

HGX34/190-4 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	60.50 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	60.50 kW
Supply frequency	50 Hz	Power consumption	19.30 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	34.40 A
Evaporating temperature	5.1 °C	Coefficient of performance (COP/EER)	3.13
Evaporating pressure (abs.)	39.80 bar	Gas cooler heat rejection	79.90 kW
High pressure (abs.)	90.00 bar	Mass flow	0.412 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	85.7 °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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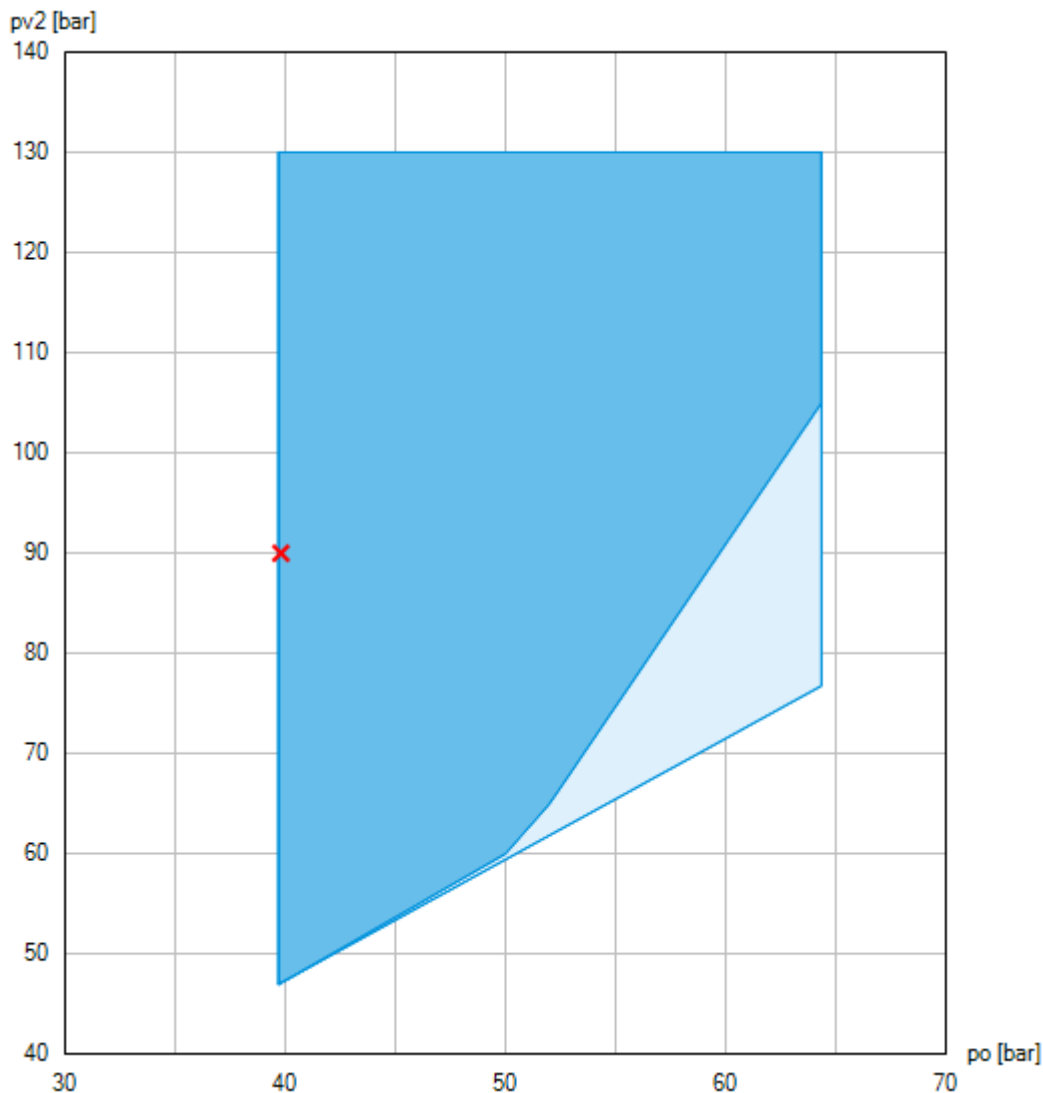
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Operating limits



-  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	4 / 36 mm / 46 mm
Displacement 50/60 Hz (1450/1740 1/min)	16,30 / 19,60 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⁾	47.8 A
Max. power consumption ²⁾	28.6 kW
Starting current (rotor blocked) ²⁾	149.0 / 246.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	208 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⁾	77 dB(A) @ +5 °C / 100 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	64 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]				92700						
	P [kW]				7.28						
	I [A]				21.00						
20.0	Q [W]			97800	84300						
	P [kW]			7.94	9.66						
	I [A]			21.60	23.10						
25.0	Q [W]		99900	86800	74800						
	P [kW]		8.70	10.60	12.00						
	I [A]		22.20	24.10	25.60						
30.0	Q [W]	92100	80900	70500	60800						
	P [kW]	9.59	11.60	13.30	14.50						
	I [A]	23.10	25.20	26.90	28.30						

Transcritical

tga [°C]		to [°C]									
		20.1	15.1	10.1	5.1						
30	pV2 [bar]	72	73	73	74						
	Q [W]	91900	78800	66600	54800						
	P [kW]	9.61	11.80	13.60	14.90						
	I [A]	23.10	25.40	27.30	28.80						
35	pV2 [bar]	85	85	86	87						
	Q [W]	86500	77000	67700	58900						
	P [kW]	14.20	16.20	17.60	18.60						
	I [A]	28.00	30.40	32.20	33.40						
40	pV2 [bar]	97	98	99	101						
	Q [W]	78900	70300	61800	53700						
	P [kW]	18.40	20.00	21.20	21.80						
	I [A]	33.20	35.40	36.90	37.90						
45	pV2 [bar]	109	111	112	114						
	Q [W]	71600	63900	56200	48900						
	P [kW]	22.20	23.60	24.40	24.80						
	I [A]	38.40	40.40	41.60	42.20						
50	pV2 [bar]	121	123	125	127						
	Q [W]	64800	57900	51000	44400						
	P [kW]	25.80	26.90	27.50	27.70						
	I [A]	43.70	45.40	46.30	46.50						

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

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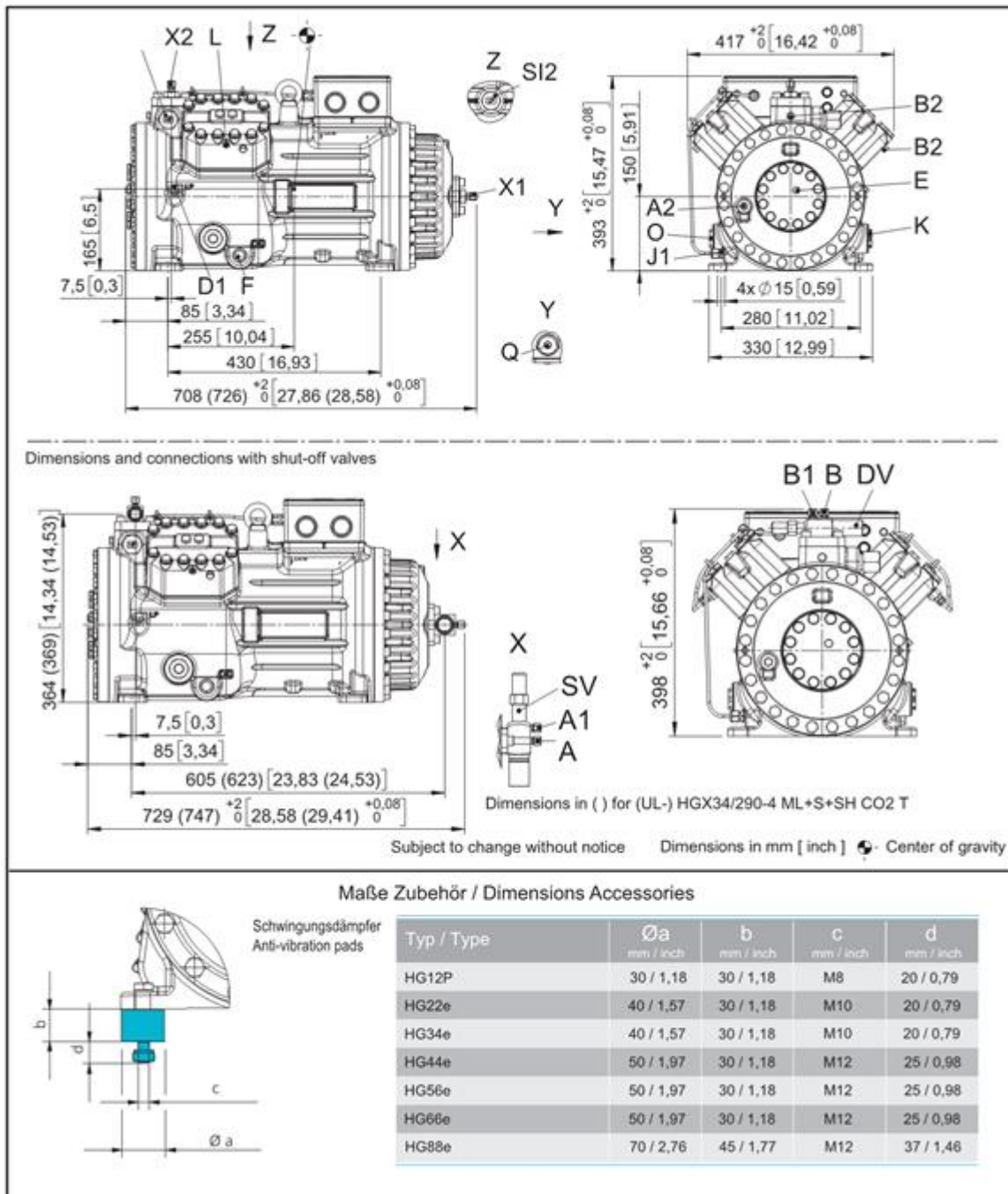
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Dimensions and connections



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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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