HGX44e/770-4

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

Subject:

Performance data

Notes

Please mind the application limits

Please check Evaporating temperature

Application: Refrigeration & AC

Refrigerant	R404A, R507
Reference temperature	Punto de rocío
Power supply	50 Hz, 400 V
Supply frequency	50 Hz
Evaporating temperature	5.0 °C
Evaporating pressure (abs.)	*7.06 bar*
Condensing temperature	50.0 °C
Condensing pressure (abs.)	*22.98 bar*
Suction gas temperature	20 °C
Subcooling (outside cond.)	0 K
Usable superheat	100%

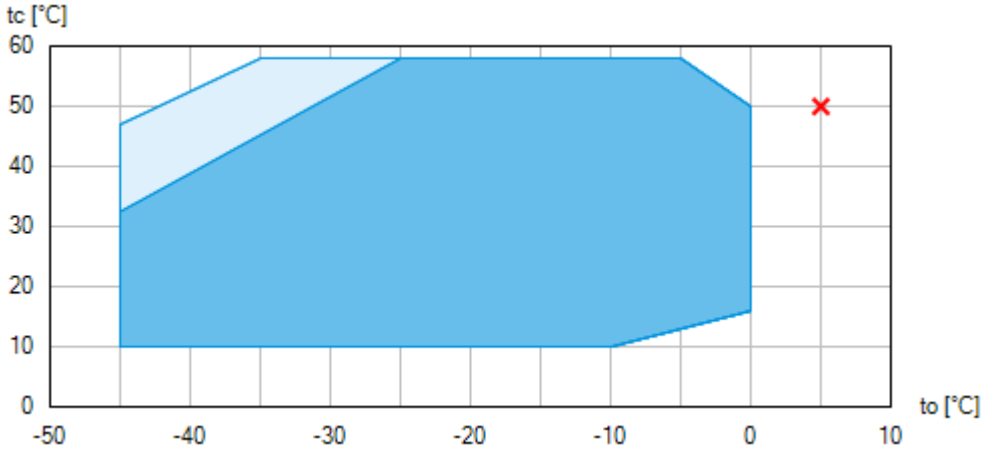
Compressor refrigeration capacity	55.10	kW
Evaporator refrigeration capacity	55.10	kW
Power consumption	18.80	kW
Current draw (400 V)	31.30	A
Coefficient of performance (COP/EER)	2.92	
Condensing capacity	73.90	kW
Mass flow	0.519	kg/s
Discharge end temperature	76.5	°C [1)]

Preliminary capacity data.

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.

Subject to change without notice

Operating limits



Unlimited application range

Supplementary cooling or reduced suction gas temperature (Δtoh<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).

Technical data

Number of cylinders / Bore / Stroke	4 / 70 mm / 50 mm
Displacement 50/60 Hz (1450/1740 ¹/min)	67,00 / 80,40 m³/h
Voltage [1)]	380-420V Y/YY -3- 50Hz PW
	440-480V Y/YY -3- 60Hz PW
Winding divided into	50% / 50%
Max. working current [2)]	30.0 A
Max. power consumption [2)]	17.8 kW
Starting current (rotor blocked) [2)]	101.0 / 174.0 A
Motor protection	INT69 G
Protection terminal box	IP 66
Weight	171 kg
Max. permissible overpressure (g) (LP/HP) [3)]	19 / 28 bar
Connection suction line SV	42 mm - 1 5/8 "
Connection discharge line DV	28 mm - 1 1/8 "
Lubrication	Oil pump
Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A	BOCKlub E55
Oil type R22	BOCKlub A46
Oil charge	2,7 Ltr.
Oil sump heater	230 V - 1 - 50/60 Hz, 160 W
Dimensions Length / Width / Height	695 / 361 / 383 mm
Sound power level L_{WA} [4)]	80 db(A) @ -35/+40 °C
	78 db(A) @ -10/+45 °C
Sound pressure level L_{pA} [4)]	67 db(A) @ -35/+40 °C
	65 db(A) @ -10/+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

PW = part winding, motors for part winding starting
(no start unloaders required)
Designs for Y/D on request

Subject to change without notice

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 fuses, supply lines and safety devices. Fuse: Consumption category AC3.

3) LP = Low pressure
HP = High pressure

4) 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 µPa), 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 = 1m to the reference box.

Performance data table

Application: Refrigeration & AC
Reference temperature: Punto de rocío
Supply frequency: 50 Hz
Voltage: 400 V
Suction gas temperature: 20 °C
Subcooling (outside cond.): 0 K

tc [°C]	to [°C]										
		5.0	**0.0**	**-5.0**	**-10.0**	**-15.0**	**-20.0**	**-25.0**	**-30.0**		
30.0	Q [W] P [kW] I [A]		65300 12.80 22.40	54300 12.60 22.10	44700 12.10 21.50	36500 11.50 20.70	29400 10.60 19.60	23300 9.62 18.40	18100 8.51 17.10		
35.0	Q [W] P [kW] I [A]		60500 14.20 24.40	50200 13.80 23.70	41300 13.00 22.80	33600 12.10 21.50	27000 11.10 20.20	21300 9.94 18.70	16500 8.70 17.30		
40.0	Q [W] P [kW] I [A]		55600 15.50 26.30	46100 14.80 25.20	37800 13.80 23.80	30700 12.70 22.30	24500 11.50 20.70	19300 10.20 19.10	14900 8.86 17.50		
45.0	Q [W] P [kW] I [A]		50700 16.70 28.00	41900 15.70 26.50	34300 14.50 24.80	27700 13.20 23.00	22100 11.80 21.20	17300 10.40 19.30	13200 9.00 17.60		
50.0	Q [W] P [kW] I [A]		45700 17.80 29.60	37600 16.50 27.80	30700 15.20 25.70	24700 13.70 23.70	19600 12.20 21.60	15300 10.60 19.60	11600 9.15 17.80		
55.0	Q [W] P [kW] I [A]			33400 17.30 28.90	27100 15.80 26.60	21700 14.10 24.30	17200 12.50 22.00	13300 10.90 19.90	9910 9.33 18.00		

Preliminary capacity data.

☐ Supplementary cooling or reduced suction gas temperature (Δtoh<20K)

to Evaporating temperature
tc Condensing temperature
Q Compressor refrigeration capacity
P Power consumption
I Current draw

Scope of supply

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

Oil pump

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

Rear bearing flange prepared for oil differential pressure sensor DELTA-P II

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

Possibility of connection of oil level controllers Traxoil [1)]

Possibility for connection of oil pressure safety switch MP54

Oil charge:
HG: **BOCK**lub A46
HGX: **BOCK**lub E55

Sight glass

Pressure relief valve

Suction and discharge line valve

Inert gas charge

4 anti-vibration pads enclosed

Accessories

Start unloader by means of a ESS (Electronic Soft Start), 400 V - 3 - 50/60 Hz, IP20 (Connection clamps IP00) for installation in switch cabinet [2)]

(Digital) capacity regulator DCR14 230 V - 1 - 50/60 Hz, IP65
possible equippment see 09900-DGbF Capacity regulator 09900-DGbF

Cylinder cover prepared for digital capacity regulator

Oil sump heater 230 V - 1 - 50/60 Hz, 160 W

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 [2)]

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz [3)]

Thermal protection thermostat per cylinder cover

USB converter for INT69 G Diagnose [2)]

Connection piece suction and discharge valve in welding design

Intermediate flange for discharge line valve on right or left seen from oil pump [2)]

Oil temperature sensor (Pt1000, for external evaluation) 2)

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

DP-Modbus Gateway 115-230 V AC, 50/60 Hz, IP00 including adapter cable 2)

Modbus-LAN Gateway 230 V AC, 50/60 Hz, IP00 2)

Additional fan
230 V AC - 1 - 50 Hz, 97 W, IP44
230 V AC - 1 - 60 Hz, 128 W 2)

Step protection

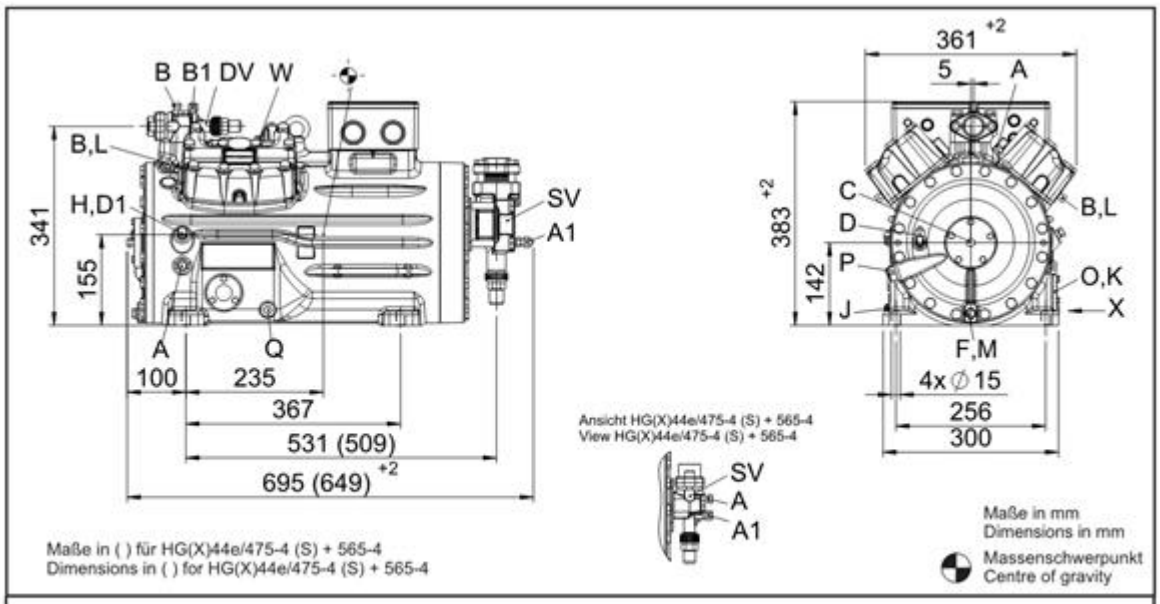
Special voltage and/or frequency (on request)

1) Only with additional adapter possible

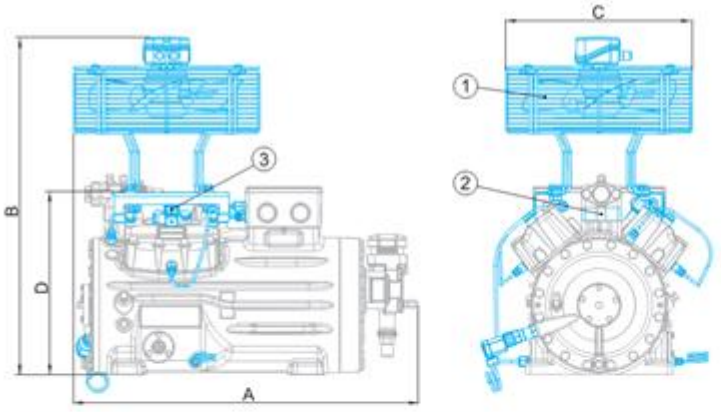
2) Enclosure

3) Enclosure (screw-in part mounted)

Dimensions and connections



Maße Zubehör / Dimensions Accessories



1. Zusatzlüfter
   Additional fan
2. Zwischenadapter für Druckabsperrventil
   Intermediate adapter for discharge line valve
3. Leistungsregler
   Capacity regulator

Typ / Type	A mm / inch	B mm / inch	C mm / inch	D mm / inch
HG12P	ca. 460	ca. 500	ca. 315	–
HG22e	ca. 525	ca. 610	ca. 380	–
HG34e	ca. 580	ca. 640	ca. 380	–
HG44e	ca. 710	ca. 685	ca. 380	368
HG56e	–	ca. 710	ca. 380	–
HG66e	ca. 820	ca. 800	ca. 380	–

Ansicht X: Anschlussmöglichkeit für Ölspiegelregulator
View X: Possibility of connection of oil level regulator

○ Dreilochanschluss für TRAXOIL (3xM6x10)
Three-hole connection for TRAXOIL (3xM6x10)

● Dreilochanschluss für ESK, AC+R, CARLY (3xM6x10)
Three-hole connection for ESK, AC+R, CARLY (3xM6x10)

SV	Suction line valve, tube ø [1)]	42 mm - 1 5/8 "
DV	Discharge line valve, tube ø [1)]	28 mm - 1 1/8 "
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
D	Connection oil pressure safety switch LP	7/16 " UNF
D1	Connection oil return from oil separator	1/4 " NPTF
F	Oil drain	M 12 x 1.5
H	Oil charge plug	1/4 " NPTF
J	Connection oil sump heater	3/8 " NPTF
K	Sight glass	3 x M 6
L	Connection thermal protection thermostat	1/8 " NPTF
M	Oil strainer	M 12 x 1.5
O	Connection oil level regulator	3 x M 6
P	Connection oil differential pressure sensor	M 20 x 1.5
Q	Connection oil temperature sensor	1/8" NPTF
W	Connection for refrigerant injection	1/8" NPTF

1) Brazing connection

Product photo