current ²⁾	11.1 / 6.4 A
Max. power consumption ²⁾	3.7 kW
Starting current (rotor blocked) ²⁾	69.0 / 40.0 A
Motor protection	INT69 G
Protection terminal box	IP 66
Weight	73 kg
Frequency range ³⁾	30 -70 Hz
Max. permissible overpressure (g) (LP/HP) ⁴⁾	19 / 28 bar
Connection suction line SV	22 mm - 7/8 "
Connection discharge line DV	16 mm - 5/8 "
Lubrication	Oil pump
Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A	BOCKlub E55
Oil type R22	BOCKlub A46
Oil charge	1,1 Ltr.
Dimensions Length / Width / Height	468 / 240 / 315 mm
Sound power level L _{WA} ⁵⁾	69 dB(A) @ -35 °C / +40 °C
	68 dB(A) @ -10 °C / +45 °C
Sound pressure level L _{pA} ⁵⁾	57 dB(A) @ -35 °C / +40 °C
	56 dB(A) @ -10 °C / +45 °C

1) Tolerance (± 10%) relates to the mean value of the voltage range. Other voltages and current types on request

All data are based on voltage rms values

2) - The stated value for the max. power consumption is valid for the adjusted power supply.

- Starting current (rotor blocked):

- Part winding (PW) motors: Winding 1 / Winding 1+2
- Delta/Star (Δ/Y) motors: Δ / Y

- Take account of the max. operating current / max. power consumption for designing motor contractors, feed lines, fuses and motor protection switches. Motor contractors: Consumption category AC3.

3) The maximum permissible working current of the compressor (I_{max}) must not be exceeded. Take account of the guidelines for use of frequency inverter (see compressor assembly instruction or selection software).

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Subject:

- 4) LP = Low pressure
HP = High pressure
- 5) Declared dual-number noise emission values are in accordance with ISO 4871. The corresponding uncertainty to the sound power level is $K_{WA} = 2,5$ dB and to the sound pressure level is $K_{pA} = 2,5$ dB. The values are valid for 50 Hz with the refrigerant R404A at the standard rating points according to EN 12900.
 - A-weighted sound power level L_{WA} (re 1 pW), in decibel. To determine the values, measurement methods of the ISO 3740 standard with accuracy class 2 or higher were used .
 - A-weighted sound pressure level L_{pA} (re 20 μ Pa), in decibel. The values are calculated from the sound power level in accordance with ISO 11203: $L_{pA} = L_{WA} - Q_2$ at a distance of $d = 1$ m to the reference box.

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Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R449A



Subject:

Performance data table

Application: Refrigeration & AC

Reference temperature: Dew point

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas superheat: 8 K

Subcooling (outside cond.): 0 K

tc [°C]		to [°C]									
		0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	-35.0	-40.0	-45.0
10.0	Q [W]			10400	8220	6410	4920	3710	2750	1990	
	P [kW]			1.68	1.68	1.62	1.52	1.38	1.22	1.05	
	I [A]			3.82	3.83	3.77	3.67	3.55	3.42	3.29	
15.0	Q [W]		12300	9840	7790	6080	4670	3530	2610	1880	
	P [kW]		1.85	1.87	1.83	1.73	1.60	1.43	1.25	1.07	
	I [A]		4.00	4.02	3.98	3.88	3.75	3.60	3.45	3.31	
20.0	Q [W]	14300	11600	9270	7340	5720	4390	3310	2440	1740	
	P [kW]	2.05	2.09	2.06	1.97	1.84	1.67	1.48	1.29	1.10	
	I [A]	4.22	4.26	4.23	4.13	3.99	3.82	3.64	3.48	3.33	
25.0	Q [W]	13400	10900	8680	6860	5340	4090	3070	2240	1570	
	P [kW]	2.34	2.32	2.24	2.10	1.93	1.74	1.53	1.32	1.12	
	I [A]	4.55	4.53	4.43	4.28	4.09	3.89	3.68	3.50	3.35	
30.0	Q [W]	12500	10100	8060	6360	4940	3770	2810	2030	1380	
	P [kW]	2.61	2.53	2.40	2.23	2.02	1.80	1.57	1.35	1.14	
	I [A]	4.89	4.79	4.63	4.42	4.19	3.95	3.72	3.52	3.36	
35.0	Q [W]	11600	9330	7440	5850	4530	3440	2540	1800	1180	
	P [kW]	2.86	2.73	2.55	2.34	2.10	1.85	1.60	1.37	1.16	
	I [A]	5.22	5.05	4.82	4.55	4.27	4.00	3.76	3.54	3.38	
40.0	Q [W]	10700	8580	6810	5340	4110	3100	2270	1570	973.00	
	P [kW]	3.09	2.91	2.69	2.44	2.17	1.90	1.63	1.39	1.18	
	I [A]	5.55	5.30	5.00	4.68	4.35	4.05	3.78	3.56	3.39	
45.0	Q [W]	9770	7820	6190	4830	3700	2770	1990	1340	772.00	
	P [kW]	3.31	3.08	2.81	2.52	2.22	1.93	1.65	1.40	1.19	
	I [A]	5.85	5.52	5.16	4.78	4.42	4.08	3.80	3.57	3.40	
50.0	Q [W]	8870	7070	5570	4320	3290	2440	1730	1120		
	P [kW]	3.50	3.22	2.91	2.59	2.26	1.95	1.66	1.40		
	I [A]	6.14	5.73	5.30	4.87	4.47	4.11	3.80	3.57		
55.0	Q [W]		6340	4970	3830	2900	2130	1480			
	P [kW]		3.35	3.00	2.64	2.29	1.96	1.65			
	I [A]		5.91	5.42	4.94	4.50	4.11	3.80			
60.0	Q [W]			4380	3360	2530	1830				
	P [kW]			3.06	2.68	2.30	1.95				
	I [A]			5.51	4.98	4.51	4.11				

Preliminary capacity data.



Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

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Subject:

- t_o* Evaporating temperature
- t_c* Condensing temperature
- Q* Compressor refrigeration capacity
- P* Power consumption
- I* Current draw

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Subject:

Scope of supply

Semi-hermetic two cylinder reciprocating compressor with drive motor
Single-section compressor housing with hermetically integrated electric motor

Winding protection with PTC resistor sensors and electronic trigger unit INT69 G
115-230 V AC, 50/60 Hz, IP00

Oil pump

Possibility for connection of oil pressure safety switch MP55

Possibility of connection of oil level controllers ESK, Traxoil, AC+R or CARLY ¹⁾

Oil charge:

HG: **BOCK**lub A46

HGX: **BOCK**lub E55

Sight glass

Suction and discharge line valve

Inert gas charge

Accessories

Oil sump heater

110-240 V - 1 - 50/60 Hz, 50-120 W, IP66

PTC heater self-regulating

Oil pressure safety switch MP55 230 V - 1 - 50/60 Hz, IP20 ²⁾

USB converter for INT69 G Diagnose ²⁾

INT69 G Diagnose 115-230 V AC, 50/60 Hz, IP00 (INT69 G not applicable)

Thermal protection thermostat per cylinder cover ³⁾

Hot gas temperature sensor (Pt1000, for external evaluation) ³⁾

Thermal protection thermostat per cylinder cover

Additional fan

230 V AC - 1 - 50 Hz, 97 W, IP44

230 V AC - 1 - 60 Hz, 128 W ²⁾

4 anti-vibration pads enclosed

Special voltage and/or frequency (on request)

1) Only with additional adapter possible

2) Enclosure

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Subject:

3) Mounted

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Subject:

Dimensions and connections

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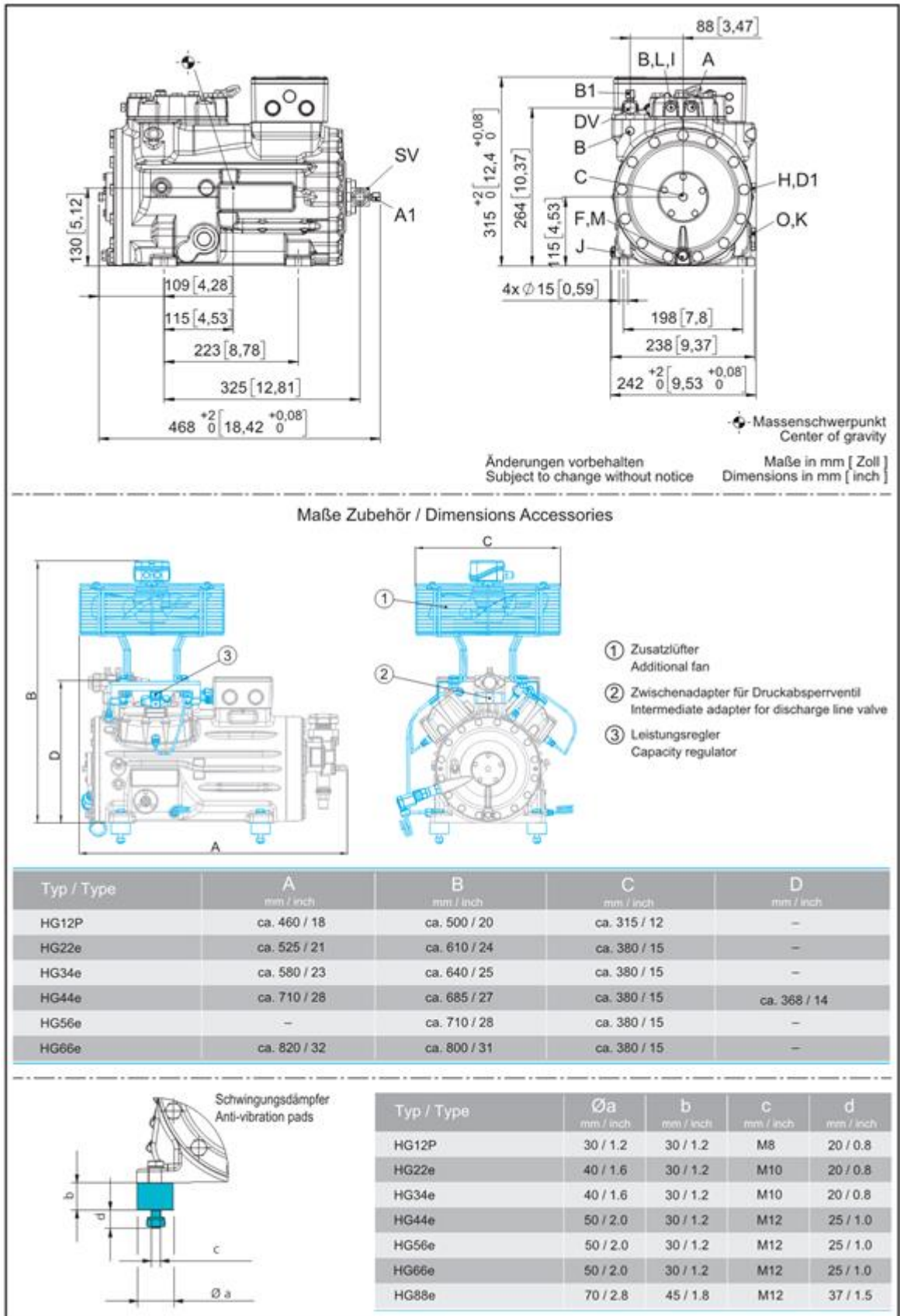
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**Subject:**

SV	Suction line valve, tube \varnothing ¹⁾	22 mm - 7/8 "
DV	Discharge line valve, tube \varnothing ¹⁾	16 mm - 5/8 "
A	Connection suction side, not lockable	1/8 " NPTF
A1	Connection suction side, lockable	7/16 " UNF
B	Connection discharge side, not lockable	1/8 " NPTF
B1	Connection discharge side, lockable	7/16 " UNF
C	Connection oil pressure safety switch OIL	1/8 " NPTF
D1	Connection oil return from oil separator	1/4 " NPTF
F	Oil drain	M 10
H	Oil charge plug	1/4 " NPTF
I	Connection hot gas temperature sensor	1/8 " NPTF
J	Connection oil sump heater	3/8 " NPTF
K	Sight glass	1 1/8 " - 18 UNEF
L	Connection thermal protection thermostat	1/8 " NPTF
O	Connection oil level regulator	1 1/8 " - 18 UNEF

1) Brazing connection

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Product photo



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