BOCK® **HGX66e/1750-4 S**

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

Refrigerant: R452A

Subject:

Performance data

Application: Refrigeration & AC

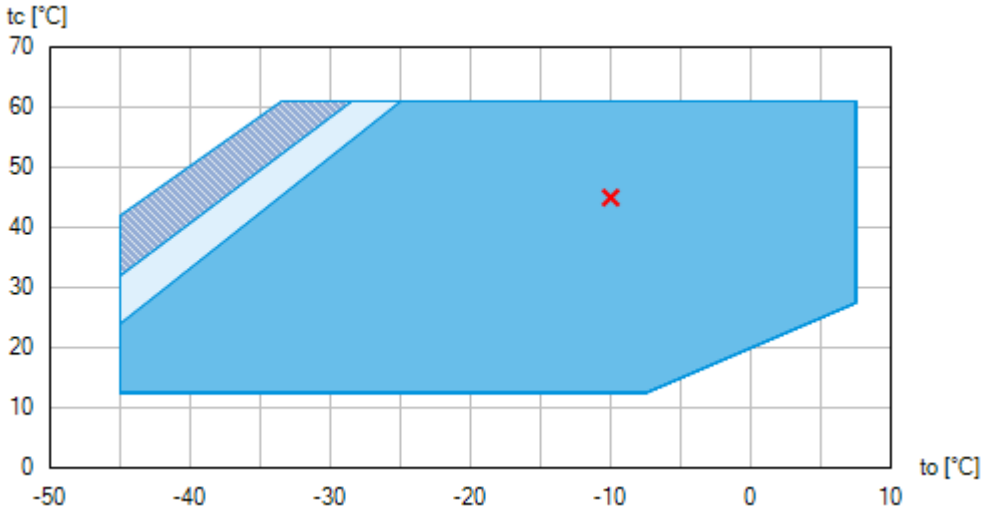
Refrigerant	R452A	Compressor refrigeration capacity	73.50 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	73.50 kW
Power supply	50 Hz, 400 V	Power consumption	32.40 kW
Supply frequency	50 Hz	Current draw (400 V)	61.50 A
Evaporating temperature	-10.0 °C	Coefficient of performance (COP/EER)	2.27
Evaporating pressure (abs.)	*3.99 bar*	Condensing capacity	106.00 kW
Condensing temperature	45.0 °C	Mass flow	0.710 kg/s
Condensing pressure (abs.)	*19.83 bar*	Discharge end temperature	69.9 °C [1)]
Suction gas superheat	8 K		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

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:

Operating limits



Unlimited application range

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

Supplementary cooling and 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).

Subject:

Technical data

Number of cylinders / Bore / Stroke	6 / 80 mm / 58 mm
Displacement 50/60 Hz (1450/1740 ¹/min)	152,2 / 182,6 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]	86.8 A
Max. power consumption [2]	50.7 kW
Starting current (rotor blocked) [2]	222.0 / 361.0 A
Motor protection	INT69 G
Protection terminal box	IP 66
Weight	282 kg
Frequency range [3]	25 - 60 Hz
Max. permissible overpressure (g) (LP/HP) [4]	19 / 28 bar
Connection suction line SV	54 mm - 2 1/8 "
Connection discharge line DV	42 mm - 1 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	4,4 Ltr.
Oil sump heater	230 V - 1 - 50/60 Hz, 160 W
Dimensions Length / Width / Height	810 / 557 / 467 mm
Sound power level L_{WA} [5]	88 dB(A) @ -35 °C / +40 °C
	83 dB(A) @ -10 °C / +45 °C
	82 dB(A) @ +5 °C / +50 °C
Sound pressure level L_{pA} [5]	75 dB(A) @ -35 °C / +40 °C
	70 dB(A) @ -10 °C / +45 °C
	68 dB(A) @ +5 °C / +50 °C

Subject:

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

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 (Imax) must not be exceeded. Take account of the guidelines for use of frequency inverter (see compressor assembly instruction or selection software).

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 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.

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] P [kW] I [A]										
15.0	Q [W] P [kW] I [A]		145000 21.10 48.90	119000 20.80 48.60	96300 20.00 47.90	77100 18.80 46.80	60800 17.40 45.50	47000 15.70 44.00	35600 13.90 42.50	26300 12.00 41.10	18900 10.10 39.80
20.0	Q [W] P [kW] I [A]	165000 24.20 52.10	137000 23.90 51.80	112000 23.10 50.90	90300 21.90 49.70	72000 20.30 48.20	56400 18.50 46.50	43300 16.50 44.70	32400 14.40 43.00	23500 12.30 41.30	16300 10.20 39.80
25.0	Q [W] P [kW] I [A]	155000 27.40 55.60	128000 26.60 54.60	105000 25.30 53.20	84100 23.70 51.50	66700 21.70 49.50	51900 19.60 47.40	39500 17.30 45.30	29200 14.90 43.30	20800 12.50 41.50	13900 10.30 39.90
30.0	Q [W] P [kW] I [A]	145000 30.40 59.00	120000 29.10 57.50	97000 27.30 55.50	77800 25.30 53.20	61400 22.90 50.70	47500 20.40 48.30	35800 17.80 45.90	26200 15.20 43.60	18200 12.70 41.60	11700 10.20 39.90
35.0	Q [W] P [kW] I [A]	135000 33.20 62.50	111000 31.40 60.20	89300 29.20 57.60	71300 26.70 54.80	56000 24.00 51.90	43000 21.20 49.00	32200 18.30 46.30	23200 15.50 43.80	15800 12.70 41.60	9670 10.10 39.80
40.0	Q [W] P [kW] I [A]	124000 35.80 65.80	102000 33.50 62.80	81500 30.90 59.60	64700 28.00 56.20	50500 25.00 52.90	38500 21.80 49.60	28600 18.70 46.60	20300 15.60 43.90	13600 12.60 41.60	7930 9.95 39.60
45.0	Q [W] P [kW] I [A]	113000 38.30 69.00	91700 35.50 65.30	73500 32.40 61.50	58000 29.10 57.50	45000 25.70 53.70	34100 22.30 50.10	25000 18.90 46.80	17600 15.60 43.90	11500 12.40 41.40	
50.0	Q [W] P [kW] I [A]	102000 40.50 72.00	82100 37.20 67.60	65300 33.70 63.10	51200 30.10 58.70	39400 26.40 54.40	29600 22.60 50.40	21600 19.00 46.90	15000 15.40 43.80	9550 12.10 41.20	
55.0	Q [W] P [kW] I [A]	90300 42.50 74.80	72200 38.80 69.70	57000 34.90 64.60	44300 30.90 59.60	33800 26.80 54.90	25200 22.80 50.60	18200 18.90 46.80	12500 15.20 43.60		
60.0	Q [W] P [kW] I [A]	78500 44.30 77.40	62100 40.20 71.60	48500 35.90 65.80	37300 31.50 60.30	28200 27.10 55.20	20800 22.80 50.60	14900 18.70 46.60			

Preliminary capacity data.

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

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

Subject:

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

Subject:

Scope of supply

Semi-hermetic six-cylinder reciprocating compressor with drive motor for part winding start
Single-section compressor housing with hermetically integrated electric motor

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

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

Oil pump

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

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

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

Sight glass

Internal safety valve

Suction and discharge line valve

Inert gas charge

Accessories

Capacitiy regulator 110 V - 1 - 50/60 Hz, IP65
1-2 capacity regulator = 66/33% residual capacity [2)]

Capacity regulator 230 V - 1 - 50/60 Hz, IP65
1-2 capacity regulator = 66/33% residual capacity [2)]

Cylinder cover prepared for capacity regulator [3)]

Oil sump heater 230 V - 1 - 50/60 Hz, 160 W [3)]

USB converter for INT69 G Diagnose [4)]

Oil service valve

INT69 G Diagnose 115-230 V AC, 50/60 Hz, IP00 (INT69 G not applicable) [3)]

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 [4)]

INT69 GTML Diagnose 115-230 V AC, 50/60 Hz, IP00, including oil differential pressure sensor INT250G, thermal protection thermostat per cylinder covers, (INT69 G not applicable) [4)]

Thermal protection thermostat per cylinder cover [3)]

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz [4)]

Subject:

Connection piece suction and discharge valve in welding design

Oil temperature sensor (Pt1000, for external evaluation) [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 [4)]

Step protection [4)]

Injection nozzle for liquid injection [4)]

4 anti-vibration pads enclosed

Special voltage and/or frequency (on request)

1) Only with additional adapter possible

2) Capacity regulator premounted, control unit enclosed

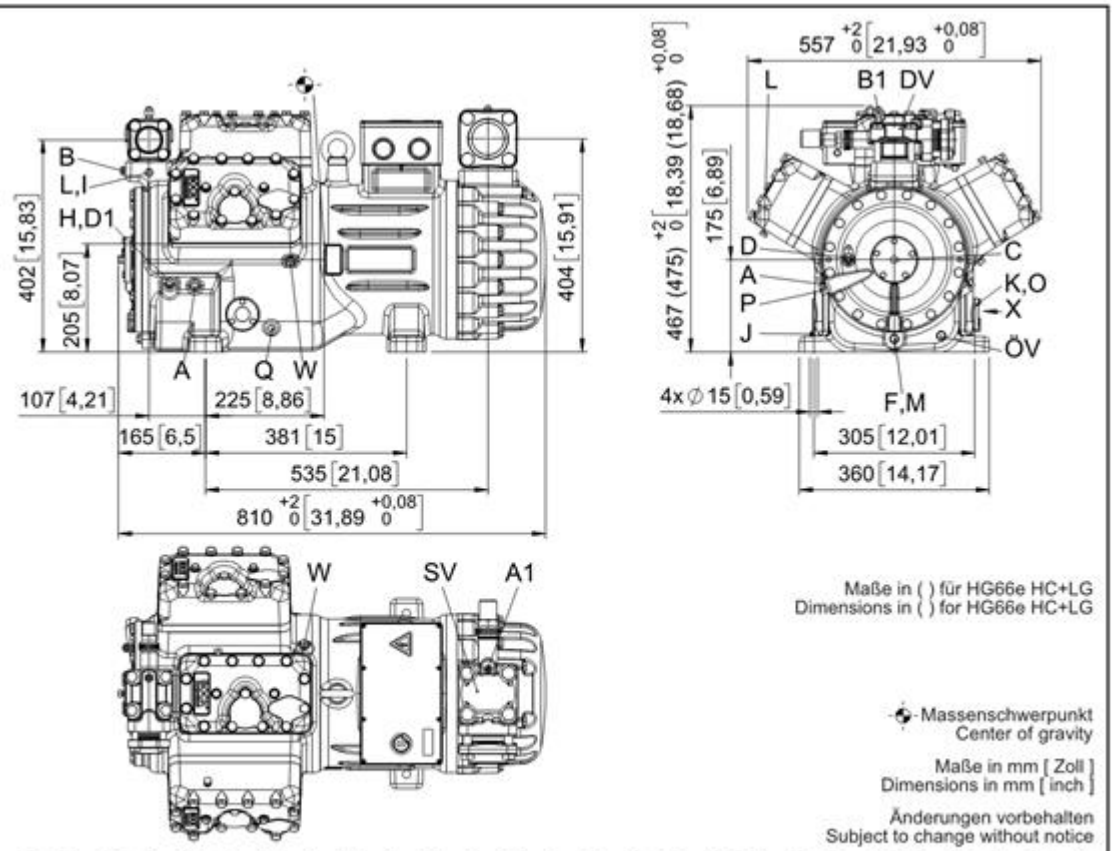
3) Mounted

4) Enclosure

Subject:

Dimensions and connections

Subject:



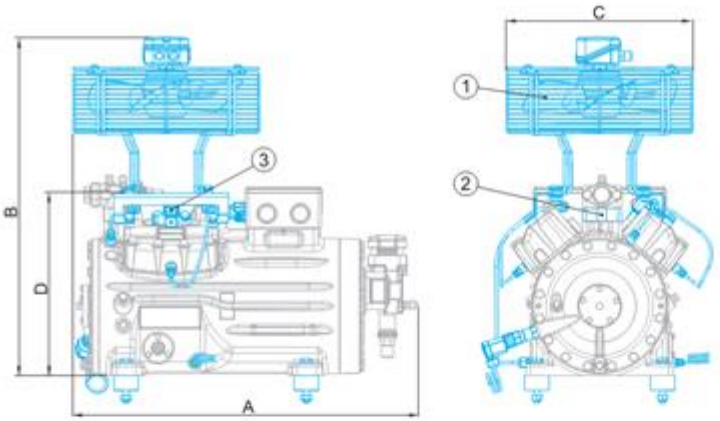
Maße in ( ) für HG66e HC+LG
Dimensions in ( ) for HG66e HC+LG

Massenschwerpunkt
Center of gravity

Maße in mm [Zoll]
Dimensions in mm [inch]

Änderungen vorbehalten
Subject to change without notice

Maße Zubehör / Dimensions Accessories



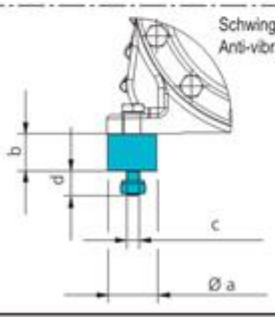
1. Zusatzlüfter
   Additional fan
2. Zwischenadapter für Druckabsperrventil
   Intermediate adapter for discharge line valve
3. Leistungsregler
   Capacity regulator

Typ / Type	A mm / inch	B mm / inch	C mm / inch	D mm / inch
HG12P	ca. 460 / 18	ca. 500 / 20	ca. 315 / 12	–
HG22e	ca. 525 / 21	ca. 610 / 24	ca. 380 / 15	–
HG34e	ca. 580 / 23	ca. 640 / 25	ca. 380 / 15	–
HG44e	ca. 710 / 28	ca. 685 / 27	ca. 380 / 15	ca. 368 / 14
HG56e	–	ca. 710 / 28	ca. 380 / 15	–
HG66e	ca. 820 / 32	ca. 800 / 31	ca. 380 / 15	–

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)



Schwingungsdämpfer
Anti-vibration pads

Typ / Type	Øa mm / inch	b mm / inch	c mm / inch	d mm / inch
HG12P	30 / 1.2	30 / 1.2	M8	20 / 0.8
HG22e	40 / 1.6	30 / 1.2	M10	20 / 0.8
HG34e	40 / 1.6	30 / 1.2	M10	20 / 0.8
HG44e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HG56e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HG66e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HG88e	70 / 2.8	45 / 1.8	M12	37 / 1.5

Subject:

SV	Suction line valve, tube ø [1)]	54 mm - 2 1/8 "
DV	Discharge line valve, tube ø [1)]	42 mm - 1 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
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
I	Connection hot gas temperature sensor	1/8 " 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
ÖV	Connection oil service valve	1/4 " NPTF
P	Connection oil differential pressure sensor	M 20 x 1.5
Q	Connection oil temperature sensor	1/8" NPTF
W	Connection for refrigerant injection	2 x 1/8" NPTF

1) Brazing connection

Subject:

Product photo