

# HGX66e/1750-4 S

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

Refrigerant: R404A, R507

**Subject:**

## Performance data

### Application: Refrigeration & AC

Refrigerant	R404A, R507	Compressor refrigeration capacity	79.80 kW
Reference temperature	DewPoint	Evaporator refrigeration capacity	79.80 kW
Power supply	50 Hz, 400 V	Power consumption	34.20 kW
Supply frequency	50 Hz	Current draw (400 V)	63.70 A
Evaporating temperature	-10.0 °C	Coefficient of performance (COP/EER)	2.33
<i>Evaporating pressure (abs.)</i>	<i>4.34 bar</i>	Condensing capacity	114.00 kW
Condensing temperature	45.0 °C	Mass flow	0.664 kg/s
<i>Condensing pressure (abs.)</i>	<i>20.47 bar</i>	Discharge end temperature	90.6 °C <sup>1)</sup>
Suction gas temperature	20 °C		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

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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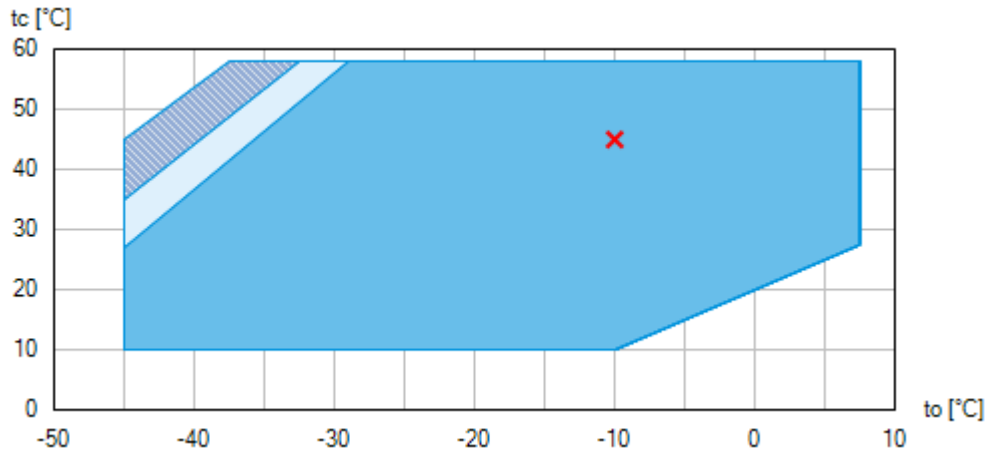
# HGX66e/1750-4 S




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## Operating limits



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

Number of cylinders / Bore / Stroke	6 / 80 mm / 58 mm
Displacement 50/60 Hz (1450/1740 1/min)	152,2 / 182,6 m <sup>3</sup> /h
Voltage <sup>1)</sup>	380-420V Y/YY -3- 50Hz PW
	440-480V Y/YY -3- 60Hz PW
Winding divided into	50% / 50%
Max. working current <sup>2)</sup>	86.8 A
Max. power consumption <sup>2)</sup>	50.7 kW
Starting current (rotor blocked) <sup>2)</sup>	222.0 / 361.0 A
Motor protection	INT69 G
Protection terminal box	IP 66
Weight	282 kg
Frequency range <sup>3)</sup>	25 - 60 Hz
Max. permissible overpressure (g) (LP/HP) <sup>4)</sup>	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 <sub>WA</sub> <sup>5)</sup>	89 db(A) @ -35/+40 °C
	86 db(A) @ -10/+45 °C
	86 db(A) @ +5/+50 °C
Sound pressure level L <sub>pA</sub> <sup>5)</sup>	75 db(A) @ -35/+40 °C
	72 db(A) @ -10/+45 °C
	72 db(A) @ +5/+50 °C

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- 1) Tolerance ( $\pm 10\%$ ) 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 ( $\Delta/Y$ ) motors:  $\Delta / Y$- 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).
- 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  $\mu$ 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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Subject:

## Performance data table

Application: Refrigeration & AC

Reference temperature: DewPoint

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 20 °C

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]			133000	109000	88200	70600	55600	43200	33000	24900
	P [kW]			19.80	19.60	18.90	17.90	16.50	15.00	13.30	11.50
	I [A]			47.70	47.50	46.80	45.90	44.70	43.40	42.10	40.80
15.0	Q [W]		152000	126000	104000	83400	66500	52200	40200	30300	22300
	P [kW]		22.60	22.40	21.60	20.50	19.10	17.40	15.60	13.60	11.60
	I [A]		50.40	50.20	49.50	48.40	47.00	45.50	43.90	42.30	40.80
20.0	Q [W]	172000	144000	119000	97200	78400	62300	48600	37100	27600	19800
	P [kW]	25.70	25.50	24.70	23.60	22.10	20.20	18.20	16.10	13.90	11.70
	I [A]	53.70	53.40	52.60	51.40	49.90	48.10	46.20	44.30	42.50	40.90
25.0	Q [W]	162000	135000	112000	91100	73300	58100	45100	34100	25000	17400
	P [kW]	28.90	28.20	27.00	25.40	23.40	21.30	18.90	16.50	14.10	11.70
	I [A]	57.30	56.50	55.10	53.30	51.30	49.10	46.90	44.70	42.70	40.90
30.0	Q [W]	151000	126000	104000	84700	68000	53700	41400	31100	22400	15200
	P [kW]	32.00	30.70	29.00	27.00	24.70	22.20	19.50	16.80	14.20	11.60
	I [A]	61.00	59.40	57.40	55.10	52.60	50.00	47.40	45.00	42.80	40.80
35.0	Q [W]	141000	117000	96100	78200	62600	49200	37800	28100	19900	13100
	P [kW]	34.90	33.10	30.90	28.50	25.80	22.90	20.00	17.10	14.20	11.50
	I [A]	64.50	62.30	59.70	56.80	53.80	50.80	47.90	45.20	42.80	40.70
40.0	Q [W]	129000	108000	88100	71400	57100	44700	34200	25200	17600	11100
	P [kW]	37.50	35.30	32.70	29.80	26.80	23.60	20.40	17.20	14.10	11.20
	I [A]	68.00	65.10	61.80	58.30	54.80	51.40	48.20	45.30	42.70	40.50
45.0	Q [W]	118000	97300	79800	64600	51400	40200	30600	22400	15400	9310
	P [kW]	40.00	37.20	34.20	31.00	27.60	24.10	20.60	17.20	13.90	10.90
	I [A]	71.30	67.60	63.70	59.70	55.70	51.90	48.40	45.30	42.60	40.30
50.0	Q [W]	106000	87200	71300	57500	45700	35600	27000	19600	13300	
	P [kW]	42.20	39.00	35.60	31.90	28.20	24.40	20.70	17.10	13.70	
	I [A]	74.40	70.00	65.40	60.90	56.50	52.30	48.50	45.20	42.40	
55.0	Q [W]	93300	76900	62600	50400	39900	31000	23400	16900		
	P [kW]	44.20	40.60	36.70	32.70	28.70	24.60	20.60	16.80		
	I [A]	77.30	72.10	67.00	61.90	57.00	52.50	48.50	45.00		



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



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

to Evaporating temperature

tc Condensing temperature

Q Compressor refrigeration capacity

P Power consumption

I Current draw

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## HGX66e/1750-4 S

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Refrigerant: R404A, R507

**Subject:**

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### 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 <sup>1)</sup>

Oil charge:

HG: **BOCK**lub A46

HGX: **BOCK**lub E55

Sight glass

Internal safety valve

Suction and discharge line valve

Inert gas charge

### Accessories

Capacity regulator 110 V - 1 - 50/60 Hz, IP65  
1-2 capacity regulator = 66/33% residual capacity <sup>2)</sup>

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

Cylinder cover prepared for capacity regulator <sup>3)</sup>

Oil sump heater 230 V - 1 - 50/60 Hz, 160 W <sup>3)</sup>

Oil temperature sensor (Pt1000, for external evaluation) <sup>3)</sup>

USB converter for INT69 G Diagnose <sup>4)</sup>

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz <sup>4)</sup>

Connection piece suction and discharge valve in welding design

Oil service valve

Thermal protection thermostat per cylinder cover <sup>3)</sup>

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 <sup>4)</sup>

INT69 G Diagnose 115-230 V AC, 50/60 Hz, IP00 (INT69 G not applicable) <sup>3)</sup>

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DP-Modbus Gateway 115-230 V AC, 50/60 Hz, IP00 including adapter cable <sup>4)</sup>

Modbus-LAN Gateway 230 V AC, 50/60 Hz, IP00 <sup>4)</sup>

Additional fan

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

230 V AC - 1 - 60 Hz, 128 W <sup>4)</sup>

Step protection <sup>4)</sup>

Injection nozzle for liquid injection <sup>4)</sup>

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

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## HGX66e/1750-4 S

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**Subject:**

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### Dimensions and connections

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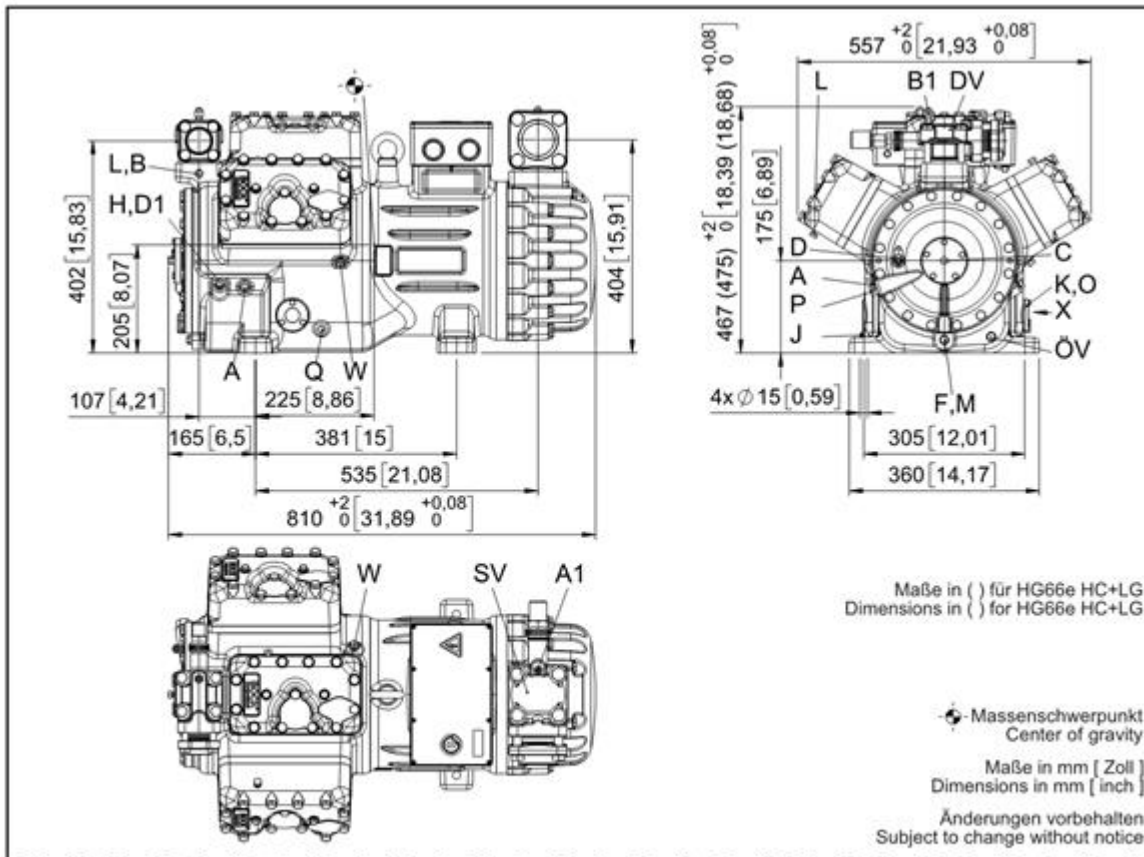


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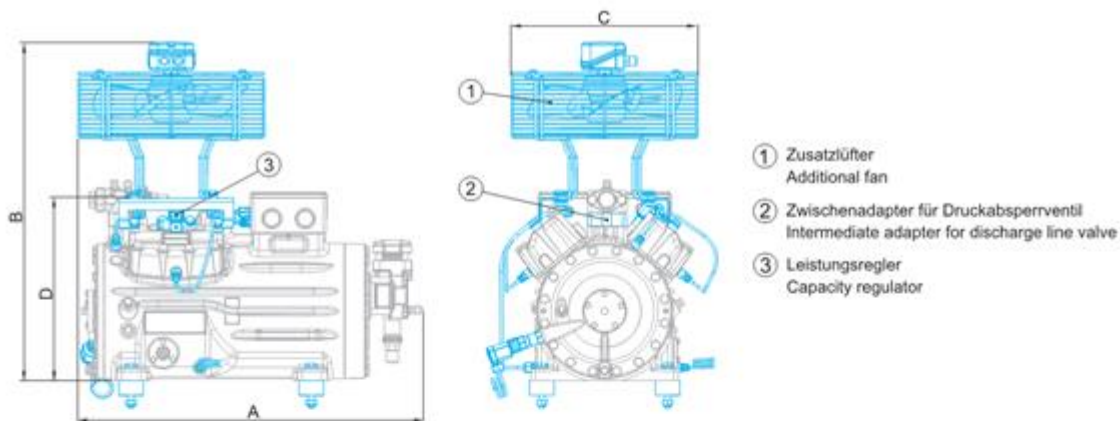
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Refrigerant: R404A, R507

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### Maße Zubehör / Dimensions Accessories

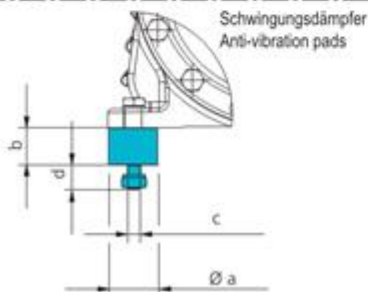


Typ / Type	A mm / inch	B mm / inch	C mm / inch	D mm / inch
HG12P	ca. 460 / 18	ca. 500 / 20	ca. 315 / 12	—
HG22e	ca. 525 / 21	ca. 610 / 24	ca. 380 / 15	—
HG34e	ca. 580 / 23	ca. 640 / 25	ca. 380 / 15	—
HG44e	ca. 710 / 28	ca. 685 / 27	ca. 380 / 15	ca. 368 / 14
HG56e	—	ca. 710 / 28	ca. 380 / 15	—
HG66e	ca.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



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

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**Subject:**

SV	Suction line valve, tube $\varnothing$ <sup>1)</sup>	54 mm - 2 1/8 "
DV	Discharge line valve, tube $\varnothing$ <sup>1)</sup>	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
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

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Refrigerant: R404A, R507

**Subject:**

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**BOCK** colour the world  
of tomorrow

### Product photo



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