

# HGX34/230-4 S 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	64.30 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	64.30 kW
Supply frequency	50 Hz	Power consumption	24.50 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	43.00 A
Evaporating temperature	0.1 °C	Coefficient of performance (COP/EER)	2.62
<i>Evaporating pressure (abs.)</i>	<i>34.94 bar</i>	Gas cooler heat rejection	88.80 kW
High pressure (abs.)	90.00 bar	Mass flow	0.433 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	93.1 °C <sup>1)</sup>
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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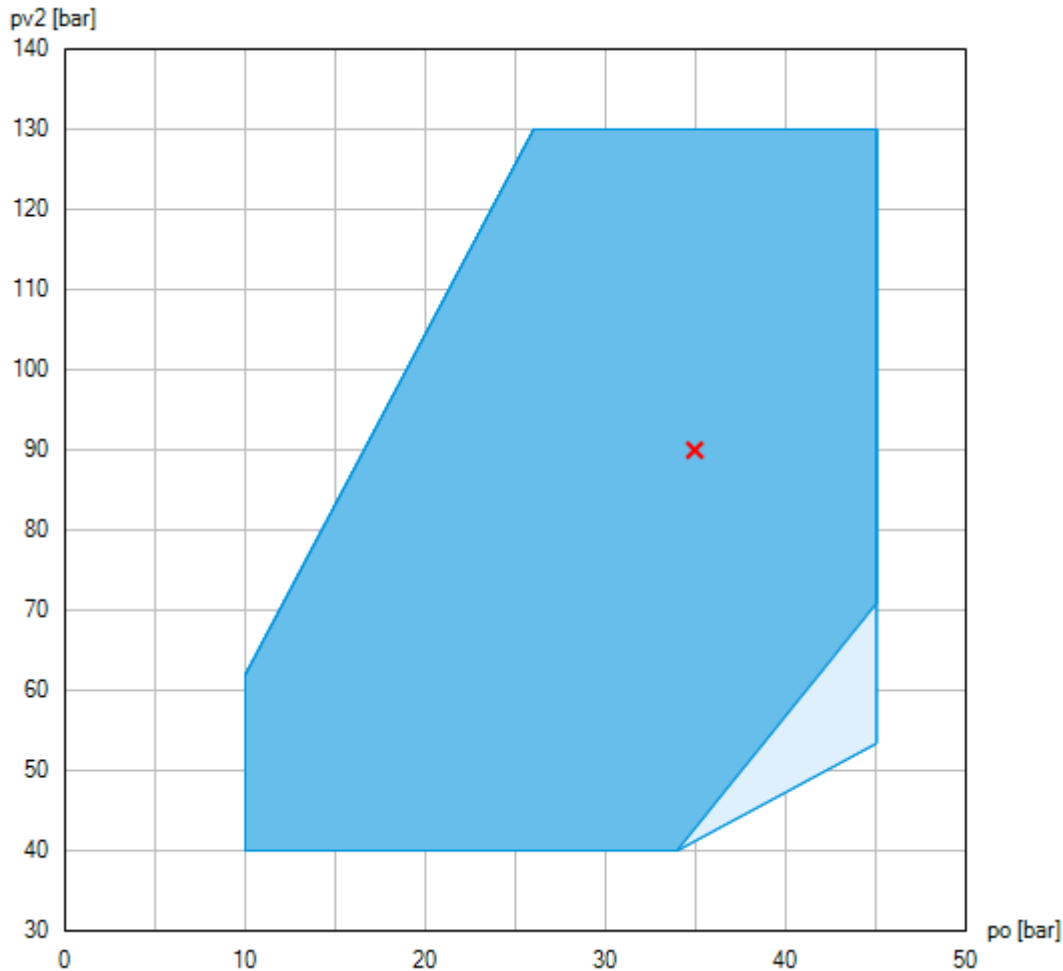
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## Operating limits



-  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	4 / 40 mm / 46 mm
Displacement 50/60 Hz (1450/1740 1/min)	20,10 / 24,10 m <sup>3</sup> /h
Voltage <sup>1)</sup>	380-420V Y/YY -3- 50Hz PW
	440-480V Y/YY -3- 60Hz PW
Winding divided into	50% / 50%
Max. working current <sup>2)</sup>	59.8 A
Max. power consumption <sup>2)</sup>	35.8 kW
Starting current (rotor blocked) <sup>2)</sup>	170.0 / 275.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	213 kg
Frequency range <sup>3)</sup>	20 - 70 Hz
Max. permissible overpressure (g) (LP/HP) <sup>4)</sup>	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	BOCKlub E85
Oil charge	2,3 Ltr.
Dimensions Length / Width / Height	708 / 417 / 393 mm
Sound power level L <sub>WA</sub> <sup>5)</sup>	79 dB(A) @ -10 °C / 15 °C / 10 K
	78 dB(A) @ -10 °C / 90 bar / 10 K
	79 dB(A) @ +5 °C / 100 bar / 10 K
Sound pressure level L <sub>pA</sub> <sup>5)</sup>	66 dB(A) @ -10 °C / 15 °C / 10 K
	65 dB(A) @ -10 °C / 90 bar / 10 K
	66 dB(A) @ +5 °C / 100 bar / 10 K

1) Tolerance (± 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.

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- 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
- 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  $\mu$ 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]									
		5.0	0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	-35.0	-40.0
10.0	Q [W]		106000	90400	76800	64700	54000	44700	36600	29500	23400
	P [kW]		8.46	10.10	11.40	12.20	12.60	12.80	12.60	12.20	11.70
	I [A]		25.10	26.50	27.70	28.40	28.90	29.00	28.90	28.50	28.00
15.0	Q [W]	114000	97800	83500	70800	59500	49600	40900	33300	26800	21100
	P [kW]	9.22	11.10	12.50	13.50	14.00	14.20	14.10	13.80	13.20	12.50
	I [A]	25.70	27.40	28.80	29.70	30.30	30.50	30.40	30.00	29.50	28.80
20.0	Q [W]	104000	89000	75900	64200	53900	44800	36800	29900	23900	18700
	P [kW]	12.20	13.80	14.90	15.60	15.90	15.80	15.50	14.90	14.20	13.30
	I [A]	28.40	30.00	31.20	31.90	32.30	32.20	31.90	31.20	30.40	29.50
25.0	Q [W]	92000	79000	67300	56800	47600	39400	32300	26100	20800	
	P [kW]	15.20	16.50	17.30	17.70	17.70	17.40	16.80	16.00	15.10	
	I [A]	31.50	32.90	33.90	34.30	34.30	34.00	33.30	32.40	31.40	
30.0	Q [W]	74800	64300	54700	46100	38500	31800	26000	20900		
	P [kW]	18.30	19.20	19.70	19.70	19.50	18.90	18.10	17.10		
	I [A]	35.00	36.10	36.70	36.80	36.50	35.80	34.80	33.60		

### Transcritical

tga [°C]		to [°C]									
		5.0	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	75		
	Q [W]	81100	69500	59100	49800	41600	34400	28100	22500		
	P [kW]	19.30	20.10	20.50	20.40	20.10	19.40	18.50	17.40		
	I [A]	36.30	37.30	37.70	37.70	37.20	36.40	35.30	34.00		
35	pV2 [bar]	85	90	90	90	90	90	90	80		
	Q [W]	70600	64100	54300	45600	38000	31200	25300	13500		
	P [kW]	22.70	24.50	24.30	23.70	22.90	21.80	20.50	18.00		
	I [A]	40.60	43.00	42.70	42.00	40.90	39.40	37.80	34.70		
40	pV2 [bar]	100	100	105	105	105	100	90			
	Q [W]	66400	56700	49600	41500	34400	27400	17700			
	P [kW]	27.20	27.10	27.60	26.60	25.40	23.20	20.50			
	I [A]	46.90	46.60	47.40	46.00	44.20	41.30	37.80			
45	pV2 [bar]	115	115	115	120	115	100				
	Q [W]	61200	52200	44100	37700	30500	20300				
	P [kW]	31.30	30.60	29.70	29.40	27.00	23.20				
	I [A]	52.80	51.90	50.50	50.00	46.50	41.30				
50	pV2 [bar]	130	130	130	130	115	100				
	Q [W]	56000	47700	40200	33600	24700	13100				
	P [kW]	35.20	34.10	32.80	31.30	27.00	23.20				
	I [A]	58.90	57.30	55.20	52.80	46.50	41.30				

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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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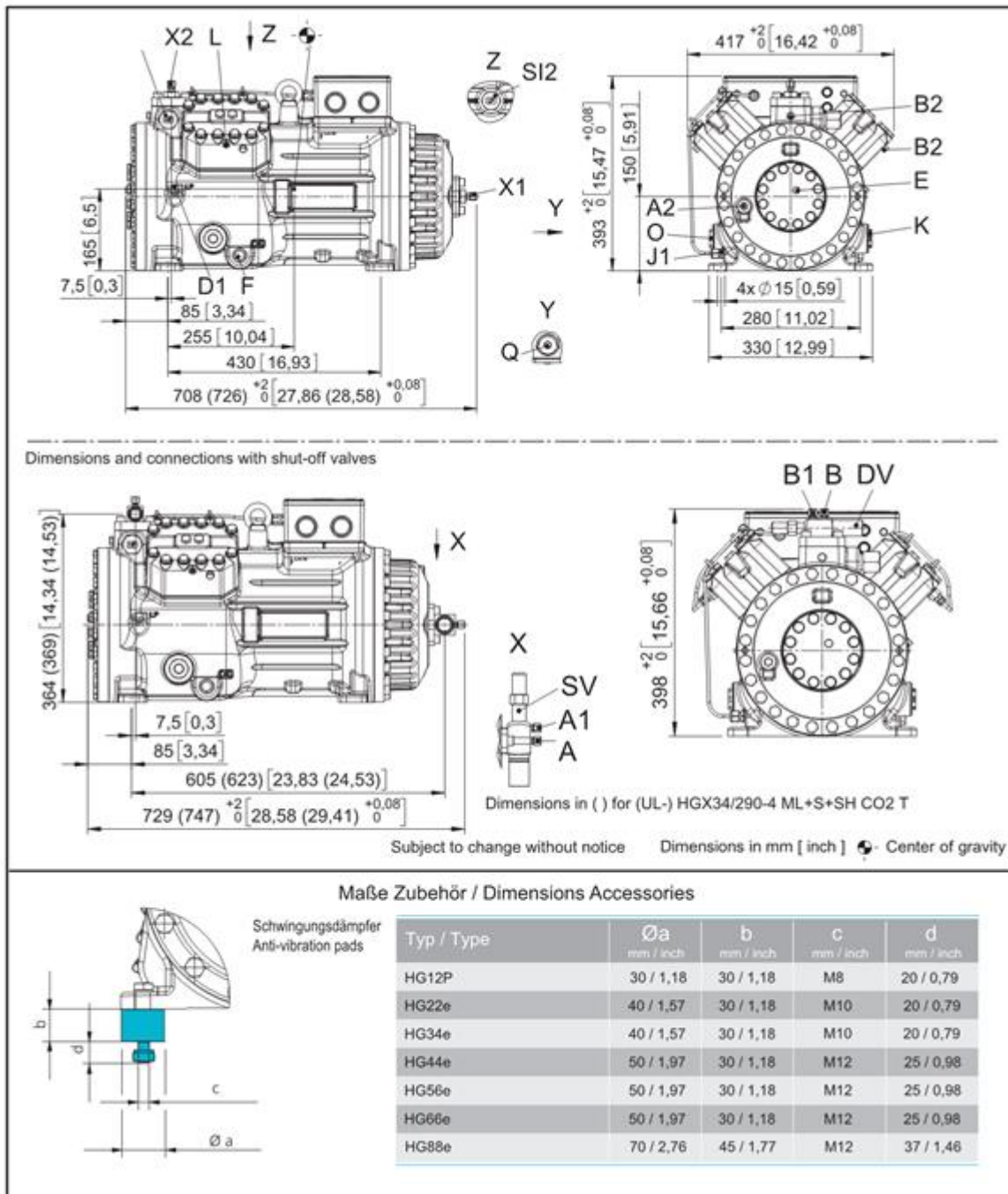
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## Dimensions and connections



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SV	Suction connection, tube $\varnothing$ <sup>1)</sup>	28 mm - 1 1/8 "
DV	Discharge connection, tube $\varnothing$ <sup>1)</sup>	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 <sup>2)</sup>	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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### Product photo

*Picture similar and/or with accessories.*



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