

HGX2/90-4 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	16.00 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	16.00 kW
Supply frequency	50 Hz	Power consumption	9.42 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	17.60 A
Evaporating temperature	-10.0 °C	Coefficient of performance (COP/EER)	1.69
<i>Evaporating pressure (abs.)</i>	<i>26.49 bar</i>	Gas cooler heat rejection	25.40 kW
High pressure (abs.)	90.00 bar	Mass flow	0.106 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	118.0 °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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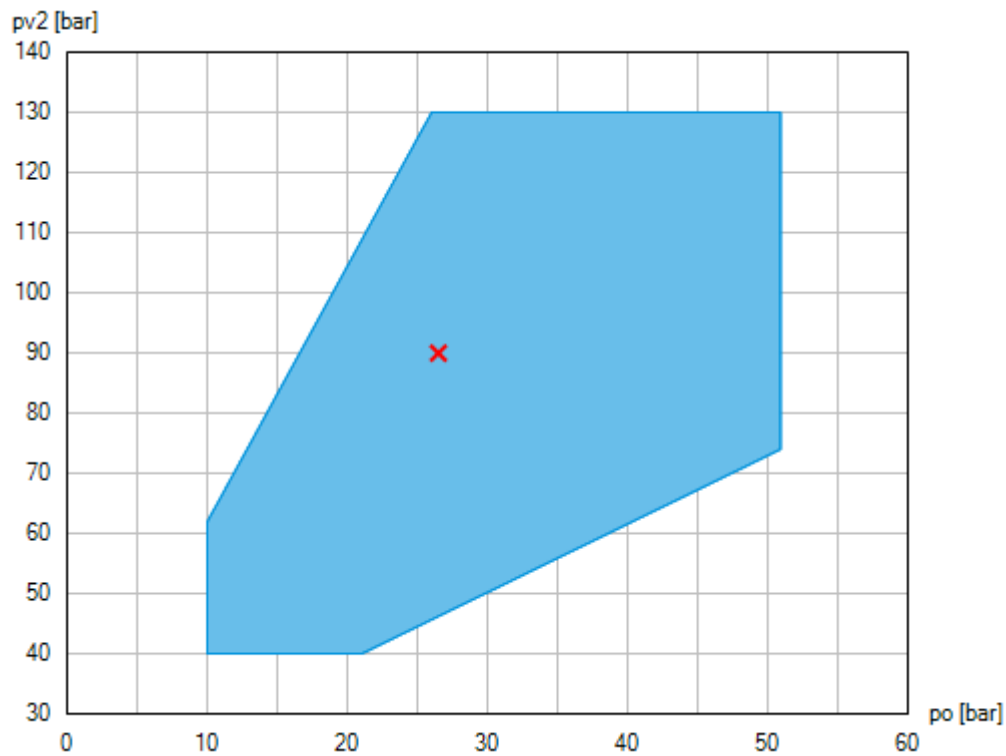
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Operating limits



 Unlimited application range

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	2 / 34 mm / 49 mm
Displacement 50/60 Hz (1450/1740 1/min)	7,70 / 9,30 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⁾	23.8 A
Max. power consumption ²⁾	13.9 kW
Starting current (rotor blocked) ²⁾	87.0 / 149.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	160 kg
Max. permissible overpressure (g) (LP/HP) ³⁾	100 / 150 bar
Connection suction line SV	22 mm - 7/8 "
Connection discharge line DV	18
Lubrication	Oil pump
Oil type R744	BOCKlub E85
Oil charge	2,6 Ltr.
Dimensions Length / Width / Height	630 / 329 / 414 mm

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) LP = Low pressure
HP = High pressure

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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]					23600	19400	15800	12600	9760	7280
	P [kW]					5.21	5.34	5.35	5.25	5.04	4.71
	I [A]					12.90	13.00	13.00	12.90	12.70	12.40
15.0	Q [W]			30800	25800	21500	17600	14200	11200	8560	6240
	P [kW]			5.39	5.69	5.87	5.93	5.87	5.69	5.39	4.98
	I [A]			13.10	13.40	13.60	13.60	13.60	13.40	13.10	12.70
20.0	Q [W]		32900	27800	23300	19300	15700	12600	9760	7330	5190
	P [kW]		5.85	6.21	6.44	6.54	6.51	6.37	6.10	5.72	5.21
	I [A]		13.50	13.90	14.10	14.30	14.20	14.10	13.80	13.40	12.90
25.0	Q [W]	34100	29100	24600	20500	16800	13600	10800	8240	6050	
	P [kW]	6.37	6.78	7.05	7.19	7.20	7.09	6.85	6.48	5.99	
	I [A]	14.10	14.50	14.80	15.00	15.00	14.90	14.60	14.20	13.70	
30.0	Q [W]	27700	23600	19900	16500	13500	10800	8400	6330		
	P [kW]	7.43	7.74	7.92	7.96	7.86	7.64	7.29	6.80		
	I [A]	15.20	15.60	15.80	15.90	15.70	15.50	15.10	14.50		

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]	30000	25500	21400	17700	14500	11600	8990	6720		
	P [kW]	7.80	8.08	8.22	8.22	8.09	7.82	7.42	6.90		
	I [A]	15.70	16.00	16.20	16.20	16.00	15.70	15.20	14.60		
35	pV2 [bar]	85	90	90	90	90	90	90	80		
	Q [W]	26100	23300	19400	16000	12800	10100	7600	3900		
	P [kW]	9.04	9.70	9.64	9.42	9.07	8.58	7.94	7.03		
	I [A]	17.20	18.00	17.90	17.60	17.20	16.60	15.80	14.80		
40	pV2 [bar]	100	100	105	105	105	100	90			
	Q [W]	24400	20600	17600	14300	11300	8560	5330			
	P [kW]	10.70	10.60	10.70	10.30	9.75	8.90	7.94			
	I [A]	19.30	19.20	19.40	18.80	18.10	17.00	15.80			
45	pV2 [bar]	115	115	115	120	115	100				
	Q [W]	22500	18900	15500	12700	9800	6340				
	P [kW]	12.10	11.80	11.40	10.90	10.00	8.90				
	I [A]	21.30	20.90	20.30	19.70	18.40	17.00				
50	pV2 [bar]	130	130	130	130	115	100				
	Q [W]	20600	17200	14000	11200	7930	4090				
	P [kW]	13.30	12.80	12.10	11.20	10.00	8.90				
	I [A]	23.10	22.30	21.30	20.00	18.40	17.00				

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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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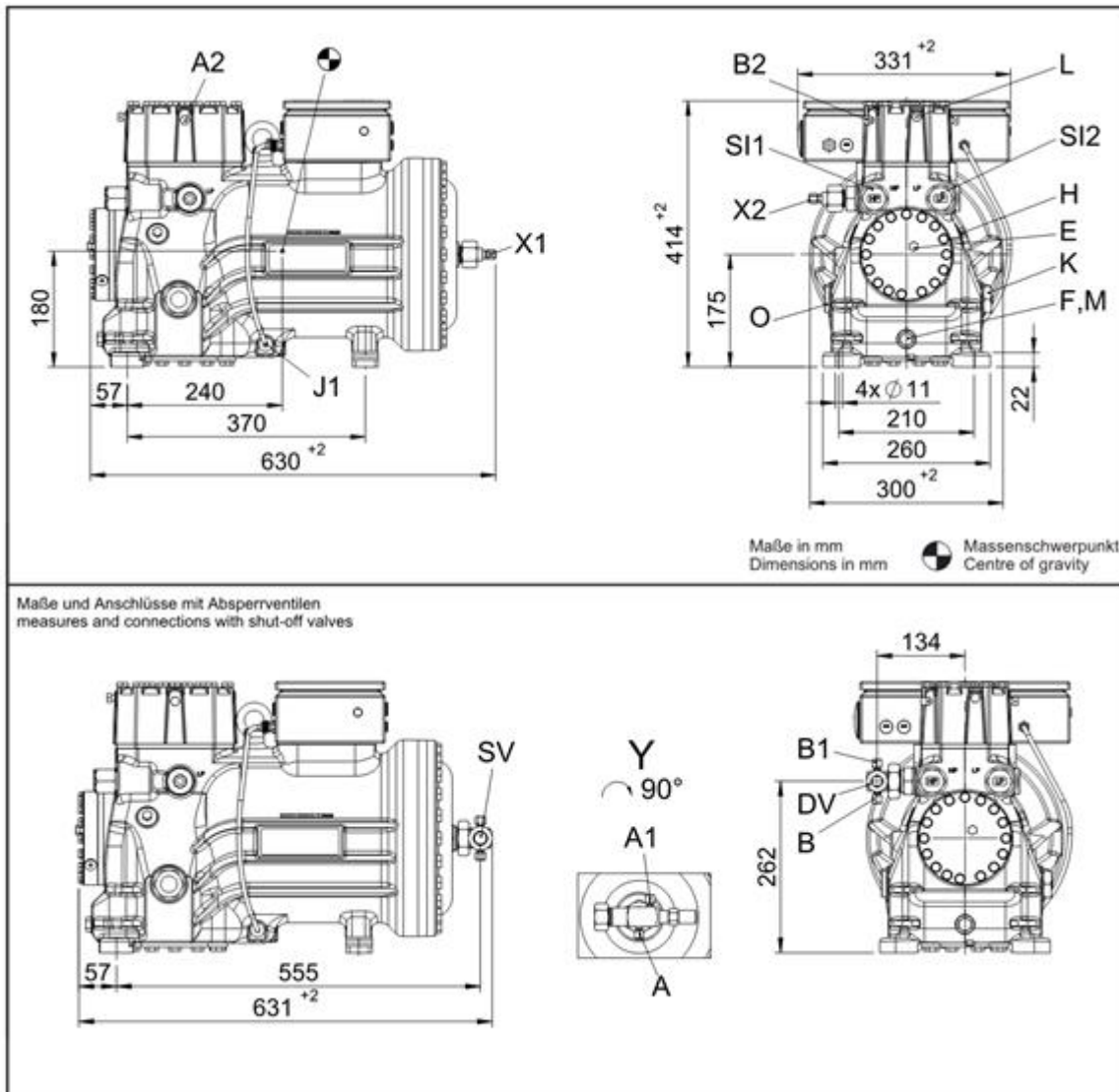
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Dimensions and connections



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SV	Suction connection, tube \varnothing ¹⁾	22 mm - 7/8 "
DV	Discharge connection, tube \varnothing ¹⁾	18 mm
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
E	Connection oil pressure gauge	1/8" NPTF
F	Oil drain	M22x1,5
H	Oil charge plug	1/8" NPTF
J1	Oil sump heater	\varnothing 15mm
K	Sight glass	G1"
L	Connection thermal protection thermostat ²⁾	1/8" NPTF
M	Oil strainer	M22x1,5
O	Connection oil level regulator	G1"
X1	Connection for schrader valve, suction side	7/16" UNF
X2	Connection for schrader valve, discharge side	7/16" UNF

1) with cutting ring

2) No connection discharge side

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