

HGX46/310-4 SH 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	101.00 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	101.00 kW
Supply frequency	50 Hz	Power consumption	32.50 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	57.30 A
Evaporating temperature	5.1 °C	Coefficient of performance (COP/EER)	3.09
Evaporating pressure (abs.)	39.80 bar	Gas cooler heat rejection	133.00 kW
High pressure (abs.)	90.00 bar	Mass flow	0.684 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	86.1 °C ¹⁾
Suction gas superheat	10 K		
Subcooling (outside cond.)	-- K		
Usable superheat	100%		

Evaporation temperatures < 5°C (40 bar) with the compressor type SH on request!

- 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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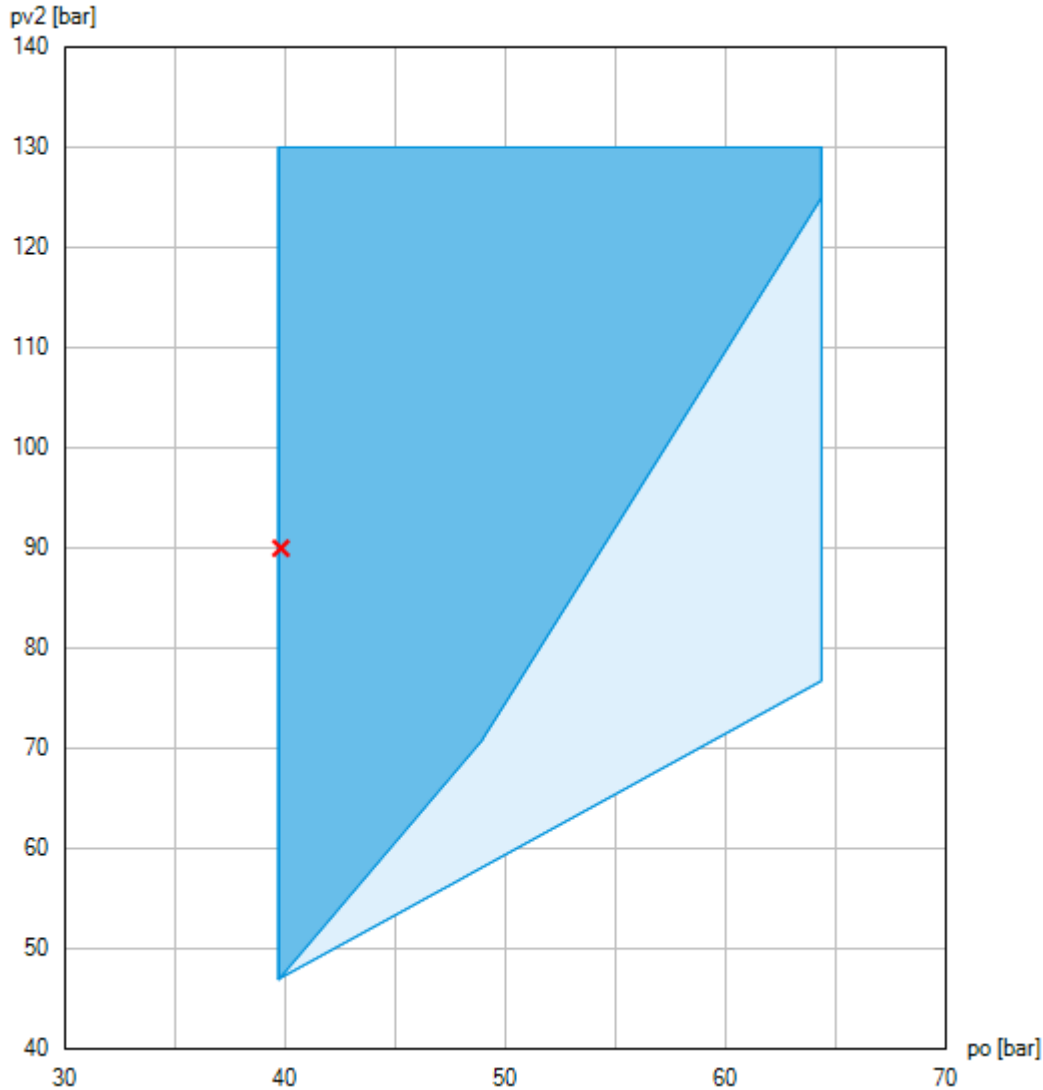
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Operating limits



-  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. Evaporation temperatures < 5°C (40 bar) with the compressor type SH on request!

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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⁾	82.0 A
Max. power consumption ²⁾	48.8 kW
Starting current (rotor blocked) ²⁾	196.0 / 335.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	240 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	Bock C 170 E
Oil charge	2,6 Ltr.
Dimensions Length / Width / Height	774 / 466 / 403 mm
Sound power level L _{WA} ⁵⁾	83 dB(A) @ +5 °C / 100 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	69 dB(A) @ +5 °C / 100 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).

4) LP = Low pressure
HP = High pressure

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- 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]									
		20.1	15.1	10.1	5.1						
15.0	Q [W]				155000						
	P [kW]				12.30						
	I [A]				34.90						
20.0	Q [W]			164000	141000						
	P [kW]			13.50	16.20						
	I [A]			35.80	38.20						
25.0	Q [W]		167000	145000	125000						
	P [kW]		14.80	17.90	20.20						
	I [A]		36.90	39.80	42.20						
30.0	Q [W]	154000	135000	118000	101000						
	P [kW]	16.40	19.80	22.40	24.30						
	I [A]	38.30	41.70	44.50	46.70						

Transcritical

tga [°C]		to [°C]									
		20.1	15.1	10.1	5.1						
30	pV2 [bar]	72	73	73	74						
	Q [W]	154000	132000	111000	90900						
	P [kW]	16.40	20.10	22.90	25.00						
	I [A]	38.40	42.00	45.10	47.50						
35	pV2 [bar]	85	85	86	87						
	Q [W]	144000	128000	113000	97700						
	P [kW]	24.30	27.40	29.70	31.20						
	I [A]	46.70	50.50	53.50	55.50						
40	pV2 [bar]	97	98	99	101						
	Q [W]	131000	117000	103000	88900						
	P [kW]	31.40	34.00	35.80	36.70						
	I [A]	55.80	59.40	62.00	63.40						
45	pV2 [bar]	109	111	112	114						
	Q [W]	119000	106000	93100	80800						
	P [kW]	37.90	40.10	41.30	41.80						
	I [A]	65.20	68.40	70.30	71.10						
50	pV2 [bar]	121	123	125	127						
	Q [W]	108000	95800	84300	73100						
	P [kW]	44.10	45.80	46.70	46.70						
	I [A]	74.70	77.40	78.80	78.90						

Evaporation temperatures < 5°C (40 bar) with the compressor type SH on request!

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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 minimal possible high pressure.

t_o Evaporating temperature
t_c Condensing temperature
t_{ga} Gas cooler outlet temperature
pV2 High pressure (abs.)
Q Compressor refrigeration capacity
P Power consumption
I Current draw

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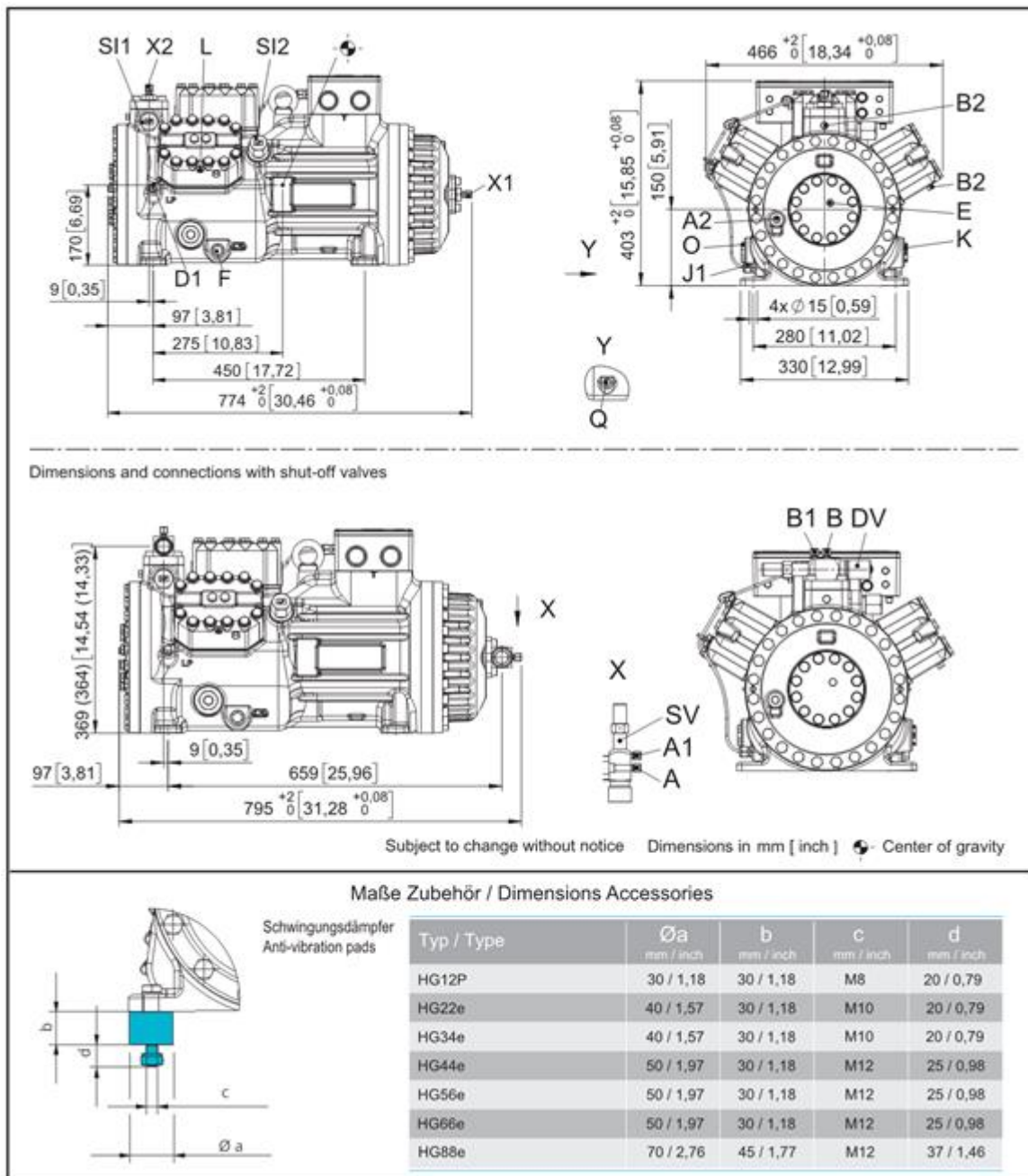
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Dimensions and connections



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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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