

HGX34/210-4 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 | 68.10 kW |
| Reference temperature | Dew point | Evaporator refrigeration capacity | 68.10 kW |
| Supply frequency | 50 Hz | Power consumption | 21.40 kW |
| Power supply | 50 Hz, 400 V | Current draw (400 V) | 37.20 A |
| Evaporating temperature | 5.1 °C | Coefficient of performance (COP/EER) | 3.18 |
| Evaporating pressure (abs.) | 39.80 bar | Gas cooler heat rejection | 89.60 kW |
| High pressure (abs.) | 90.00 bar | Mass flow | 0.464 kg/s |
| Gas cooler outlet temperature | 35.0 °C | Discharge end temperature | 85.2 °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.

Subject to change without notice

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

From:

26.10.2022
Page 1 of 9

VAP 11.12.0

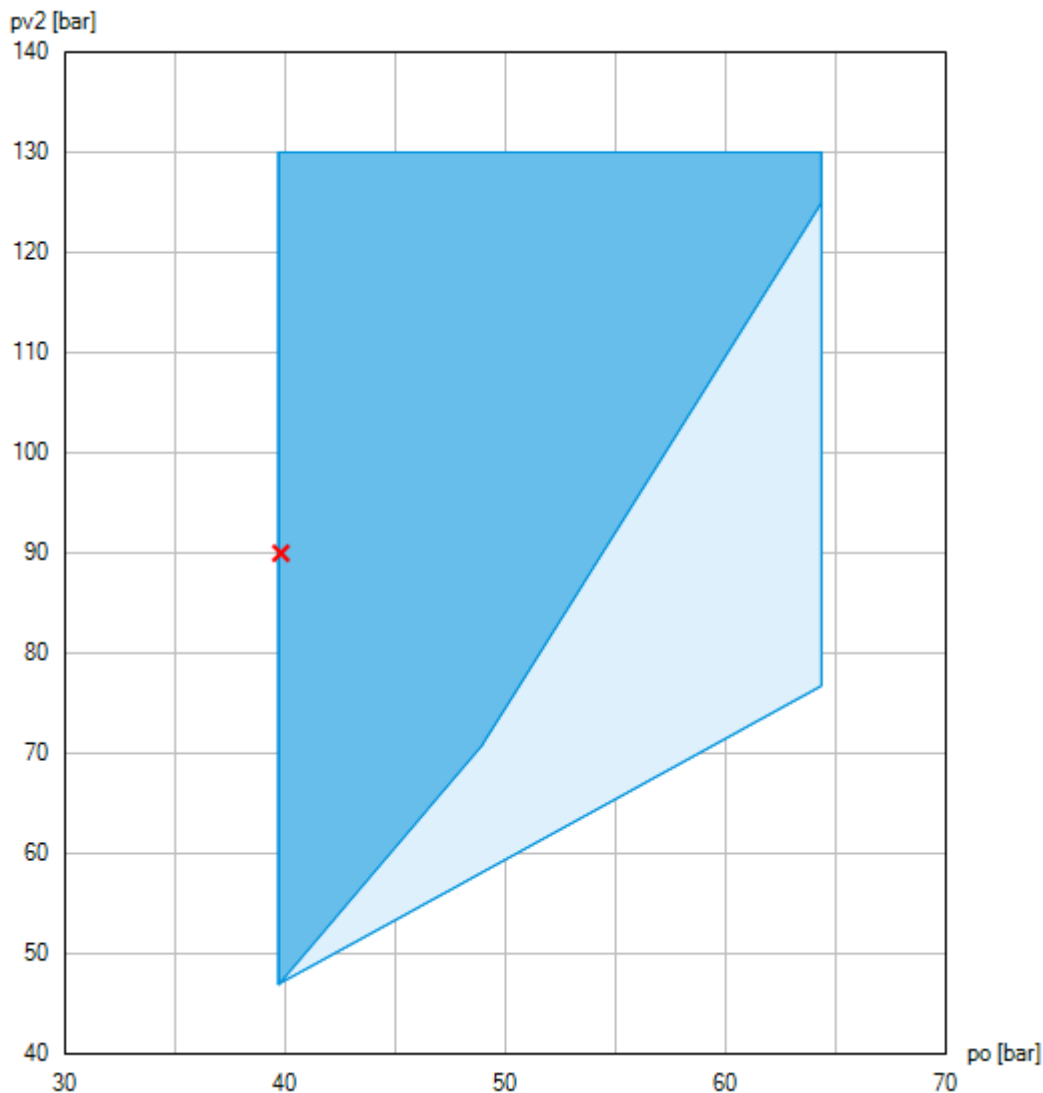
HGX34/210-4 SH CO2 T



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

Refrigerant: R744

Subject: Предварительный расчет

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!

Subject to change without notice

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

From:

26.10.2022
Page 2 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

Technical data

| | |
|---|-----------------------------------|
| Number of cylinders / Bore / Stroke | 4 / 38 mm / 46 mm |
| Displacement 50/60 Hz (1450/1740 1/min) | 18,20 / 21,80 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⁾ | 53.9 A |
| Max. power consumption ²⁾ | 32.4 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⁾ | 78 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 (± 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

Subject to change without notice

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

From:

26.10.2022
Page 3 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

- 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.

Subject to change without notice

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

From:

26.10.2022
Page 4 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

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] | | | | 104000 | | | | | | |
| | P [kW] | | | | 8.24 | | | | | | |
| | I [A] | | | | 21.80 | | | | | | |
| | | | | | | | | | | | |
| 20.0 | Q [W] | | | 111000 | 94700 | | | | | | |
| | P [kW] | | | 8.99 | 10.70 | | | | | | |
| | I [A] | | | 22.50 | 24.20 | | | | | | |
| | | | | | | | | | | | |
| 25.0 | Q [W] | | 113000 | 97800 | 84100 | | | | | | |
| | P [kW] | | 9.89 | 11.80 | 13.30 | | | | | | |
| | I [A] | | 23.40 | 25.30 | 27.00 | | | | | | |
| | | | | | | | | | | | |
| 30.0 | Q [W] | 105000 | 91500 | 79500 | 68400 | | | | | | |
| | P [kW] | 10.90 | 13.00 | 14.70 | 15.90 | | | | | | |
| | I [A] | 24.50 | 26.70 | 28.60 | 30.10 | | | | | | |
| | | | | | | | | | | | |

Transcritical

| tga [°C] | | to [°C] | | | | | | | | | |
|----------|-----------|---------|-------|-------|-------|--|--|--|--|--|--|
| | | 20.1 | 15.1 | 10.1 | 5.1 | | | | | | |
| 30 | pV2 [bar] | 72 | 73 | 73 | 74 | | | | | | |
| | Q [W] | 105000 | 89100 | 75100 | 61700 | | | | | | |
| | P [kW] | 11.00 | 13.20 | 15.00 | 16.40 | | | | | | |
| | I [A] | 24.50 | 26.90 | 29.00 | 30.60 | | | | | | |
| 35 | pV2 [bar] | 85 | 85 | 86 | 87 | | | | | | |
| | Q [W] | 98200 | 87200 | 76500 | 66300 | | | | | | |
| | P [kW] | 16.00 | 18.00 | 19.50 | 20.50 | | | | | | |
| | I [A] | 30.20 | 32.70 | 34.70 | 36.10 | | | | | | |
| 40 | pV2 [bar] | 97 | 98 | 99 | 101 | | | | | | |
| | Q [W] | 89700 | 79600 | 69800 | 60500 | | | | | | |
| | P [kW] | 20.70 | 22.40 | 23.60 | 24.30 | | | | | | |
| | I [A] | 36.40 | 38.70 | 40.40 | 41.40 | | | | | | |
| 45 | pV2 [bar] | 109 | 111 | 112 | 114 | | | | | | |
| | Q [W] | 81400 | 72400 | 63500 | 55000 | | | | | | |
| | P [kW] | 25.10 | 26.50 | 27.40 | 27.70 | | | | | | |
| | I [A] | 42.70 | 44.70 | 46.00 | 46.60 | | | | | | |
| 50 | pV2 [bar] | 121 | 123 | 125 | 127 | | | | | | |
| | Q [W] | 73600 | 65500 | 57400 | 49700 | | | | | | |
| | P [kW] | 29.30 | 30.40 | 31.00 | 31.00 | | | | | | |
| | I [A] | 49.10 | 50.80 | 51.70 | 51.80 | | | | | | |

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

Subject to change without notice

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

From:

26.10.2022
Page 5 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

- 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.

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

Subject to change without notice

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

From:

26.10.2022
Page 6 of 9

VAP 11.12.0

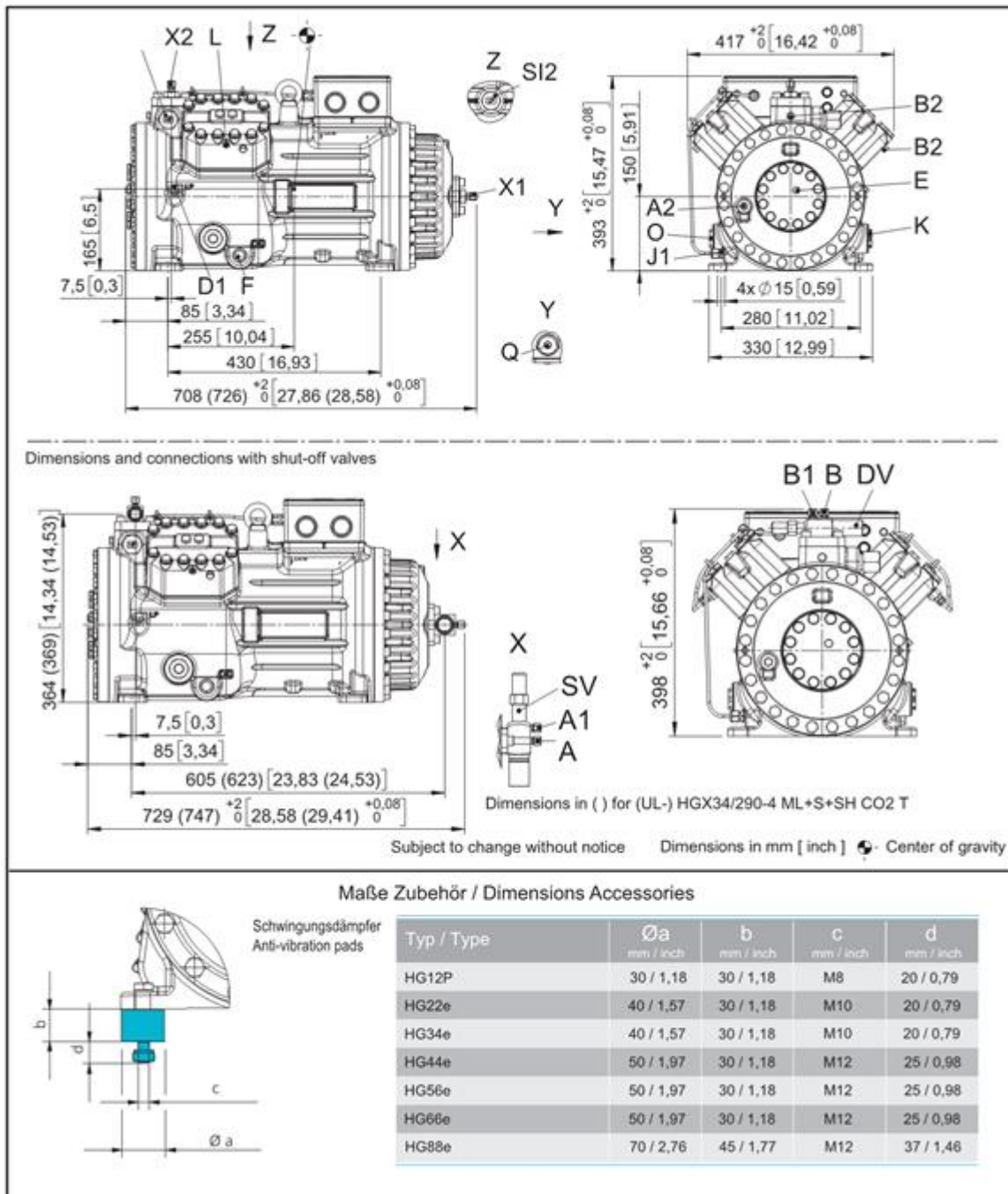
HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

Dimensions and connections



Subject to change without notice

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

From:

26.10.2022
Page 7 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

| | | |
|-----|--|-------------------|
| 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

Subject to change without notice

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

From:

26.10.2022
Page 8 of 9

VAP 11.12.0

HGX34/210-4 SH CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

BOCK colour the world
of tomorrow

Product photo

Picture similar and/or with accessories.



Subject to change without notice

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

From:

26.10.2022
Page 9 of 9

VAP 11.12.0