

HGX46/310-4 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	84.70 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	84.70 kW
Supply frequency	50 Hz	Power consumption	32.90 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	55.30 A
Evaporating temperature	0.1 °C	Coefficient of performance (COP/EER)	2.57
<i>Evaporating pressure (abs.)</i>	<i>34.94 bar</i>	Gas cooler heat rejection	118.00 kW
High pressure (abs.)	90.00 bar	Mass flow	0.571 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	93.9 °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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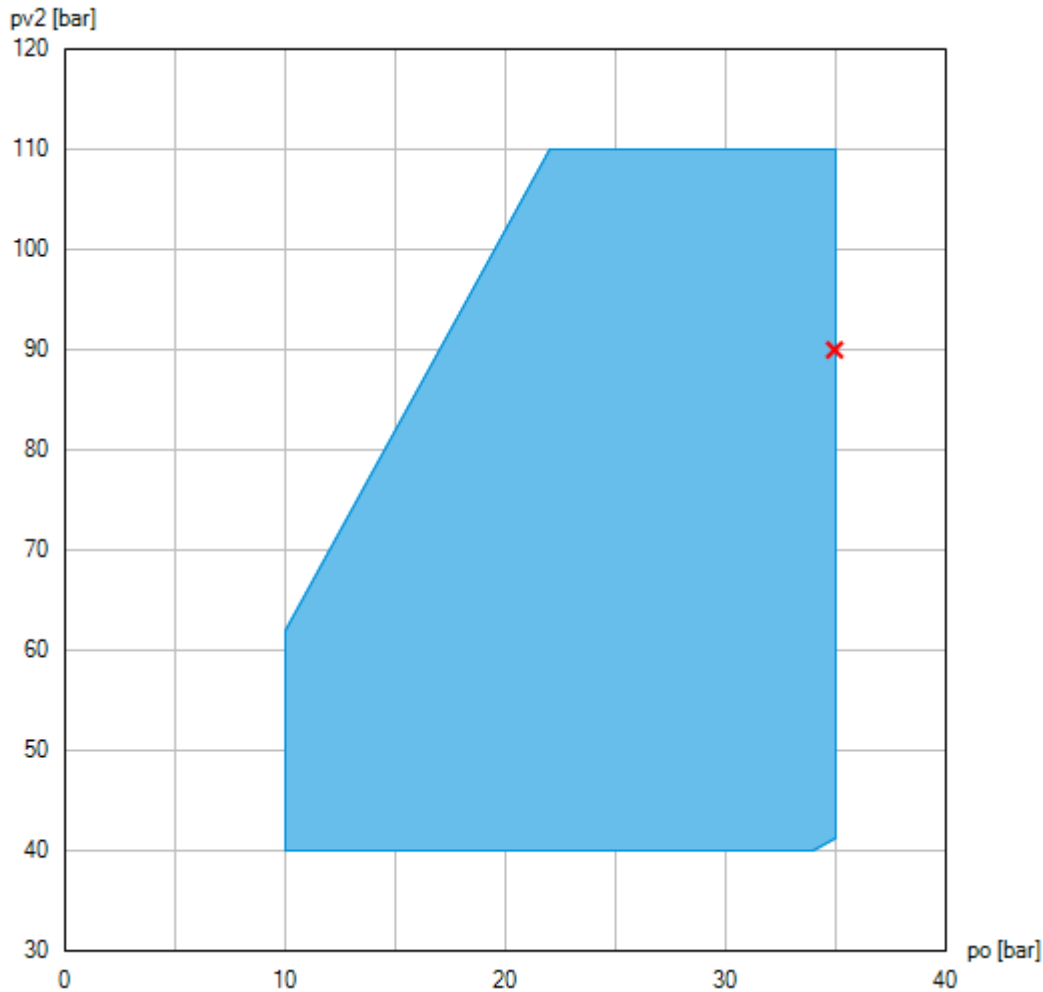
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Operating limits



 Unlimited application range (compressor with DCR22 CO2 flexxCO2NTROL 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 / 38 mm / 46 mm
Displacement 50/60 Hz (1450/1740 ¹ /min)	27,20 / 32,70 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⁾	66.2 A
Max. power consumption ²⁾	39.8 kW
Starting current (rotor blocked) ²⁾	170.0 / 275.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	235 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⁾	83 dB(A) @ -10 °C / 15 °C / 10 K
	81 dB(A) @ -10 °C / 90 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	70 dB(A) @ -10 °C / 15 °C / 10 K
	68 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]	142000	121000	103000	85900	71500	58800	47900	38400	30300	
	P [kW]	11.10	13.40	15.00	16.20	16.90	17.10	17.00	16.50	15.60	
	I [A]	27.40	29.60	31.40	32.60	33.40	33.70	33.50	32.90	32.00	
15.0	Q [W]	131000	112000	94100	78900	65500	53800	43600	34900	27400	
	P [kW]	14.70	16.60	17.90	18.80	19.10	19.10	18.60	17.80	16.80	
	I [A]	31.00	33.10	34.60	35.60	36.10	36.00	35.40	34.50	33.30	
20.0	Q [W]	119000	101000	85300	71400	59100	48400	39200	31300	24500	
	P [kW]	18.40	19.90	20.90	21.30	21.40	21.00	20.20	19.20	17.80	
	I [A]	35.10	37.00	38.20	38.80	38.80	38.40	37.40	36.10	34.50	
25.0	Q [W]	105000	89400	75400	63000	52100	42600	34400	27300		
	P [kW]	22.00	23.10	23.70	23.80	23.50	22.80	21.80	20.40		
	I [A]	39.70	41.20	42.00	42.10	41.70	40.80	39.40	37.60		
30.0	Q [W]	85200	72500	61100	51000	42100	34300	27700			
	P [kW]	25.70	26.40	26.60	26.30	25.70	24.60	23.30			
	I [A]	44.70	45.70	45.90	45.60	44.60	43.20	41.30			

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]	92200	78400	66000	55000	45400	37100	29900			
	P [kW]	26.90	27.50	27.60	27.20	26.40	25.20	23.80			
	I [A]	46.50	47.20	47.30	46.80	45.70	44.00	42.00			
35	pV2 [bar]	90	90	90	90	90	85				
	Q [W]	84400	71600	60200	50200	41300	32000				
	P [kW]	32.90	32.70	32.20	31.20	29.80	27.20				
	I [A]	55.30	55.10	54.20	52.70	50.60	46.80				
40	pV2 [bar]	100	105	105	105	100	85				
	Q [W]	74400	65000	54600	45500	36400	16000				
	P [kW]	36.40	37.40	36.20	34.70	31.90	27.20				
	I [A]	60.90	62.40	60.60	58.20	53.80	46.80				
45	pV2 [bar]	110	110	110	110	100					
	Q [W]	65600	55700	46800	39000	27000					
	P [kW]	39.80	38.90	37.60	35.90	31.90					
	I [A]	66.30	64.80	62.70	60.10	53.80					
50	pV2 [bar]	110	110	110	110	100					
	Q [W]	50000	42600	35900	29900	17400					
	P [kW]	39.80	38.90	37.60	35.90	31.90					
	I [A]	66.30	64.80	62.70	60.10	53.80					

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Optimal high pressure is outside of the operating limits. Performance data are indicated at maximal possible high pressure.

<i>t_o</i>	Evaporating temperature
<i>t_c</i>	Condensing temperature
<i>t_{ga}</i>	Gas cooler outlet temperature
<i>p_{V2}</i>	High pressure (abs.)
<i>Q</i>	Compressor refrigeration capacity
<i>P</i>	Power consumption
<i>I</i>	Current draw

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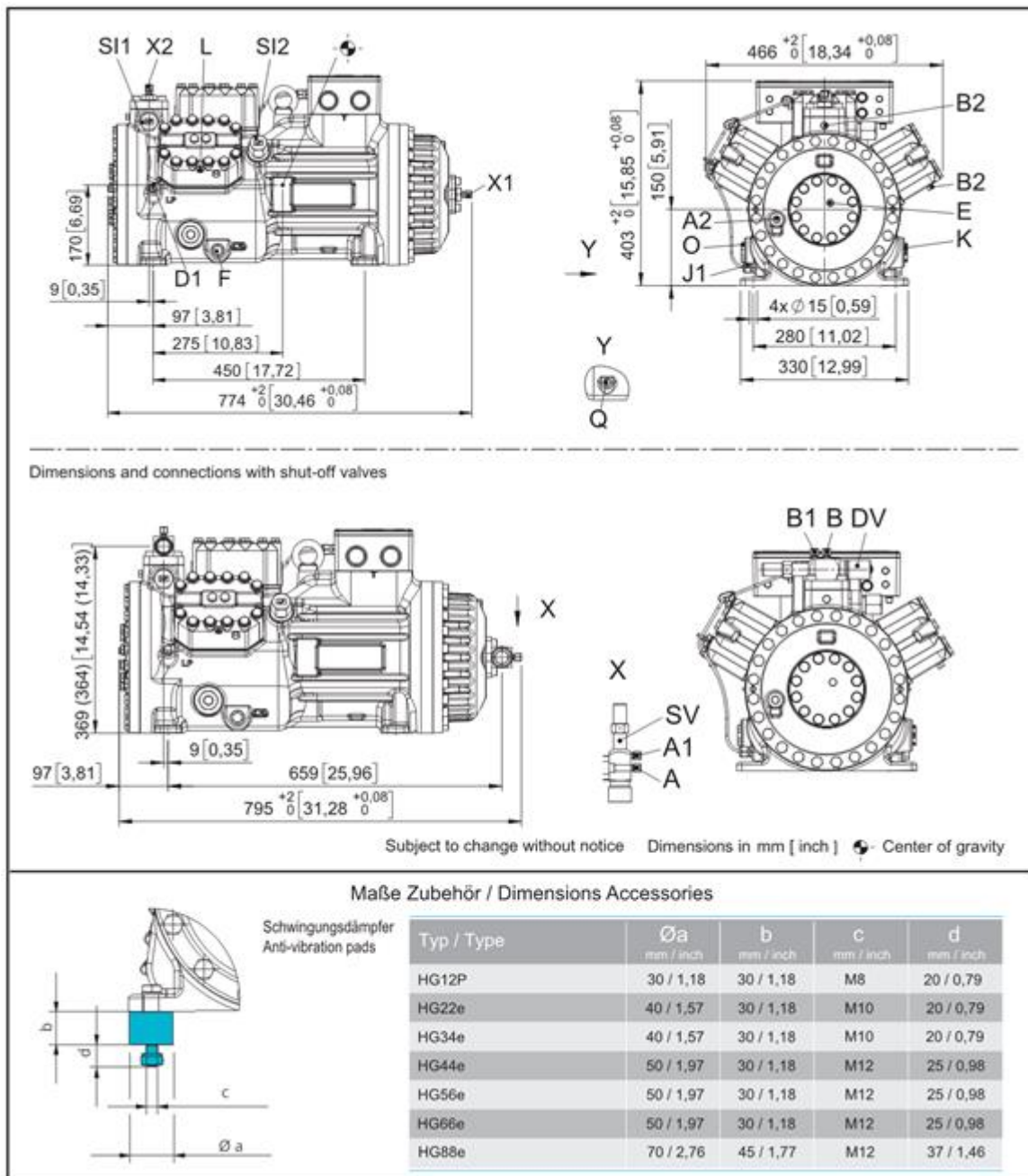
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Dimensions and connections



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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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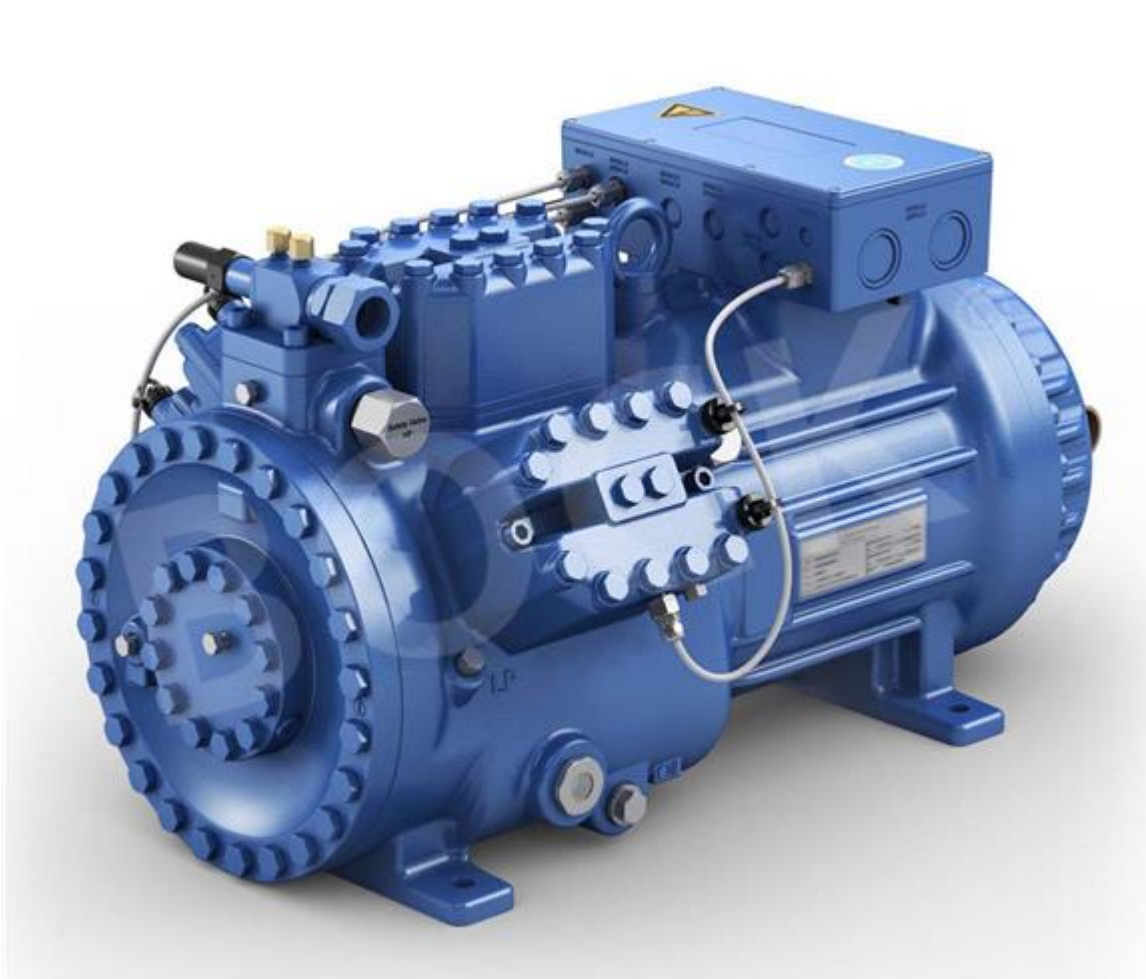
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Product photo

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