

HGX34/170-4 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	53.30 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	53.30 kW
Supply frequency	50 Hz	Power consumption	17.20 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	30.10 A
Evaporating temperature	5.1 °C	Coefficient of performance (COP/EER)	3.09
Evaporating pressure (abs.)	39.80 bar	Gas cooler heat rejection	70.60 kW
High pressure (abs.)	90.00 bar	Mass flow	0.363 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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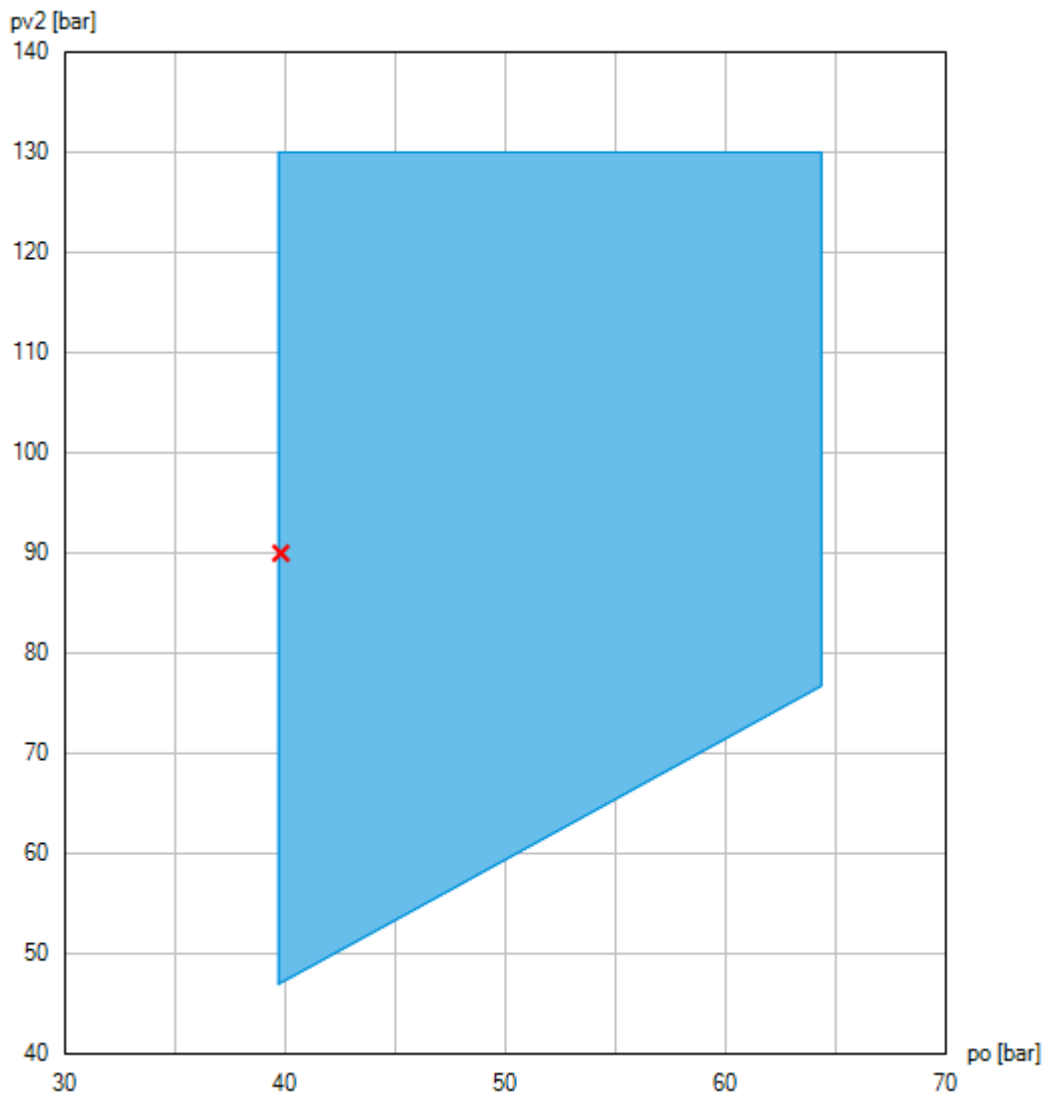
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Operating limits



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

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Technical data

Number of cylinders / Bore / Stroke	4 / 34 mm / 46 mm
Displacement 50/60 Hz (1450/1740 1/min)	14,50 / 17,40 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⁾	42.9 A
Max. power consumption ²⁾	25.7 kW
Starting current (rotor blocked) ²⁾	125.0 / 209.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	206 kg
Frequency range ³⁾	20 - 70 Hz
Max. permissible overpressure (g) (LP/HP) ⁴⁾	100 / 150 bar
Connection suction line SV	28 mm - 1 1/8 "
Connection discharge line DV	22 mm - 7/8 "
Lubrication	Oil pump
Oil type R744	Bock C 170 E
Oil charge	2,3 Ltr.
Dimensions Length / Width / Height	708 / 417 / 393 mm
Sound power level L _{WA} ⁵⁾	76 dB(A) @ +5 °C / 100 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	62 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]				82200						
	P [kW]				6.60						
	I [A]				17.40						
20.0	Q [W]			86800	74700						
	P [kW]			7.18	8.68						
	I [A]			18.00	19.50						
25.0	Q [W]		88700	76800	66000						
	P [kW]		7.85	9.51	10.70						
	I [A]		18.70	20.40	21.80						
30.0	Q [W]	81800	71600	62100	53500						
	P [kW]	8.64	10.40	11.80	12.90						
	I [A]	19.50	21.50	23.10	24.40						

Transcritical

tga [°C]		to [°C]									
		20.1	15.1	10.1	5.1						
30	pV2 [bar]	72	73	73	74						
	Q [W]	81600	69600	58700	48200						
	P [kW]	8.66	10.60	12.10	13.30						
	I [A]	19.50	21.60	23.50	24.90						
35	pV2 [bar]	85	85	86	87						
	Q [W]	76300	67900	59700	51900						
	P [kW]	12.70	14.40	15.70	16.60						
	I [A]	24.20	26.30	28.00	29.20						
40	pV2 [bar]	97	98	99	101						
	Q [W]	69600	62000	54500	47300						
	P [kW]	16.40	17.90	18.90	19.50						
	I [A]	29.00	31.10	32.50	33.40						
45	pV2 [bar]	109	111	112	114						
	Q [W]	63200	56400	49600	43000						
	P [kW]	19.90	21.10	21.90	22.20						
	I [A]	33.90	35.80	36.90	37.50						
50	pV2 [bar]	121	123	125	127						
	Q [W]	57200	51100	45000	39100						
	P [kW]	23.10	24.10	24.70	24.80						
	I [A]	38.90	40.50	41.40	41.60						

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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
p_{V2} High pressure (abs.)
Q Compressor refrigeration capacity
P Power consumption
I Current draw

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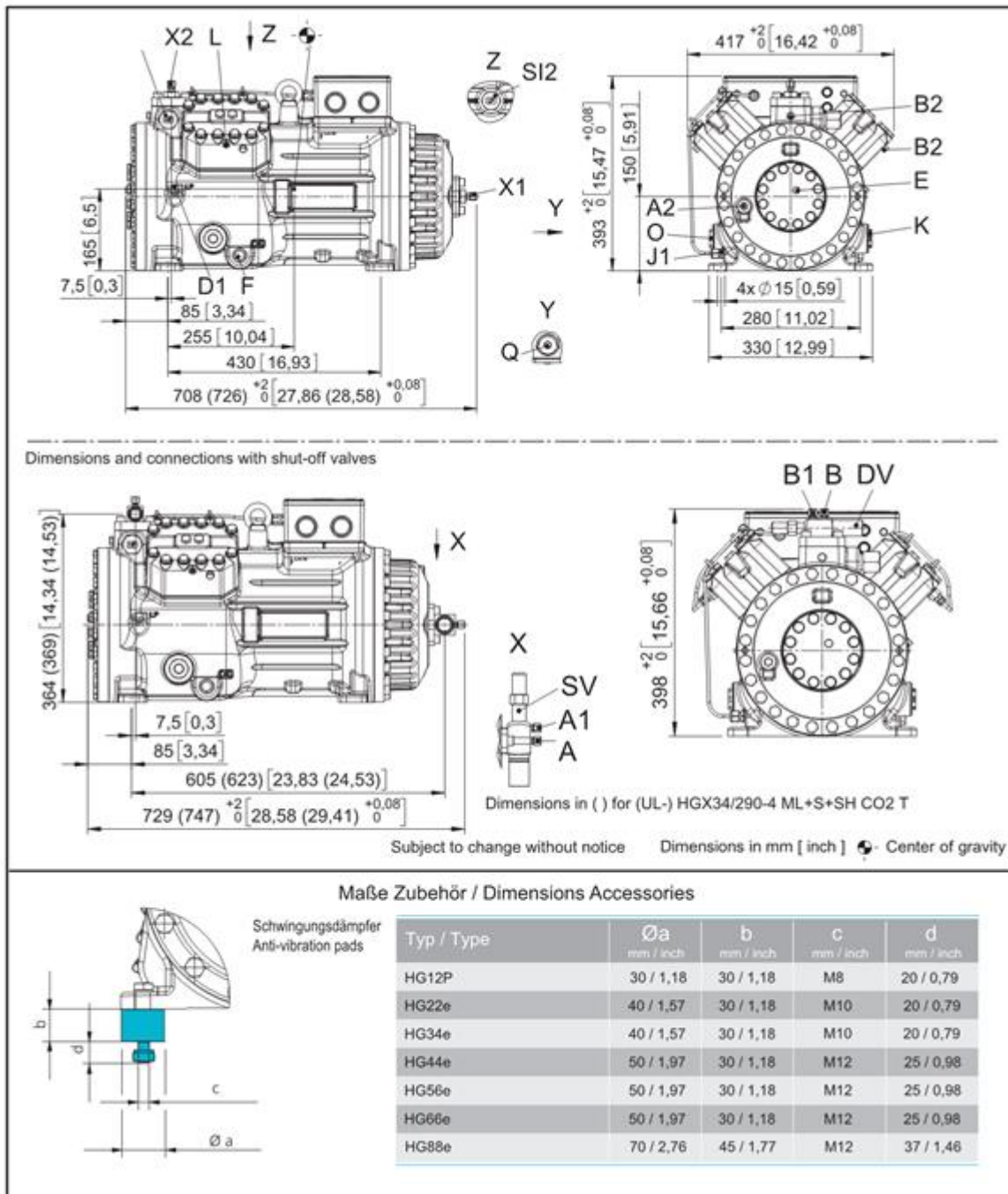
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Dimensions and connections



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SV	Suction connection, tube \varnothing ¹⁾	28 mm - 1 1/8 "
DV	Discharge connection, tube \varnothing ¹⁾	22 mm - 7/8 "
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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