

# BOCK® HGX12P/75-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R449A



## Subject:

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### Performance data

#### Application: Refrigeration & AC

Refrigerant	R449A	Compressor refrigeration capacity	2.99 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	2.99 kW
Power supply	50 Hz, 400 V	Power consumption	1.50 kW
Supply frequency	50 Hz	Current draw (400 V)	3.01 A
Evaporating temperature	-10.0 °C	Coefficient of performance (COP/EER)	1.98
<i>Evaporating pressure (abs.)</i>	<i>3.58 bar</i>	Condensing capacity	4.50 kW
Condensing temperature	45.0 °C	Mass flow	0.021 kg/s
<i>Condensing pressure (abs.)</i>	<i>18.75 bar</i>	Discharge end temperature	94.5 °C <sup>1)</sup>
Suction gas superheat	10 K		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

*Preliminary capacity data.*

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- 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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To:

From:

13.03.2026

Page 1 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

# BOCK® HGX12P/75-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

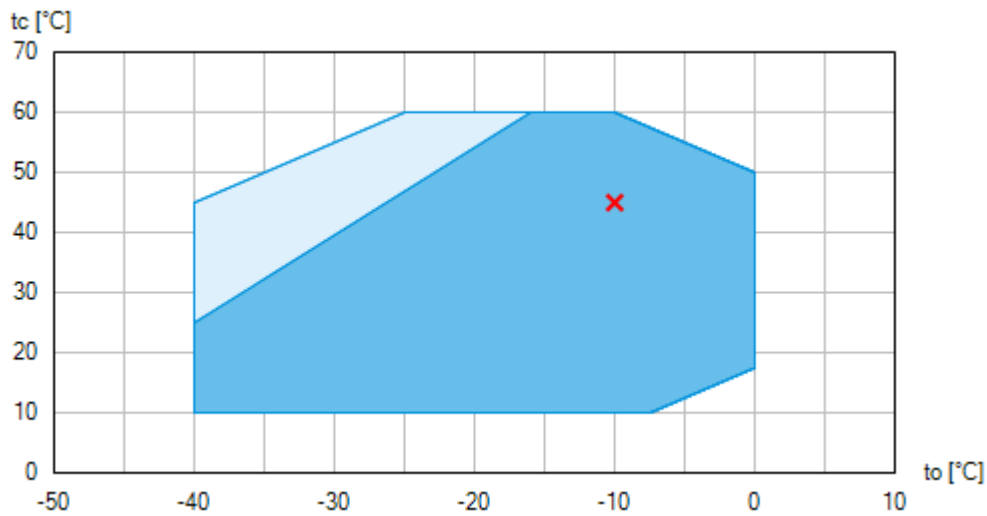
Refrigerant: R449A





**Subject:**

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## 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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To:

From:

13.03.2026  
Page 2 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

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## Subject:

## Technical data

Number of cylinders / Bore / Stroke	2 / 38 mm / 34 mm
Displacement 50/60 Hz (1450/1740 1/min)	6,70 / 8,10 m <sup>3</sup> /h
Voltage 1)	220-240V Δ / 380-420V Y -3- 50Hz
	265-290V Δ / 440-480V Y -3- 60Hz
Max. working current 2)	7.1 / 4.1 A
Max. power consumption 2)	2.3 kW
Starting current (rotor blocked) 2)	40.0 / 23.0 A
Motor protection	INT69 G
Protection terminal box	IP 66
Weight	48 kg
Frequency range 3)	30 -70 Hz
Max. permissible overpressure (g) (LP/HP) 4)	19 / 28 bar
Connection suction line SV	16 mm - 5/8 "
Connection discharge line DV	12 mm - 1/2 "
Lubrication	Oil pump
Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A	BOCKlub E55
Oil type R22	BOCKlub A46
Oil charge	0,8 Ltr.
Dimensions Length / Width / Height	412 / 223 / 280 mm
Sound power level L <sub>WA</sub> 5)	67 dB(A) @ -35 °C / +40 °C
	67 dB(A) @ -10 °C / +45 °C
Sound pressure level L <sub>pA</sub> 5)	55 dB(A) @ -35 °C / +40 °C
	55 dB(A) @ -10 °C / +45 °C

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<sub>max</sub>) must not be exceeded. Take account of the guidelines for use of frequency inverter (see compressor assembly instruction or selection software).

Subject to change without notice

To:

From:

13.03.2026

Page 3 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

# BOCK® HGX12P/75-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

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## Subject:

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- 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 R404A 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  $\mu$ 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:

From:

13.03.2026  
Page 4 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

# BOCK® HGX12P/75-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

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## Subject:

### Performance data table

Application: Refrigeration & AC  
Reference temperature: Dew point  
Supply frequency: 50 Hz  
Voltage: 400 V  
Suction gas superheat: 10 K  
Subcooling (outside cond.): 0 K

tc [°C]		to [°C]									
		5.0	0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0	-35.0	
15.0	Q [W]			5840	4720	3770	2960	2280	1720	1250	
	P [kW]			1.07	1.05	1.00	0.93	0.85	0.76	0.66	
	I [A]			2.38	2.35	2.29	2.20	2.11	2.01	1.91	
20.0	Q [W]		6710	5490	4430	3520	2760	2120	1600	1170	
	P [kW]		1.17	1.16	1.12	1.06	0.99	0.89	0.79	0.69	
	I [A]		2.52	2.50	2.45	2.37	2.27	2.16	2.04	1.94	
25.0	Q [W]		6300	5140	4130	3280	2560	1970	1480	1080	
	P [kW]		1.28	1.25	1.20	1.12	1.03	0.93	0.82	0.72	
	I [A]		2.68	2.63	2.55	2.45	2.33	2.20	2.08	1.96	
30.0	Q [W]		5900	4790	3840	3040	2370	1810	1360	980.00	
	P [kW]		1.40	1.35	1.27	1.18	1.07	0.96	0.84	0.73	
	I [A]		2.85	2.77	2.66	2.53	2.38	2.24	2.10	1.98	
35.0	Q [W]		5500	4450	3560	2800	2170	1660	1230	885.00	
	P [kW]		1.52	1.44	1.35	1.23	1.11	0.99	0.86	0.74	
	I [A]		3.03	2.91	2.77	2.61	2.44	2.27	2.12	1.99	
40.0	Q [W]		5100	4110	3270	2570	1980	1500	1110	788.00	
	P [kW]		1.64	1.54	1.42	1.29	1.15	1.01	0.87	0.74	
	I [A]		3.23	3.07	2.89	2.69	2.49	2.30	2.13	1.99	
45.0	Q [W]		4710	3780	2990	2330	1790	1340	981.00	689.00	
	P [kW]		1.77	1.65	1.50	1.35	1.19	1.03	0.88	0.74	
	I [A]		3.44	3.23	3.01	2.78	2.55	2.33	2.15	1.99	
50.0	Q [W]		4320	3440	2710	2100	1590	1190	854.00	587.00	
	P [kW]		1.91	1.76	1.59	1.41	1.23	1.06	0.89	0.74	
	I [A]		3.67	3.41	3.14	2.87	2.60	2.36	2.16	1.98	
55.0	Q [W]			3110	2430	1860	1400	1030	726.00		
	P [kW]			1.87	1.68	1.48	1.28	1.08	0.90		
	I [A]			3.61	3.29	2.97	2.67	2.40	2.16		
60.0	Q [W]				2150	1630	1210	867.00			
	P [kW]				1.77	1.55	1.32	1.11			
	I [A]				3.44	3.08	2.73	2.43			

Preliminary capacity data.



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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To:

From:

13.03.2026  
Page 5 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

# BOCK® HGX12P/75-4

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### Scope of supply

Semi-hermetic two cylinder reciprocating compressor with drive motor  
Single-section compressor housing with hermetically integrated electric motor

Winding protection with PTC resistor sensors and electronic trigger unit INT69 G  
115-230 V AC, 50/60 Hz, IP00

Oil pump

Possibility for connection of oil pressure safety switch MP55

Possibility of connection of oil level controllers ESK, Traxoil, AC+R or CARLY <sup>1)</sup>

Oil charge:

HG: **BOCK**lub A46

HGX: **BOCK**lub E55

Sight glass

Suction and discharge line valve

Inert gas charge

### Accessories

Oil sump heater

110-240 V - 1 - 50/60 Hz, 50-120 W, IP66

PTC heater self-regulating

Oil pressure safety switch MP55 230 V - 1 - 50/60 Hz, IP20 <sup>2)</sup>

Thermal protection thermostat per cylinder cover <sup>3)</sup>

Hot gas temperature sensor (Pt1000, for external evaluation) <sup>3)</sup>

Thermal protection thermostat per cylinder cover

Additional fan

230 V AC - 1 - 50 Hz, 72 W, IP44

230 V AC - 1 - 60 Hz, 68 W

<sup>2)</sup>

4 anti-vibration pads enclosed

Special voltage and/or frequency (on request)

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1) Only with additional adapter possible

2) Enclosure

3) Mounted

# BOCK® HGX12P/75-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

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**Subject:**

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## Dimensions and connections

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To:

From:

13.03.2026  
Page 7 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

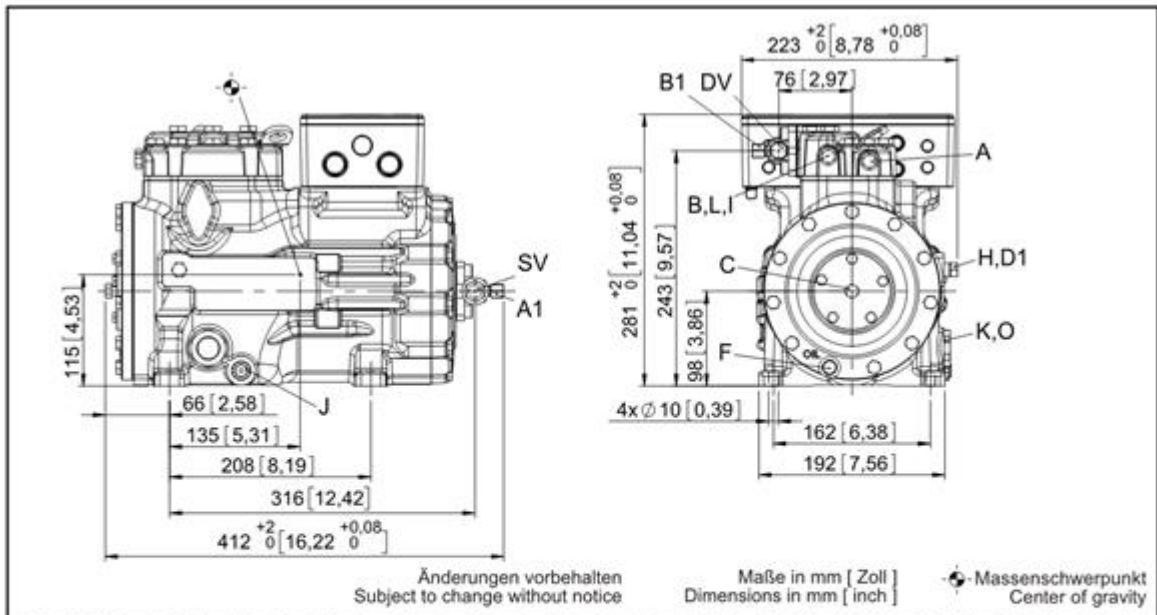
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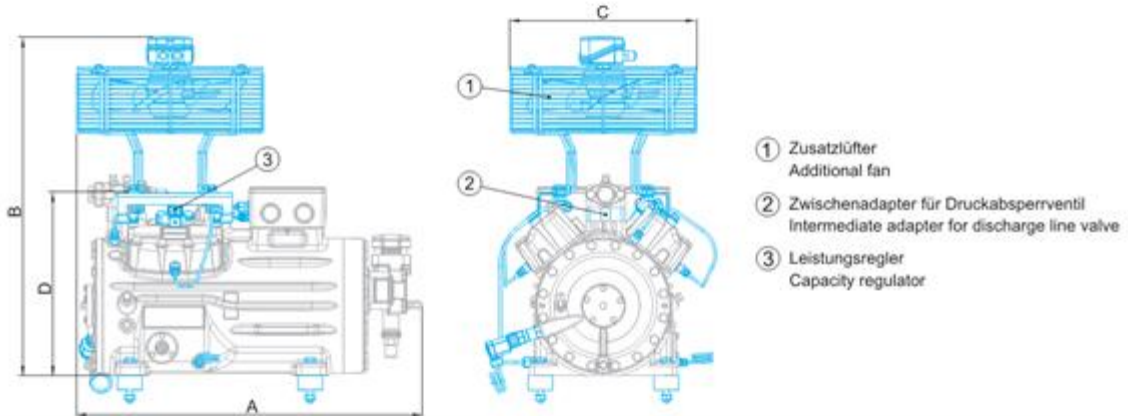
Refrigerant: R449A



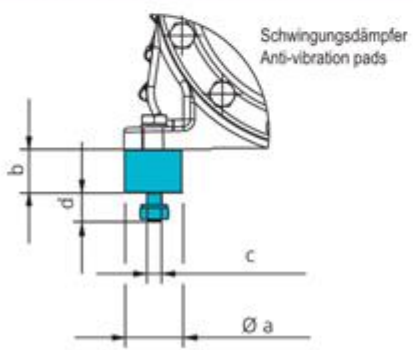
## Subject:



### Maße Zubehör / Dimensions Accessories



Typ / Type	A mm / inch	B mm / inch	C mm / inch	D mm / inch
HGX12P	ca. 460 / 18	ca. 500 / 20	ca. 315 / 12	–
HGX22e	ca. 525 / 21	ca. 610 / 24	–	–
HGX34e	ca. 580 / 23	ca. 640 / 25	ca. 380 / 15	–
HGX44e	ca. 710 / 28	ca. 685 / 27	ca. 380 / 15	ca. 368 / 14
HGX56e	–	ca. 710 / 28	ca. 380 / 15	–
HGX66e	ca. 820 / 32	ca. 800 / 31	ca. 380 / 15	–



Typ / Type	Øa mm / inch	b mm / inch	c mm / inch	d mm / inch
HGX12P	30 / 1.2	30 / 1.2	M8	20 / 0.8
HGX22e	40 / 1.6	30 / 1.2	M10	20 / 0.8
HGX34e	40 / 1.6	30 / 1.2	M10	20 / 0.8
HGX44e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HGX56e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HGX66e	50 / 2.0	30 / 1.2	M12	25 / 1.0
HGX88e	70 / 2.8	45 / 1.8	M12	37 / 1.5

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To:

From:

13.03.2026  
Page 8 of 10

# BOCK® HGX12P/75-4

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## Subject:

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SV	Suction line valve, tube $\varnothing$ <sup>1)</sup>	16 mm - 5/8 "
DV	Discharge line valve, tube $\varnothing$ <sup>1)</sup>	12 mm - 1/2 "
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	1/8 " NPTF
D1	Connection oil return from oil separator	1/4 " NPTF
F	Oil drain	M 8
H	Oil charge plug	1/4 " NPTF
I	Connection hot gas temperature sensor	1/8 " NPTF
J	Connection oil sump heater	3/8 " NPTF
K	Sight glass	1 1/8 " - 18 UNEF
L	Connection thermal protection thermostat	1/8 " NPTF
O	Connection oil level regulator	1 1/8 " - 18 UNEF

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1) Brazing connection

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To:

From:

13.03.2026  
Page 9 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)

# BOCK® HGX12P/75-4

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---

**Product photo**



Subject to change without notice

---

To:

From:

13.03.2026  
Page 10 of 10

VAP 11.15.3 – [vap.danfoss.com](http://vap.danfoss.com)