

HGX5/945-4 S

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

Refrigerant: R404A, R507

BOCK

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Subject:

Performance data

Application: Refrigeration & AC

Refrigerant	R404A, R507	Compressor refrigeration capacity	77.90 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	77.90 kW
Power supply	50 Hz, 400 V	Power consumption	21.70 kW
Supply frequency	50 Hz	Current draw (400 V)	37.10 A
Evaporating temperature	5.0 °C	Coefficient of performance (COP/EER)	3.59
<i>Evaporating pressure (abs.)</i>	<i>7.06 bar</i>	Condensing capacity	99.60 kW
Condensing temperature	40.0 °C	Mass flow	0.630 kg/s
<i>Condensing pressure (abs.)</i>	<i>18.17 bar</i>	Discharge end temperature	69.0 °C ¹⁾
Suction gas temperature	20 °C		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

Certifications



ASERCOM certified performance data

The performance data of compressors bearing this label has been certified to the strict requirements of ASERCOM.

ASERCOM is the Association of European Refrigeration Compressors and Controls Manufacturers. Information about the Association and the constantly updated overview of certified GEA compressors can be found at www.asercom.org.

This certification is based on EN 12900. This signifies: 20 °C suction gas temperature without liquid subcooling at 50 Hz power supply frequency.

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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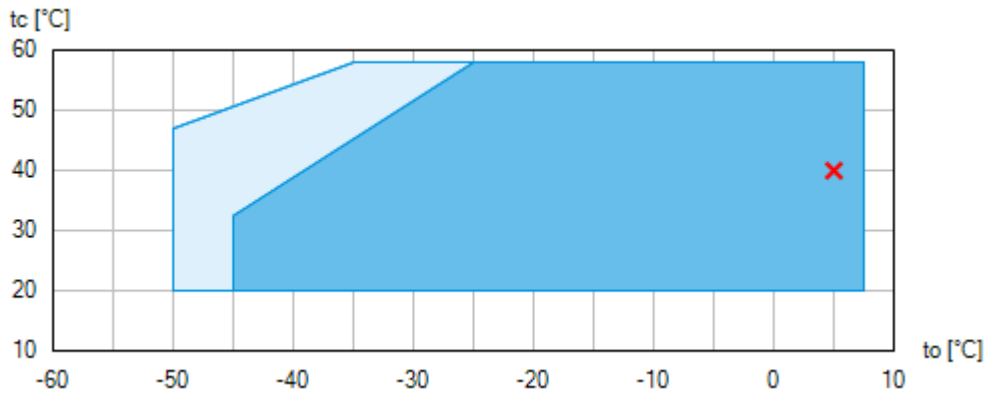
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Subject:

Operating limits



-  Unlimited application range
-  Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation. Axis values refer to dew point (saturated vapour line).

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Subject:

Technical data

Number of cylinders / Bore / Stroke	4 / 80 mm / 47 mm
Displacement 50/60 Hz (1450/1740 1/min)	82,20 / 98,60 m ³ /h
Voltage ¹⁾	380-420V Y/YY -3- 50Hz PW 440-480V Y/YY -3- 60Hz PW
Winding divided into	66% / 33%
Max. working current ²⁾	49.0 A
Max. power consumption ²⁾	28.6 kW
Starting current (rotor blocked) ²⁾	126.0 / 160.0 A
Motor protection	MP10
Protection terminal box	IP 65
Weight	205 kg
Max. permissible pressure (LP/HP) ³⁾	19 / 28 bar
Connection suction line SV	54 mm - 2 1/8 "
Connection discharge line DV	35 mm - 1 3/8 "
Lubrication	Oil pump
Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A	FUCHS Reniso Triton SE 55
Oil type R22	FUCHS Reniso SP 46
Oil charge	3,6 Ltr.
Oil sump heater	230 V - 1 - 50/60 Hz, 140 W
Dimensions Length / Width / Height	830 / 435 / 405 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

PW = part winding, motors for part winding starting
(no start unloaders required)
Designs for Y/D on request

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 fuses, supply lines and safety devices. Fuse: Consumption category AC3.

3) LP = Low pressure
HP = High pressure

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Subject:

Performance data table

Application: Refrigeration & AC

Reference temperature: Dew point

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 20 °C

Subcooling (outside cond.): 0 K

tc [°C]		to [°C]									
		10.0	5.0	0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	
30.0	Q [W]		92000	77300	64400	53000	43100	34500	27200	20900	
	P [kW]		18.30	17.70	16.90	16.00	14.90	13.60	12.30	10.80	
	I [A]		31.70	30.80	29.60	28.20	26.60	24.90	23.10	21.40	
35.0	Q [W]		85000	71300	59300	48700	39600	31600	24800	19100	
	P [kW]		20.00	19.10	18.10	17.00	15.70	14.20	12.70	11.10	
	I [A]		34.30	33.00	31.50	29.70	27.80	25.80	23.70	21.70	
40.0	Q [W]		77900	65300	54200	44500	36000	28700	22500	17100	
	P [kW]		21.70	20.60	19.40	18.00	16.50	14.80	13.10	11.30	
	I [A]		37.10	35.40	33.40	31.20	28.90	26.60	24.20	21.90	
45.0	Q [W]		70800	59200	49000	40100	32500	25800	20100	15200	
	P [kW]		23.40	22.00	20.60	18.90	17.20	15.30	13.40	11.40	
	I [A]		39.90	37.70	35.30	32.70	30.00	27.30	24.60	22.00	
50.0	Q [W]		63700	53100	43900	35800	28900	22900	17700	13200	
	P [kW]		25.00	23.40	21.70	19.80	17.80	15.70	13.50	11.30	
	I [A]		42.80	40.10	37.20	34.10	31.00	27.90	24.80	22.00	
55.0	Q [W]		56500	47000	38700	31500	25200	19900	15200	11200	
	P [kW]		26.70	24.80	22.80	20.60	18.40	16.00	13.60	11.10	
	I [A]		45.60	42.40	38.90	35.40	31.80	28.30	24.90	21.80	



Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

to Evaporating temperature
tc Condensing temperature
Q Compressor refrigeration capacity
P Power consumption
I Current draw

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Subject:

Scope of supply

Semi-hermetic four-cylinder reciprocating compressor with drive motor
Motor unit flanged onto the compressor housing

Oil pump

Winding protection with PTC resistor sensors and electronic trigger unit MP 10

Oil pump cover with screw-in option for oil differential pressure sensor DELTA-P II

Possibility of connection of oil level controllers ESK, AC+R or CARLY

Possibility of connection of oil level controllers Traxoil ¹⁾

Possibility for connection of oil pressure safety switch MP54

Oil charge:

HG: FUCHS Reniso SP 46

HGX: FUCHS Reniso Triton SE 55

Sight glass

Prepared for capacity regulator (1 cylinder cover)

Pressure relief valve

Suction and discharge line valve

Inert gas charge

4 anti-vibration pads enclosed

Accessories

Start unloader 230 V - 1 - 50/60 Hz, IP65, less check valve,
including thermal protection thermostat (posistor tracer)

Start unloader by means of a ESS (Electronic Soft Start), 400 V - 3 - 50/60 Hz, IP20 (Connection clamps IP00) for
installation in switch cabinet ²⁾

Capacity regulator 230 V - 1 - 50/60 Hz, IP65
1 capacity regulator = 50% residual capacity

Oil sump heater 230 V - 1 - 50/60 Hz, 140 W

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 ²⁾

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz ²⁾

Oil service valve

Thermal protection thermostat per cylinder cover ³⁾

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Subject:

Water-cooled cylinder covers

Connection piece suction and discharge valve in welding design

Additional fan

230 V AC - 1 - 50 Hz, 97 W, IP44

230 V AC - 1 - 60 Hz, 128 W ²⁾

Intermediate adapter for discharge line valve

Special voltage and/or frequency (on request)

-
- 1) Only with additional adapter possible
 - 2) Enclosure
 - 3) Mounted

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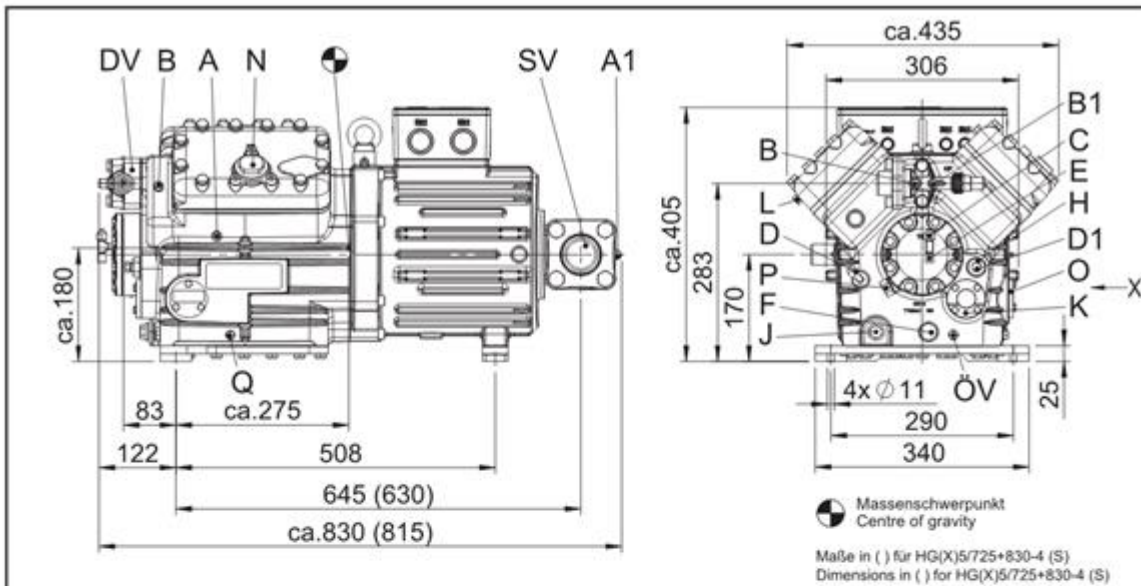
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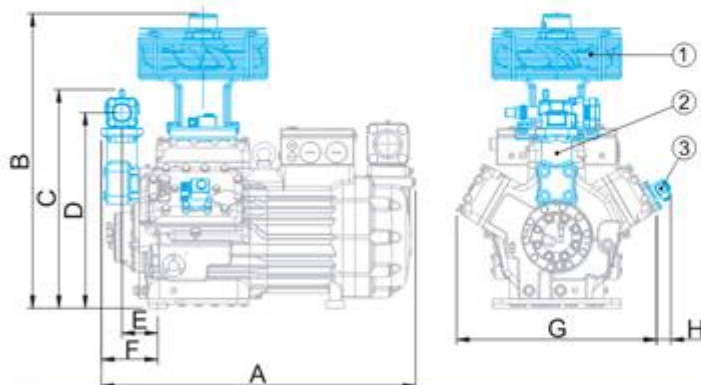
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Subject:

Dimensions and connections



Maße Zubehör / Dimensions Accessories



Ansicht X: Anschlussmöglichkeit für Ölspiegelregulator
View X: Possibility of connection of oil level regulator



- Dreilochanschluss für TRAXOIL (3xM6x10)
Three-hole connection for TRAXOIL (3xM6x10)
- Dreilochanschluss für ESK, AC+R, CARLY (3xM6x10)
Three-hole connection for ESK, AC+R, CARLY (3xM6x10)

- ① Zusatzlüfter
Additional fan
- ② Zwischenadapter für Druckabsperrventil
Intermediate adapter for discharge line valve
- ③ Leistungsregler
Capacity regulator

	A	B	C	D	E	F	G	H
	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch
HG44e	- ¹⁾	ca. 675	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	ca. 360	-
HA4	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	ca. 400	ca. 5
HG5/725, HG5/830	ca. 835	ca. 730	ca. 465	422	101	141	ca. 440	-
HG5/945	ca. 850	ca. 730	ca. 465	422	101	141	ca. 440	-
HA5	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	ca. 435	-
HG6	ca. 870	ca. 740	ca. 460	421	101	141	ca. 460	-
HA6	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	- ¹⁾	ca. 455	-
HG7	ca. 830	ca. 760	ca. 580	520,5	95	150	ca. 510	ca. 15
HG88e	ca. 920	ca. 880	ca. 680	617	90	145	ca. 610	ca. 20

¹⁾Nicht verfügbar / Not available

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SV	Suction line valve, tube \varnothing ¹⁾	54 mm - 2 1/8 "
DV	Discharge line valve, tube \varnothing ¹⁾	35 mm - 1 3/8 "
A	Connection suction side, not lockable	1/8 " NPTF
A1	Connection suction side, lockable	7/16 " UNF
B	Connection discharge side, not lockable	1/8 " NPTF
B1	Connection discharge side, lockable	7/16 " UNF
C	Connection oil pressure safety switch OIL	7/16 " UNF
D	Connection oil pressure safety switch LP	7/16 " UNF
D1	Connection oil return from oil separator	1/4 " NPTF
E	Connection oil pressure gauge	7/16 " UNF
F	Oil drain	M 22 x 1.5
H	Oil charge plug	M 22 x 1.5
J	Connection oil sump heater	M 22 x 1.5
K	Sight glass	-
L	Connection thermal protection thermostat	1/8 " NPTF
N	Connection capacity regulator	M 45 x 1.5
O	Connection oil level regulator	3 x M 6
ÖV	Connection oil service valve	1/4" NPTF
P	Connection oil differential pressure sensor	M 20 x 1.5
Q	Connection oil temperature sensor	1/8" NPTF

1) Brazing connection

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Product photo



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