

HGX46/440-4 ML CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

Performance data

Application: Refrigeration & AC

Refrigerant	R744	Compressor refrigeration capacity	120.00 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	120.00 kW
Supply frequency	50 Hz	Power consumption	48.40 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	83.50 A
Evaporating temperature	0.1 °C	Coefficient of performance (COP/EER)	2.46
<i>Evaporating pressure (abs.)</i>	<i>34.94 bar</i>	Gas cooler heat rejection	168.00 kW
High pressure (abs.)	90.00 bar	Mass flow	0.803 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	95.7 °C ¹⁾
Suction gas superheat	10 K		
Subcooling (outside cond.)	-- 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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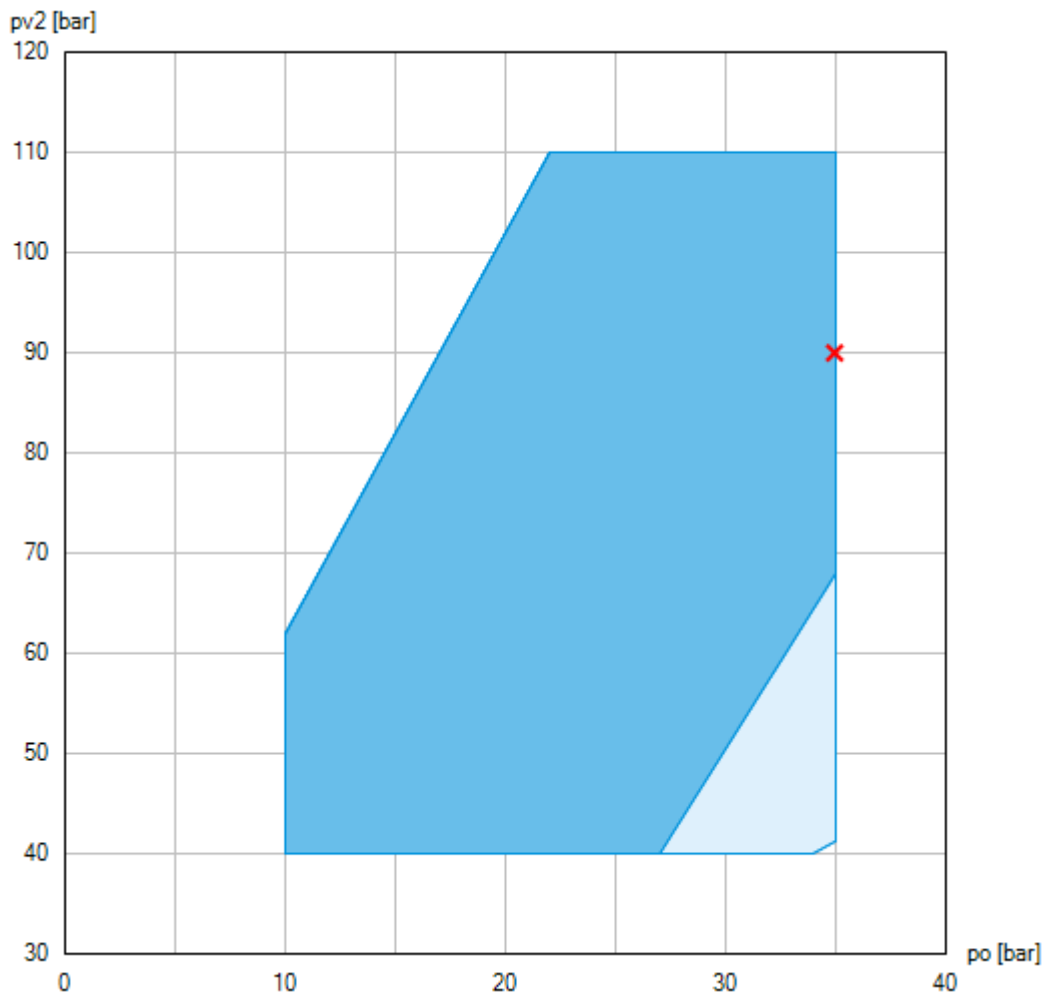
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Operating limits



-  Unlimited application range
-  Unlimited application range (compressor with DCR22 CO2 flexxCO2NTROL not permitted - range preliminary)

Compressor operation is possible within the limits shown on the diagrams of application. Compressor application limits should not be chosen for design purposes or continuous operation.

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Technical data

Number of cylinders / Bore / Stroke	6 / 45 mm / 46 mm
Displacement 50/60 Hz (1450/1740 ¹ /min)	38,20 / 45,80 m ³ /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⁾	99.3 A
Max. power consumption ²⁾	58.7 kW
Starting current (rotor blocked) ²⁾	222.0 / 361.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	242 kg
Frequency range ³⁾	20 - 70 Hz
Max. permissible overpressure (g) (LP/HP) ⁴⁾	100 / 150 bar
Connection suction line SV	35 mm - 1 3/8 "
Connection discharge line DV	28 mm - 1 1/8 "
Lubrication	Oil pump
Oil type R744	BOCKlub E85
Oil charge	2,6 Ltr.
Dimensions Length / Width / Height	774 / 466 / 403 mm
Sound power level L _{WA} ⁵⁾	90 dB(A) @ -10 °C / 15 °C / 10 K
	86 dB(A) @ -10 °C / 90 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	76 dB(A) @ -10 °C / 15 °C / 10 K
	73 dB(A) @ -10 °C / 90 bar / 10 K

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

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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-
- 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 R744 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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Performance data table

Application: Refrigeration & AC

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas superheat: 10 K

Subcooling (outside cond.): -- K

Subcritical

tc [°C]		to [°C]									
		0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	-35.0	-40.0	
10.0	Q [W]	201000	172000	146000	123000	102000	84100	68700	55400	43900	
	P [kW]	16.90	20.30	22.60	24.10	24.80	24.90	24.40	23.50	22.30	
	I [A]	45.10	48.10	50.40	52.00	52.70	52.80	52.30	51.30	50.10	
15.0	Q [W]	185000	158000	134000	113000	93400	76900	62600	50300	39800	
	P [kW]	22.20	24.90	26.60	27.60	27.80	27.40	26.50	25.30	23.70	
	I [A]	50.00	52.80	54.70	55.70	56.00	55.50	54.60	53.20	51.60	
20.0	Q [W]	169000	144000	122000	102000	84400	69300	56300	45100	35500	
	P [kW]	27.50	29.50	30.60	31.00	30.70	29.90	28.60	27.00	25.20	
	I [A]	55.60	57.90	59.30	59.70	59.40	58.40	56.90	55.10	53.10	
25.0	Q [W]	149000	127000	108000	89600	74200	60800	49200	39300		
	P [kW]	32.70	34.10	34.60	34.40	33.60	32.30	30.70	28.70		
	I [A]	61.90	63.50	64.20	63.90	62.90	61.30	59.30	57.10		
30.0	Q [W]	121000	103000	86700	72400	59800	48900	39500			
	P [kW]	38.00	38.60	38.50	37.80	36.50	34.80	32.80			
	I [A]	68.70	69.50	69.40	68.30	66.70	64.50	61.90			

Transcritical

tga [°C]		to [°C]									
		0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	-35.0	-40.0	
30	pV2 [bar]	75	75	75	75	75	75	75			
	Q [W]	131000	112000	93500	78000	64400	52700	42500			
	P [kW]	39.80	40.20	39.90	38.90	37.50	35.70	33.50			
	I [A]	71.10	71.70	71.20	69.90	68.00	65.60	62.90			
35	pV2 [bar]	90	90	90	90	90	85				
	Q [W]	119000	101000	84700	70500	58100	45100				
	P [kW]	48.40	47.70	46.50	44.70	42.50	38.60				
	I [A]	83.50	82.40	80.50	78.00	74.90	69.50				
40	pV2 [bar]	100	105	105	105	100	85				
	Q [W]	104000	90400	75800	62900	50500	22600				
	P [kW]	53.70	54.70	52.70	50.30	45.90	38.60				
	I [A]	91.50	93.00	89.90	86.30	79.80	69.50				
45	pV2 [bar]	110	110	110	110	100					
	Q [W]	91000	77100	64600	53500	37400					
	P [kW]	58.70	57.00	54.80	52.30	45.90					
	I [A]	99.50	96.70	93.20	89.40	79.80					
50	pV2 [bar]	110	110	110	110	100					
	Q [W]	69400	59000	49500	41000	24200					
	P [kW]	58.70	57.00	54.80	52.30	45.90					
	I [A]	99.50	96.70	93.20	89.40	79.80					

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- Unlimited application range (compressor with DCR22 CO2 flexxCO2NTROL not permitted - range preliminary)
- Optimal high pressure is outside of the operating limits. Performance data are indicated at maximal possible high pressure.

to Evaporating temperature
tc Condensing temperature
tga Gas cooler outlet temperature
pV2 High pressure (abs.)
Q Compressor refrigeration capacity
P Power consumption
I Current draw

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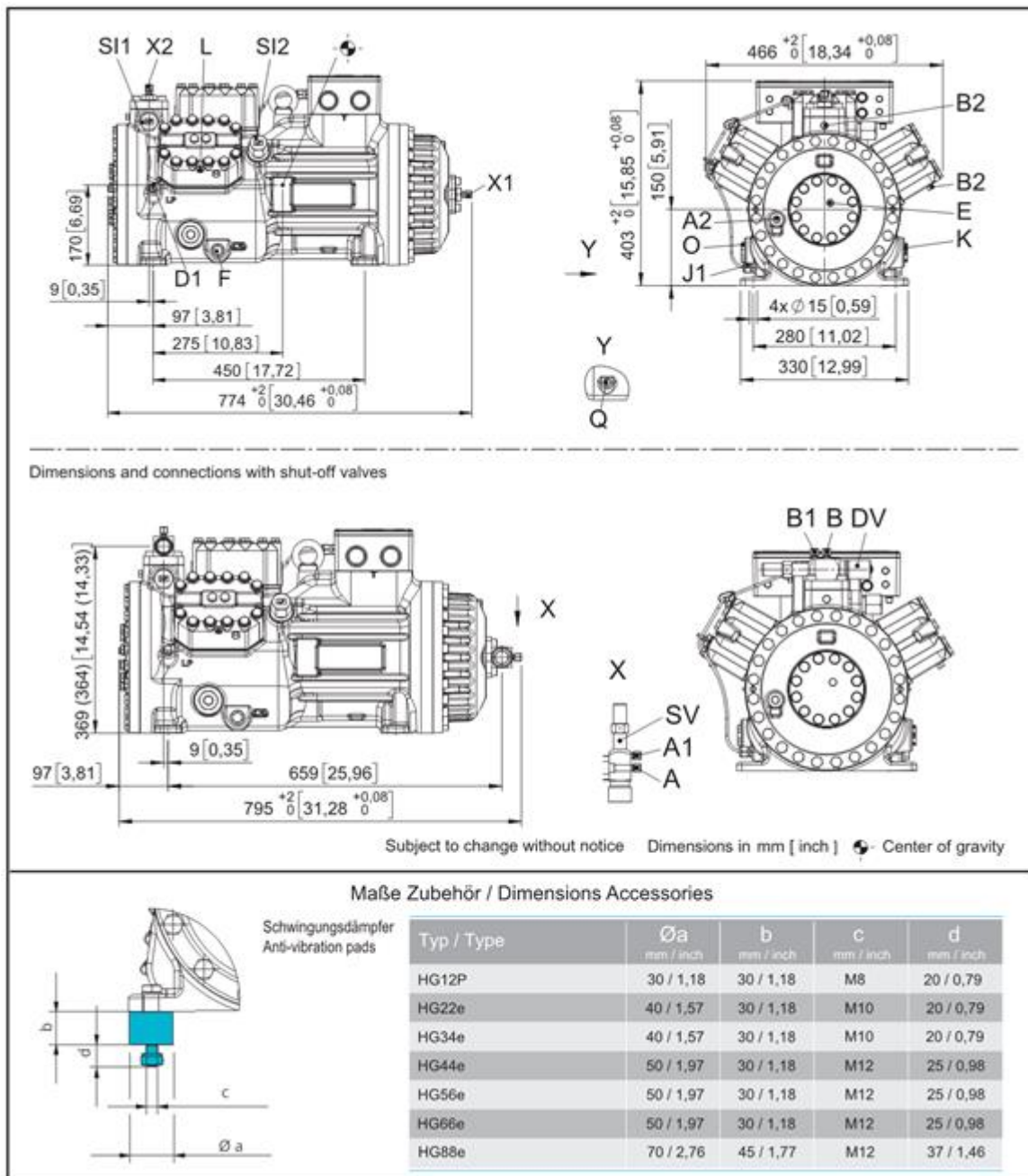
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Dimensions and connections



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SV	Suction connection, tube \varnothing ¹⁾	35 mm - 1 3/8 "
DV	Discharge connection, tube \varnothing ¹⁾	28 mm - 1 1/8 "
A	Connection suction side, not lockable	7/16" UNF
A1	Connection suction side, lockable	7/16" UNF
A2	Connection suction side, not lockable	1/8" NPTF
B	Connection discharge side, not lockable	7/16" UNF
B1	Connection discharge side, lockable	7/16" UNF
B2	Connection discharge side, not lockable	1/8" NPTF
D1	Connection oil return from oil separator	1/4" NPTF
E	Connection oil pressure gauge	1/8" NPTF
F	Oil drain	M22x1,5
J1	Oil sump heater	3/8" NPTF
K	Sight glass	1 1/8 " - 18 UNEF
L	Connection thermal protection thermostat ²⁾	1/8" NPTF
O	Connection oil level regulator	1 1/8 " - 18 UNEF
Q	Connection oil temperature sensor	1/8" NPTF
SI1	Decompression valve HP	M24x1,5
SI2	Decompression valve LP	M22x1,5
X1	Connection for schrader valve, suction side	7/16" UNF
X2	Connection for schrader valve, discharge side	7/16" UNF

1) Solder/ Welding connection, cutting ring

2) No connection discharge side

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