



GEA Bock Compressors HG44e and HG56e

Semi-hermetic GEA Bock Compressors

Bock compressors HG44e and HG56e

Our solutions are customer-oriented and user-friendly, because they are low-priced, energy-efficient, long-lasting and tailored to your individual needs.

With its GEA Bock HG44e and HG56e compressor ranges, GEA Refrigeration Technologies introduces new, more efficient semi-hermetic compressors to the market – models that replace its HG4 and HG5 ranges. In addition to their uses in the field of refrigeration and air-conditioning, the new compressors are ideally suited for refrigeration in supermarkets. They offer improved efficiency over their predecessors, greater displacement stages, more compact structural design, and a new configuration of connections. These connections match the gas connections normally found in the sector, to ensure that no adaptation work is necessary when the user invests in a replacement compressor. The foot mountings of the new compressor likewise conform to sector standards. In the four-cylinder HG44e range, four model sizes cover the area of maximum displacement from 41.3 m³/h to 67.0 m³/h. Three six-cylinder HG56e models round the spectrum off toward the top with displacements of 73.8 m³/h to 100.4 m³/h.

Special features

Both new ranges profit from a new and advanced valve plate system, electrical motors from the latest generation, and enhanced gas flow – which increase efficiency and lower energy consumption. In comparison to its predecessors, the GEA Bock HG44e range includes four instead of three model sizes. In addition, the largest version, the HG44e/770-4 compressor, offers with its 67 m³/h, almost 20 % more displacement than the largest HG4 model. As a result, this compressor range demonstrates the greatest power density in the sector. With the GEA Bock HG56e range, six-cylinder models are available throughout, instead of the four-cylinder HG5 versions. In comparison to the four-cylinder compressor models usually found on the market, the increase of the number of cylinders leads to enhanced efficiency and optimized running smoothness. Here as well, the largest compressor – with 100.4 m³/h displacement – exceeds that of its predecessor by around one-fifth. The GEA Bock oil-pump design, proven over many years, further assures reliable lubrication of all moving parts. The new models furthermore demonstrate excellent service friendliness – for example, simple exchange of the drive motor, as before. With its new GEA Bock HG44e and HG56e compressors, GEA Refrigeration Technologies sets new standards in efficiency and performance.



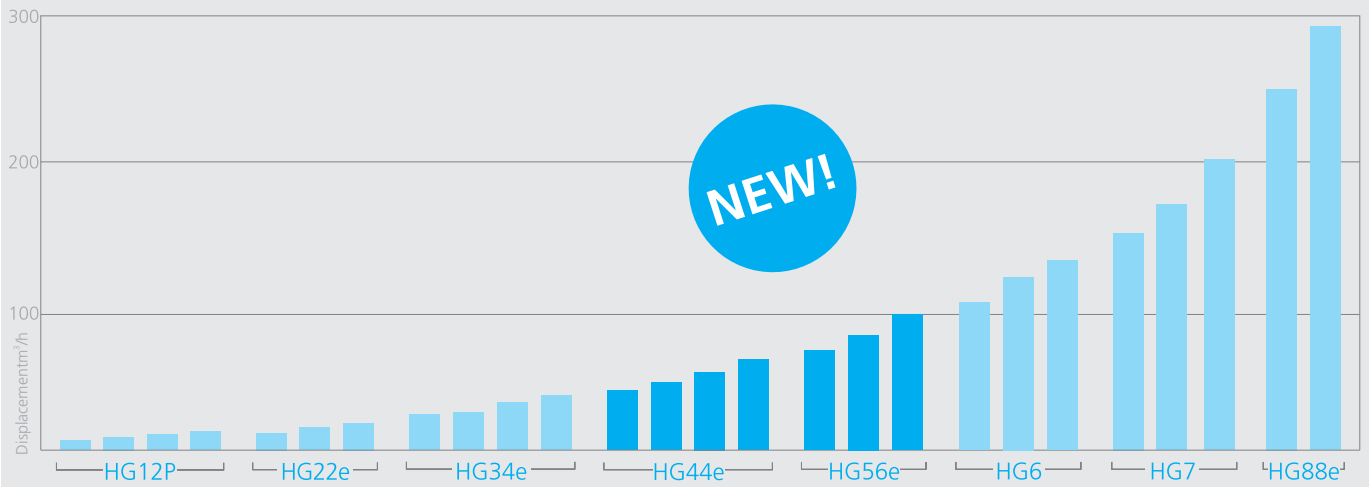
Disclaimer

This brochure has been produced for you with the greatest of care. Nevertheless it is not possible to rule out mistakes completely. In such cases we cannot assume any liability. The contents correspond to the status on going to print. Deviations cannot be ruled out because of the ongoing development process for our products.

The details are provided as unbinding general information and cannot substitute detailed, individual consultation. Reprints even only of excerpts only allowed with the explicit approval of GEA Bock GmbH. © GEA Bock GmbH 2014

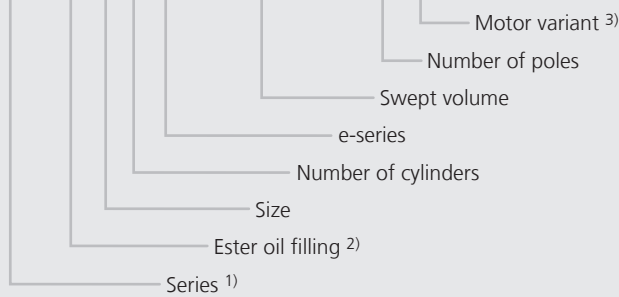
The current program

...8 model sizes with 26 capacity stages from 5,4 to 281,3 m³/h (50 Hz)



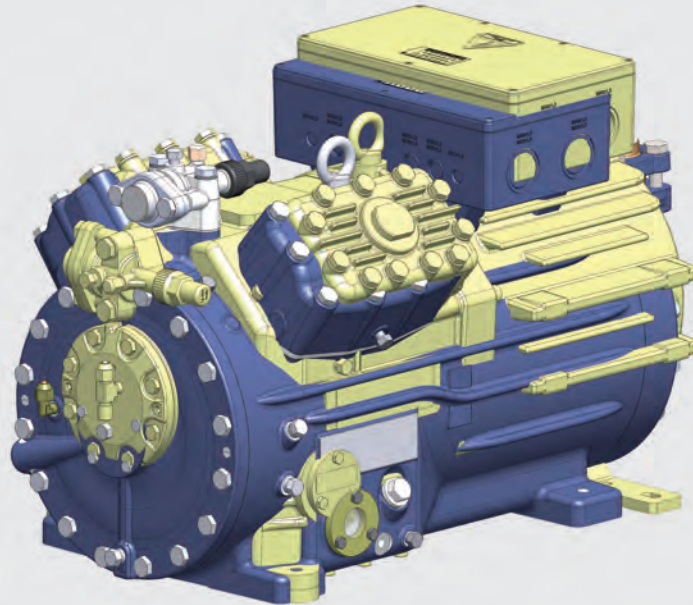
Type key

HGX56e / 1155 - 4 S



- 1) HG = Hermetic Gas-Cooled (suction gas-cooled)
- 2) X = Ester oil filling
(HFC refrigerants e.g. R134a, R404A, R507, R407C)
- 3) S = More powerful motor e.g. air-conditioning applications

Comparison HG44e vs. HG4



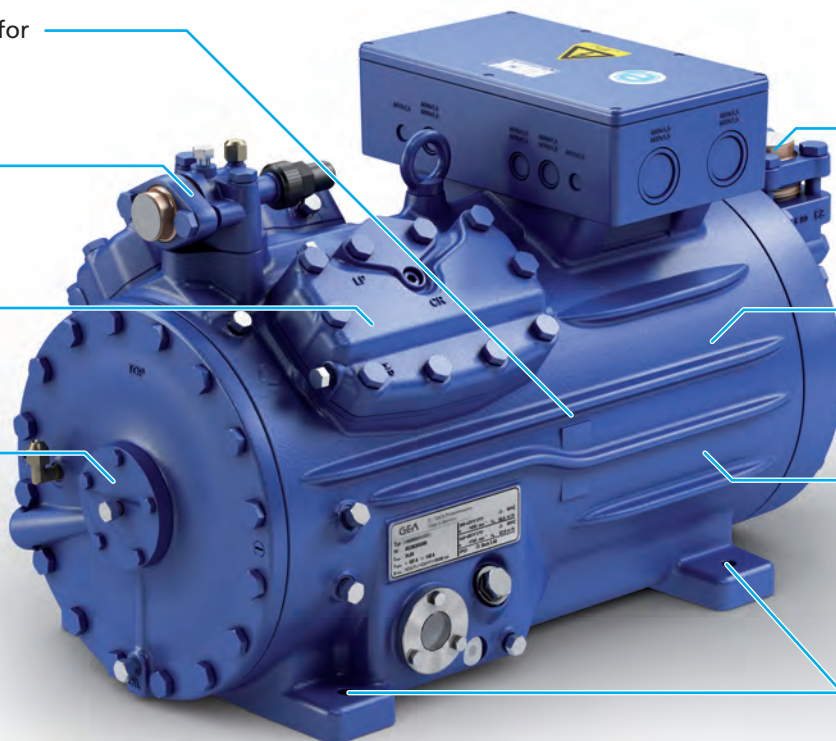
Blue: Bock HG44e
Yellow: Bock HG4

New design housing for maximum flow

Standard discharge valve system

Optimized valve plate system

Approved and reliable oil pump lubrication



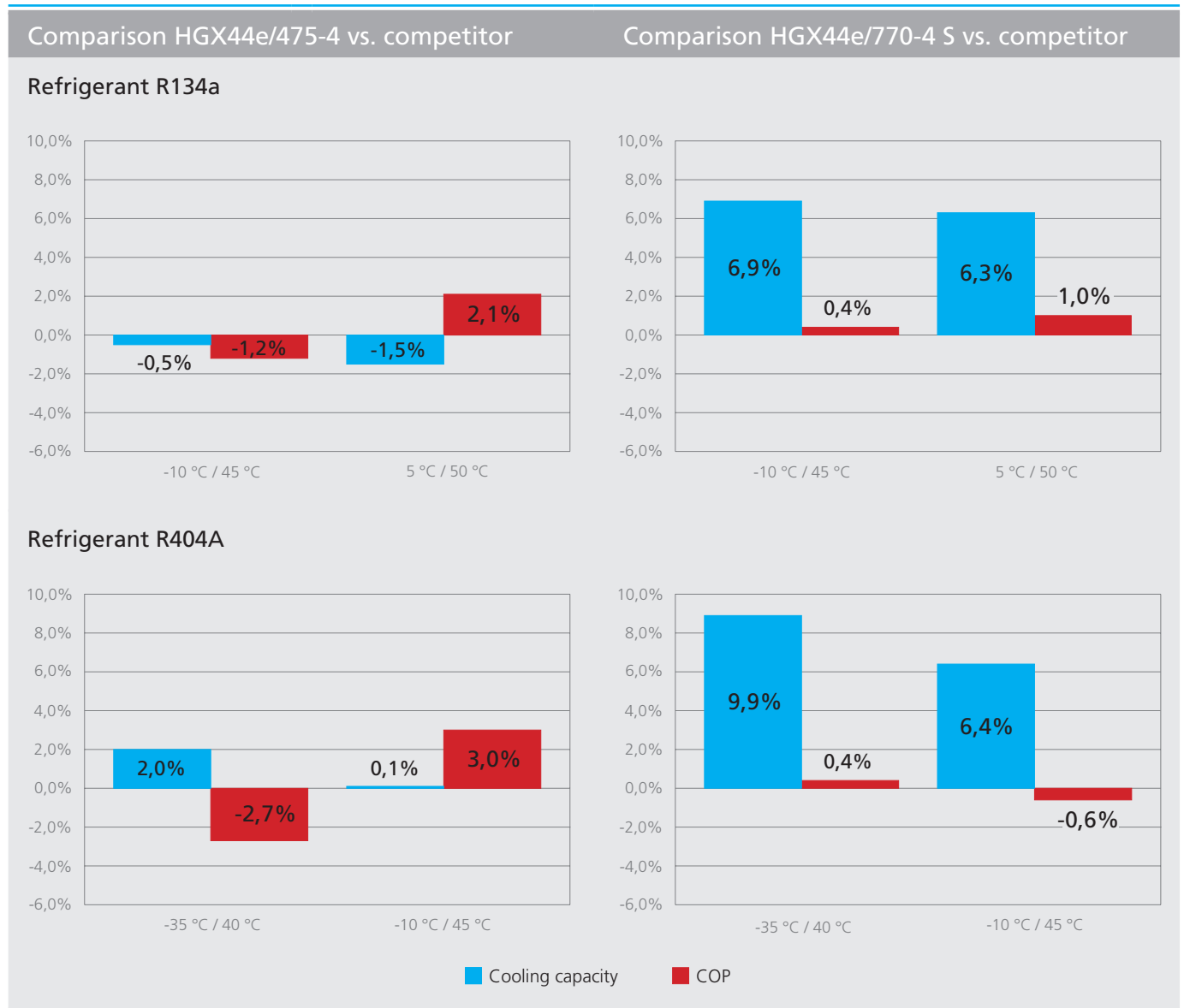
Standard suction valve position

Exchangeable motor

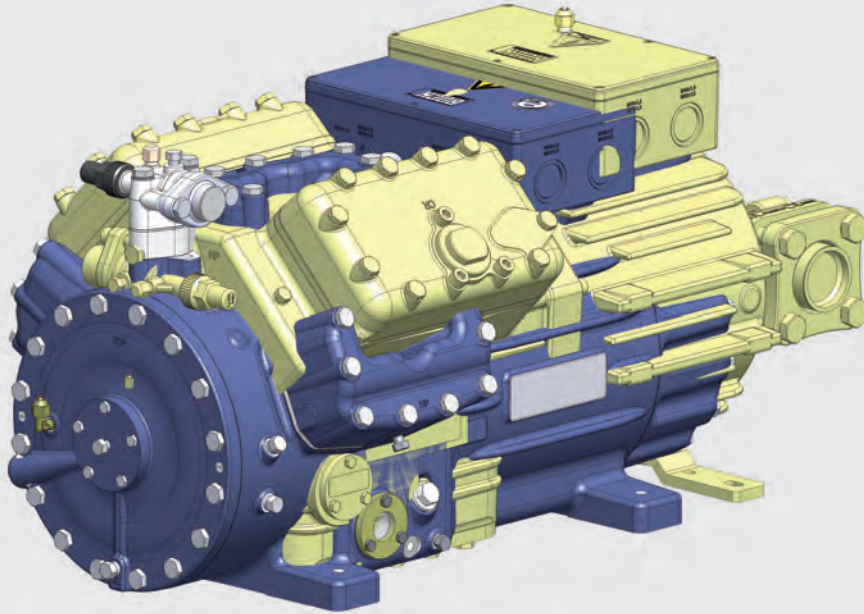
High efficiency motors of newest generation

Standard footprints

Length (cm)	Width (cm)	Height (cm)
-3	-1	-2



Comparison HG56e vs. HG5



Blue: Bock HG56e
Yellow: Bock HG5

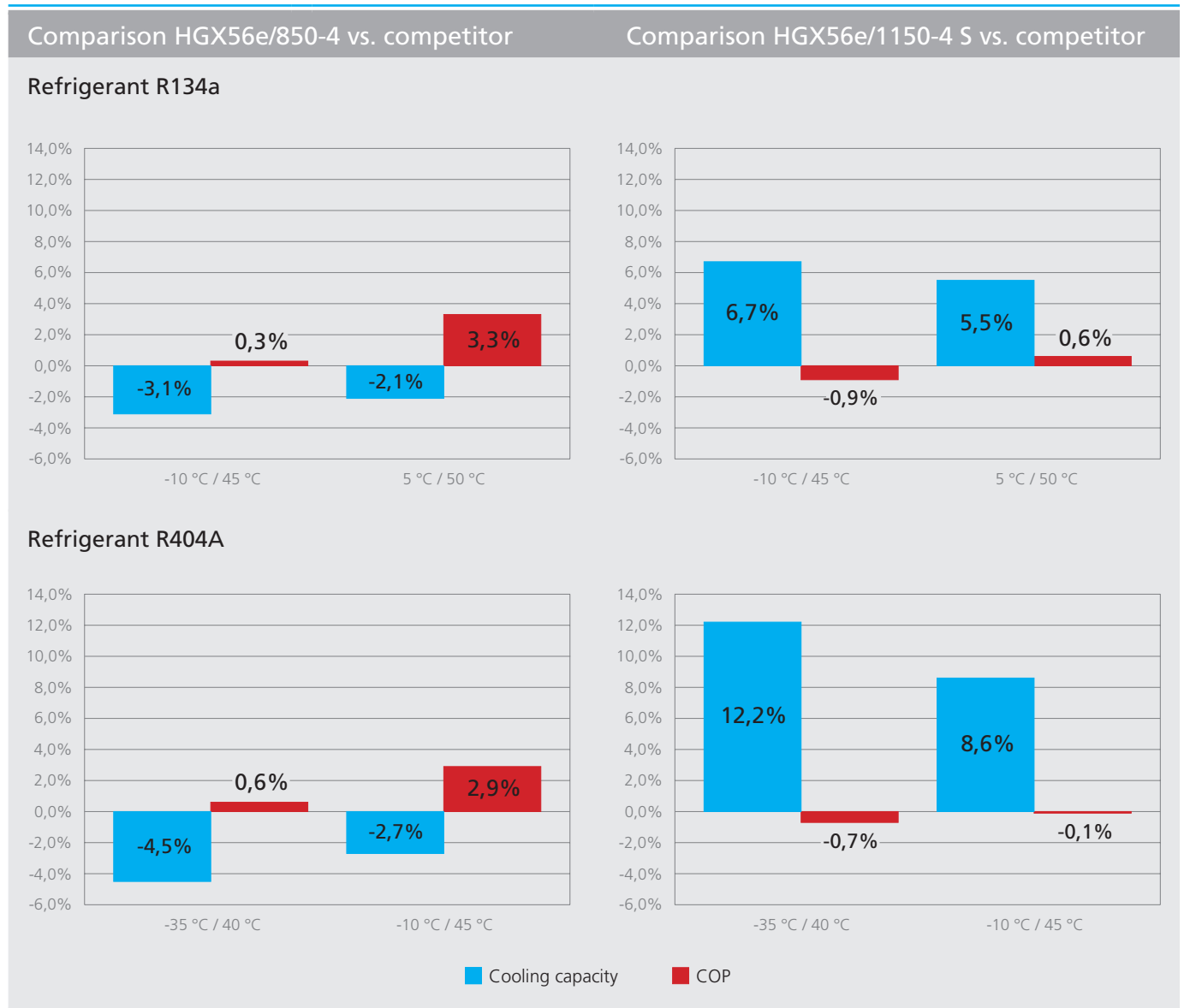
New designed 6-cylinder housing for highest efficiency and smoothness



Standard suction valve position

Standard footprints

Length (cm)	Width (cm)	Height (cm)
-12,5	0	+3,5



INT69 G Motor Protection

Electronic Motor Protection GEA Bock INT69 G

PTC sensors
Connection of up to nine PTC sensors possible



Temperature safety drive for the drive motor

The INT69 G is replacing, in the HG44e/HG56e and in all future new developments, the MP10 compressors used as standard at GEA Bock

The INT69 G also provides the usual functions, as:

- motor temperature monitoring
- hot gas temperature monitoring
- a reconnection preventing device
- a reset

INT69 G Diagnose



Operating recognition

PTC sensors

Connection hot gas sensor

Interface for USB / DB-Mod-bus Gateway

Technical data

Unit designation	INT69 G	ING69 G Diagnose
Connection voltage	AC 115-230 V - 1 - 50/60 Hz ± 10% 3 VA	AC 115-230 V - 1 - 50/60 Hz ± 10% 3 VA
Relay	AC 240 V, 2,5A, C300	AC 240 V, 2,5A, C300
Dimensions L/W/H	53 x 33 x 68 mm	50 x 33 x 68 mm

INT69 G Diagnose Unit Motor Protection

Read facility via INTelligence diagnosis software

With the INTelligence software, valuable information can be obtained on the status of the compressor and the system. The diagnosis function includes the plausibility checks of the logic sequences, all important operation and error values of the compressor and provides for its clear visualization.

Crucial evaluation parameters can be configured individually. This allows for a quick analysis and an efficient system management.

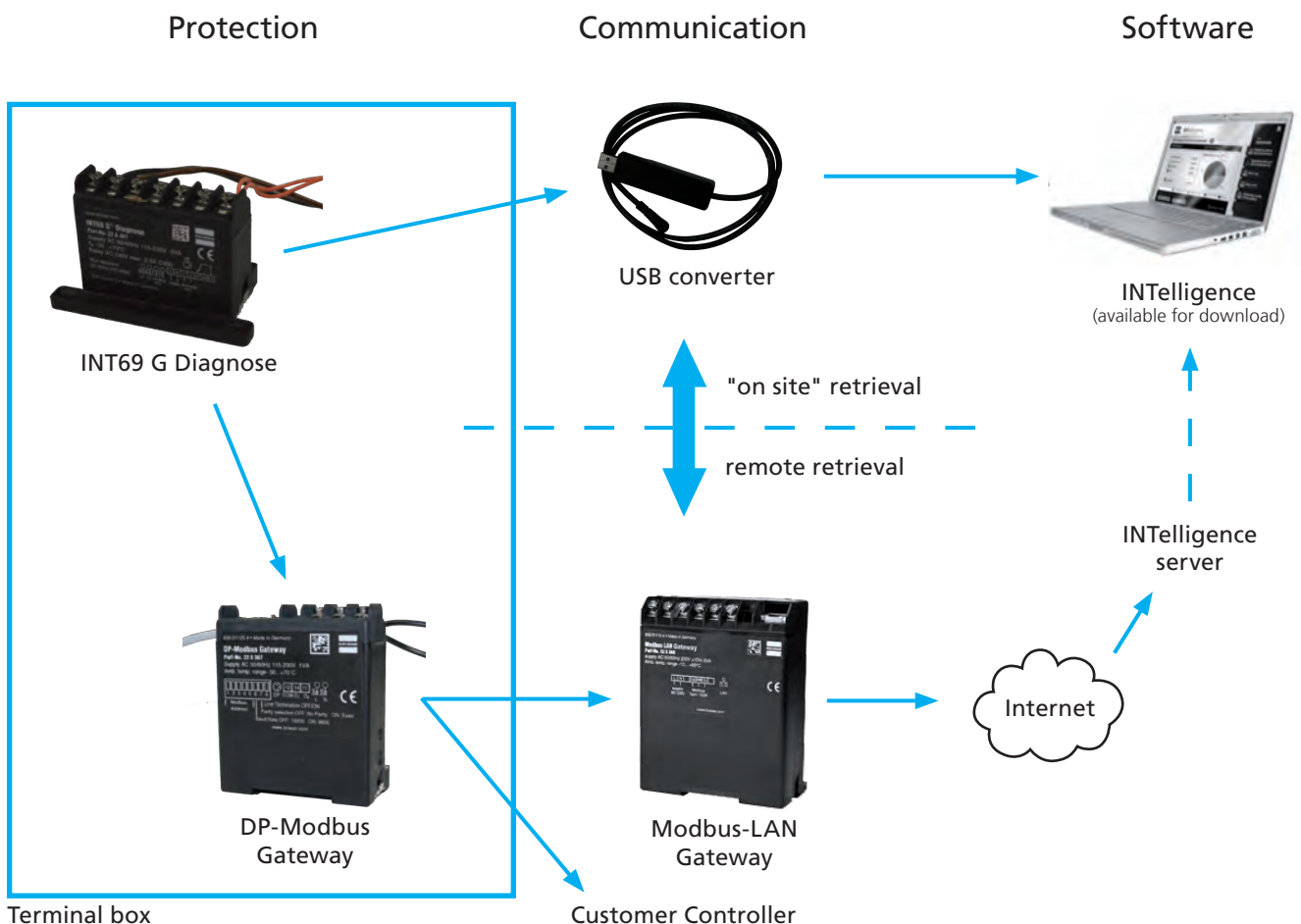
Advantages:

- Simple operation
- Immediate diagnosis and precise problem solving
- Specially adaptable to the user's needs

If required, data can be retrieved directly at each compressor via USB port. A Modbus interface is available for integration in a network.

The data are sent periodically via the DP-Modbus gateway and the Modbus-LAN gateway to a server and can be retrieved remotely by the INTelligence diagnosis software.

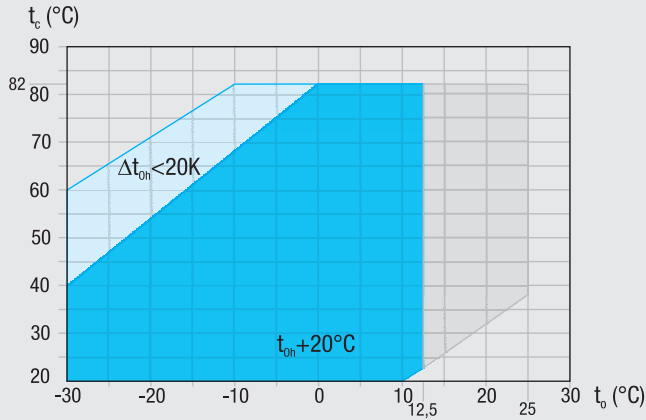
The INTelligence diagnosis software can be downloaded for free at www.kriwan.com.



Further explanation can be found at www.kriwan.com.

In the event of inquiries please contact our Department for Application Technology, phone +49 7022 9454-0.

R134a Operating limits



- Unlimited application range
- Supplementary cooling or reduced suction gas temperature
- Motor version -S- (more powerful motor)

- t_o Evaporation temperature (°C)
- t_c Condensing temperature (°C)
- Δt_{oh} Suction gas superheat (K)
- t_{oh} Suction gas temperature (°C)

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar

¹⁾ LP = low pressure HP = high pressure

R134a Notes

Operating limits

Compressor operation is possible within the limits shown on the application diagrams. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation.

Restrictions to the operating limits may occur when using the Bock EFC (Electronic Frequency Control).
Further explanation see www.bock.de.

Performance data

The performance data for R134a are based on European Standard EN 12900 50 Hz power supply frequency.

This signifies: 20 °C suction gas temperature without liquid sub-cooling.

This results in significant differences compared to specifications with liquid undercooling and/or suction-gas temperatures

Conversion factor for 60 Hz = 1,2

Performance data for other operating points, see GEA Bock software.

R134a		Performance data											50 Hz	
Type	Cond. temp. °C	Q _P	Cooling capacity \dot{Q}_o [W]										Power consumption P_e [kW]	
			Evaporating temperature °C											
			12,5	10	7,5	5	0	-5	-10	-15	-20	-25	-30	
HGX44e/475-4	30	Q	39200 4,71	35700 4,75	32500 4,76	29500 4,74	24100 4,62	19400 4,41	15400 4,13	12100 3,79	9190 3,42	6850 3,03	4920 2,63	
	40	Q	34500 5,95	31400 5,90	28600 5,82	25900 5,71	21100 5,43	16900 5,07	13400 4,65	10400 4,19	7790 3,70	5670 3,20	3890 2,72	
	50	Q	29900 7,12	27200 6,97	24700 6,80	22300 6,61	18100 6,16	14400 5,64	11300 5,08	8660 4,49	6430 3,88	4520 3,27	2880 2,69	
	60	Q	25400 8,16	23000 7,91	20800 7,65	18800 7,36	15100 6,74	12000 6,06	9280 5,35	7000 4,62	5040 3,89	3340 3,17	1840 2,49	
	70	Q	20800 8,99	18800 8,65	16900 8,28	15200 7,90	12100 7,10	9450 6,26	7210 5,40	5280 4,52	3600 3,66			
HGX44e/565-4	30	Q	46600 5,58	42600 5,62	38700 5,64	35200 5,61	28800 5,47	23200 5,22	18500 4,88	14500 4,48	11100 4,03	8310 3,56	6010 3,09	
	40	Q	41100 7,07	37500 7,01	34100 6,91	30900 6,79	25200 6,45	20300 6,01	16100 5,51	12500 4,95	9480 4,37	6950 3,78	4820 3,19	
	50	Q	35700 8,49	32500 8,31	29500 8,10	26700 7,87	21700 7,33	17400 6,71	13700 6,03	10600 5,31	7890 4,58	5610 3,86	3640 3,17	
	60	Q	30400 9,75	27600 9,45	25000 9,13	22600 8,78	18200 8,03	14500 7,21	11400 6,35	8620 5,47	6280 4,59	4240 3,74	2410 2,92	
	70	Q	25000 10,70	22600 10,30	20400 9,90	18400 9,44	14700 8,47	11600 7,45	8910 6,41	6610 5,36	4590 4,32			
HGX44e/665-4	30	Q	55200 6,52	50400 6,58	45800 6,59	41600 6,56	33900 6,40	27300 6,11	21700 5,72	16900 5,25	12900 4,74	9590 4,19	6870 3,64	
	40	Q	48600 8,24	44200 8,17	40200 8,06	36400 7,91	29600 7,52	23700 7,03	18700 6,44	14500 5,80	10900 5,13	7910 4,44	5400 3,76	
	50	Q	42100 9,87	38200 9,66	34700 9,43	31300 9,16	25400 8,54	20200 7,82	15900 7,04	12100 6,22	8950 5,37	6260 4,53	3960 3,73	
	60	Q	35600 11,30	32300 10,90	29200 10,60	26300 10,20	21100 9,34	16700 8,40	13000 7,42	9720 6,40	6970 5,39	4580 4,39	2470 3,44	
	70	Q	29100 12,40	26300 11,90	23700 11,40	21200 10,90	16900 9,85	13200 8,68	9990 7,48	7280 6,27	4920 5,07			
HGX44e/770-4 S	30	Q	63600 7,62	58000 7,68	52800 7,70	47900 7,67	39100 7,48	31600 7,14	25100 6,69	19700 6,14	15100 5,54	11300 4,90	8100 4,25	
	40	Q	56000 9,63	51100 9,54	46400 9,42	42100 9,24	34200 8,79	27500 8,21	21800 7,53	16900 6,78	12800 5,99	9360 5,19	6460 4,40	
	50	Q	48700 11,50	44200 11,20	40100 11,00	36300 10,70	29500 9,97	23600 9,14	18600 8,23	14300 7,26	10700 6,28	7510 5,30	4830 4,35	
	60	Q	41300 13,20	37500 12,80	33900 12,30	30600 11,90	24700 10,90	19600 9,82	15300 8,66	11600 7,48	8390 6,29	5630 5,13	3160 4,02	
	70	Q	34000 14,50	30700 13,90	27700 13,40	24900 12,70	19900 11,50	15600 10,10	12000 8,74	8810 7,32	6070 5,93			

Relating to 20 °C suction gas temperature without liquid subcooling.

This performance data is preliminary data!

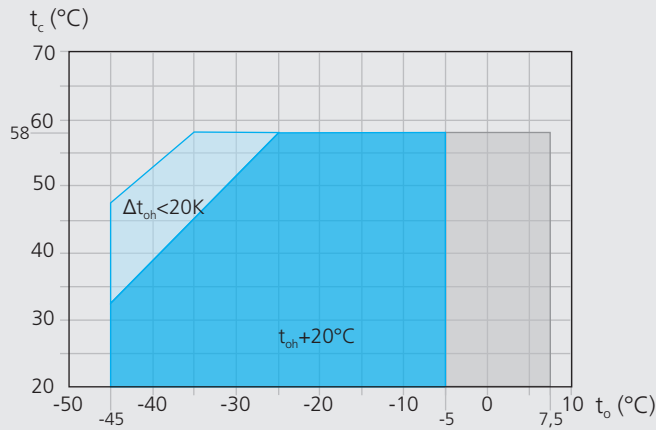
Supplementary cooling or reduced suction gas temp.

R134a		Performance data						50 Hz
Type	Displacement m ³ /h (50 Hz)	Cooling capacity \dot{Q}_o [W]				Drive power P_e [kW]		
		Normal cooling			Air-conditioning			
		Evaporation temp. -10°C / Cond. temp. +45°C						
		\dot{Q}_o	P_e	COP	\dot{Q}_o	P_e	COP	
HGX56e/850-4	73,8	22300	8,68	2,57	40100	11,7	3,43	
HGX56e/995-4	86,6	26000	10,0	2,60	46800	13,6	3,44	
HGX56e/1155-4	100,4	30200	11,7	2,58	54400	15,9	3,42	

Relating to 20 °C suction gas temperature without liquid subcooling.

This performance data is preliminary data!

R404A/R507 Operating limits



- Unlimited application range
- Supplementary cooling or reduced suction gas temperature
- Motor version -S- (more powerful motor)
- t_o Evaporation temperature (°C)
- t_c Condensing temperature (°C)
- Δt_{oh} Suction gas superheat (K)
- t_{oh} Suction gas temperature (°C)

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar

¹⁾ LP = low pressure HP = high pressure

R404A/R507 Notes

Operating limits

Compressor operation is possible within the limits shown on the application diagrams. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation.

Restrictions to the operating limits may occur when using the Bock EFC (Electronic Frequency Control). Further explanation see www.bock.de.

Performance data

The performance data for R404A/R507 are based on European Standard EN 12900 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid sub-cooling.

This leads to significant differences compared to systems with liquid subcooling and/or other suction gas temperatures


Performance data were compiled for R404A and R507. The base values are the data for R404A.


Conversion factor for 60 Hz = 1,2

Performance data for other operating points, see GEA Bock software.

R404A/R507		Performance data											50 Hz			
Type	Cond. temp. °C		Cooling capacity \dot{Q}_o [W]										Power consumption P_e [kW]			
			Evaporating temperature °C													
			7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45		
HGX44e/475-4 HGX44e/475-4 S	30	Q	52500	48300	40500	33500	27500	22400	18000	14300	11100	8340	6060	4110		
		P	7,73	7,85	7,94	7,80	7,52	7,10	6,57	5,94	5,26	4,54	3,81	3,11		
	40	Q	45200	41400	34600	28300	23200	18800	15000	11800	9010	6670	4650	2870		
		P	9,97	9,90	9,61	9,16	8,57	7,88	7,12	6,31	5,47	4,64	3,84	3,11		
	50	Q	37600	34300	28500	23100	18800	15100	12000	9260	6970	5000	3270			
		P	11,80	11,50	10,90	10,20	9,41	8,49	7,55	6,59	5,65	4,76	3,94			
HGX44e/565-4 HGX44e/565-4 S	30	Q	62700	57700	48400	39800	32800	26800	21600	17200	13400	10200	7470	5140		
		P	9,18	9,32	9,43	9,31	8,97	8,47	7,82	7,07	6,24	5,38	4,51	3,66		
	40	Q	54000	49600	41400	33700	27700	22500	18100	14300	11100	8230	5820	3680		
		P	11,80	11,70	11,40	10,90	10,20	9,42	8,49	7,51	6,50	5,50	4,55	3,67		
	50	Q	45100	41200	34200	27500	22500	18200	14500	11400	8620	6270	4180			
		P	14,00	13,70	13,00	12,30	11,20	10,10	9,01	7,85	6,72	5,64	4,66			
HGX44e/665-4 HGX44e/665-4 S	30	Q	73100	67100	56300	46500	38300	31100	25000	19800	15300	11600	8340	5630		
		P	10,70	10,90	11,00	10,90	10,50	9,94	9,19	8,32	7,36	6,35	5,33	4,34		
	40	Q	62700	57400	47900	39300	32200	26000	20800	16300	12500	9160	6360	3910		
		P	13,90	13,80	13,30	12,80	12,00	11,00	9,97	8,83	7,66	6,49	5,37	4,34		
	50	Q	52000	47500	39300	32000	26000	20900	16500	12800	9570	6840	4440			
		P	16,50	16,10	15,30	14,30	13,10	11,80	10,50	9,22	7,91	6,66	5,51			
HGX44e/770-4 S	30	Q	84600	77800	65300	54300	44700	36500	29400	23300	18100	13800	10100	6840		
		P	12,40	12,60	12,80	12,60	12,10	11,50	10,60	9,62	8,51	7,34	6,16	5,02		
	40	Q	72600	66500	55600	46100	37800	30700	24500	19300	14900	11100	7750	4860		
		P	16,10	16,00	15,50	14,80	13,80	12,70	11,50	10,20	8,86	7,51	6,22	5,02		
	50	Q	60300	55100	45700	37600	30700	24700	19600	15300	11600	8360	5530			
		P	19,20	18,80	17,80	16,50	15,20	13,70	12,20	10,60	9,15	7,70	6,37			

Relating to 20 °C suction gas temperature without liquid subcooling.

 Motor version -S- (more powerful motor)

 Supplementary cooling or reduced suction gas temp.

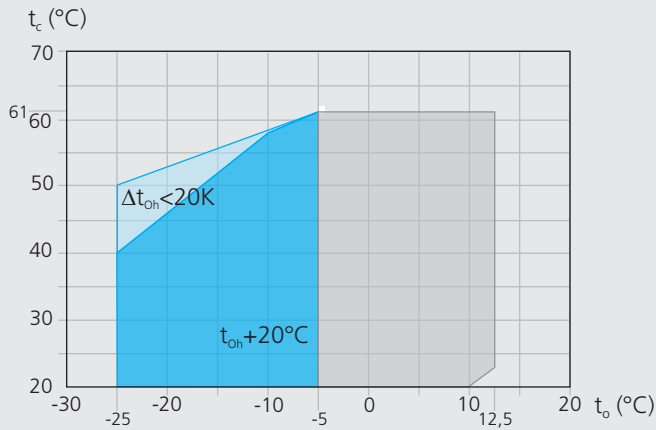
This performance data is preliminary data!

R404A/R507		Performance data							50 Hz	
Type	Displacement m ³ /h (50 Hz)	Cooling capacity \dot{Q}_o [W]						Drive power P_e [kW]		
		Deep freezing			Normal cooling			Air-conditioning		
		Evaporation temp. -35°C / Condensing temp. +40°C			Evaporation temp. -10°C / Condensing temp. +45°C			Evaporation temp. +5°C / Condensing temp. +50°C		
		\dot{Q}_o	P_e	COP	\dot{Q}_o	P_e	COP	\dot{Q}_o	P_e	COP
HGX56e/850-4	73,8	12400	8,26	1,50	37700	16,0	2,36			
HGX56e/850-4 S	73,8				38100	16,0	2,38	61200	20,6	2,97
HGX56e/995-4	86,6	14300	9,69	1,48	44000	18,8	2,34			
HGX56e/995-4 S	86,6				44300	18,7	2,37	71300	24,2	2,95
HGX56e/1155-4	100,4	16600	11,1	1,50	51200	21,8	2,35			
HGX56e/1155-4 S	100,4				51700	21,8	2,37	83400	27,9	2,99

Relating to 20 °C suction gas temperature without liquid subcooling.

This performance data is preliminary data!

R407C Operating limits



- Unlimited application range
- Supplementary cooling or reduced suction gas temperature
- Motor version -S (more powerful motor)
- t_o Evaporation temperature (°C)
- t_c Condensing temperature (°C)
- Δt_{oh} Suction gas superheat (K)
- t_{oh} Suction gas temperature (°C)

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar

¹⁾ LP = low pressure HP = high pressure

R407C Notes

Operating limits

Compressor operation is possible within the limits shown on the application diagrams. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation.

Restrictions to the operating limits may occur when using the Bock EFC (Electronic Frequency Control).

Further explanation see www.bock.de.

Performance data

The performance data for R407C are based on European Standard EN 12900 50 Hz power supply frequency.

This signifies: 20 °C suction gas temperature without liquid sub-cooling.


Evaporation and condensing temperatures are based on the dew point values (saturated vapour conditions).


Conversion factor for 60 Hz = 1,2

Performance data for other operating points, see GEA Bock software.

R407C		Performance data										50 Hz
Type	Cond. temp. °C		Cooling capacity \dot{Q}_0 [W]					Power consumption P_e [kW]				
			Evaporating temperature °C									
			12,5	10	7,5	5	0	-5	-10	-15	-20	-25
HG44e/475-4	30	Q	56600	51700	47100	42800	35200	28500	22900	18100	14100	10700
		P	7,20	7,25	7,25	7,21	7,03	6,66	6,24	5,73	5,18	4,59
	40	Q	50200	45800	41700	37800	30900	24900	19900	15600	12000	8850
P		9,13	9,03	8,89	8,72	8,28	7,69	7,05	6,35	5,61	4,87	
HG44e/475-4 S	50	Q	43600	39700	36000	32600	26500	21200	16800	13100	9850	7100
		P	10,80	10,50	10,30	10,00	9,33	8,54	7,69	6,80	5,90	5,02
HG44e/565-4	30	Q	67400	61600	56200	51100	42000	33900	27300	21700	17000	12900
		P	8,54	8,60	8,61	8,56	8,34	7,93	7,42	6,81	6,14	5,44
	40	Q	60000	54700	49800	45200	37000	29700	23800	18700	14500	10800
P		10,80	10,70	10,50	10,30	9,83	9,18	8,40	7,55	6,67	5,78	
HG44e/565-4 S	50	Q	52200	47500	43100	39000	31800	25300	20100	15700	12000	8650
		P	12,80	12,50	12,20	11,80	11,00	10,20	9,18	8,10	7,01	5,95
HG44e/665-4	30	Q	78700	71900	65500	59600	48900	40000	32200	25500	19800	15000
		P	10,00	10,00	10,00	10,00	9,76	9,23	8,65	7,95	7,17	6,36
	40	Q	69800	63600	57900	52500	42900	34900	27900	21900	16800	12400
P		12,70	12,50	12,30	12,10	11,50	10,60	9,77	8,80	7,78	6,75	
HG44e/665-4 S	50	Q	60600	55100	49900	45200	36700	29700	23500	18300	13800	9890
		P	15,10	14,70	14,40	13,90	13,00	11,80	10,60	9,43	8,18	6,96
HG44e/770-4 S	30	Q	92000	84000	76600	69600	57100	46300	37100	29300	22700	17000
		P	11,60	11,70	11,70	11,60	11,30	10,80	10,00	9,22	8,26	7,23
	40	Q	81400	74200	67400	61200	49900	40300	32000	25000	19000	13900
P		14,80	14,70	14,40	14,10	13,30	12,40	11,30	10,00	8,82	7,51	
HG44e/770-4 S	50	Q	70400	64000	58000	52400	42500	34000	26800	20600	15400	10800
		P	17,60	17,20	16,70	16,20	15,00	13,60	12,10	10,60	9,06	7,49

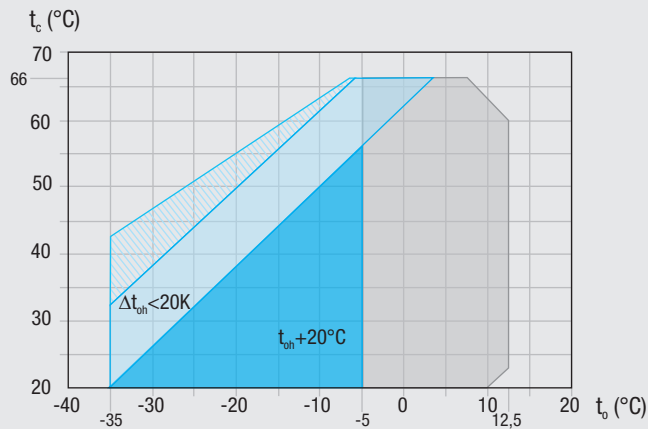
Relating to 20 °C suction gas temperature without liquid subcooling.

 Motor version -S- (more powerful motor)

 Supplementary cooling or reduced suction gas temp.

This performance data is preliminary data!

R22 Operating limits



- Unlimited application range
 - Supplementary cooling or reduced suction gas temperature
 - Supplementary cooling and reduced suction gas temperature
 - Motor version -S- (more powerful motor)
- t_o Evaporation temperature (°C)
 t_c Condensing temperature (°C)
 Δt_{oh} Suction gas superheat (K)
 t_{oh} Suction gas temperature (°C)

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar

¹⁾ LP = low pressure HP = high pressure

R22 Notes

Operating limits

Compressor operation is possible within the limits shown on the application diagrams. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation.

Restrictions to the operating limits may occur when using the Bock EFC (Electronic Frequency Control).

Further explanation see www.bock.de.

Performance data

The performance data for R22 are based on European Standard EN 12900 50 Hz power supply frequency.

This signifies: 20 °C suction gas temperature without liquid sub-cooling.

Conversion factor for 60 Hz = 1,2

Performance data for other operating points, see GEA Bock software.

R22		Performance data											50 Hz			
Type	Cond. temp. °C		Cooling capacity \dot{Q}_0 [W]										Power consumption P_e [kW]			
			Evaporating temperature °C													
			12,5	10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35		
HG44e/475-4	30	Q	58200	53600	49100	45000	37500	30800	25100	20300	16100	12500	9390	6730		
		P	7,16	7,27	7,34	7,36	7,29	7,02	6,68	6,25	5,73	5,16	4,55	3,93		
	40	Q	52700	48300	44300	40500	33600	27400	22200	17800	14000	10700	7780	5280		
HG44e/475-4 S	40	P	9,17	9,15	9,08	8,97	8,66	8,19	7,63	6,99	6,29	5,54	4,78	4,02		
		50	Q	47000	43100	39300	35900	29600	24000	19300	15300	11800	8800			
	P	11,00	10,80	10,60	10,40	9,90	9,24	8,46	7,62	6,73	5,82					
HG44e/565-4	30	Q	69400	63900	58600	53700	44800	36700	30000	24300	19300	15100	11400	8180		
		P	8,50	8,64	8,71	8,74	8,65	8,37	7,96	7,43	6,81	6,12	5,39	4,64		
	40	Q	62900	57700	52900	48400	40200	32600	26600	21300	16800	12900	9460	6450		
HG44e/565-4 S	40	P	10,80	10,80	10,70	10,60	10,20	9,79	9,11	8,33	7,48	6,58	5,66	4,74		
		50	Q	56300	51500	47100	43000	35500	28600	23200	18400	14300	10800			
	P	13,10	12,90	12,60	12,40	11,70	11,00	10,10	9,10	8,02	6,91					
HG44e/665-4	30	Q	81000	74500	68300	62600	52100	43300	35300	28500	22600	17500	13200	9410		
		P	9,95	10,10	10,10	10,20	10,10	9,73	9,26	8,66	7,94	7,15	6,30	5,44		
	40	Q	73100	67100	61500	56200	46600	38400	31200	24900	19600	14900	10900	7320		
HG44e/665-4 S	40	P	12,70	12,70	12,60	12,50	12,00	11,30	10,50	9,69	8,71	7,68	6,63	5,57		
		50	Q	65200	59700	54600	49700	41000	33600	27000	21400	16500	12300			
	P	15,40	15,20	14,90	14,50	13,80	12,80	11,70	10,50	9,33	8,07					
HG44e/770-4 S	30	Q	93900	86300	79200	72600	60500	50000	40900	33000	26200	20400	15400	11100		
		P	11,50	11,70	11,80	11,80	11,70	11,30	10,80	10,10	9,28	8,35	7,36	6,36		
	40	Q	84700	77800	71300	65200	54100	44500	36200	29000	22800	17500	12800	8710		
HG44e/770-4 S	40	P	14,80	14,80	14,60	14,50	13,90	13,20	12,30	11,30	10,10	8,97	7,74	6,51		
		50	Q	75600	69300	63300	57800	47700	39000	31500	25000	19400	14500			
	P	17,90	17,70	17,30	16,90	16,00	14,90	13,60	12,30	10,90	9,43					

Relating to 20 °C suction gas temperature without liquid subcooling
 This performance data is preliminary data!

Supplementary cooling or reduced suction gas temp.
 Motor version -S- (more powerful motor)
 Supplementary cooling and reduced suction gas temp.

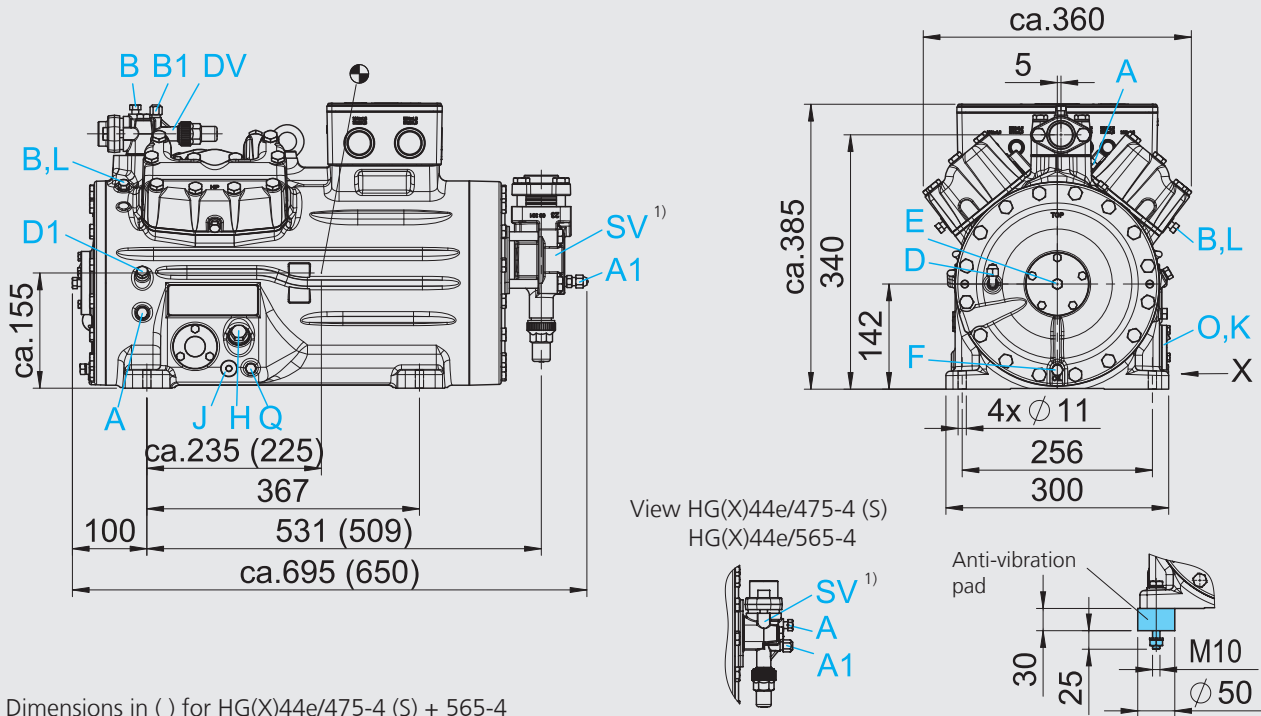
Type	Number of cylinders	Displacement 50 / 60 Hz (1450/1740 rpm)	Electrical data				Weight kg	Connections ④		Oil charge Ltr.
			Voltage	Max. working current	Max. power consumption	Starting current (rotor locked)		Discharge line DV	Suction line SV	
			①	②	②			mm I inch	mm I inch	
		m ³ /h		A	kW	A				
				PW 1 + 2		PW 1 / PW 1 + 2				
HG44e/475-4	4	41,30 / 49,60	③	19	11,0	83 / 109	164	28 / 1 ¹ / ₈	35 / 1 ³ / ₈	2,3
HG44e/475-4 S	4	41,30 / 49,60	③	23	13,1	115 / 150	168	28 / 1 ¹ / ₈	35 / 1 ³ / ₈	2,3
HG44e/565-4	4	49,20 / 59,00	③	22	13,2	83 / 109	164	28 / 1 ¹ / ₈	35 / 1 ³ / ₈	2,3
HG44e/565-4 S	4	49,20 / 59,00	③	26	15,6	133 / 171	170	28 / 1 ¹ / ₈	42 / 1 ⁵ / ₈	2,3
HG44e/665-4	4	57,70 / 69,20	③	26	15,4	115 / 150	169	28 / 1 ¹ / ₈	42 / 1 ⁵ / ₈	2,3
HG44e/665-4 S	4	57,70 / 69,20	③	30	18,3	133 / 171	168	28 / 1 ¹ / ₈	42 / 1 ⁵ / ₈	2,3
HG44e/770-4 S	4	67,00 / 80,40	③	35	21,4	133 / 171	164	28 / 1 ¹ / ₈	42 / 1 ⁵ / ₈	2,3
HG56e/850-4	6	73,80 / 88,60	③	38	22,6	133 / 171	194	28 / 1 ¹ / ₈	42 / 1 ⁵ / ₈	3,0
HG56e/850-4 S	6	73,80 / 88,60	③	43	25,3	162 / 210	211	28 / 1 ¹ / ₈	54 / 2 ¹ / ₈	3,0
HG56e/995-4	6	86,60 / 103,90	③	44	26,0	162 / 210	208	28 / 1 ¹ / ₈	54 / 2 ¹ / ₈	3,0
HG56e/995-4 S	6	86,60 / 103,90	③	50	29,9	189 / 246	211	28 / 1 ¹ / ₈	54 / 2 ¹ / ₈	3,0
HG56e/1155-4	6	100,40 / 120,50	③	51	30,4	189 / 246	212	28 / 1 ¹ / ₈	54 / 2 ¹ / ₈	3,0
HG56e/1155-4 S	6	100,40 / 120,50	③	61	34,5	253 / 330	221	28 / 1 ¹ / ₈	54 / 2 ¹ / ₈	3,0

* PW = Part Winding, motors for part winding start 1 = 1. part winding 2 = 2. part winding

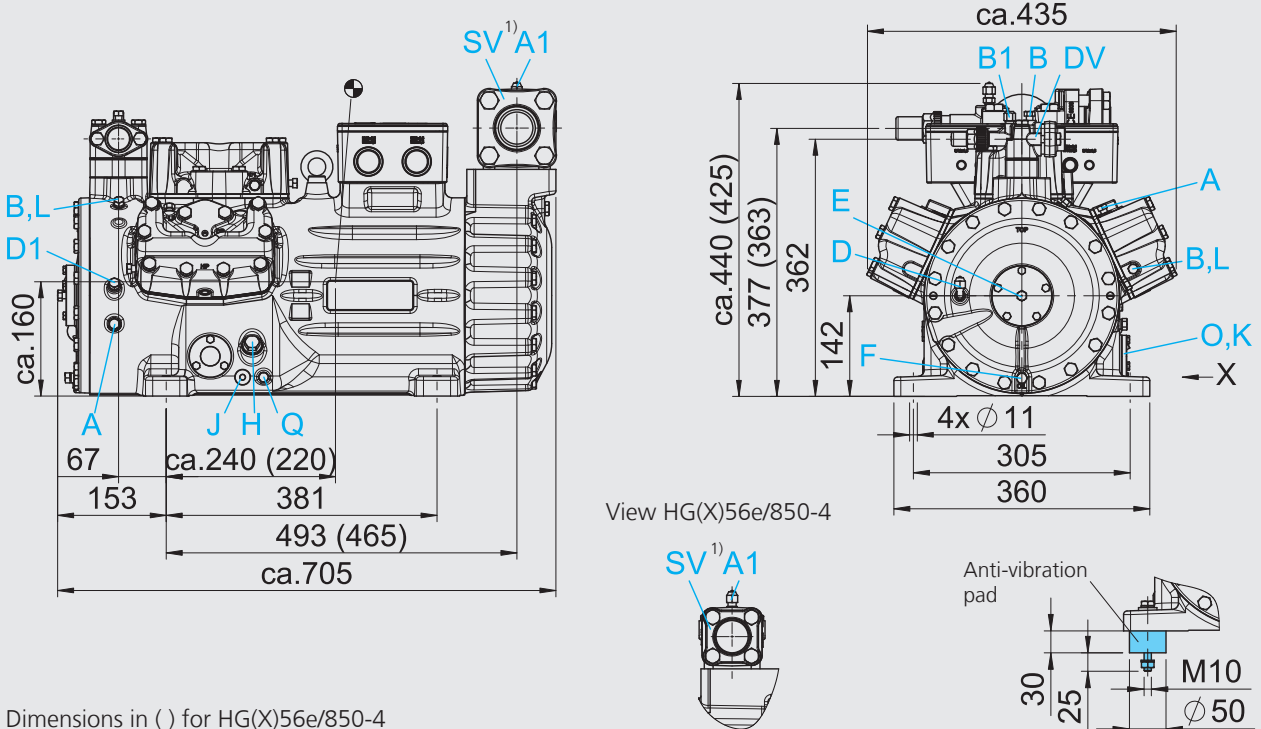
Explanations:

- ① Tolerance ($\pm 10\%$) relates to the mean value of the voltage range. Other voltages and current types on request.
- ② - The specifications for max. power consumption apply for 50Hz operation. For 60Hz operation, the specifications have to be multiplied by the factor 1.2. The max. working current remains unchanged
- Take account of the max. operating current / max. power consumption when designing contactors, leads and fuses. Switches: Service category AC3
- ③ 380-420 V Y/YY - 3 - 50 Hz PW
440-480 V Y/YY - 3 - 60 Hz PW
PW = Part Winding, motors for part winding start (no start unloaders required)
- Winding ratios: 70% / 30%
- Designs for Y/ Δ on request
- ④ For soldering connections

HG44e



HG56e



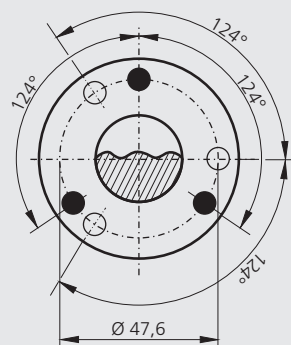
Dimensions in mm
¹⁾ SV 90° rotatable
 ● Centre of gravity

Connections see page 20

View X

Possibility to connect to oil level regulator

- Three-hole connection for oil level regulator make ESK, AC+R, CARLY (3x M6, 10 deep)
- Three-hole connection for oil level regulator make TRAXOIL (3 x M6 x 10 deep)



Dimensions in mm

Connections

SV	Suction line	please refer to Technical data page 18
DV	Discharge line	
A	Connection suction side, not lockable	1/4 " 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
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	1/8 " NPTF
F	Oil drain	1/4 " NPTF
H	Oil charge plug	M 22 x 1,5
J	Connection oil sump heater	Ø 15 mm
K	Sight glass	-
L	Connection thermal protection thermostat	1/8 " NPTF
O	Connection oil level regulator	3 x M6
Q	Connection oil temperature sensor	1/8 " NPTF

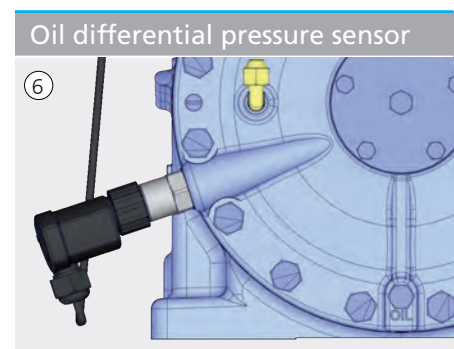
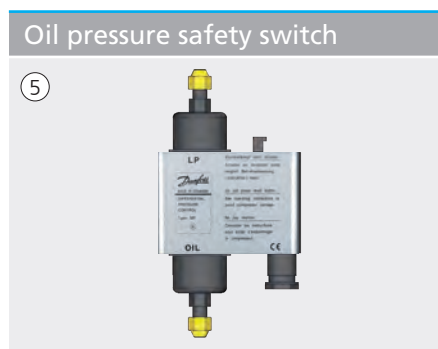
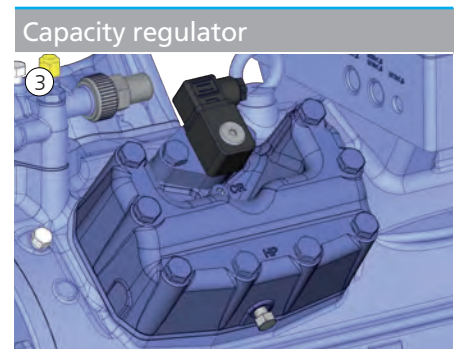
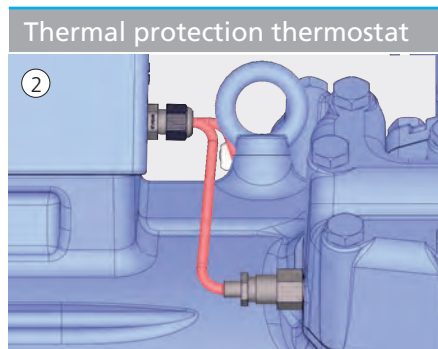
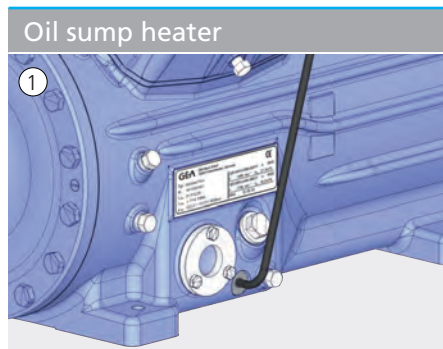
Scope of supply	HG44e	HG56e
Semi-hermetic four cylinder reciprocating compressor with drive motor for part winding start 380-420 V Y / YY - 3 - 50 Hz 440-480 V Y / YY - 3 - 60 Hz Single-section compressor housing with hermetically integrated electric motor	●	
Semi-hermetic six cylinder reciprocating compressor with drive motor for part winding start 380-420 V Y / YY - 3 - 50 Hz 440-480 V Y / YY - 3 - 60 Hz Single-section compressor housing with hermetically integrated electric motor		●
Winding protection with PTC resistor sensors and electronic trigger unit INT69 G	●	●
Oil pump	●	●
Possibility to connect to oil level controllers makes ESK, AC+R or CARLY	●	●
Possibility to connect to oil level controllers make Traxoil	● ¹⁾	● ¹⁾
Oil charge: HG: FUCHS Reniso SP46 HGX: FUCHS Reniso Triton SE55	●	●
Sight glass	●	●
Decompression valve	●	●
Suction and discharge line valve	●	●
Inert gas charge	●	●
4 anti-vibration pads enclosed	●	●

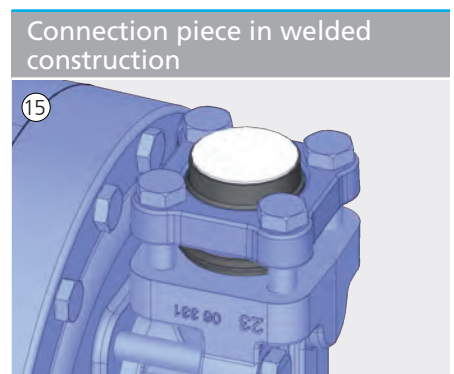
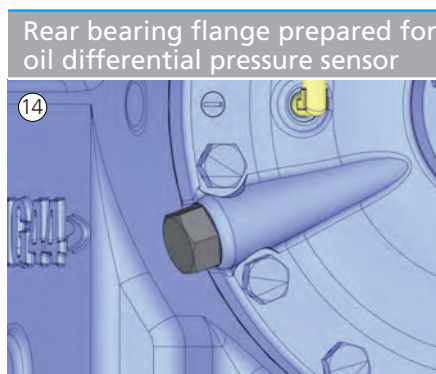
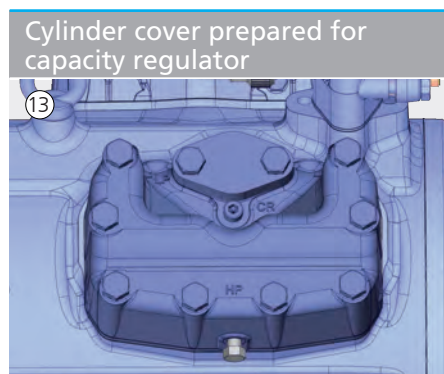
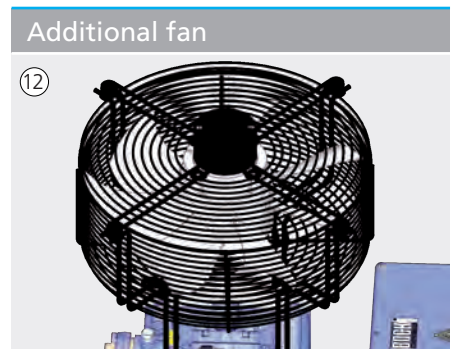
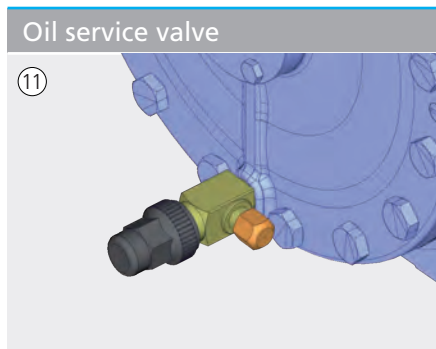
1) Only possible with additional adapter

Accessories	HG44e	HG56e
① Oil sump heater 220-240 V - 1 - 50/60 Hz, 160 W	●	●
② Thermal protection thermostat (PTC)	●	●
③ Capacity regulator 230 V - 1 - 50/60 Hz, IP65, 1 capacity regulator = 50% residual capacity Capacity regulator 230 V - 1 - 50/60 Hz, IP65, 1-2 capacity regulators = 66/33% residual capacity	●	●
④ Start unloader by means of a Bock ES (Electronic Soft Start) 400 V - 3 - 50/60 Hz, IP20, (connection clamps IP00) for installation in switch cabinet	● ¹⁾	● ¹⁾
⑤ Oil pressure safety switch MP 54 230 V - 1 - 50/60 Hz, IP20	● ¹⁾	● ¹⁾
⑥ Oil differential pressure sensor, (Δp -switch Kriwan make) 220-240 V - 1 - 50/60 Hz	● ¹⁾	● ¹⁾
⑦ INT69 G Diagnose 115 V / 230 V AC, 50/60 Hz, IP00 (INT69 G not applicable)	●	●
⑧ DP-Modbus Gateway 115 V / 230 V AC, 50/60 Hz, IP00 incl. adapter cable	● ¹⁾	● ¹⁾
⑨ Modbus-LAN Gateway 230 V AC, 50/60 Hz, IP00	● ¹⁾	● ¹⁾
⑩ USB converter for INT69 G Diagnose	● ¹⁾	● ¹⁾
⑪ Oil service valve	●	●
⑫ Additional fan 230 V D /400 V Y -3- 50 Hz, 120 W, 230-265 V Δ / 400-460 V Y - 3 - 60 Hz, 190 W, IP54	● ¹⁾	● ¹⁾
⑬ Cylinder cover prepared for capacity regulator	●	●
⑭ Rear bearing flange prepared for oil differential pressure sensor (Δp -switch Kriwan make)	●	●
⑮ Connection piece suction and discharge valve in welded construction	●	●
Special voltage and/or frequency	● ²⁾	● ²⁾

¹⁾ Enclosed package

²⁾ On request







We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 index.

GEA Refrigeration Technologies

GEA Bock GmbH

Benzstraße 7, 72636 Frickenhausen, Germany
Phone: +49 7022 9454-0, Fax: +49 7022 9454-137
bock@gea.com, www.bock.de, www.gea.com