

HGX34/170-4 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	45.50 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	45.50 kW
Supply frequency	50 Hz	Power consumption	17.40 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	30.30 A
Evaporating temperature	0.1 °C	Coefficient of performance (COP/EER)	2.61
<i>Evaporating pressure (abs.)</i>	<i>34.94 bar</i>	Gas cooler heat rejection	62.90 kW
High pressure (abs.)	90.00 bar	Mass flow	0.306 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	93.3 °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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From:

26.10.2022
Page 1 of 9

VAP 11.12.0

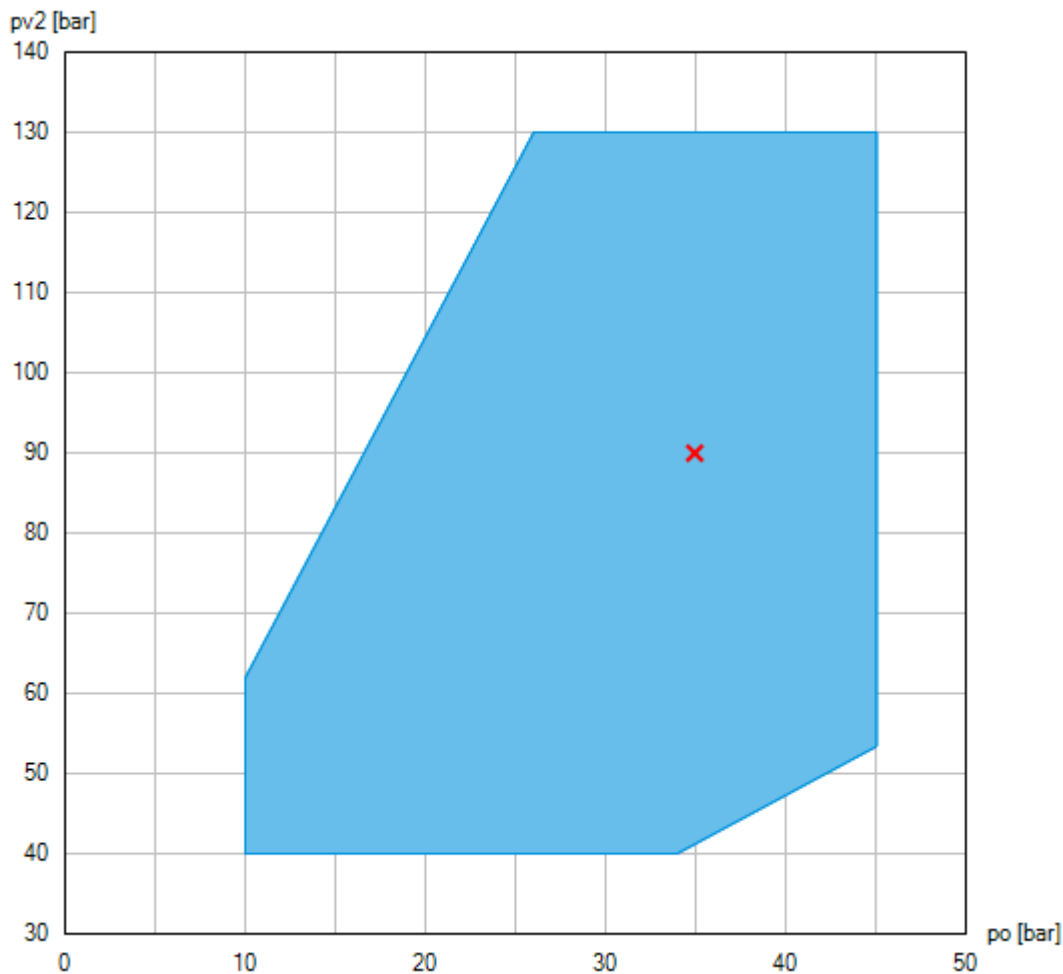
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Operating limits



 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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To: Промышленная Холодильная
Компания info@phk-holod.ru

From:

26.10.2022
Page 2 of 9

VAP 11.12.0

HGX34/170-4 S CO2 T

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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⁾	42.2 A
Max. power consumption ²⁾	25.3 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	BOCKlub E85
Oil charge	2,3 Ltr.
Dimensions Length / Width / Height	708 / 417 / 393 mm
Sound power level L _{WA} ⁵⁾	76 dB(A) @ -10 °C / 15 °C / 10 K
	76 dB(A) @ -10 °C / 90 bar / 10 K
	76 dB(A) @ +5 °C / 100 bar / 10 K
Sound pressure level L _{pA} ⁵⁾	63 dB(A) @ -10 °C / 15 °C / 10 K
	63 dB(A) @ -10 °C / 90 bar / 10 K
	62 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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To: Промышленная Холодильная
Компания info@phk-holod.ru

From:

26.10.2022
Page 3 of 9

VAP 11.12.0

HGX34/170-4 S CO2 T

Engine: 380-420V Y/YY -3- 50Hz PW

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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 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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To: Промышленная Холодильная
Компания info@phk-holod.ru

From:

26.10.2022
Page 4 of 9

VAP 11.12.0

HGX34/170-4 S CO2 T

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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]		75900	64600	54400	45500	37700	30900	25100	20000	15700
	P [kW]		6.02	7.24	8.16	8.80	9.17	9.31	9.23	8.96	8.51
	I [A]		16.90	18.10	19.00	19.60	20.00	20.20	20.10	19.80	19.30
15.0	Q [W]	81700	69900	59400	50000	41700	34500	28200	22800	18200	14300
	P [kW]	6.55	7.90	8.93	9.66	10.10	10.30	10.30	10.00	9.67	9.09
	I [A]	17.40	18.70	19.80	20.60	21.10	21.30	21.30	21.00	20.60	20.00
20.0	Q [W]	74300	63500	53900	45300	37700	31100	25400	20500	16300	12800
	P [kW]	8.66	9.80	10.60	11.10	11.40	11.40	11.30	10.90	10.30	9.63
	I [A]	19.50	20.70	21.70	22.30	22.60	22.60	22.40	22.00	21.30	20.50
25.0	Q [W]	65800	56200	47600	40000	33300	27400	22300	18000	14300	
	P [kW]	10.70	11.70	12.30	12.60	12.70	12.60	12.20	11.70	10.90	
	I [A]	21.80	22.90	23.70	24.10	24.20	24.00	23.60	22.90	22.10	
30.0	Q [W]	53400	45600	38600	32400	26900	22100	18000	14500		
	P [kW]	12.90	13.60	14.00	14.10	14.00	13.70	13.10	12.40		
	I [A]	24.40	25.30	25.80	25.90	25.80	25.40	24.70	23.80		

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]	57800	49300	41700	35000	29100	23900	19500	15700		
	P [kW]	13.60	14.20	14.60	14.60	14.40	14.00	13.40	12.70		
	I [A]	25.40	26.10	26.50	26.60	26.40	25.80	25.10	24.10		
35	pV2 [bar]	85	90	90	90	90	90	90	80		
	Q [W]	50200	45300	38300	32100	26600	21900	17800	9430		
	P [kW]	16.10	17.40	17.30	17.00	16.50	15.70	14.80	13.10		
	I [A]	28.50	30.40	30.30	29.80	29.10	28.10	26.90	24.60		
40	pV2 [bar]	100	100	105	105	105	100	90			
	Q [W]	47000	40100	35000	29300	24300	19400	12500			
	P [kW]	19.30	19.20	19.70	19.10	18.20	16.80	14.80			
	I [A]	33.10	33.00	33.70	32.80	31.60	29.50	26.90			
45	pV2 [bar]	115	115	115	120	115	100				
	Q [W]	43200	36800	31100	26700	21700	14400				
	P [kW]	22.20	21.80	21.20	21.00	19.40	16.80				
	I [A]	37.40	36.80	35.90	35.60	33.20	29.50				
50	pV2 [bar]	130	130	130	130	115	100				
	Q [W]	39400	33600	28500	23900	17600	9240				
	P [kW]	24.90	24.20	23.40	23.30	19.40	16.80				
	I [A]	41.70	40.70	39.30	37.60	33.20	29.50				

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From:

26.10.2022
Page 5 of 9

VAP 11.12.0

HGX34/170-4 S CO2 T

Engine: 380-420V Y/YY -3- 50Hz PW

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Optimal high pressure is outside of the operating limits. Performance data are indicated at maximal 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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To: Промышленная Холодильная
Компания info@phk-holod.ru

From:

26.10.2022
Page 6 of 9

VAP 11.12.0

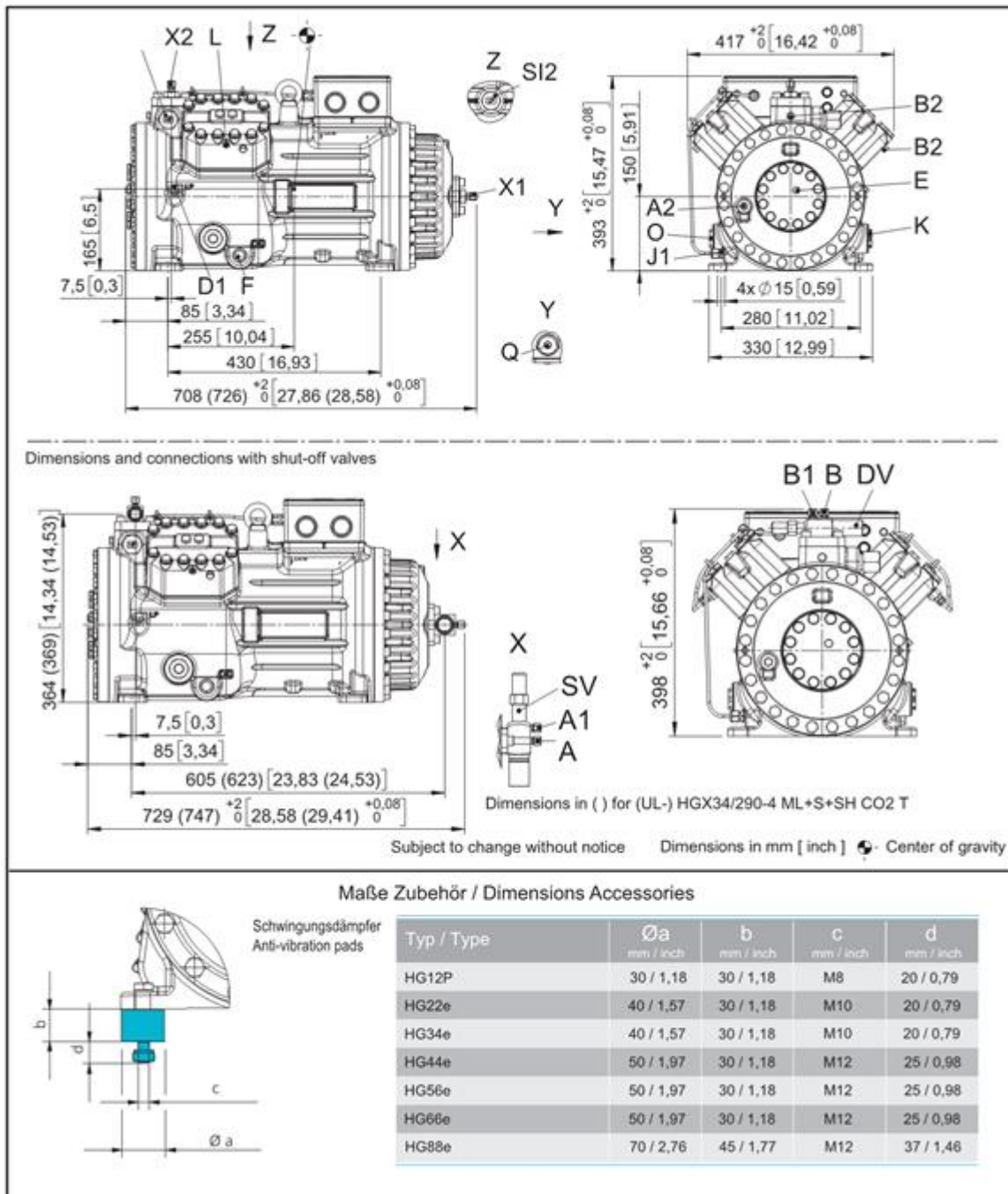
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Dimensions and connections



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To: Промышленная Холодильная
Компания info@phk-holod.ru

From:

26.10.2022
Page 7 of 9

VAP 11.12.0

HGX34/170-4 S CO2 T

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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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Компания info@phk-holod.ru

From:

26.10.2022
Page 8 of 9

VAP 11.12.0

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Product photo

Picture similar and/or with accessories.



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From:

26.10.2022
Page 9 of 9

VAP 11.12.0