

# HGX2/70-4 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	12.40 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	12.40 kW
Supply frequency	50 Hz	Power consumption	7.29 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	13.30 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	19.70 kW
High pressure (abs.)	90.00 bar	Mass flow	0.082 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	118.0 °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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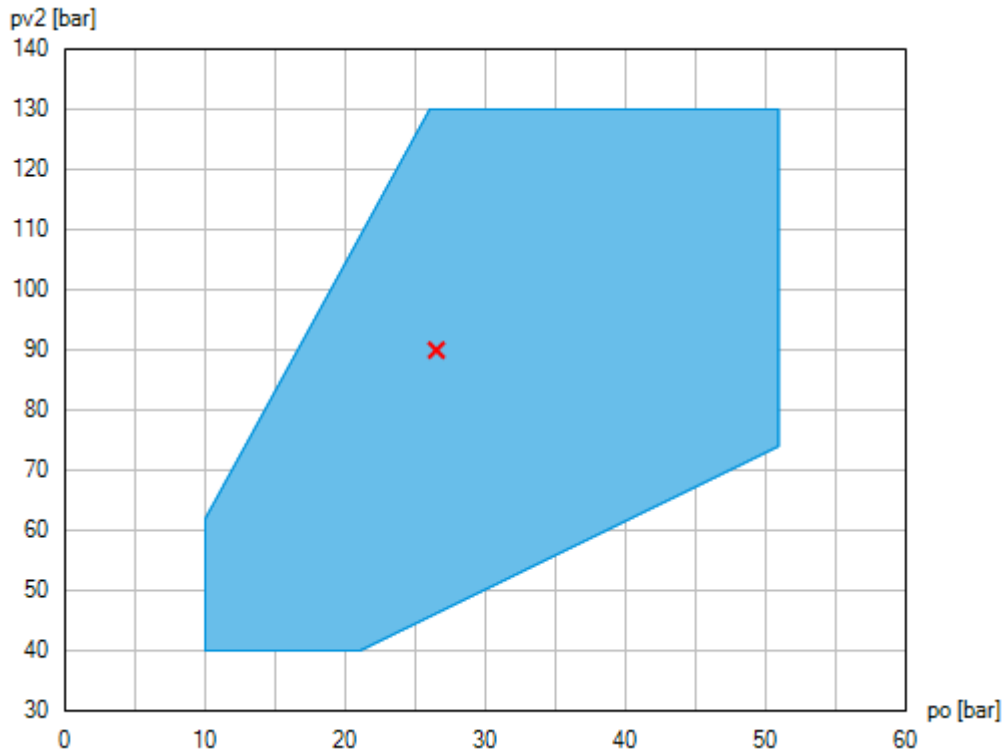
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## Operating limits



Unlimited application range

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 / 39 mm
Displacement 50/60 Hz (1450/1740 1/min)	6,20 / 7,40 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>	18.3 A
Max. power consumption <sup>2)</sup>	10.9 kW
Starting current (rotor blocked) <sup>2)</sup>	65.0 / 109.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	145 kg
Max. permissible overpressure (g) (LP/HP) <sup>3)</sup>	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 ( $\Delta/Y$ ) motors:  $\Delta$  / 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]					18600	15200	12300	9600	7300	5270
	P [kW]					4.02	4.19	4.25	4.19	4.04	3.79
	I [A]					9.35	9.53	9.59	9.53	9.37	9.11
15.0	Q [W]			24400	20400	16900	13700	10900	8460	6310	4420
	P [kW]			4.03	4.37	4.57	4.65	4.62	4.49	4.26	3.95
	I [A]			9.36	9.72	9.94	10.10	10.00	9.85	9.61	9.27
20.0	Q [W]		26100	22000	18300	15100	12200	9550	7300	5330	3580
	P [kW]		4.37	4.75	4.99	5.10	5.09	4.98	4.77	4.46	4.07
	I [A]		9.73	10.20	10.40	10.60	10.60	10.40	10.20	9.82	9.40
25.0	Q [W]	27100	23000	19300	16000	13100	10500	8130	6110	4330	
	P [kW]	4.77	5.18	5.45	5.59	5.60	5.51	5.31	5.01	4.63	
	I [A]	10.20	10.70	11.00	11.10	11.20	11.10	10.80	10.50	10.10	
30.0	Q [W]	21900	18500	15500	12800	10400	8220	6320	4650		
	P [kW]	5.67	5.97	6.13	6.17	6.09	5.91	5.62	5.24		
	I [A]	11.20	11.60	11.80	11.80	11.70	11.50	11.20	10.70		

### 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]	23600	20000	16700	13800	11200	8810	6750	4930		
	P [kW]	5.98	6.24	6.36	6.37	6.26	6.04	5.72	5.31		
	I [A]	11.60	11.90	12.10	12.10	11.90	11.70	11.30	10.80		
35	pV2 [bar]	85	90	90	90	90	90	90			
	Q [W]	20500	18200	15100	12400	9850	7660	5720			
	P [kW]	6.97	7.50	7.45	7.29	7.02	6.66	6.20			
	I [A]	12.80	13.50	13.50	13.30	12.90	12.40	11.90			
40	pV2 [bar]	100	100	105	105	105	100	90			
	Q [W]	19100	16100	13700	11100	8750	6570	4010			
	P [kW]	8.27	8.25	8.42	8.12	7.73	7.05	6.20			
	I [A]	14.60	14.50	14.80	14.40	13.80	12.90	11.90			
45	pV2 [bar]	115	115	115	120	115	100				
	Q [W]	17600	14800	12200	9990	7690	4870				
	P [kW]	9.49	9.33	9.07	9.01	8.24	7.05				
	I [A]	16.30	16.10	15.70	15.60	14.50	12.90				
50	pV2 [bar]	130	130	130	130	115					
	Q [W]	16300	13600	11200	8910	6220					
	P [kW]	10.70	10.40	10.10	9.69	8.24					
	I [A]	18.20	17.80	17.20	16.60	14.50					

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Optimal high pressure is outside of the operating limits. Performance data are indicated at maximal possible high pressure.

*t<sub>o</sub>* Evaporating temperature  
*t<sub>c</sub>* Condensing temperature  
*t<sub>ga</sub>* Gas cooler outlet temperature  
*p<sub>V2</sub>* High pressure (abs.)  
*Q* Compressor refrigeration capacity  
*P* Power consumption  
*I* Current draw

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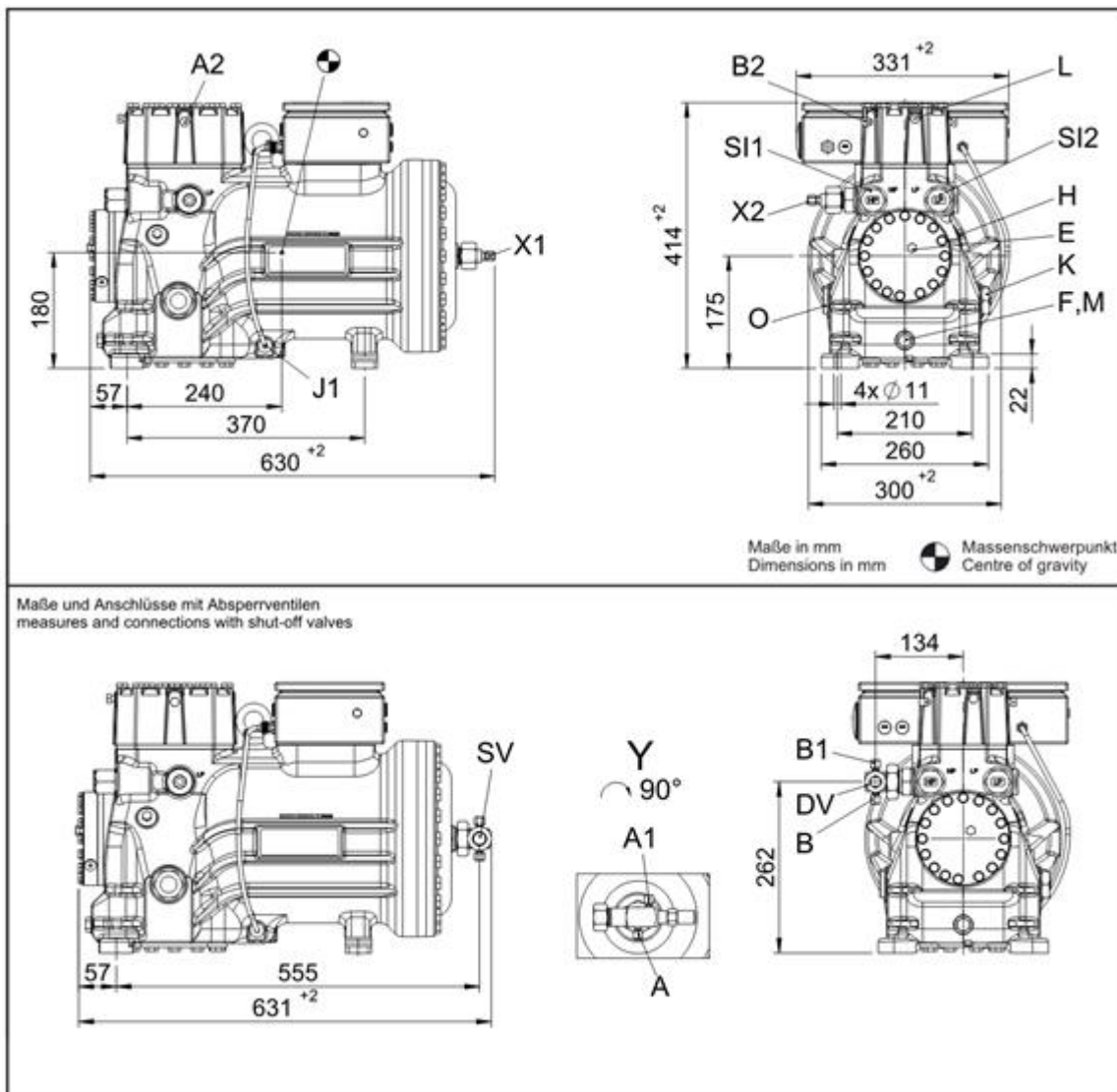
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## Dimensions and connections



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SV	Suction connection, tube $\varnothing$ <sup>1)</sup>	22 mm - 7/8 "
DV	Discharge connection, tube $\varnothing$ <sup>1)</sup>	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 <sup>2)</sup>	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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### Product photo

*Picture similar and/or with accessories.*



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