



BOCK Semi-hermetic Compressors

Single- and two-stage reciprocating
Bock compressors (HG/HA)

BOCK

colour the world
of tomorrow



HG semi-hermetic compressors

HA semi-hermetic compressors

HGZ two-stage semi-hermetic compressors

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- 2
- 3



ASERCOM Certification
Based on the requirements of the EU Ecodesign Directive and the corresponding regulation.

ASERCOM, the association of European manufacturers of components for refrigeration and air conditioning, addresses scientific and technical challenges, promotes performance and safety standards, supports better environmental protection, and serves the refrigeration and air conditioning industry and its customers. ASERCOM's compressors certification

program enables an objective performance comparison of the wide range of products on the market.
Many of the BOCK compressors are certified.
An overview can be found here:
<https://www.asercom.org/list-of-certified-compressors/>

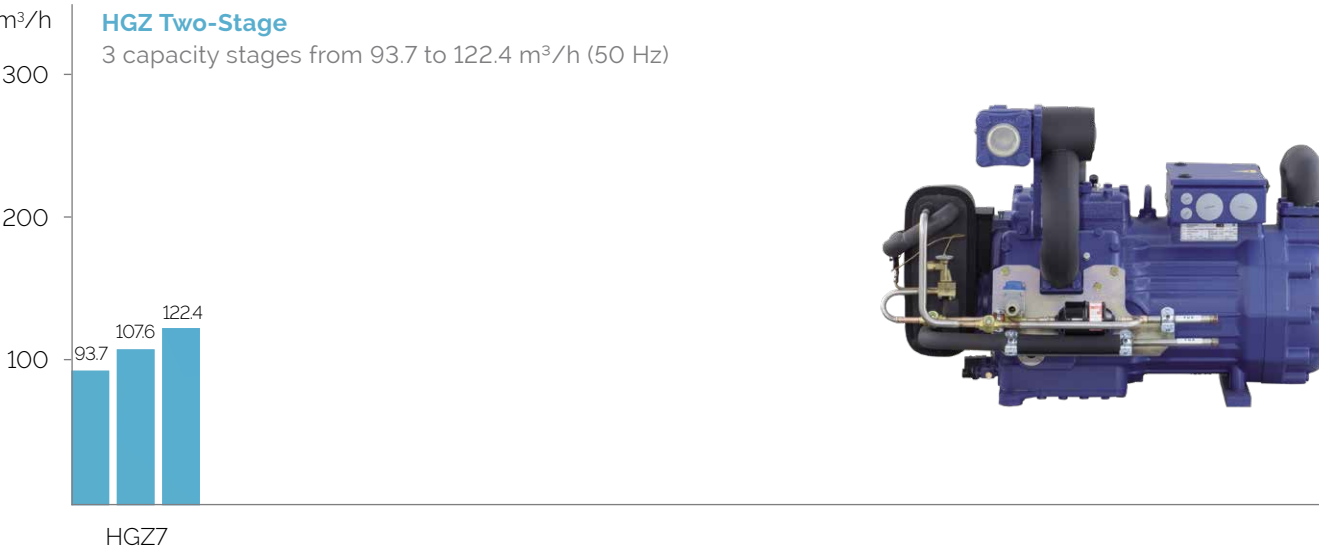
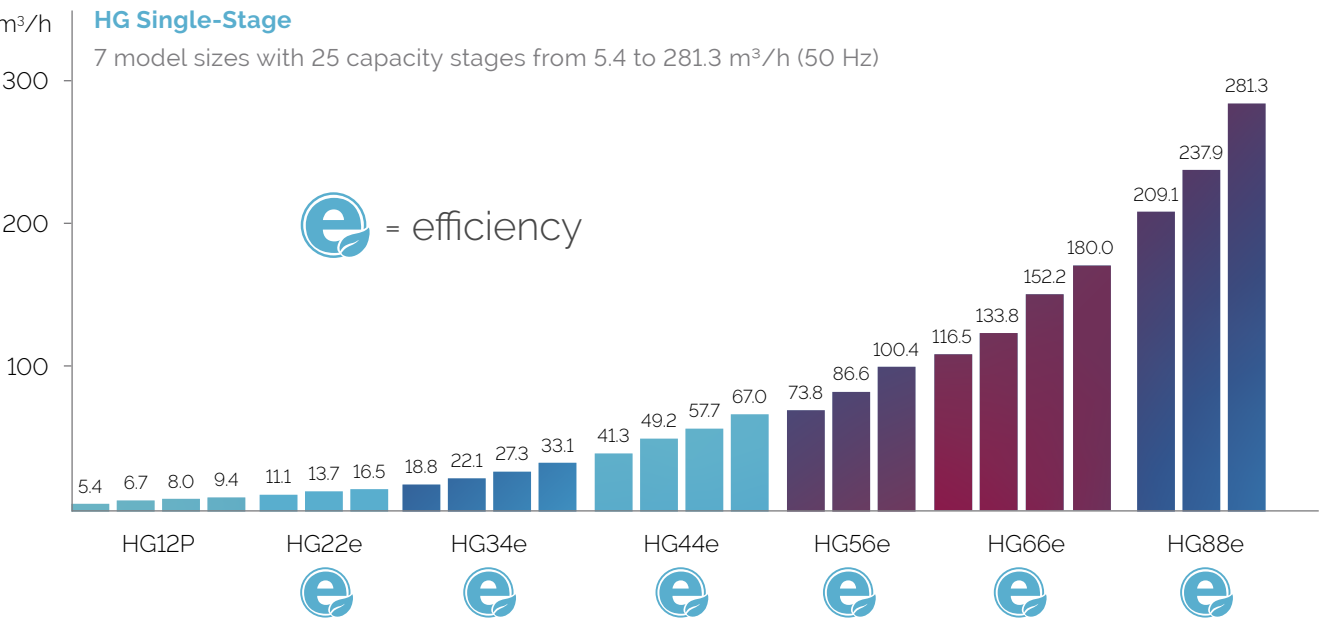
Overview

HG (gas-cooled)

The BOCK HG range of semi-hermetic compressors offers traditional suction-gas-cooled compressor technology. These compressors are state-of-the-art, excelling in ease of running, simple maintenance, high efficiency, and reliability.

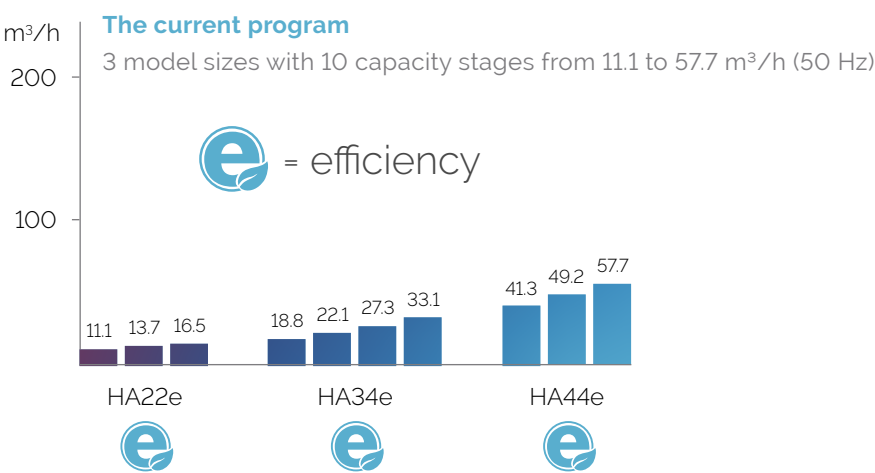


HG66e



HA (air-cooled)

The BOCK HA range of semi-hermetic compressors has been specially engineered for low temperature applications. While gas-cooled compressors can reach their temperature limit due to heat-up of the suction gas by the drive motor, the unique BOCK HA principle prevents this: Drive motor and cylinder heads are air-cooled via a compact ventilation unit, and the suction gas is fed directly to the compressor without passing through the motor. HA compressors are suitable as standard for conventional or chlorine-free HFC refrigerants and are particularly offered for the refrigerants R404A, R507, R407A, R407F, R448A, R449A, R22.



HA44e

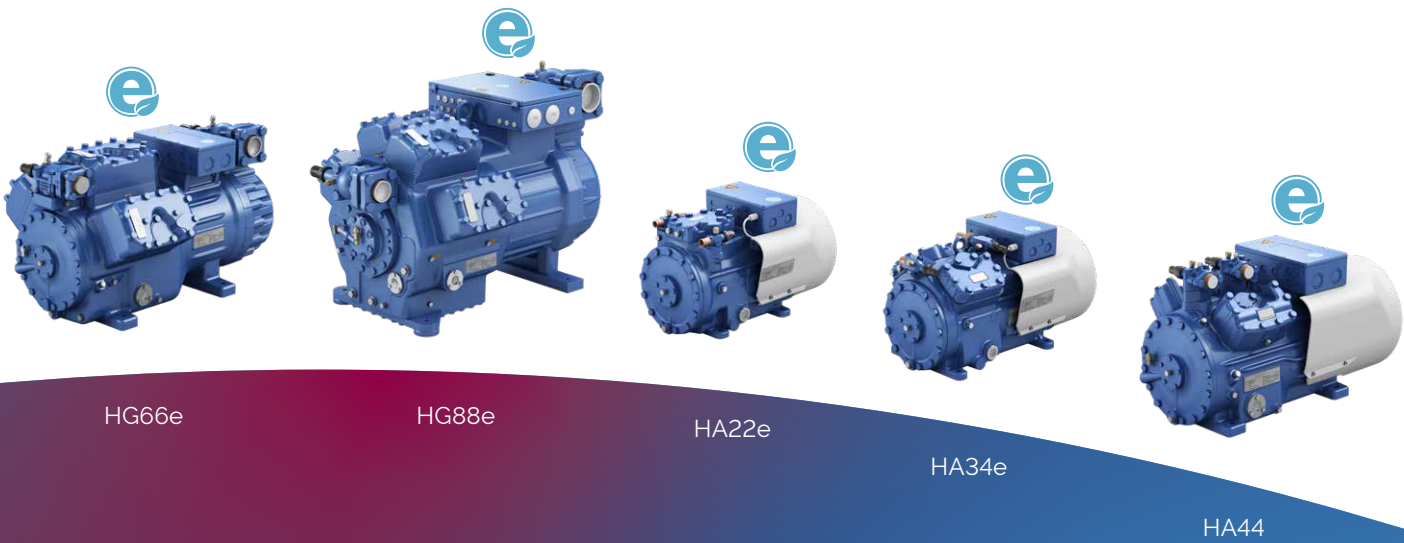
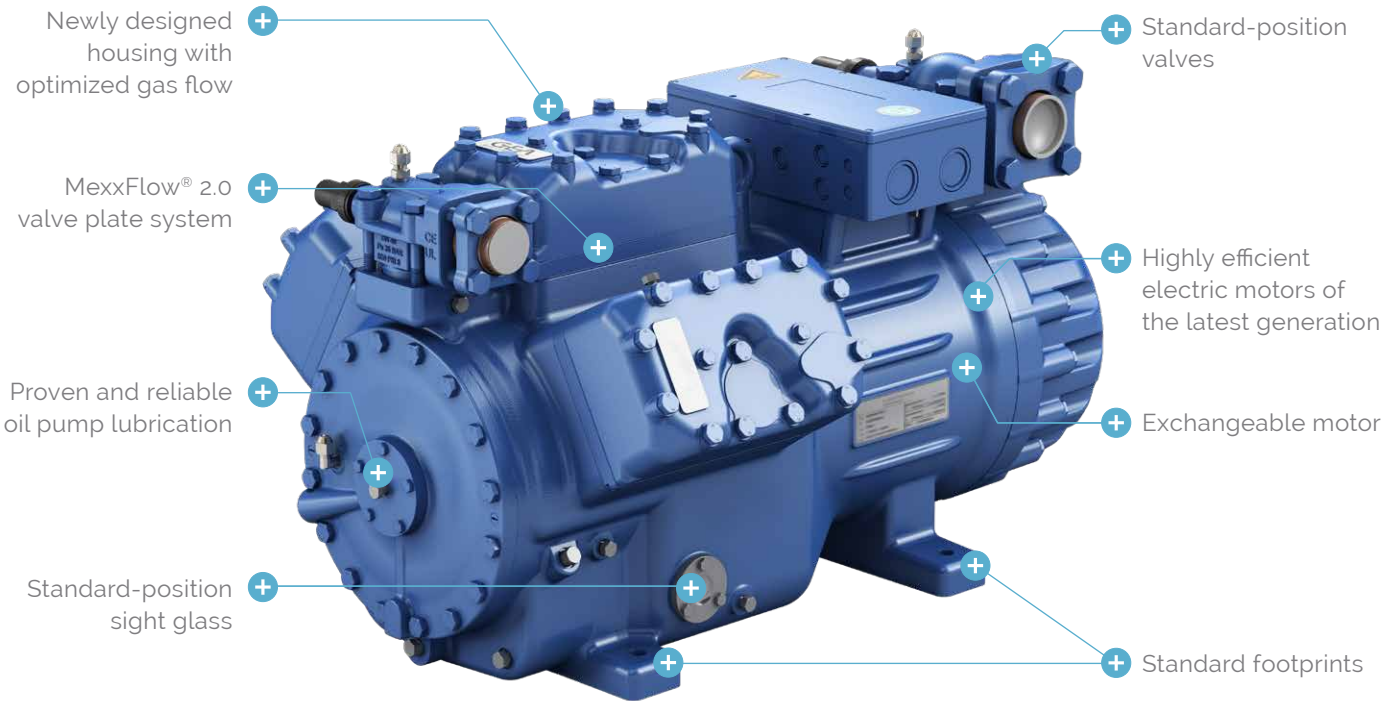
Improved HG/HA Series

For new advancements in efficiency, BOCK has now updated its entire semi-hermetic compressor range. The new models, marked with the letter “e” (= efficiency), all offer decisive mechanical improvements, a more compact design and easier-to-use connections.

The entire range of gas-cooled commercial BOCK compressors is now available in the new, optimized design. In addition to their uses in the fields 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, a more compact structural design, and a new configuration of connections.

To increase efficiency and reduce energy consumption, the new models profit from a new and advanced valve plate system, electrical motors from the latest generation, and enhanced gas flow.

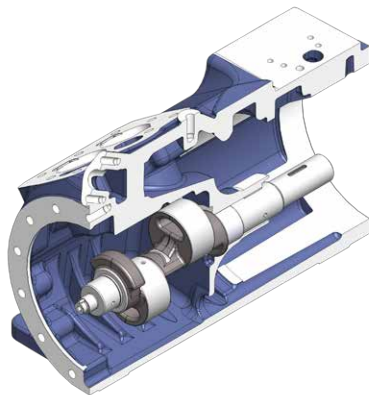
The re-designed connections match the gas connections normally found in the sector, to ensure that no adaptation work is necessary when the user invests in a replacement compressor. The foot mountings of the new compressor likewise conform to sector standards.



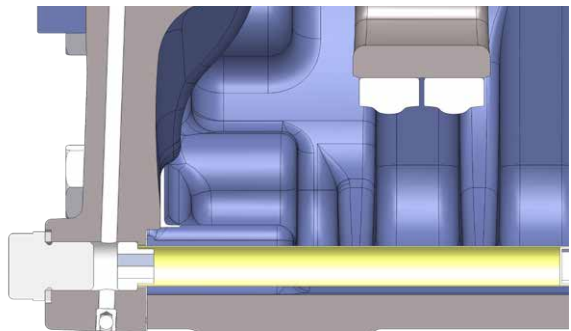
Improved technology

Optimized drive gear

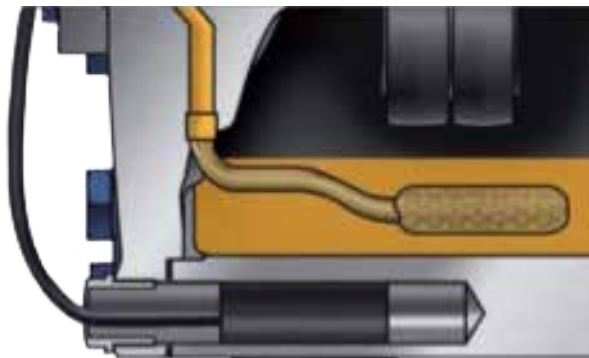
- Optimized drive gear with thrust washer, improving emergency-mode operation and resistance against damage in case of insufficient lubrication



New, easy-to-maintain strainer

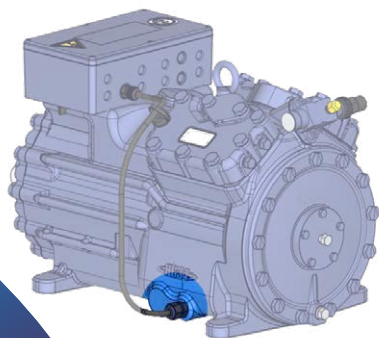


- New, easy-to-remove oil strainer for easier maintenance and increased availability

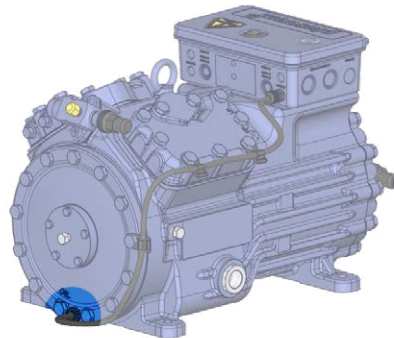


- Former version

Optimized fastening of oil sump heater

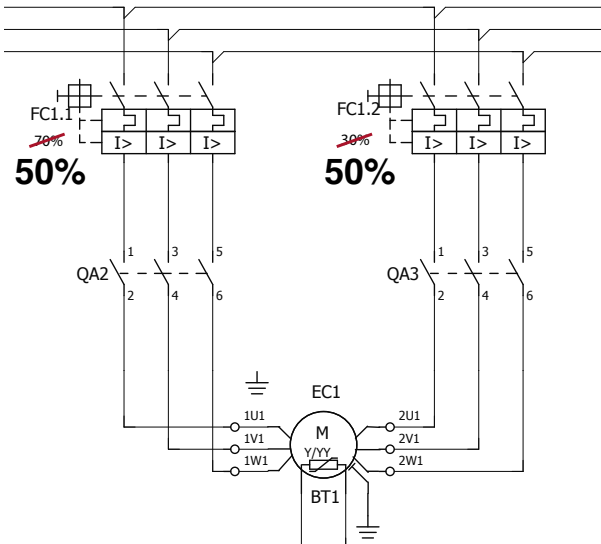


- New, optimized fastening of oil sump heater



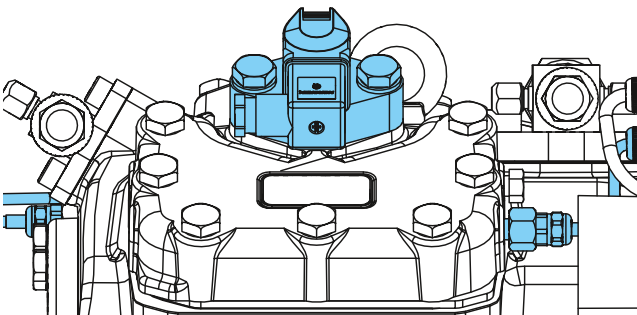
- Former version

50 / 50 winding sectioning

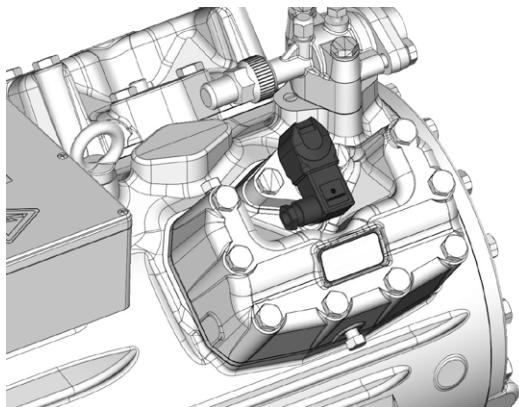


- HG44e, HG56e, HG66e & HG88e state-of-the-art 50/50 performance

Digital Capacity Regulator DCR14 (HG34e / HG44e / HG56e / HA34e / HA44e)

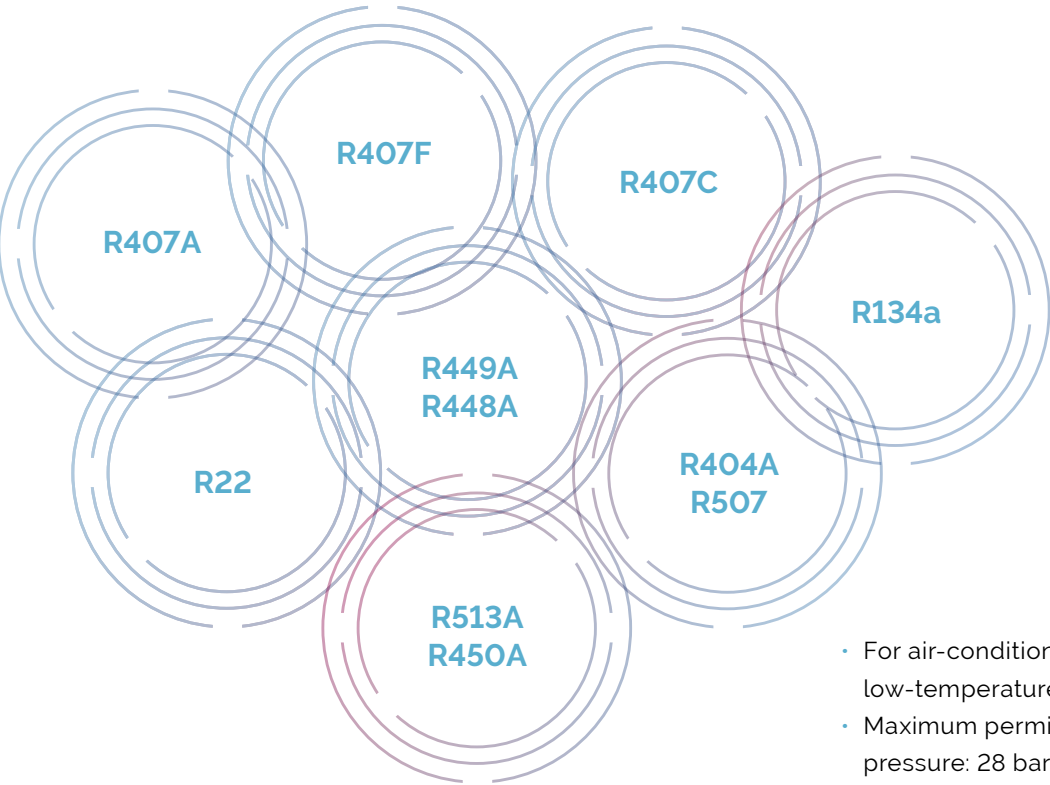


- Digital control with the possibility of high switching frequency
- Almost infinite capacity regulation
- Economical alternative to a frequency converter



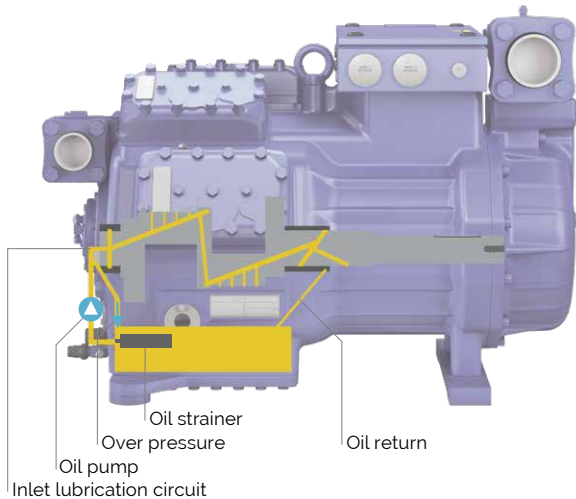
Unique features and advantages

One compressor design for all standard refrigerants



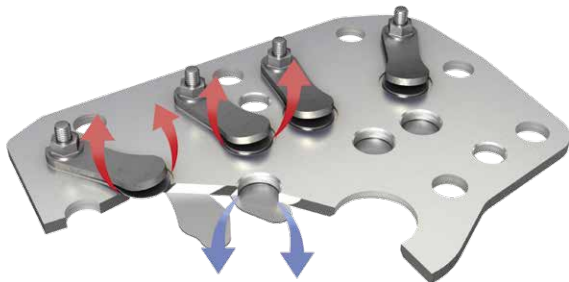
- For air-conditioning, medium and low-temperature application
- Maximum permissible operating pressure: 28 bar

Safe, reliable oil supply



- All compressors with a conventional single circuit lubricating system
- All compressors with oil pump lubrication independent of direction of rotation
- Minimized oil carryover
- Service-friendly oil strainer
- Oil pump lubrication independent of direction of rotation
- Connection possibility for oil pressure monitoring
- Large-volume oil sump
- Coupling option for oil level regulator included as standard

Standard valve plate design



HG12P-56e

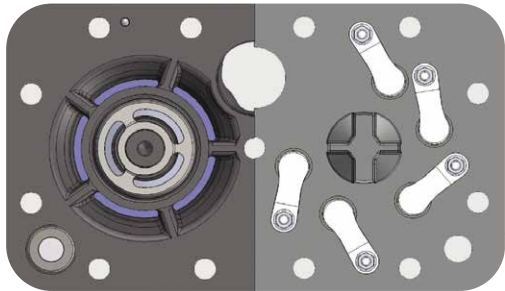
- Valves made of high-quality, impact-resistant spring steel
- Universally proven valve design with suction and discharge finger reed valves

Valve plate innovation: mexxFlow®, only from BOCK

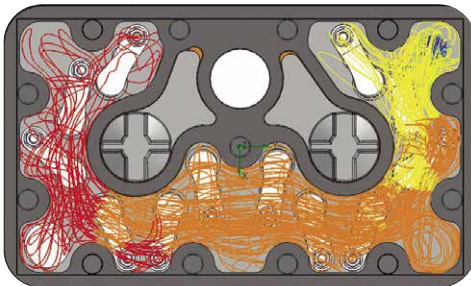


HG66e
HG88e

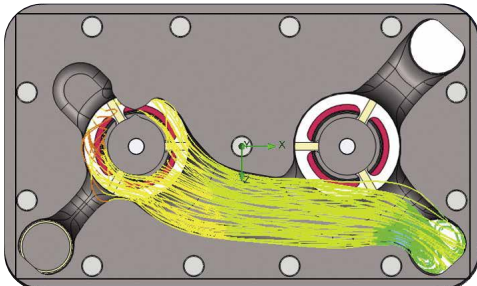
mexxFlow
benchmark for efficiency



mexxFlow® vs. previous design



Previous cylinder cover – high pressure drops and turbulences



mexxFlow® – reduced pressure drops and improved gas flow

- With the mexxFlow® system pressure losses can be minimized thanks to a flow-optimized double ring fin construction of the valve plate, in combination with a cylinder head that is specially adapted to the valve plate. Thus, the efficiency of the compressor is increased significantly

Wear-resistant durable driving gear



2- and 4-cylinder compressor
HG12P to HG34e

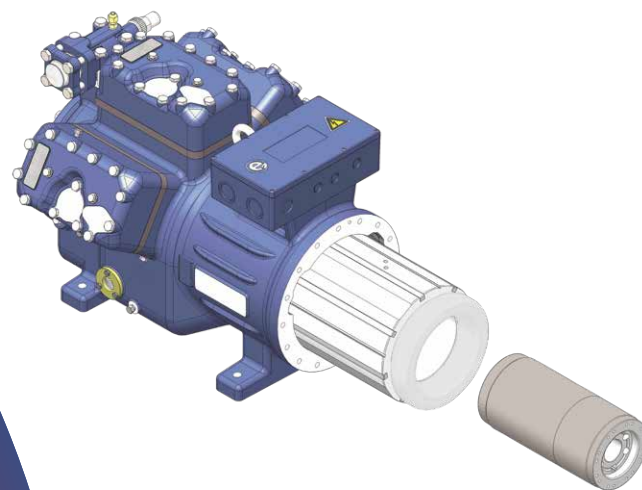
- Solid design of eccentric shaft
- High durability due to low-friction sleeve bearings
- Low oil carryover due to aluminum pistons with double ring assembly



4-, 6- and 8-cylinder compressor
HG44e to HG88e

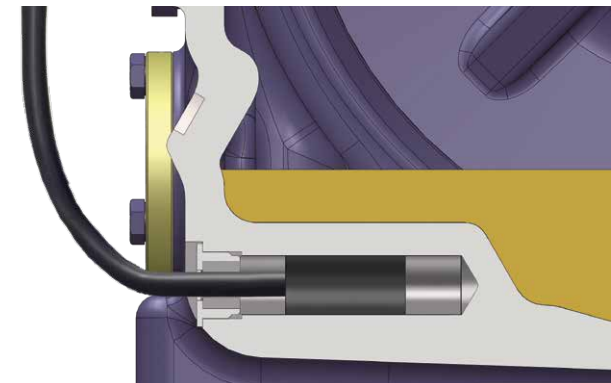
- Solid design of crankshaft
- High durability due to low-friction sleeve bearings
- Aluminum pistons with triple ring assembly, hard-chromium-plated sealing ring, HG44e and HG56e with double ring assembly
- Aluminum connecting rod with high-resistance piston bolt bearings, for HG44e and upwards
- Heavy-duty and robust, split-forged connecting rod

Service-friendly design

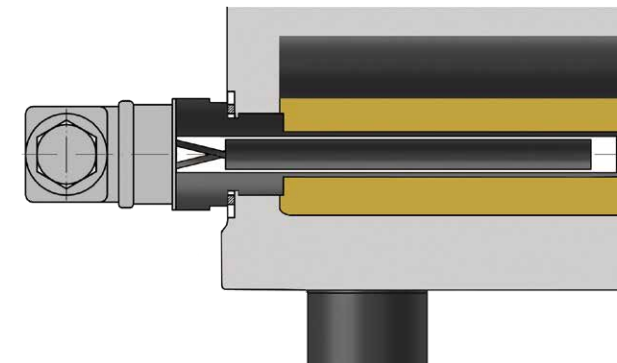


- Built-in motor, easy to replace due to slide fit (not press fit)

Oil sump heater

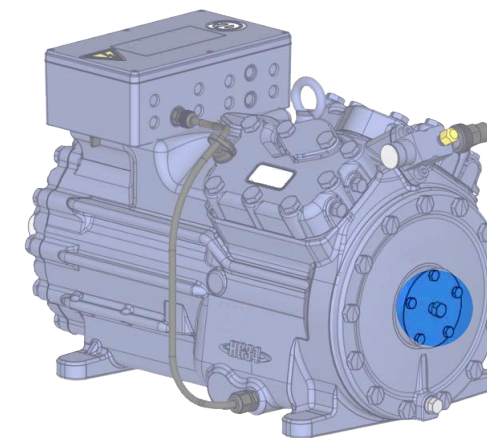


- PTC heater, self-regulating for HG12P up to HG34e
- Constant power for HG44e up to HG66e



- Standard in 8-cylinder compressors HG88e

Connection plug for oil monitoring with oil pressure safety switch MP55



- For HG12P up to HG34e compressors

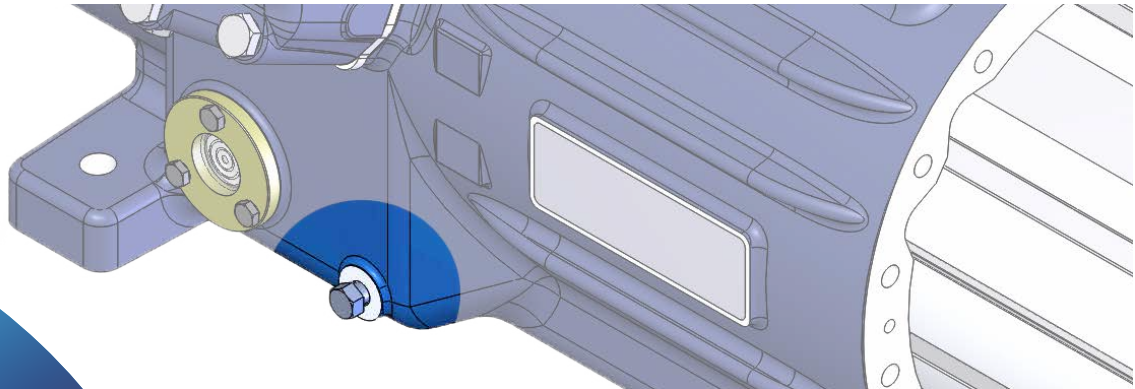
Variable suction line valve position HG



- 1 Shut-off valve rotates 90°
- 2 Suction cover rotates 90°
- 1+2 Flexible position for suction line connection

	Shut-off valve rotation	Suction cover rotation
HG12P, HG22e, HG34e, HG44e	90°	–
HG56e	180°	90°
HG66e	180°	90°
HG88e	180°	90°

Connection facility oil temperature sensor



- Available for HG44e – HG88e

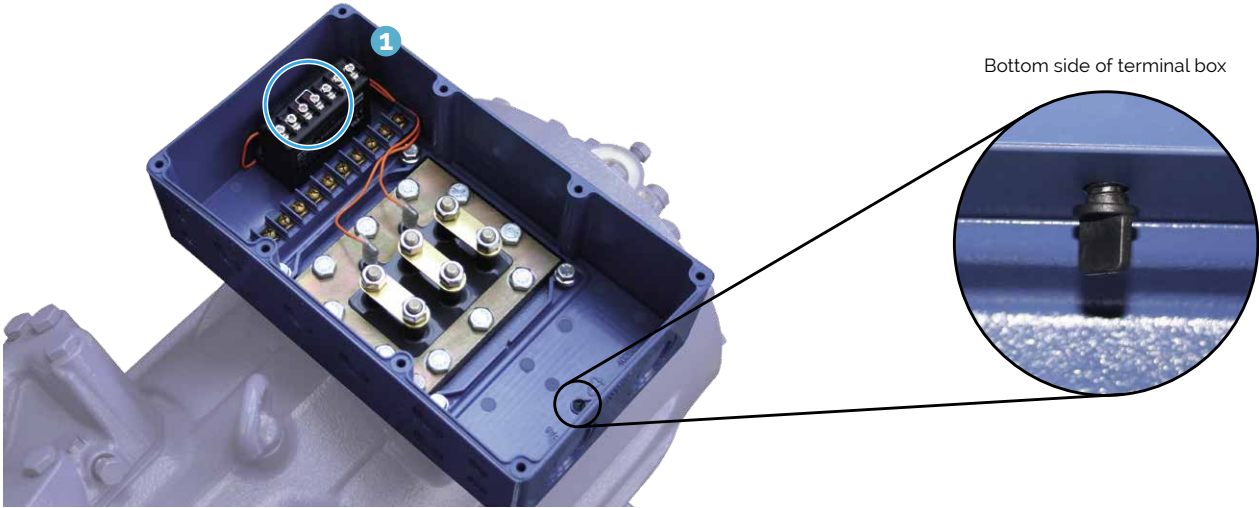
Electronic motor protection INT69 G



Temperature safety drive for the drive motor

- The INT69 G also provides the usual functions, such as:
- Motor temperature monitoring
- Hot gas temperature monitoring
- Reconnection preventing device
- Reset function
- 1 PTC sensors
- Connection of up to nine PTC sensors possible

State-of-the-art terminal box



- Easy electrical installation due to large internal volume
- Terminal board with cable entry points in glass seal model
- 1 Electrical motor protection INT69 G integrated
- High level of protection IP66
- HG12P to HG66e equipped with plug to drain condensed water from the terminal box under unfavorable circumstances (when in use, Ip protection is reduced)

Bock HG semi-hermetic compressors

Bock HG12P – HG88e

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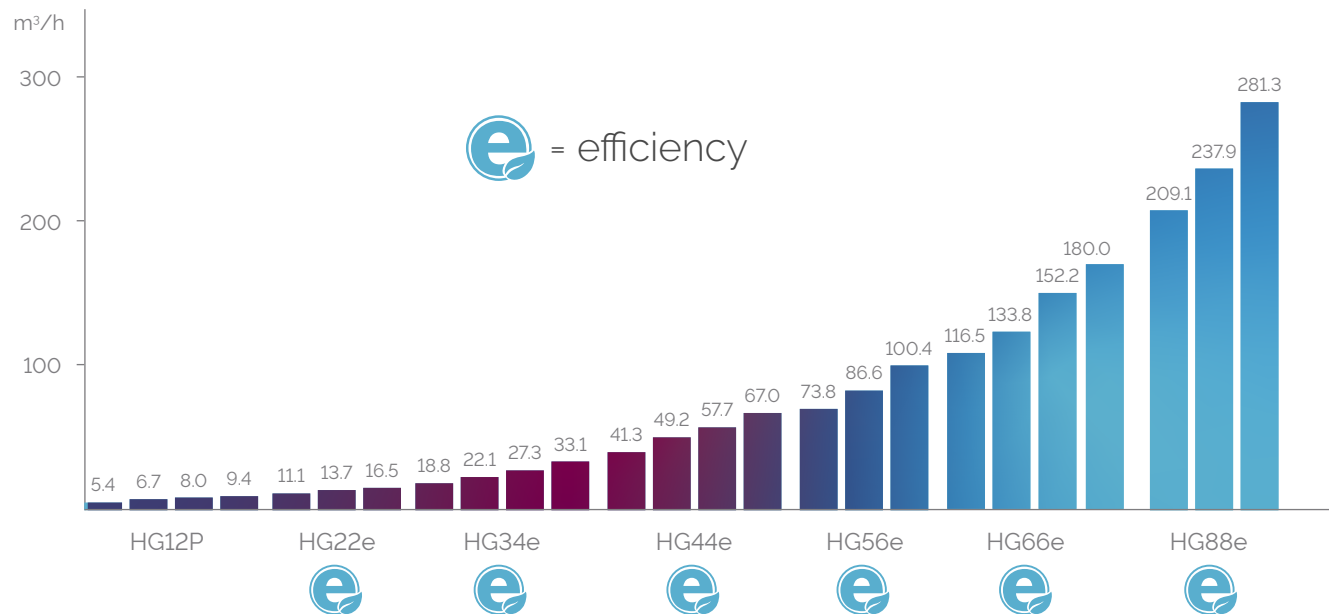


Bock HG semi-hermetic compressors

The Bock HG (Hermetic Gas-cooled) range of single-stage, semi-hermetic compressors offers traditional suction-gas-cooled compressor technology. These compressors of the highest quality standard excel in their running comfort, easy maintenance, efficiency and reliability. They are suitable as standard for conventional or chlorine-free HFC refrigerants.

HG Single-Stage

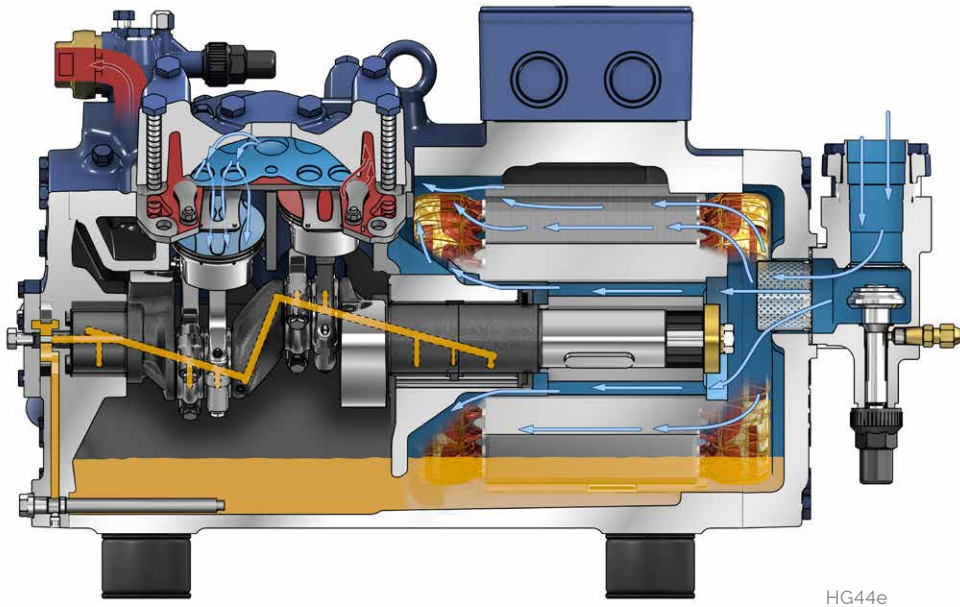
7 model sizes with 25 capacity stages from 5.4 to 281.3 m³/h (50 Hz)



HG semi-hermetic compressors At a glance

Special features:

- Outstanding running comfort
- Efficiency and reliability on the highest level of quality
- Service-friendly design, e.g. with replaceable drive motors
- Oil pump lubrication
- Electronic motor protection
- Suitable components for conventional or chlorine-free HFC refrigerants



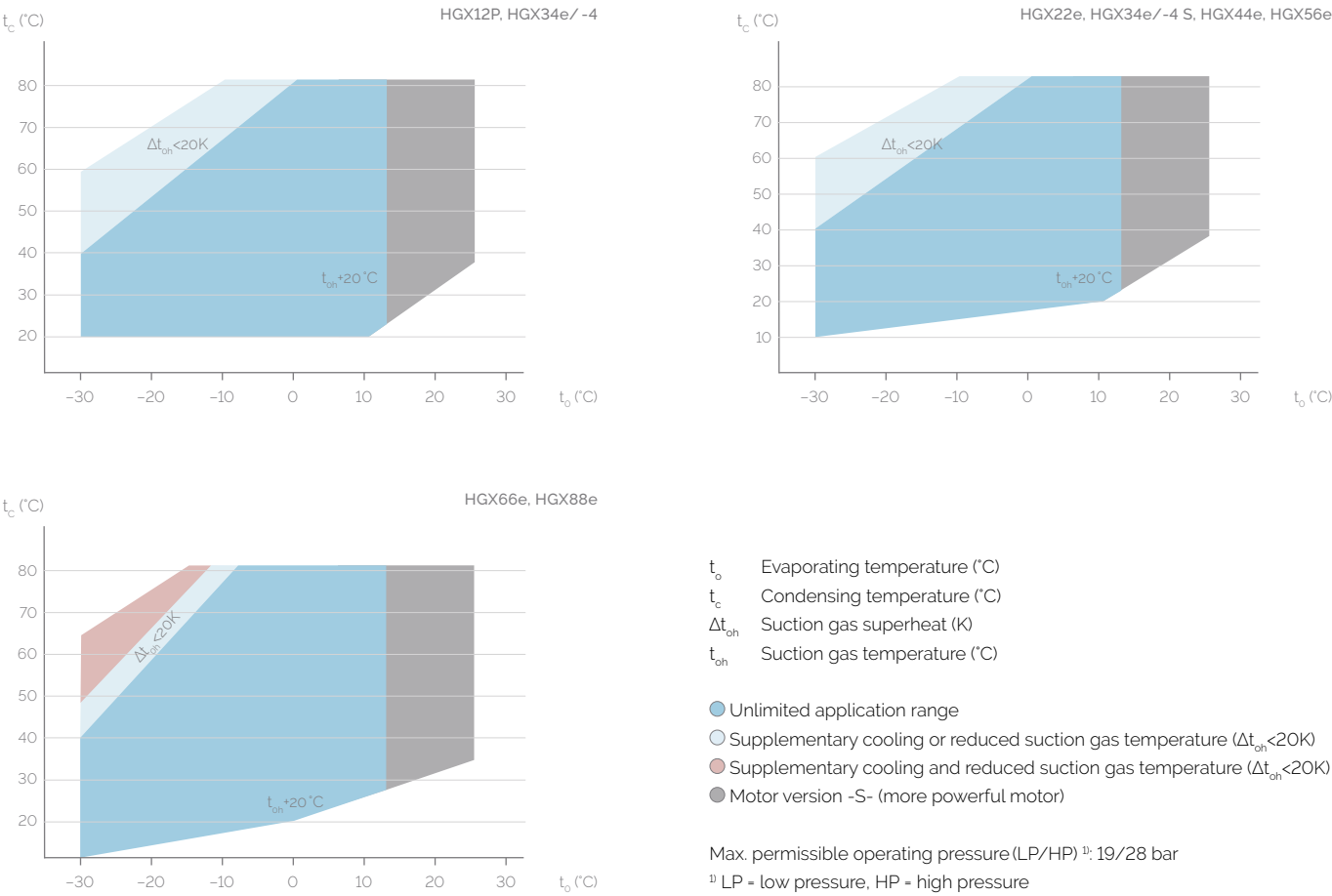
Type key

HGX66e / 2070-4S

- Motor variant ⁴⁾
 - Number of poles
 - Swept volume
 - e-series ³⁾
 - Number of cylinders
 - Size
 - Ester oil filling ²⁾
 - Series ¹⁾
- ¹⁾ HG = Hermetic Gas-cooled (suction gas-cooled)
²⁾ X = Ester oil filling (HFC refrigerants e.g. R134a, R404A, R448A, R449A)
³⁾ = Additional declaration for e-series compressors
⁴⁾ S = More powerful motor e.g. air-conditioning applications

HG semi-hermetic compressors
 Operating limits

R134a



Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult 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 subcooling. This results in significant differences compared to specifications with liquid undercooling and/or suction-gas temperatures.

A comprehensive modification to 20 °C suction gas temperature will follow at a later date.

Conversion factor for 60 Hz = 1.2

Performance data for other operating points, see BOCK VAP software (vap.bock.de).

ASERCOM certified performance data



For compressors with this label, the performance data are certified according 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 BOCK compressors can be found at www.asercom.org and www.bock.de.

HG semi-hermetic compressors
 Performance data

R134a | 50 Hz

Type		Cooling capacity Q _o [kW]							Power consumption P _e [kW]				
		Evaporating temperature °C											
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	
HGX12P/60-4S	30	Q	4920	4490	4080	3700	3010	2420	1910	1480	1130	836	605
		P	0.703	0.710	0.711	0.706	0.682	0.645	0.597	0.544	0.491	0.443	0.403
	40	Q	4260	3880	3520	3190	2590	2070	1630	1250	932	670	456
		P	0.851	0.843	0.830	0.813	0.768	0.713	0.653	0.592	0.535	0.487	0.453
	50	Q	3630	3300	2990	2700	2190	1740	1350	1030	742	505	302
		P	0.991	0.968	0.942	0.912	0.846	0.774	0.701	0.631	0.571	0.523	0.494
	60	Q	3020	2740	2480	2240	1800	1420	1100	806	558	341	146
		P	1.11	1.08	1.04	0.999	0.910	0.821	0.735	0.657	0.593	0.546	0.521
HGX12P/75-4	30	Q	2450	2220	2010	1810	1450	1130	847	602	381	-	-
		P	1.22	1.17	1.12	1.06	0.956	0.849	0.750	0.664	0.595	-	-
	40	Q	6150	5610	5100	4620	3760	3020	2390	1850	1410	1050	756
		P	0.879	0.887	0.888	0.882	0.853	0.805	0.746	0.680	0.614	0.553	0.503
	50	Q	5320	4850	4400	3980	3230	2590	2030	1560	1170	837	569
		P	1.06	1.05	1.03	1.01	0.959	0.891	0.815	0.739	0.668	0.609	0.565
	60	Q	4530	4120	3730	3380	2730	2170	1690	1280	927	630	377
		P	1.23	1.21	1.17	1.14	1.05	0.967	0.875	0.789	0.713	0.654	0.617
HGX12P/90-4	30	Q	3780	3430	3100	2800	2250	1780	1370	1010	697	425	182
		P	1.39	1.35	1.30	1.24	1.13	1.02	0.918	0.821	0.741	0.682	0.651
	40	Q	3070	2780	2510	2260	1800	1410	1060	751	476	-	-
		P	1.53	1.46	1.40	1.33	1.19	1.06	0.937	0.829	0.743	-	-
	50	Q	7300	6670	6070	5520	4510	3630	2870	2230	1700	1260	912
		P	1.08	1.10	1.12	1.12	1.10	1.06	0.997	0.915	0.826	0.735	0.649
	60	Q	6380	5820	5290	4790	3890	3110	2440	1880	1410	1020	708
		P	1.33	1.33	1.32	1.30	1.24	1.16	1.06	0.955	0.846	0.742	0.649
HGX12P/110-4	30	Q	5490	4990	4520	4080	3290	2610	2030	1540	1130	793	522
		P	1.59	1.56	1.53	1.48	1.38	1.26	1.14	1.01	0.885	0.770	0.672
	40	Q	4620	4180	3780	3400	2720	2140	1640	1230	876	592	359
		P	1.82	1.77	1.71	1.65	1.51	1.35	1.20	1.05	0.914	0.790	0.690
	50	Q	3780	3410	3060	2750	2180	1690	1280	937	653	-	-
		P	2.00	1.93	1.84	1.76	1.58	1.40	1.22	1.05	0.903	-	-
	60	Q	8620	7860	7150	6480	5280	4240	3350	2600	1980	1470	1060
		P	1.23	1.24	1.24	1.23	1.19	1.13	1.04	0.954	0.861	0.776	0.706
HGX22e/125-4	30	Q	7460	6790	6170	5580	4530	3620	2850	2190	1640	1180	798
		P	1.49	1.47	1.45	1.42	1.34	1.24	1.14	1.03	0.938	0.854	0.793
	40	Q	6350	5770	5230	4730	3830	3040	2370	1790	1300	884	529
		P	1.73	1.69	1.65	1.59	1.48	1.35	1.22	1.10	1.00	0.917	0.866
	50	Q	5290	4800	4350	3920	3160	2490	1920	1420	978	596	255
		P	1.96	1.89	1.82	1.75	1.59	1.43	1.28	1.15	1.03	0.957	0.914
	60	Q	4300	3890	3520	3160	2530	1970	1490	1060	668	-	-
		P	2.15	2.05	1.96	1.86	1.67	1.48	1.31	1.16	1.04	-	-
HGX22e/160-4	30	Q	10200	9270	8440	7660	6220	4960	3860	2930	2160	1550	1090
		P	1.30	1.35	1.38	1.39	1.39	1.34	1.25	1.14	1.02	0.891	0.765
	40	Q	8990	8200	7450	6740	5440	4300	3310	2480	1790	1260	860
		P	1.69	1.70	1.69	1.67	1.59	1.48	1.35	1.20	1.05	0.903	0.769
	50	Q	7800	7090	6420	5780	4630	3620	2750	2020	1440	978	657
		P	2.02	1.98	1.94	1.88	1.75	1.59	1.41	1.24	1.06	0.908	0.773
	60	Q	6570	5950	5360	4810	3810	2940	2200	1590	1110	744	504
		P	2.27	2.21	2.13	2.04	1.86	1.66	1.45	1.25	1.07	0.909	0.783
HGX22e/190-4	30	Q	5330	4800	4310	3840	3000	2280	1690	1200	829	-	-
		P	2.48	2.38	2.27	2.16	1.93	1.70	1.47	1.25	1.06	-	-
	40	Q	12800	11600	10600	9560	7780	6240	4920	3810	2870	2110	1490
		P	1.63	1.65	1.66	1.65	1.63	1.59	1.51	1.41	1.29	1.15	0.983
	50	Q	11200	10200	9200	8330	6750	5390	4230	3240	2410	1730	1160
		P	2.07	2.05	2.03	2.00	1.92	1.81	1.68	1.53	1.36	1.17	0.962
	60	Q	9640	8760	7930	7170	5780	4580	3560	2680	1940	1310	783
		P	2.46	2.41	2.36	2.29	2.15	1.99	1.80	1.60	1.38	1.14	0.884
HGX22e/250-4	30	Q	8230	7460	6730	6060	4840	3790	2880	2100	1430	844	335
		P	2.80	2.72	2.63	2.54	2.33	2.11	1.87	1.61	1.34	1.04	0.744
	40	Q	6880	6210	5580	4990	3930	3000	2190	1490	862	-	-
		P	3.09	2.97	2.85	2.72	2.45	2.17	1.87	1.56	1.23	-	-
	50	Q	15300	14000	12900	11700	9630	7800	6180	4790	3610	2640	1870
		P	2.04	2.06	2.06	2.05	2.00	1.92	1.80	1.65	1.48	1.29	1.09
	60	Q	13600	12500	11400	10400	8460	6810	5360	4110	3060	2200	1530
		P	2.59	2.55	2.51	2.46	2.33	2.17	1.98	1.78	1.57	1.34	1.11
HGX22e/315-4	30	Q	11900	10800	9840	8940	7270	5800	4520	3430	2520	1790	1220
		P	3.09	3.01	2.92	2.83	2.62	2.39	2.14	1.89	1.63	1.37	1.12
	40	Q	10100	9160	8320	7520	6070	4800	3700	2770	2010	1410	959
		P	3.54	3.41	3.28	3.14	2.86	2.56	2.26	1.96	1.66	1.37	1.10
	50	Q	8280	7510	6790	6110	4880	3810	2900	2150	1540	-	-
		P	3.91	3.74	3.57	3.39	3.03	2.68	2.32	1.97	1.64	-	-

Relating to 20 °C suction gas temperature without liquid subcooling

Supplementary cooling or reduced suction gas temperature

vap.bock.de



HG semi-hermetic compressors

Performance data

R134a | 50 Hz

Type		Cooling capacity Q _o [kW]										Power consumption P _e [kW]		
		Evaporating temperature °C												
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30		
HGX34e/215-4	30	Q	17200	15700	14400	13000	10600	8450	6590	5000	3670	2610	1800	
		P	2.27	2.30	2.32	2.31	2.25	2.14	1.98	1.80	1.59	1.38	1.18	
	40	Q	15200	13800	12600	11400	9120	7190	5530	4120	2970	2060	1400	
		P	2.87	2.84	2.78	2.72	2.55	2.34	2.11	1.87	1.64	1.42	1.22	
	50	Q	13000	11800	10700	9540	7590	5890	4440	3240	2270	1540	1040	
		P	3.38	3.27	3.16	3.03	2.76	2.47	2.18	1.90	1.64	1.42	1.24	
	60	Q	10800	9690	8690	7750	6070	4620	3400	2420	1660	1120	784	
		P	3.79	3.62	3.45	3.27	2.90	2.54	2.20	1.89	1.61	1.39	1.24	
HGX34e/255-4 ¹⁾	30	Q	8590	7680	6830	6040	4630	3440	2480	1730	1190	-	-	
		P	4.12	3.89	3.66	3.43	2.99	2.56	2.17	1.84	1.56	-	-	
	40	Q	20600	18800	17200	15600	12700	10100	7800	5890	4320	3080	2190	
		P	2.61	2.67	2.71	2.71	2.66	2.53	2.34	2.12	1.88	1.63	1.41	
	50	Q	18100	16500	15000	13600	11000	8660	6660	4960	3570	2490	1710	
		P	3.36	3.35	3.31	3.25	3.08	2.84	2.57	2.27	1.97	1.68	1.43	
	60	Q	15600	14200	12900	11600	9310	7280	5540	4070	2880	1960	1330	
		P	4.02	3.93	3.83	3.71	3.42	3.08	2.73	2.36	2.01	1.68	1.41	
HGX34e/315-4 ¹⁾	30	Q	13100	11900	10700	9610	7640	5920	4450	3220	2240	1510	1030	
		P	4.56	4.41	4.24	4.06	3.66	3.23	2.80	2.37	1.96	1.61	1.32	
	40	Q	10500	9430	8480	7590	5970	4570	3380	2410	1660	-	-	
		P	4.98	4.77	4.54	4.30	3.79	3.28	2.76	2.28	1.83	-	-	
	50	Q	25500	23300	21100	19200	15500	12400	9660	7390	5520	4040	2920	
		P	3.40	3.43	3.43	3.40	3.29	3.11	2.88	2.61	2.32	2.02	1.72	
	60	Q	22300	20300	18500	16700	13500	10700	8260	6260	4620	3320	2330	
		P	4.22	4.17	4.10	4.01	3.78	3.49	3.16	2.80	2.43	2.07	1.73	
HGX34e/380-4 ¹⁾	30	Q	19200	17400	15800	14200	11400	8950	6880	5140	3720	2600	1740	
		P	4.97	4.85	4.71	4.55	4.19	3.79	3.36	2.91	2.47	2.04	1.65	
	40	Q	16100	14600	13100	11800	9350	7280	5520	4050	2850	1900	1170	
		P	5.63	5.44	5.22	5.00	4.51	4.00	3.46	2.93	2.41	1.92	1.47	
	50	Q	13100	11800	10600	9390	7380	5660	4200	3000	2010	-	-	
		P	6.18	5.91	5.62	5.33	4.71	4.08	3.44	2.82	2.22	-	-	
	HGX34e/475-4	30	Q	30700	28100	25600	23200	19000	15300	12100	9310	7060	5250	3860
			P	4.27	4.28	4.26	4.22	4.06	3.83	3.53	3.20	2.83	2.46	2.09
40		Q	27000	24600	22400	20300	16600	13300	10400	8000	6020	4420	3180	
		P	5.26	5.19	5.09	4.97	4.67	4.30	3.89	3.46	3.00	2.56	2.13	
50		Q	23200	21200	19300	17400	14100	11300	8760	6670	4940	3540	2450	
		P	6.17	6.01	5.83	5.63	5.18	4.69	4.16	3.62	3.07	2.55	2.06	
60		Q	19600	17800	16100	14600	11700	9240	7130	5350	3860	2650	1690	
		P	6.97	6.73	6.46	6.18	5.59	4.96	4.31	3.66	3.02	2.42	1.86	
HGX44e/475-4	30	Q	16000	14500	13100	11800	9340	7290	5530	4040	2800	-	-	
		P	7.65	7.31	6.97	6.60	5.86	5.09	4.32	3.56	2.83	-	-	
	40	Q	39200	35700	32500	29500	24100	19400	15400	12100	9190	6850	4920	
		P	4.71	4.75	4.76	4.74	4.62	4.41	4.13	3.79	3.42	3.03	2.63	
	50	Q	34500	31400	28600	25900	21100	16900	13400	10400	7790	5670	3890	
		P	5.95	5.90	5.82	5.71	5.43	5.07	4.65	4.19	3.70	3.20	2.72	
	60	Q	29900	27200	24700	22300	18100	14400	11300	8660	6430	4520	2880	
		P	7.12	6.97	6.80	6.61	6.16	5.64	5.08	4.49	3.88	3.27	2.69	
HGX44e/565-4	30	Q	25400	23000	20800	18800	15100	12000	9280	7000	5040	3340	1840	
		P	8.16	7.91	7.65	7.36	6.74	6.06	5.35	4.62	3.89	3.17	2.49	
	40	Q	20800	18800	16900	15200	12100	9450	7210	5280	3600	-	-	
		P	8.99	8.65	8.28	7.90	7.10	6.26	5.40	4.52	3.66	-	-	
	50	Q	46600	42600	38700	35200	28800	23200	18500	14500	11100	8310	6010	
		P	5.58	5.62	5.64	5.61	5.47	5.22	4.88	4.48	4.03	3.56	3.09	
	60	Q	41100	37500	34100	30900	25200	20300	16100	12500	9480	6950	4820	
		P	7.07	7.01	6.91	6.79	6.45	6.01	5.51	4.95	4.37	3.78	3.19	
HGX44e/665-4 ¹⁾	30	Q	35700	32500	29500	26700	21700	17400	13700	10600	7890	5610	3640	
		P	8.49	8.31	8.10	7.87	7.33	6.71	6.03	5.31	4.58	3.86	3.17	
	40	Q	30400	27600	25000	22600	18200	14500	11400	8620	6280	4240	2410	
		P	9.75	9.45	9.13	8.78	8.03	7.21	6.35	5.47	4.59	3.74	2.92	
	50	Q	25000	22600	20400	18400	14700	11600	8910	6610	4590	-	-	
		P	10.7	10.3	9.90	9.44	8.47	7.45	6.41	5.36	4.32	-	-	
	60	Q	55700	50900	46400	42100	34400	27700	21900	17000	12900	9520	6880	
		P	6.61	6.71	6.76	6.76	6.62	6.33	5.92	5.40	4.82	4.20	3.57	

Relating to 20 °C suction gas temperature
without liquid subcooling

Supplementary cooling or
reduced suction gas temperature

¹⁾ ASERCOM certified

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HG semi-hermetic compressors

Performance data

R134a | 50 Hz

Type		Cooling capacity Q ₀ [W]										Power consumption P _e [kW]	
		Evaporating temperature °C											
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	
HGX44e/770-4	30	Q	63600	58000	52800	47900	39100	31600	25100	19700	15100	11300	8100
		P	7.62	7.68	7.70	7.67	7.48	7.14	6.69	6.14	5.54	4.90	4.25
	40	Q	56000	51100	46400	42100	34200	27500	21800	16900	12800	9360	6460
		P	9.63	9.54	9.42	9.24	8.79	8.21	7.53	6.78	5.99	5.19	4.40
	50	Q	48700	44200	40100	36300	29500	23600	18600	14300	10700	7510	4830
		P	11.5	11.2	11.0	10.7	9.97	9.14	8.23	7.26	6.28	5.30	4.35
HHGX56e/850-4	30	Q	41300	37500	33900	30600	24700	19600	15300	11600	8390	5630	3160
		P	13.2	12.8	12.3	11.9	10.9	9.82	8.66	7.48	6.29	5.13	4.02
	40	Q	34000	30700	27700	24900	19900	15600	12000	8810	6070	-	-
		P	14.5	13.9	13.4	12.7	11.5	10.1	8.74	7.32	5.93	-	-
	50	Q	71500	65200	59400	53900	43900	35300	28000	21700	16500	12300	8870
		P	8.74	8.80	8.79	8.74	8.49	8.08	7.52	6.86	6.11	5.30	4.45
HGX56e/995-4	30	Q	62900	57400	52200	47300	38500	30900	24300	18800	14200	10400	7330
		P	11.1	10.9	10.8	10.5	9.99	9.27	8.43	7.50	6.51	5.48	4.45
	40	Q	54500	49600	45000	40700	33000	26400	20700	15900	11900	8470	5720
		P	13.2	12.9	12.5	12.1	11.2	10.2	9.11	7.93	6.71	5.47	4.26
	50	Q	46000	41800	37900	34200	27600	21900	17100	13000	9440	6520	4060
		P	15.1	14.6	14.1	13.5	12.3	10.9	9.57	8.13	6.68	5.24	3.85
HGX56e/1155-4	30	Q	37600	34100	30800	27700	22200	17500	13400	9960	7050	-	-
		P	16.7	16.0	15.3	14.6	13.0	11.4	9.77	8.09	6.41	-	-
	40	Q	82900	75700	68900	62500	51000	41000	32400	25100	19000	14000	10100
		P	10.1	10.1	10.1	10.1	9.81	9.29	8.62	7.81	6.92	5.98	5.03
	50	Q	73100	66600	60600	54900	44700	35800	28100	21600	16200	11700	8050
		P	12.7	12.6	12.4	12.1	11.4	10.6	9.60	8.51	7.36	6.20	5.05
HGX66e/1340-4	30	Q	63200	57600	52300	47300	38300	30500	23900	18100	13300	9260	5930
		P	15.2	14.8	14.4	13.9	12.9	11.6	10.3	8.98	7.58	6.19	4.85
	40	Q	53300	48500	43900	39700	32000	25300	19500	14600	10400	6770	3720
		P	17.4	16.8	16.1	15.5	14.0	12.4	10.8	9.16	7.49	5.88	4.35
	50	Q	43500	39400	35600	32000	25600	20000	15200	11000	7380	-	-
		P	19.1	18.3	17.5	16.6	14.7	12.8	10.9	8.94	7.02	-	-
HGX66e/1540-4	30	Q	94600	86200	78400	71100	57800	46400	36600	28400	21600	16000	11700
		P	13.0	12.9	12.8	12.6	12.0	11.2	10.3	9.31	8.24	7.16	6.12
	40	Q	83600	76200	69200	62600	50800	40700	32000	24700	18600	13600	9550
		P	15.9	15.6	15.3	14.9	13.9	12.8	11.5	10.2	8.85	7.51	6.24
	50	Q	72600	66000	59900	54100	43800	34900	27300	20800	15500	11000	7340
		P	18.7	18.2	17.6	17.0	15.6	14.1	12.5	10.8	9.21	7.60	6.08
HGX66e/1750-4	30	Q	61500	55800	50500	45500	36700	29000	22500	17000	12300	8370	5090
		P	21.3	20.5	19.7	18.9	17.1	15.1	13.2	11.1	9.20	7.29	5.50
	40	Q	50400	45600	41100	37000	29500	23200	17700	13100	9130	-	-
		P	23.5	22.5	21.4	20.3	18.1	15.7	13.3	11.0	8.69	-	-
	50	Q	109000	99700	91100	82900	68000	54900	43600	33900	25800	19100	13800
		P	14.0	14.2	14.2	14.1	13.6	12.9	12.0	10.8	9.66	8.40	7.16
HGX66e/1950-4	30	Q	97000	88700	80800	73400	59900	48000	37800	29100	21800	15800	11100
		P	17.7	17.5	17.2	16.8	15.8	14.5	13.1	11.6	10.1	8.65	7.22
	40	Q	84400	76900	69900	63300	51300	40800	31800	24200	17900	12700	-
		P	20.9	20.4	19.7	19.0	17.5	15.8	14.0	12.1	10.3	8.62	-
	50	Q	71300	64800	58600	52900	42500	33500	25900	19500	14200	-	-
		P	23.6	22.8	21.8	20.8	18.8	16.6	14.4	12.3	10.2	-	-
HGX66e/2150-4	30	Q	57900	52400	47200	42400	33800	26400	20200	15100	-	-	-
		P	25.8	24.6	23.4	22.1	19.6	17.0	14.4	12.0	-	-	-
	40	Q	125000	115000	105000	95200	78200	63300	50400	39300	30000	22300	16200
		P	16.1	16.2	16.3	16.2	15.7	14.9	13.8	12.5	11.1	9.74	8.33
	50	Q	112000	102000	92900	84400	69000	55500	43900	33900	25500	18700	13200
		P	20.4	20.2	19.8	19.4	18.2	16.8	15.2	13.5	11.8	10.1	8.50
HGX66e/2350-4	30	Q	97000	88500	80500	73000	59300	47400	37100	28400	21100	15200	-
		P	24.2	23.6	22.9	22.1	20.3	18.3	16.3	14.2	12.1	10.2	-
	40	Q	82100	74700	67700	61200	49300	39100	30400	23000	16900	-	-
		P	27.5	26.4	25.4	24.3	21.9	19.4	16.9	14.5	12.1	-	-
	50	Q	66900	60600	54700	49200	39400	31000	23900	18100	-	-	-
		P	30.1	28.7	27.3	25.9	23.0	20.0	17.1	14.3	-	-	-
HGX66e/2550-4	30	Q	143000	131000	120000	109000	89400	72400	57600	44900	34300	25600	18600
		P	18.4	18.6	18.6	18.5	17.9	17.0	15.8	14.4	12.8	11.2	9.67
	40	Q	128000	117000	107000	96600	79000	63600	50200	38800	29300	21400	15200
		P	23.3	23.0	22.6	22.1	20.8	19.2	17.5	15.5	13.6	11.7	9.89
	50	Q	111000	102000	92200	83600	67900	54300	42500	32600	24200	17400	-
		P	27.6	26.9	26.1	25.2	23.2	21.0	18.7	16.3	14.0	11.8	-
HGX66e/2750-4	30	Q	94100	85600	77600	70100	56600	44900	34900	26500	19500	-	-
		P	31.3	30.2	29.0	27.7	25.1	22.3	19.4	16.7	14.0	-	-
	40	Q	76700	69500	62800	56500	45200	35600	27500	20800	-	-	-
		P	34.3	32.8	31.2	29.6	26.3	23.0	19.7	16.5	-	-	-

HG semi-hermetic compressors
 Performance data

R134a | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]								Power consumption P_e [kW]			
		Evaporating temperature °C											
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	
HGX66e/2070-4	30	Q P	168000 21.7	154000 21.9	141000 21.9	129000 21.8	106000 21.1	85300 20.0	67900 18.6	53000 16.9	40500 15.0	30200 13.1	22000 11.2
		Q P	150000 27.6	137000 27.2	125000 26.7	114000 26.1	93000 24.6	74900 22.7	59200 20.6	45800 18.3	34500 15.9	25300 13.7	17900 11.5
	40	Q P	131000 32.8	120000 31.9	109000 30.9	98300 29.9	79900 27.5	63900 24.8	50100 22.0	38400 19.2	28600 16.4	20600 13.8	- -
		Q P	111000 37.3	101000 35.9	91100 34.4	82400 32.9	66500 29.7	52800 26.3	41100 22.9	31200 19.6	23000 16.5	- -	- -
	50	Q P	89900 40.9	81500 39.0	73700 37.1	66300 35.2	53200 31.2	41900 27.2	32400 23.2	24600 19.4	- -	- -	- -
		Q P	197000 26.1	181000 26.3	165000 26.3	151000 26.1	124000 25.4	99900 24.2	79500 22.5	62000 20.6	47400 18.4	35300 16.1	25700 13.8
HGX88e/2400-4	30	Q P	176000 32.8	161000 32.4	147000 31.8	134000 31.1	110000 29.4	87800 27.2	69400 24.8	53700 22.2	40500 19.5	29600 16.8	21000 14.2
		Q P	154000 38.8	141000 37.8	128000 36.7	116000 35.4	94000 32.7	75100 29.7	58900 26.5	45100 23.3	33600 20.1	24200 17.0	- -
	40	Q P	131000 44.0	119000 42.4	108000 40.7	97100 38.9	78400 35.3	62200 31.5	48300 27.6	36700 23.8	27100 20.2	- -	- -
		Q P	107000 48.2	96400 46.1	87100 43.9	78400 41.6	62800 37.1	49400 32.5	38200 28.0	29000 23.7	- -	- -	- -
	50	Q P	225000 29.9	206000 30.1	188000 30.1	171000 29.9	141000 29.0	114000 27.6	90500 25.8	70600 23.5	53900 21.1	40200 18.5	29300 15.8
		Q P	201000 37.4	184000 36.9	168000 36.3	152000 35.5	125000 33.5	100000 31.1	79000 28.4	61100 25.4	46100 22.3	33700 19.2	23900 16.3
HGX88e/2735-4	30	Q P	176000 44.1	160000 43.0	146000 41.7	132000 40.3	108000 37.3	85600 33.9	67100 30.3	51400 26.7	38200 23.0	27500 19.5	- -
		Q P	149000 49.8	136000 48.1	123000 46.2	111000 44.3	89400 40.2	70900 35.9	55100 31.5	41800 27.2	30900 23.1	- -	- -
	40	Q P	122000 54.5	111000 52.2	99400 49.7	89400 47.2	71600 42.2	56300 37.0	43500 32.0	33000 27.1	- -	- -	- -
		Q P	265000 35.2	243000 35.4	222000 35.4	202000 35.2	166000 34.2	135000 32.5	107000 30.3	83300 27.6	63500 24.7	47300 21.6	34400 18.5
	50	Q P	237000 44.1	217000 43.5	198000 42.7	180000 41.8	147000 39.4	118000 36.6	93200 33.3	72000 29.8	54200 26.1	39600 22.5	28000 18.9
		Q P	207000 52.0	189000 50.6	172000 49.1	156000 47.5	127000 43.8	101000 39.8	78900 35.6	60400 31.2	44900 26.9	32300 22.7	- -
HGX88e/3235-4	30	Q P	176000 58.7	160000 56.6	145000 54.4	131000 52.1	106000 47.2	83400 42.1	64700 37.0	49100 31.8	36100 26.9	- -	- -
		Q P	144000 64.3	130000 61.4	117000 58.5	106000 55.6	84200 49.5	66200 43.4	51100 37.4	38600 31.5	- -	- -	- -
	40	Q P	237000 44.1	217000 43.5	198000 42.7	180000 41.8	147000 39.4	118000 36.6	93200 33.3	72000 29.8	54200 26.1	39600 22.5	28000 18.9
		Q P	207000 52.0	189000 50.6	172000 49.1	156000 47.5	127000 43.8	101000 39.8	78900 35.6	60400 31.2	44900 26.9	32300 22.7	- -
	50	Q P	176000 58.7	160000 56.6	145000 54.4	131000 52.1	106000 47.2	83400 42.1	64700 37.0	49100 31.8	36100 26.9	- -	- -
		Q P	144000 64.3	130000 61.4	117000 58.5	106000 55.6	84200 49.5	66200 43.4	51100 37.4	38600 31.5	- -	- -	- -

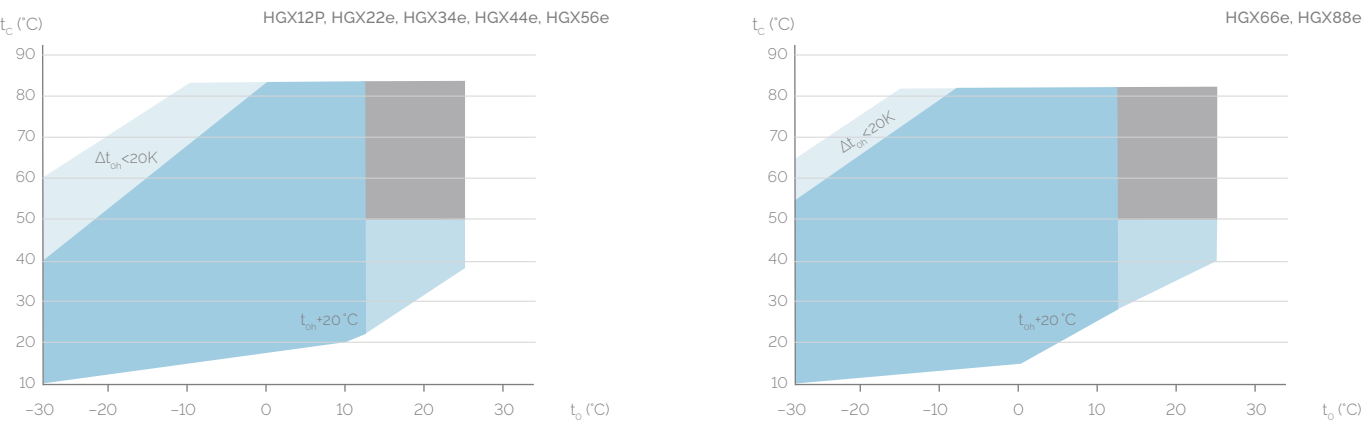
Relating to 20 °C suction gas temperature without liquid subcooling

Supplementary cooling or reduced suction gas temperature



HG semi-hermetic compressors
 Operating limits

R513A



- Unlimited application range
- Supplementary cooling or reduced suction gas temperature ($\Delta t_{sh} < 20K$)
- Motor version -S- (more powerful motor)
- Required minimum superheating $\Delta t_{sh} = 20K$

Max. permissible operating pressure (LP/HP) ¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de

Performance data
 The performance data for R513A are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

This results in significant differences compared to specifications with liquid undercooling and/or suction-gas temperatures. A comprehensive modification to 20 °C suction gas temperature will follow at a later date.

Conversion factor for 60 Hz = 1.2
 Performance data for other operating points, see BOCK VAP software (vap.bock.de).

HG semi-hermetic compressors

Performance data

R513A 50 Hz													
Type			Cooling capacity Q _o [kW]						Power consumption P _e [kW]				
			Evaporating temperature °C										
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	
HGX12P/60-4 S	30	Q P	5040 0.722	4610 0.732	4210 0.735	3830 0.732	3150 0.713	2550 0.679	2040 0.633	1600 0.581	1230 0.527	925 0.475	677 0.431
		Q P	4320 0.879	3950 0.873	3600 0.862	3270 0.847	2680 0.805	2170 0.751	1720 0.691	1340 0.629	1020 0.569	745 0.516	520 0.474
	40	Q P	3620 1.02	3310 1.00	3010 0.981	2730 0.953	2230 0.888	1800 0.816	1420 0.741	1090 0.668	809 0.603	570 0.548	365 0.508
		Q P	2950 1.16	2690 1.12	2450 1.08	2220 1.04	1800 0.956	1440 0.865	1130 0.777	850 0.694	611 0.622	401 0.566	213 0.529
	50	Q P	2320 1.27	2110 1.22	1910 1.17	1730 1.11	1400 1.00	1110 0.895	849 0.792	625 0.699	424 0.622	-	-
		Q P	6280 0.970	5750 0.987	5260 0.998	4790 1.00	3930 0.891	3190 0.848	2550 0.791	2000 0.726	1540 0.658	1160 0.594	846 0.538
	HGX12P/75-4 HGX12P/75-4 S)	30	Q P	5500 1.19	5030 1.18	4590 1.18	4180 1.16	3350 1.00	2700 0.939	2150 0.864	1680 0.786	1270 0.711	931 0.645
Q P			4690 1.39	4280 1.37	3890 1.34	3530 1.31	2790 1.10	2240 1.01	1770 0.926	1360 0.835	1010 0.753	712 0.684	456 0.635
40		Q P	3840 1.57	3500 1.54	3170 1.49	2870 1.44	2250 1.19	1800 1.08	1410 0.970	1070 0.867	763 0.777	501 0.707	266 0.660
		Q P	2990 1.75	2710 1.69	2440 1.63	2200 1.57	1740 1.25	1380 1.11	1060 0.990	780 0.874	529 0.777	-	-
50		Q P	7550 1.15	6890 1.17	6270 1.19	5690 1.19	4710 1.14	3830 1.10	3060 1.04	2410 0.963	1860 0.874	1400 0.780	1030 0.689
		Q P	6570 1.42	5990 1.42	5440 1.41	4940 1.39	4030 1.30	3250 1.22	2580 1.12	2010 1.01	1530 0.908	1130 0.799	800 0.698
HGX12P/90-4 HGX12P/90-4 S		30	Q P	5590 1.67	5090 1.65	4620 1.62	4180 1.58	3370 1.45	2700 1.34	2130 1.21	1640 1.08	1230 0.953	880 0.831
	Q P		4600 1.90	4180 1.86	3790 1.80	3420 1.75	2730 1.58	2170 1.43	1690 1.28	1280 1.12	940 0.983	658 0.850	426 0.737
	40	Q P	3600 2.10	3260 2.03	2940 1.96	2650 1.88	2110 1.66	1660 1.48	1280 1.30	956 1.12	689 0.969	-	-
		Q P	8820 1.26	8070 1.28	7370 1.28	6710 1.28	5510 1.25	4470 1.18	3570 1.10	2800 1.01	2160 0.923	1620 0.833	1190 0.755
	50	Q P	7560 1.54	6910 1.53	6300 1.51	5730 1.48	4690 1.41	3790 1.31	3010 1.21	2350 1.10	1780 0.997	1310 0.904	911 0.831
		Q P	6340 1.80	5790 1.76	5270 1.71	4780 1.66	3900 1.55	3140 1.42	2480 1.29	1910 1.17	1420 1.05	998 0.960	640 0.891
	HGX12P/110-4 HGX12P/110-4 S	30	Q P	5170 2.03	4710 1.97	4280 1.90	3880 1.82	3150 1.67	2520 1.51	1970 1.36	1490 1.21	1070 1.09	702 0.991
Q P			4050 2.23	3690 2.14	3340 2.05	3020 1.95	2440 1.76	1940 1.56	1490 1.38	1100 1.22	741 1.08	-	-
40		Q P	10400 1.31	9540 1.37	8730 1.41	7970 1.43	6540 1.44	5280 1.40	4170 1.32	3210 1.22	2410 1.09	1750 0.964	1240 0.832
		Q P	9130 1.73	8370 1.74	7640 1.74	6950 1.73	5670 1.66	4540 1.56	3550 1.43	2700 1.28	1990 1.13	1420 0.980	975 0.837
50		Q P	7810 2.08	7130 2.05	6490 2.01	5880 1.97	4760 1.83	3770 1.68	2920 1.51	2190 1.33	1580 1.15	1100 0.986	741 0.839
		Q P	6440 2.36	5860 2.30	5310 2.23	4790 2.15	3840 1.95	3010 1.76	2290 1.55	1690 1.35	1210 1.15	825 0.986	558 0.843
HGX22e/125-4 HGX22e/125-4 S		30	Q P	5060 2.57	4580 2.48	4130 2.38	3700 2.28	2920 2.03	2260 1.80	1700 1.57	1240 1.35	875 1.15	-
	Q P		13100 1.71	12000 1.75	11000 1.77	10100 1.79	8150 1.71	6600 1.66	5270 1.59	4130 1.50	3160 1.38	2360 1.24	1700 1.07
	40	Q P	11500 2.17	10600 2.16	9600 2.15	8740 2.12	7010 2.00	5660 1.90	4490 1.78	3490 1.63	2640 1.46	1930 1.27	1340 1.07
		Q P	9850 2.56	8990 2.51	8170 2.46	7400 2.40	5930 2.25	4750 2.09	3740 1.91	2870 1.71	2120 1.49	1490 1.26	944 1.00
	50	Q P	8170 2.89	7420 2.80	6720 2.71	6050 2.61	4870 2.44	3860 2.22	2990 1.99	2230 1.73	1580 1.47	1010 1.18	505 0.888
		Q P	6490 3.15	5850 3.03	5260 2.91	4700 2.78	3830 2.57	2980 2.30	2230 2.00	1580 1.70	994 1.38	-	-
	HGX22e/160-4 HGX22e/160-4 S	30	Q P	15700 2.11	14500 2.13	13300 2.14	12200 2.14	10100 2.10	8230 2.02	6620 1.90	5200 1.76	3990 1.59	2970 1.41
Q P			13700 2.64	12600 2.62	11600 2.59	10600 2.55	8760 2.45	7130 2.29	5690 2.11	4430 1.91	3360 1.69	2460 1.47	1740 1.24
40		Q P	11800 3.15	10800 3.08	9840 3.01	8980 2.93	7420 2.76	5990 2.53	4740 2.28	3660 2.03	2740 1.77	1980 1.51	1380 1.25
		Q P	9740 3.61	8920 3.50	8150 3.38	7410 3.25	6070 3.01	4850 2.72	3800 2.41	2900 2.11	2140 1.81	1540 1.52	1070 1.23
50		Q P	7780 4.00	7100 3.84	6460 3.68	5850 3.51	4710 3.20	3730 2.84	2880 2.49	2170 2.14	1600 1.80	-	-
		Q P	6490 3.15	5850 3.03	5260 2.91	4700 2.78	3830 2.57	2980 2.30	2230 2.00	1580 1.70	994 1.38	-	-
HGX22e/190-4 HGX22e/190-4 S		30	Q P	15700 2.11	14500 2.13	13300 2.14	12200 2.14	10100 2.10	8230 2.02	6620 1.90	5200 1.76	3990 1.59	2970 1.41
	Q P		13700 2.64	12600 2.62	11600 2.59	10600 2.55	8760 2.45	7130 2.29	5690 2.11	4430 1.91	3360 1.69	2460 1.47	1740 1.24
	40	Q P	11800 3.15	10800 3.08	9840 3.01	8980 2.93	7420 2.76	5990 2.53	4740 2.28	3660 2.03	2740 1.77	1980 1.51	1380 1.25
		Q P	9740 3.61	8920 3.50	8150 3.38	7410 3.25	6070 3.01	4850 2.72	3800 2.41	2900 2.11	2140 1.81	1540 1.52	1070 1.23
	50	Q P	7780 4.00	7100 3.84	6460 3.68	5850 3.51	4710 3.20	3730 2.84	2880 2.49	2170 2.14	1600 1.80	-	-
		Q P	6490 3.15	5850 3.03	5260 2.91	4700 2.78	3830 2.57	2980 2.30	2230 2.00	1580 1.70	994 1.38	-	-

HG semi-hermetic compressors

Performance data

R513A | 50 Hz

Type		Cooling capacity Q _o [kW]											Power consumption P _e [kW]		
		Evaporating temperature °C													
Cond.															
temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30			
HGX44e/770-4	30	Q	65200	59700	54600	49700	41000	33400	26800	21200	16500	12500	9160		
		P	793	8.01	8.04	8.03	786	755	711	657	596	5.31	4.64		
	40	Q	57000	52100	47500	43300	35500	28800	23100	18200	14000	10400	7400		
		P	10.0	9.95	9.83	9.68	9.24	8.68	8.02	7.27	6.47	5.65	4.83		
	50	Q	48800	44500	40500	36800	30100	24300	19400	15100	11500	8350	5680		
		P	11.9	11.7	11.4	11.1	10.4	9.66	8.76	7.80	6.81	5.81	4.82		
HGX44e/770-4 S	60	Q	40500	36900	33500	30300	24700	19800	15700	12100	8970	6300	3940		
		P	13.6	13.2	12.8	12.4	11.4	10.3	9.24	8.06	6.87	5.68	4.53		
HGX56e/850-4	30	Q	32200	29200	26400	23800	19200	15300	11900	8940	6420	-	-		
		P	15.0	14.4	13.9	13.3	12.0	10.7	9.36	7.95	6.55	-	-		
	40	Q	73600	67400	61600	56200	46100	37400	30000	23600	18200	13700	10100		
		P	9.23	9.29	9.30	9.26	8.96	8.57	8.03	7.37	6.62	5.80	4.94		
	50	Q	64200	58800	53600	48800	39900	32400	25800	20200	15500	11600	8310		
		P	11.6	11.5	11.3	11.1	10.5	9.83	9.00	8.08	7.09	6.05	5.00		
HGX56e/850-4 S	60	Q	54800	50000	45600	41400	33700	27200	21600	16900	12800	9360	6530		
		P	13.7	13.4	13.1	12.7	11.8	10.8	9.76	8.58	7.35	6.11	4.87		
HGX56e/995-4	30	Q	45300	41300	37500	34000	27600	22100	17500	13500	10100	7170	4750		
		P	15.6	15.2	14.7	14.1	12.9	11.6	10.2	8.85	7.40	5.95	4.53		
	40	Q	35800	32500	29500	26600	21400	17000	13300	10100	7350	-	-		
		P	17.3	16.6	15.9	15.2	13.8	12.2	10.5	8.89	7.21	-	-		
	50	Q	85100	78000	71300	65000	53500	43400	34700	27200	20900	15700	11500		
		P	10.5	10.6	10.6	10.6	10.3	9.86	9.20	8.40	7.51	6.56	5.57		
HGX56e/995-4 S	60	Q	74300	68100	62200	56600	46400	37500	29900	23300	17700	13100	9200		
		P	13.3	13.2	13.0	12.7	12.0	11.2	10.2	9.18	8.03	6.84	5.66		
HGX56e/1155-4	30	Q	63400	58000	52800	48000	39200	31600	25000	19300	14500	10400	6940		
		P	15.8	15.5	15.1	14.6	13.6	12.4	11.1	9.73	8.32	6.90	5.51		
	40	Q	52400	47800	43500	39400	31900	25600	20000	15300	11200	7660	4660		
		P	18.0	17.5	16.9	16.2	14.8	13.2	11.6	9.98	8.30	6.65	5.07		
	50	Q	41300	37600	34000	30700	24700	19600	15100	11300	7910	-	-		
		P	19.8	19.1	18.2	17.4	15.6	13.7	11.8	9.84	7.91	-	-		
HGX56e/1155-4 S	30	Q	98000	89700	81900	74500	60700	49200	39300	30800	23700	17900	13200		
		P	13.8	13.8	13.7	13.5	12.7	11.9	11.0	10.0	8.95	7.83	6.72		
	40	Q	85900	78500	71600	65100	52800	42700	34000	26500	20300	15100	10800		
		P	16.8	16.5	16.2	15.8	14.7	13.6	12.3	11.0	9.65	8.26	6.91		
	50	Q	73500	67100	61100	55500	44800	36100	28600	22200	16700	12200	8410		
		P	19.5	19.1	18.5	18.0	16.5	15.0	13.4	11.7	10.1	8.43	6.83		
HGX66e/1340-4	30	Q	61000	55500	50400	45700	36700	29400	23100	17700	13200	9280	6030		
		P	22.1	21.4	20.6	19.8	18.0	16.1	14.2	12.1	10.1	8.21	6.34		
	40	Q	48300	43900	39700	35800	28500	22600	17600	13300	9600	-	-		
		P	24.2	23.3	22.3	21.3	19.1	16.8	14.5	12.1	9.76	-	-		
	50	Q	116000	106000	96700	88100	72200	58700	47000	36900	28500	21500	15800		
		P	15.4	15.5	15.4	15.3	14.6	13.7	12.7	11.5	10.3	9.06	7.85		
HGX66e/1340-4 S	60	Q	102000	93100	84900	77200	62900	50800	40300	31400	23800	17600	12500		
		P	18.9	18.6	18.3	17.8	16.7	15.4	13.9	12.4	10.8	9.33	7.90		
HGX66e/1540-4	30	Q	87200	79600	72400	65600	53000	42500	33400	25700	19300	14000	9660		
		P	21.9	21.4	20.8	20.1	18.4	16.7	14.9	13.0	11.1	9.36	7.74		
	40	Q	72100	65500	59300	53600	42900	34100	26600	20400	15200	11000	7580		
		P	24.5	23.7	22.8	21.9	19.8	17.6	15.4	13.2	11.0	9.09	7.29		
	50	Q	56500	51100	46100	41500	32900	26000	20300	15600	11800	8800	-		
		P	26.6	25.5	24.4	23.2	20.7	18.1	15.5	13.0	10.6	8.45	-		
HGX66e/1540-4 S	30	Q	133000	122000	111000	102000	83100	67600	54300	42800	33100	25100	18600		
		P	17.6	17.7	17.6	17.5	16.8	15.8	14.7	13.3	11.9	10.5	9.13		
	40	Q	117000	107000	97700	88900	72500	58700	46700	36500	27800	20700	14900		
		P	21.7	21.4	21.0	20.5	19.3	17.8	16.1	14.4	12.6	10.9	9.29		
	50	Q	101000	91600	83400	75700	61300	49200	38900	30100	22700	16600	11700		
		P	25.3	24.7	24.0	23.2	21.4	19.4	17.3	15.2	13.0	11.0	9.22		
HGX66e/1750-4	30	Q	83100	75600	68500	62000	49800	39700	31200	24000	18000	13200	9310		
		P	28.4	27.5	26.5	25.4	23.1	20.6	18.1	15.5	13.1	10.8	8.85		
	40	Q	65300	59200	53400	48100	38400	30500	23900	18500	14200	10800	-		
		P	30.9	29.7	28.4	27.1	24.2	21.3	18.3	15.5	12.8	10.3	-		
	50	Q	151000	138000	126000	115000	95000	77300	62000	48900	37900	28700	21300		
		P	20.2	20.3	20.2	20.0	19.2	18.1	16.8	15.3	13.7	12.1	10.5		
HGX66e/1750-4 S	30	Q	133000	122000	111000	101000	82900	67100	53500	41800	31900	23700	17100		
		P	24.8	24.5	24.1	23.5	22.0	20.4	18.5	16.5	14.5	12.6	10.7		
	40	Q	114000	104000	94700	86000	70200	56400	44600	34500	26100	19100	13500		
		P	29.0	28.3	27.5	26.6	24.5	22.2	19.8	17.4	15.0	12.8	10.7		
	50	Q	94300	85800	77900	70500	57100	45600	35800	27600	20800	15200	10800		
		P	32.6	31.5	30.4	29.1	26.4	23.6	20.7	17.9	15.2	12.6	10.3		
HGX66e/1750-4	60	Q	74200	67200	60800	54800	44000	35000	27500	21300	16400	12500	-		
		P	35.5	34.0	32.6	31.0	27.7	24.4	21.1	17.9	14.8	12.0	-		

Relating to 20 °C suction gas temperature without liquid subcooling



Motor version -S- (more powerful motor)



Supplementary cooling or reduced suction gas temperature

vap.bock.de



HG semi-hermetic compressors

Performance data

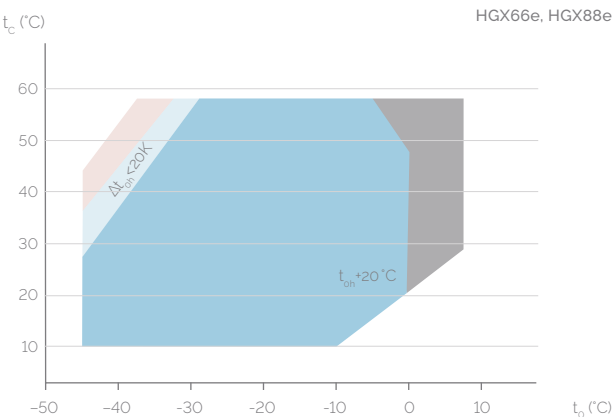
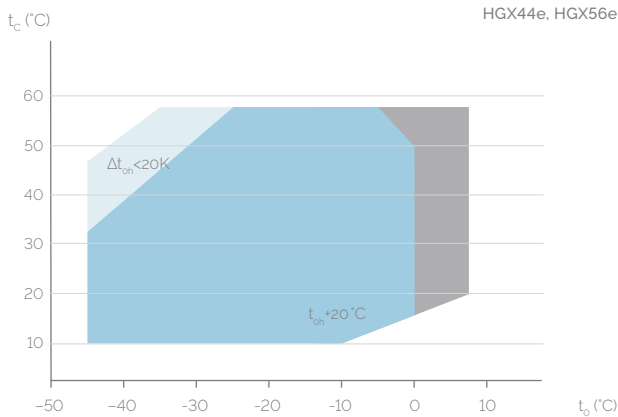
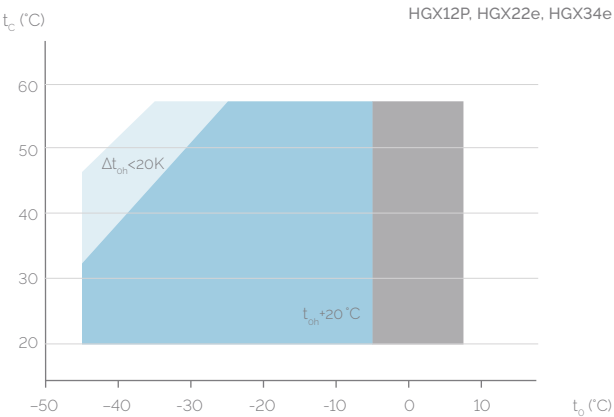
R513A | 50 Hz

Type		Cooling capacity Q _o [W]										Power consumption P _e [kW]		
		Evaporating temperature °C												
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30		
HGX66e/2070-4	30	Q	177000	163000	149000	136000	112000	91100	73100	57700	44700	33900	25100	
		P	23.8	23.9	23.8	23.6	22.6	21.3	19.8	18.0	16.1	14.1	12.3	
	40	Q	157000	143000	131000	119000	97600	79100	63000	49200	37600	28000	20200	
		P	29.3	29.0	28.4	27.8	26.0	24.0	21.8	19.4	17.0	14.7	12.6	
	HGX66e/2070-4 S	50	Q	134000	123000	112000	102000	82500	66400	52500	40700	30800	22600	15900
		P	34.3	33.5	32.5	31.5	29.0	26.3	23.4	20.5	17.7	15.0	12.5	
HGX88e/2400-4	60	Q	111000	101000	91500	82800	67100	53600	42200	32500	24500	18000	12800	
		P	38.6	37.3	36.0	34.5	31.3	27.9	24.5	21.1	17.8	14.8	12.1	
	70	Q	87100	78900	71400	64300	51700	41200	32400	25100	19300	14700	-	
		P	42.1	40.4	38.6	36.8	32.9	28.9	24.9	21.0	17.4	14.0	-	
	HGX88e/2400-4 S	30	Q	209000	192000	175000	160000	131000	107000	85600	67500	52300	39600	29400
		P	28.9	28.9	28.8	28.6	27.1	25.7	23.9	21.8	19.6	17.3	15.1	
HGX88e/2400-4 S	40	Q	185000	169000	155000	141000	115000	92800	73900	57700	44100	32900	23700	
		P	35.1	34.7	34.1	33.4	31.0	28.8	26.2	23.5	20.8	18.1	15.5	
	50	Q	159000	145000	132000	120000	97100	78100	61700	47800	36100	26500	18800	
		P	40.7	39.8	38.7	37.5	34.4	31.4	28.1	24.8	21.5	18.4	15.5	
	60	Q	132000	120000	109000	98400	79100	63200	49600	38300	28900	21200	15200	
		P	45.5	44.1	42.6	41.0	37.1	33.3	29.4	25.5	21.8	18.2	15.0	
HGX88e/2735-4	70	Q	104000	94100	85000	76600	61100	48600	38200	29700	22800	17500	-	
		P	49.4	47.5	45.6	43.6	39.1	34.5	29.9	25.5	21.3	17.4	-	
	30	Q	237000	218000	199000	182000	150000	122000	97500	76900	59500	45100	33500	
		P	32.6	32.6	32.5	32.2	30.9	29.3	27.3	25.0	22.5	19.9	17.3	
	HGX88e/2735-4 S	40	Q	210000	192000	176000	160000	131000	106000	84200	65800	50300	37400	27000
		P	39.7	39.2	38.5	37.7	35.4	32.8	30.0	26.9	23.8	20.7	17.7	
HGX88e/3235-4	50	Q	181000	165000	150000	137000	111000	89000	70300	54500	41200	30200	21400	
		P	46.1	45.0	43.8	42.4	39.2	35.8	32.1	28.4	24.7	21.1	17.7	
	60	Q	150000	137000	124000	112000	90200	72000	56600	43600	32900	24200	17300	
		P	51.6	50.0	48.2	46.4	42.2	38.0	33.6	29.2	24.9	20.9	17.2	
	HGX88e/3235-4 S	70	Q	118000	107000	96500	86900	69700	55400	43500	33800	26000	19900	-
		P	56.1	53.9	51.7	49.4	44.4	39.3	34.2	29.2	24.4	19.9	-	
HGX88e/3235-4 S	30	Q	280000	257000	235000	215000	177000	144000	116000	90700	70100	53100	39300	
		P	38.4	38.5	38.4	38.0	36.4	34.5	32.1	29.3	26.3	23.3	20.2	
	40	Q	248000	227000	207000	189000	155000	125000	99200	77500	59100	43900	31600	
		P	46.8	46.2	45.4	44.4	41.6	38.6	35.2	31.6	27.9	24.2	20.7	
	HGX88e/3235-4 S	50	Q	213000	195000	177000	161000	131000	105000	82800	64000	48300	35400	25000
		P	54.3	53.0	51.5	49.9	46.1	42.0	37.7	33.3	28.8	24.6	20.6	
HGX88e/3235-4 S	60	Q	177000	161000	146000	132000	107000	84700	66500	51100	38500	28200	20100	
	P	60.7	58.8	56.7	54.5	49.7	44.6	39.3	34.1	29.0	24.2	19.9		
HGX88e/3235-4 S	70	Q	139000	126000	114000	103000	82000	65100	51000	39600	30400	23200	-	
		P	65.9	63.4	60.7	57.9	52.1	46.1	40.0	34.0	28.3	23.0	-	

HG semi-hermetic compressors

Operating limits

R404A/R507



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

● Unlimited application range
● Supplementary cooling or reduced suction gas temperature (Δt_{oh} < 20K)
● Supplementary cooling and reduced suction gas temperature (Δt_{oh} < 20K)
● Motor version -S- (more powerful motor)

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data
The performance data for R404A/R507 are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling. 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 BOCK VAP software (vap.bock.de).

ASERCOM certified performance data



For compressors with this label, the performance data are certified according 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 BOCK compressors can be found at www.asercom.org and www.bock.de.

HG semi-hermetic compressors

Performance data

R404A/R507 | 50 Hz

Type	Cond. temp. °C	Cooling capacity Q _o [kW]												Power consumption P _e [kW]	
		Evaporating temperature °C													
		7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45		
HGX12P/60-4 S ¹⁾	30	Q P 6540	5990	5000	4110	3340	2670	2100	1610	1210	879	617	415		
		120	121	122	120	115	108	100	0.908	0.810	0.712	0.618	0.533		
	40	Q P 5540	5070	4200	3430	2770	2200	1710	1300	959	685	466	296		
HGX12P/75-4 S ¹⁾	30	Q P 148	147	143	136	127	117	106	0.945	0.827	0.713	0.609	0.519		
	40	Q P 4540	4130	3400	2750	2200	1730	1330	994	722	503	330	-		
	50	Q P 172	168	159	149	136	123	109	0.959	0.825	0.700	0.589	-		
HGX12P/90-4 S ¹⁾	30	Q P 8160	7500	6290	5230	4290	3470	2770	2170	1670	1250	911	648		
		152	154	155	150	144	136	126	115	103	0.908	0.789	0.680		
	40	Q P 6940	6360	5310	4420	3610	2910	2300	1790	1370	1020	734	513		
HGX12P/110-4 S ¹⁾	30	Q P 190	189	183	172	162	150	136	122	108	0.939	0.807	0.689		
	40	Q P 5730	5240	4350	3640	2950	2360	1860	1440	1090	805	577	-		
	50	Q P 221	216	205	192	177	162	145	128	112	0.963	0.821	-		
HGX12P/125-4 S ¹⁾	30	Q P 9740	8950	7510	6090	5000	4060	3240	2530	1940	1450	1050	731		
		185	186	185	177	168	157	145	132	117	103	0.888	0.745		
	40	Q P 8290	7600	6350	5150	4210	3390	2680	2080	1580	1160	818	550		
HGX12P/160-4 S ¹⁾	30	Q P 227	224	217	202	187	172	155	138	121	104	0.876	0.719		
	40	Q P 6870	6280	5220	4220	3420	2730	2140	1640	1230	886	611	-		
	50	Q P 266	260	246	225	205	185	164	144	123	104	0.857	-		
HGX12P/190-4 S ¹⁾	30	Q P 11300	10400	8700	7220	5970	4870	3920	3100	2400	1820	1340	947		
		216	217	215	215	204	191	176	159	141	122	105	0.883		
	40	Q P 9590	8800	7370	6130	5040	4100	3280	2570	1980	1480	1070	728		
HGX12P/215-4 S ¹⁾	30	Q P 264	261	252	247	229	210	189	167	145	124	105	0.877		
	40	Q P 7880	7220	6010	5020	4100	3310	2620	2040	1550	1150	804	-		
	50	Q P 312	305	288	273	249	224	198	173	148	125	105	-		
HGX22e/125-4 S ¹⁾	30	Q P 13400	12400	10500	8790	7250	5870	4650	3590	2680	1920	1320	857		
		218	222	226	224	216	203	188	169	149	128	107	0.878		
	40	Q P 11600	10700	8970	7460	6090	4880	3820	2900	2120	1490	992	640		
HGX22e/160-4 S ¹⁾	30	Q P 277	275	268	258	241	222	200	176	152	128	106	0.853		
	40	Q P 9650	8860	7390	6080	4910	3880	2990	2230	1610	1110	749	-		
	50	Q P 326	320	303	284	260	234	207	180	153	127	103	-		
HGX22e/190-4 S ¹⁾	30	Q P 17000	15700	13200	10900	8980	7320	5850	4560	3450	2510	1750	1170		
		270	275	278	273	262	247	229	207	184	159	134	108		
	40	Q P 14600	13400	11200	9170	7540	6090	4810	3700	2750	1960	1330	851		
HGX22e/215-4 S ¹⁾	30	Q P 342	340	331	317	296	272	247	219	191	162	134	107		
	40	Q P 12100	11100	9150	7480	6090	4860	3790	2860	2090	1460	972	-		
	50	Q P 401	393	373	351	322	290	258	225	192	160	130	-		
HGX22e/255-4 S ¹⁾	30	Q P 20800	19200	16100	13300	11000	8920	7140	5620	4330	3240	2350	1620		
		347	349	347	341	326	307	284	257	229	200	170	141		
	40	Q P 17800	16300	13700	11300	9200	7450	5940	4640	3540	2620	1860	1230		
HGX22e/315-4 S ¹⁾	30	Q P 429	424	409	393	368	339	308	274	239	203	168	135		
	40	Q P 14800	13500	11300	9150	7460	6000	4750	3680	2780	2020	1390	-		
	50	Q P 504	492	465	440	406	368	327	285	243	201	161	-		
HGX34e/215-4 S ¹⁾	30	Q P 23900	21900	18200	14600	11900	9470	7390	5610	4120	2900	1940	1220		
		383	385	384	370	352	326	294	258	221	184	149	118		
	40	Q P 20200	18500	15300	12200	9840	7770	5990	4480	3230	2220	1430	851		
HGX34e/255-4 S ¹⁾	30	Q P 472	465	448	426	394	356	314	270	227	185	147	115		
	40	Q P 16500	15000	12200	9770	7800	6090	4630	3420	2420	1630	1040	-		
	50	Q P 548	533	499	467	423	375	325	274	226	181	142	-		
HGX34e/315-4 S ¹⁾	30	Q P 28000	25700	21500	17200	14200	11500	9120	7080	5350	3900	2730	1820		
		457	461	459	444	423	395	361	322	281	239	197	158		
	40	Q P 23800	21800	18100	14500	11800	9460	7430	5680	4210	3010	2050	1320		
HGX34e/355-4 S ¹⁾	30	Q P 564	558	538	514	476	433	386	337	287	238	192	150		
	40	Q P 19500	17700	14600	11700	9410	7450	5760	4330	3150	2200	1480	-		
	50	Q P 655	640	602	568	515	458	400	341	284	230	180	-		
HGX34e/395-4 S ¹⁾	30	Q P 33800	31000	26000	21300	17600	14300	11400	8840	6700	4930	3490	2370		
		586	582	567	547	520	485	443	398	349	299	249	201		
	40	Q P 28700	26300	22000	17900	14700	11900	9350	7220	5400	3880	2650	1690		
HGX34e/455-4 S ¹⁾	30	Q P 705	692	659	629	583	532	476	418	358	298	240	186		
	40	Q P 23500	21500	17800	14500	11800	9430	7370	5600	4100	2840	1820	-		
	50	Q P 813	790	739	697	634	567	496	425	354	285	220	-		

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R404A/R507 | 50 Hz

Type		Cooling capacity Q _o [kW]										Power consumption P _e [kW]		
		Evaporating temperature °C												
Cond. temp. °C		7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
HGX34e/380-4 HGX34e/380-4 S	30	Q P	40900 720	37600 715	31700 6.98	25800 6.84	21200 6.45	17300 5.98	13800 5.46	10900 4.88	8300 4.28	6200 3.67	4490 3.05	3120 2.45
	40	Q P	34600 8.75	31800 8.59	26700 8.18	21600 7.84	17700 7.25	14300 6.59	11400 5.90	8850 5.18	6730 4.45	4960 3.72	3510 3.00	2340 2.33
	50	Q P	28400 10.1	26000 9.86	21800 9.23	17600 8.73	14300 7.92	11500 7.08	9030 6.22	6960 5.34	5210 4.47	3760 3.62	2550 2.81	-
HGX44e/475-4 HGX44e/475-4 S	30	Q P	52500 7.73	48300 7.85	40200 7.91	33500 7.80	27500 7.52	22400 7.10	18000 6.57	14300 5.94	11100 5.26	8340 4.54	6060 3.81	4110 3.11
	40	Q P	45200 9.97	41400 9.90	34200 9.62	28300 9.16	23200 8.57	18800 7.88	15000 7.12	11800 6.31	9010 5.47	6670 4.64	4650 3.84	2870 3.11
	50	Q P	37600 11.8	34300 11.5	28100 11.0	23100 10.2	18800 9.41	15100 8.49	12000 7.55	9260 6.59	6970 5.65	5000 4.76	3270 3.94	-
HGX44e/565-4 HGX44e/565-4 S	30	Q P	62700 9.18	57700 9.32	47800 9.45	39800 9.31	32800 8.97	26800 8.47	21600 7.82	17200 7.07	13400 6.24	10200 5.38	7470 4.51	5140 3.66
	40	Q P	54000 11.8	49600 11.7	40700 11.5	33700 10.9	27700 10.2	22500 9.42	18100 8.49	14300 7.51	11100 6.50	8230 5.50	5820 4.55	3680 3.67
	50	Q P	45100 14.0	41200 13.7	33400 13.2	27500 12.3	22500 11.2	18200 10.1	14500 9.01	11400 7.85	8620 6.72	6270 5.64	4180 4.66	-
HGX44e/665-4 HGX44e/665-4 S	30	Q P	73100 10.7	67100 10.9	56000 11.0	46500 10.9	38300 10.5	31100 9.94	25000 9.19	19800 8.32	15300 7.36	11600 6.35	8340 5.33	5630 4.34
	40	Q P	62700 13.9	57400 13.8	47500 13.4	39300 12.8	32200 12.0	26000 11.0	20800 9.97	16300 8.83	12500 7.66	9160 6.49	6360 5.37	3910 4.34
	50	Q P	52000 16.5	47500 16.1	38900 15.4	32000 14.3	26000 13.1	20900 11.8	16500 10.5	12800 9.22	9570 7.91	6840 6.66	4440 5.51	-
HGX44e/770-4 HGX44e/770-4 S	30	Q P	84600 12.4	77800 12.6	65300 12.8	54300 12.6	44700 12.1	36500 11.5	29400 10.6	23300 9.62	18100 8.51	13800 7.34	10100 6.16	6840 5.02
	40	Q P	72600 16.1	66500 16.0	55600 15.5	46100 14.8	37800 13.8	30700 12.7	24500 11.5	19300 10.2	14900 8.86	11100 7.51	7750 6.22	4860 5.02
	50	Q P	60300 19.2	55100 18.8	45700 17.8	37600 16.5	30700 15.2	24700 13.7	19600 12.2	15300 10.6	11600 9.15	8360 7.70	5530 6.37	-
HGX56e/850-4 HGX56e/850-4 S	30	Q P	93700 13.7	86100 13.9	71800 14.1	59800 13.9	49300 13.4	40200 12.6	32400 11.7	25800 10.6	20100 9.38	15300 8.08	11200 6.77	7710 5.49
	40	Q P	80500 17.7	73800 17.6	61100 17.1	50600 16.3	41600 15.3	33800 14.0	27200 12.7	21400 11.2	16600 9.76	12400 8.27	8720 6.83	5520 5.50
	50	Q P	67000 21.1	61200 20.6	50100 19.6	41300 18.3	33800 16.8	27300 15.1	21800 13.4	17000 11.7	13000 10.0	9410 8.48	6280 7.00	-
HGX56e/995-4 HGX56e/995-4 S	30	Q P	111000 18.6	102000 18.3	85000 17.6	70800 16.7	58300 15.8	47400 14.6	38000 13.4	29800 12.1	22900 10.7	17100 9.21	12200 7.61	8120 5.94
	40	Q P	94300 22.0	86600 21.5	72100 20.4	59800 19.2	49000 17.8	39600 16.3	31500 14.7	24500 12.9	18500 11.1	13400 9.23	9110 7.23	5480 5.15
	50	Q P	78000 25.3	71400 24.6	59000 23.1	48600 21.4	39500 19.6	31700 17.6	24900 15.5	19100 13.4	14100 11.1	9800 8.75	6130 6.30	-
HGX56e/1155-4 HGX56e/1155-4 S	30	Q P	127000 19.4	117000 19.7	97500 20.0	81100 19.7	66800 19.0	54500 17.9	43900 16.6	34800 15.0	27100 13.2	20600 11.4	15000 9.59	10300 7.80
	40	Q P	109000 25.1	99900 24.9	83000 24.4	68800 23.2	56400 21.7	45800 19.9	36700 18.0	28900 15.9	22200 13.8	16600 11.7	11700 9.68	7280 7.80
	50	Q P	90600 29.9	82800 29.2	68200 27.9	56200 26.0	45800 23.8	36900 21.5	29300 19.1	22900 16.6	17300 14.2	12500 12.0	8270 9.91	-
HGX66e/1340-4 HGX66e/1340-4 S	30	Q P	150000 25.0	138000 24.9	115000 24.2	95700 23.2	78800 21.9	64100 20.3	51300 18.5	40400 16.5	31000 14.4	23100 12.3	16500 10.3	11000 8.30
	40	Q P	129000 30.3	118000 29.7	97900 28.4	81200 26.6	66600 24.5	53800 22.3	42800 19.9	33400 17.4	25400 14.9	18500 12.5	12700 10.1	-
	50	Q P	106000 34.9	97000 33.9	79900 31.8	65900 29.3	53700 26.6	43100 23.8	34100 20.9	26400 17.9	19800 15.0	14200 12.2	-	-
HGX66e/1540-4 HGX66e/1540-4 S	30	Q P	172000 28.8	158000 28.6	132000 28.0	110000 26.9	90700 25.4	73900 23.5	59400 21.5	46900 19.2	36200 16.9	27100 14.5	19500 12.1	13200 9.87
	40	Q P	148000 35.1	136000 34.4	113000 32.9	93400 30.9	76800 28.6	62300 26.0	49700 23.3	39000 20.4	29800 17.6	21900 14.7	15300 12.0	-
	50	Q P	122000 40.5	112000 39.4	91900 37.1	75900 34.2	62100 31.1	50100 27.9	39800 24.5	31000 21.1	23400 17.8	17000 14.6	-	-

Relating to 20 °C suction gas temperature without liquid subcooling



Motor version -S- (more powerful motor)



Supplementary cooling or reduced suction gas temperature

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HG semi-hermetic compressors

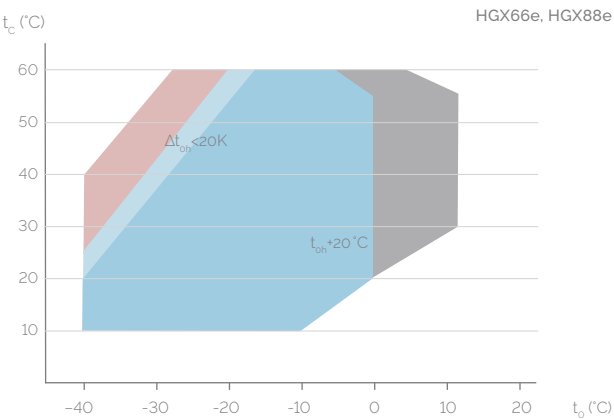
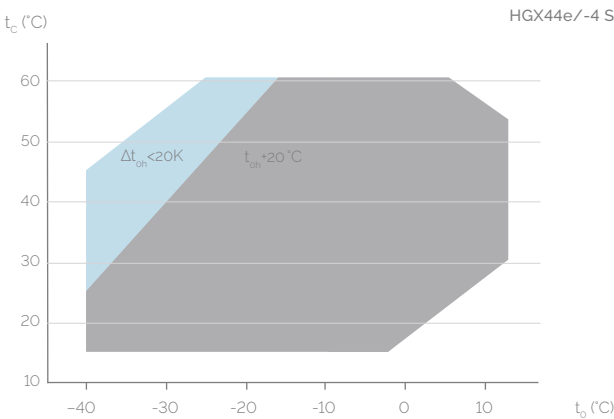
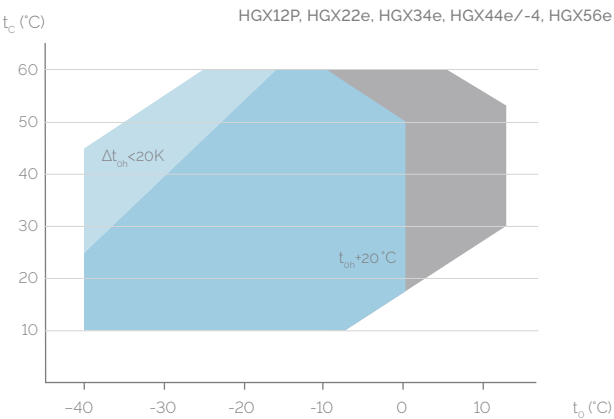
Performance data

R404A/R507 | 50 Hz

Type		Cooling capacity Q _o [kW]										Power consumption P _e [kW]		
		Evaporating temperature °C												
Cond. temp. °C		7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
HGX66e/1750-4 HGX66e/1750-4 S	30	Q P	195000 32.9	180000 32.8	151000 31.9	126000 30.7	104000 28.9	84700 26.9	68000 24.5	53700 22.0	41500 19.3	31100 16.6	22400 14.0	15200 11.4
		Q P	167000 40.1	154000 39.4	129000 37.6	107000 35.3	88000 32.6	71400 29.7	57100 26.6	44800 23.4	34200 20.2	25200 17.0	17600 13.9	- -
	40	Q P	138000 46.3	127000 45.1	106000 42.3	87000 39.1	71200 35.6	57500 31.9	45700 28.1	35600 24.3	27000 20.5	19600 16.9	- -	- -
		Q P	229000 39.1	211000 38.9	177000 38.0	148000 36.4	122000 34.4	99600 31.9	80000 29.1	63200 26.0	48900 22.8	36700 19.6	26500 16.4	17900 13.4
HGX66e/2070-4 HGX66e/2070-4 S	30	Q P	196000 47.8	180000 46.9	151000 44.8	126000 42.0	104000 38.8	83800 35.3	67100 31.6	52700 27.7	40300 23.8	29800 20.0	20800 16.4	- -
		Q P	162000 55.4	148000 53.8	123000 50.6	102000 46.7	83400 42.4	67400 37.9	53700 33.3	41900 28.7	31800 24.2	23100 19.9	- -	- -
	40	Q P	272000 46.0	251000 45.8	209000 44.8	175000 43.0	144000 40.6	118000 37.8	94200 34.6	74300 31.1	57400 27.4	43100 23.7	31100 20.1	21100 16.6
		Q P	235000 55.6	216000 54.6	179000 52.7	149000 49.5	122000 45.8	99000 41.8	79100 37.5	62000 33.1	47400 28.6	35100 24.3	24500 20.1	- -
HGX88e/2400-4 HGX88e/2400-4 S	30	Q P	194000 63.9	178000 62.2	147000 59.4	121000 54.9	98900 50.0	79800 44.8	63400 39.6	49400 34.3	37500 29.2	27300 24.2	- -	- -
		Q P	235000 63.9	216000 62.1	179000 59.5	149000 55.9	122000 51.8	99000 47.4	79100 42.6	62000 37.7	47400 32.7	35100 27.8	24500 23.0	- -
	40	Q P	309000 52.2	284000 51.9	239000 50.7	199000 48.7	164000 46.1	134000 42.9	108000 39.3	84700 35.5	65400 31.4	49100 27.2	35400 23.0	24000 19.0
		Q P	266000 63.3	244000 62.1	204000 59.5	170000 55.9	140000 51.8	113000 47.4	90200 42.6	70700 37.7	54100 32.7	39900 27.8	27900 23.0	- -
HGX88e/2735-4 HGX88e/2735-4 S	30	Q P	220000 73.1	202000 71.0	168000 67.0	139000 61.9	113000 56.5	91100 50.8	72400 44.9	56400 39.1	42700 33.3	31100 27.7	- -	- -
		Q P	365000 61.5	336000 61.1	282000 59.8	235000 57.5	194000 54.3	158000 50.6	127000 46.3	99800 41.6	77000 36.8	57700 31.8	41500 26.9	28100 22.1
	40	Q P	314000 74.5	288000 73.1	241000 70.2	200000 66.0	165000 61.1	133000 55.7	107000 50.1	83200 44.2	63500 38.3	46800 32.4	32600 26.8	- -
		Q P	260000 85.9	238000 83.5	198000 79.1	163000 73.0	133000 66.5	108000 59.7	85100 52.7	66200 45.8	50100 38.9	36400 32.2	- -	- -

HG semi-hermetic compressors
 Operating limits

R448A/R449A



- t_o Evaporating temperature (°C)
 t_c Condensing temperature (°C)
 Δt_{oh} Suction gas superheat (K)
 t_{oh} Suction gas temperature (°C)
- Unlimited application range
 - Supplementary cooling or reduced suction gas temperature (Δt_{oh} < 20K)
 - Supplementary cooling and reduced suction gas temperature (Δt_{oh} < 20K)
 - Motor version -S- (more powerful motor)
- Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to the operating limits may occur when using a frequency converter.

Performance data
 The performance data for R448A and R449A are based on European Standard EN 12900 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling. 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 BOCK VAP software (vap.bock.de).

ASERCOM certified performance data



For compressors with this label, the performance data are certified according 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 BOCK compressors can be found at www.asercom.org and www.bock.de.

HG semi-hermetic compressors
 Performance data

R448A | 50 Hz

Type		Cooling capacity Q _o [kW]										Power consumption P _e [kW]			
		Evaporating temperature °C													
		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
Cond. temp. °C		Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	Q P	
HGX12P/60-4 S	30	Q P	7620	6970	6360	5790	4760	3870	3110	2460	1920	1470	1100	790	543
		P	112	114	115	115	113	109	103	0.957	0.871	0.780	0.687	0.597	0.515
	40	Q P	6730	6140	5590	5070	4140	3350	2670	2100	1630	1230	907	644	428
		P	142	141	140	137	132	124	114	104	0.931	0.817	0.705	0.600	0.507
HGX12P/75-4 HGX12P/75-4 S	50	Q P	5850	5320	4820	4360	3540	2830	2240	1740	1330	988	712	487	-
		P	174	171	167	162	152	140	127	113	0.988	0.847	0.712	0.588	-
	30	Q P	9480	8680	7920	7220	5940	4840	3900	3090	2420	1860	1400	1020	703
		P	138	140	141	142	140	135	128	118	107	0.962	0.845	0.732	0.629
HGX12P/90-4 HGX12P/90-4 S	40	Q P	8380	7640	6960	6320	5180	4190	3350	2650	2060	1570	1170	835	563
		P	176	175	174	171	165	155	143	130	116	101	0.875	0.743	0.626
	50	Q P	7290	6630	6020	5450	4420	3550	2820	2200	1690	1270	924	641	-
		P	218	214	209	203	192	176	160	142	124	106	0.893	0.737	-
HGX12P/110-4 HGX12P/110-4 S	30	Q P	11300	10400	9430	8590	7070	5760	4650	3700	2900	2230	1680	1230	857
		P	167	170	171	172	167	160	151	140	127	113	0.997	0.861	0.736
	40	Q P	9960	9090	8280	7530	6160	5000	4010	3170	2470	1890	1410	1020	694
		P	213	213	211	208	196	185	170	155	138	120	103	0.881	0.739
HGX12P/125-4 HGX12P/125-4 S	50	Q P	8670	7890	7160	6490	5270	4240	3370	2640	2040	1540	1130	789	-
		P	264	260	254	247	229	211	191	170	148	127	106	0.880	-
	30	Q P	13200	12100	11100	10100	8280	6750	5450	4340	3410	2630	1990	1460	1020
		P	196	199	201	202	196	189	178	165	149	133	116	100	0.857
HGX12P/135-4 HGX12P/135-4 S	40	Q P	11700	10700	9680	8800	7210	5850	4700	3720	2910	2230	1670	1210	828
		P	252	251	248	245	232	218	201	182	162	142	122	103	0.865
	50	Q P	10200	9200	8360	7570	6150	4960	3950	3100	2400	1820	1340	942	-
		P	314	308	301	293	271	250	226	201	175	150	126	103	-
HGX22e/125-4 HGX22e/125-4 S	30	Q P	16600	15200	13800	12600	10300	8330	6680	5290	4130	3160	2370	1710	1170
		P	200	206	210	212	212	206	196	182	166	148	130	112	0.958
	40	Q P	14500	13200	12000	10900	8870	7170	5730	4510	3500	2660	1950	1370	853
		P	264	265	263	260	251	237	219	199	178	156	135	115	0.987
HGX22e/160-4 HGX22e/160-4 S	50	Q P	12400	11200	10200	9180	7470	6010	4770	3730	2870	2150	1540	1010	-
		P	322	316	310	302	283	261	237	211	185	160	137	116	-
	30	Q P	20300	18600	17000	15400	12600	10200	8180	6480	5060	3880	2900	2100	1440
		P	294	290	285	279	262	254	241	223	203	180	157	135	115
HGX22e/190-4 HGX22e/190-4 S	40	Q P	17700	16100	14700	13400	10900	8760	7000	5520	4290	3260	2400	1670	1050
		P	365	355	345	335	311	292	270	245	218	190	164	139	118
	50	Q P	15200	13800	12600	11400	9110	7330	5820	4560	3510	2630	1880	1230	-
		P	434	419	404	388	352	324	293	260	227	196	166	140	-
HGX22e/215-4 HGX22e/215-4 S	30	Q P	24500	22400	20500	18700	15400	12700	10300	8260	6570	5170	3980	2980	2110
		P	357	351	345	339	335	314	293	270	247	223	198	172	144
	40	Q P	21300	19500	17800	16200	13400	11000	8890	7140	5670	4430	3380	2460	1630
		P	445	433	422	409	395	364	333	303	272	241	210	179	147
HGX34e/215-4 HGX34e/215-4 S	50	Q P	18300	16700	15200	13900	11500	9300	7510	6010	4740	3660	2730	1880	-
		P	533	514	496	477	451	409	368	329	290	252	214	178	-
	30	Q P	27600	25200	23000	20900	16800	13700	10900	8490	6500	4830	3470	2370	1500
		P	348	349	348	345	336	319	296	270	242	213	184	157	134
HGX34e/255-4 HGX34e/255-4 S	40	Q P	24200	22000	20000	18100	14400	11600	9060	6980	5240	3810	2650	1740	1030
		P	458	448	437	424	401	367	330	293	255	219	186	157	133
	50	Q P	20600	18600	16800	15100	11900	9380	7280	5520	4080	2920	2010	1320	-
		P	559	538	517	495	457	408	358	310	264	221	185	154	-
HGX34e/255-4 HGX34e/255-4 S	30	Q P	32200	29600	27100	24700	20000	16400	13200	10400	7970	5960	4300	2950	1880
		P	359	372	380	386	392	382	363	336	303	267	229	192	158
	40	Q P	27900	25600	23400	21300	17200	14000	11200	8720	6660	4930	3490	2310	1370
		P	483	485	484	480	473	446	411	370	326	279	233	189	150
HGX34e/315-4 HGX34e/315-4 S	50	Q P	23300	21300	19400	17600	14100	11400	9040	7040	5350	3930	2750	1790	-
		P	595	587	576	563	543	499	449	394	338	281	227	177	-
	30	Q P	41100	37500	34100	30900	25000	20200	16200	12800	9840	7440	5470	3850	2510
		P	484	490	492	492	475	458	433	400	362	320	276	231	187
HGX34e/315-4 HGX34e/315-4 S	40	Q P	35700	32500	29500	26700	21500	17300	13800	10800	8230	6140	4410	2960	1720
		P	623	618	611	601	567	533	491	443	391	337	282	227	174
	50	Q P	30300	27400	24800	22400	17900	14300	11300	8770	6660	4910	3430	2170	-
		P	755	740	722	703	650	598	539	476	409	342	274	209	-

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R448A | 50 Hz

Type		Cooling capacity Q _o [kW]										Power consumption P _e [kW]			
		Evaporating temperature °C													
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX34e/380-4 HGX34e/380-4 S	30	Q P	48800 6.17	44600 6.20	40600 6.20	37000 6.17	30000 5.95	24500 5.71	19800 5.38	15700 4.97	12300 4.50	9440 3.98	7070 3.44	5090 2.88	3430 2.33
	40	Q P	42400 7.82	38700 7.74	35200 7.62	32000 7.48	25800 7.06	21000 6.62	16900 6.09	13400 5.50	10400 4.87	7890 4.20	5790 3.52	3990 2.85	2420 2.19
	50	Q P	35900 9.40	32600 9.19	29600 8.96	26900 8.70	21600 8.08	17500 7.42	14000 6.69	11100 5.92	8530 5.11	6410 4.28	4590 3.46	2990 2.65	-
HGX44e/475-4 HGX44e/475-4 S	30	Q P	61800 7.17	56500 7.30	51700 7.37	47100 7.39	38600 7.26	31500 7.00	25400 6.62	20200 6.12	15800 5.54	12200 4.89	9150 4.21	6660 3.53	4620 2.85
	40	Q P	54300 9.44	49600 9.40	45200 9.30	41100 9.17	33500 8.77	27300 8.23	21900 7.58	17300 6.84	13500 6.05	10300 5.21	7590 4.37	5340 3.55	3430 2.76
	50	Q P	46700 11.5	42500 11.3	38700 11.0	35100 10.7	28400 10.0	22900 9.25	18200 8.33	14300 7.34	11000 6.32	8150 5.28	5790 4.26	3760 3.28	-
HGX44e/565-4 HGX44e/565-4 S	30	Q P	73700 8.52	67500 8.66	61700 8.75	56200 8.77	45900 8.65	37500 8.35	30300 7.88	24200 7.28	19000 6.58	14700 5.80	11200 4.99	8160 4.16	5710 3.36
	40	Q P	64900 11.2	59300 11.1	54100 11.0	49200 10.8	40000 10.4	32600 9.83	26200 9.04	20900 8.15	16300 7.19	12500 6.19	9300 5.18	6620 4.19	4320 3.25
	50	Q P	55900 13.7	51000 13.4	46400 13.1	42100 12.7	33800 12.1	27400 11.0	21900 9.95	17300 8.75	13400 7.52	10100 6.27	7190 5.04	4750 3.87	-
HGX44e/665-4 HGX44e/665-4 S ¹⁾	30	Q P	87000 9.92	79500 10.1	72600 10.2	66000 10.2	53700 10.1	43800 9.81	35300 9.26	28100 8.57	22000 7.75	16900 6.85	12700 5.90	9210 4.93	6350 3.99
	40	Q P	76200 13.0	69500 13.0	63300 12.9	57500 12.7	46600 12.2	37900 11.5	30400 10.6	24000 9.58	18700 8.47	14200 7.30	10500 6.12	7330 4.96	4670 3.86
	50	Q P	65400 16.0	59500 15.7	54000 15.3	48800 14.9	39300 14.1	31700 12.9	25200 11.6	19800 10.2	15100 8.84	11300 7.39	7930 5.97	5120 4.59	-
HGX44e/770-4 HGX44e/770-4 S	30	Q P	99500 11.5	91100 11.7	83200 11.8	75900 11.8	62600 11.7	51100 11.3	41300 10.7	32900 9.91	25800 8.96	19900 7.92	15100 6.82	11000 5.71	7650 4.61
	40	Q P	87300 15.3	79800 15.2	72800 15.0	66300 14.8	54500 14.1	44300 13.3	35600 12.2	28300 11.0	22100 9.79	16900 8.44	12600 7.08	8860 5.74	5760 4.46
	50	Q P	75100 18.8	68400 18.4	62200 18.0	56500 17.4	46200 16.3	37300 14.9	29800 13.4	23400 11.8	18000 10.2	13500 8.55	9620 6.90	6320 5.31	-
HGX56e/850-4 HGX56e/850-4 S	30	Q P	110000 12.7	101000 12.9	92100 13.0	83900 13.1	69000 12.9	56300 12.5	45500 11.8	36300 10.9	28600 9.87	22100 8.72	16700 7.49	12300 6.25	8560 5.04
	40	Q P	96600 16.8	88400 16.7	80600 16.5	73400 16.3	60000 15.6	48900 14.7	39400 13.5	31300 12.2	24500 10.7	18800 9.29	14000 7.78	9920 6.29	6480 4.87
	50	Q P	83100 20.6	75800 20.2	69000 19.7	62600 19.1	50800 18.0	41200 16.5	32900 14.8	25900 13.1	20000 11.2	15100 9.41	10800 7.58	7130 5.82	-
HGX56e/995-4 HGX56e/995-4 S	30	Q P	129000 15.6	119000 15.8	108000 15.9	98500 15.9	81100 15.6	66400 15.0	53800 14.1	43000 13.1	33900 11.8	26200 10.5	19800 9.08	14400 7.60	9760 6.11
	40	Q P	113000 20.3	104000 20.1	94300 19.9	86000 19.5	70500 18.7	57600 17.5	46600 16.1	37100 14.6	29100 12.9	22300 11.1	16500 9.34	11400 7.50	6880 5.70
	50	Q P	96900 24.6	88500 24.2	80700 23.6	73300 22.9	59800 21.5	48700 19.8	39200 17.8	31000 15.8	24000 13.6	18000 11.4	12700 9.22	7940 7.01	-
HGX56e/1155-4 HGX56e/1155-4 S	30	Q P	150000 18.0	137000 18.3	125000 18.5	114000 18.5	93500 18.3	76400 17.7	61600 16.7	49100 15.4	38600 13.9	29800 12.3	22500 10.6	16500 8.88	11500 7.17
	40	Q P	132000 23.8	120000 23.7	110000 23.4	99500 23.1	81300 22.2	66200 20.8	53200 19.2	42300 17.3	33000 15.3	25200 13.1	18800 11.0	13300 8.93	8620 6.93
	50	Q P	113000 29.2	103000 28.6	93500 27.9	84800 27.2	68900 25.6	55700 23.4	44400 21.1	34900 18.5	26900 15.9	20200 13.3	14400 10.7	9460 8.26	-
HGX66e/1340-4 HGX66e/1340-4 S	30	Q P	160000 22.8	146000 22.6	133000 22.4	123000 22.4	109000 21.6	88300 20.5	71200 19.2	56700 17.6	44500 15.8	34200 14.0	25600 12.1	18400 10.1	-
	40	Q P	140000 27.9	128000 27.4	116000 26.8	116000 26.8	94100 25.3	76500 23.6	61400 21.6	48700 19.4	37900 17.1	28800 14.8	21100 12.4	-	-
	50	Q P	120000 32.6	109000 31.7	98600 30.8	98600 30.8	79700 28.7	64400 26.2	51400 23.6	40400 20.8	31000 17.9	23100 14.9	-	-	-
HGX66e/1540-4 HGX66e/1540-4 S	30	Q P	183000 26.2	167000 26.1	152000 25.8	138000 25.8	125000 25.0	102000 23.7	82100 22.2	65500 20.4	51600 18.4	39800 16.3	30000 14.1	21700 11.9	-
	40	Q P	161000 32.2	146000 31.6	133000 31.0	123000 30.8	109000 29.4	88100 27.4	71000 25.1	56400 22.6	44100 20.0	33700 17.3	24900 14.6	-	-
	50	Q P	138000 37.9	125000 36.9	114000 35.8	103000 35.8	91800 33.4	74400 30.6	59600 27.5	47000 24.3	36400 21.0	27300 17.7	-	-	-

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S-
(more powerful motor)

Supplementary cooling or
reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R448A | 50 Hz

Type		Cooling capacity Q _o [kW]												Power consumption P _e [kW]	
		Evaporating temperature °C													
		Cond. temp. °C	12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40
HGX66e/1750-4 HGX66e/1750-4 S	30	Q P	207000 30.0	189000 29.8	173000 29.5	158000 15.9	143000 28.5	117000 27.1	94000 25.3	75100 23.3	59100 21.1	45700 18.7	34400 16.2	24900 13.7	-
		Q P	182000 36.8	166000 36.2	151000 35.4	136000 19.5	124000 33.5	101000 31.3	81300 28.7	64700 25.9	50600 22.9	38700 19.9	28600 16.8	-	-
	40	Q P	156000 43.3	142000 42.2	129000 40.9	117000 22.9	106000 38.1	85200 34.9	68300 31.5	54000 27.9	41800 24.1	31400 20.3	-	-	-
		Q P	124000 35.5	112000 35.3	100000 35.0	88000 15.9	77000 33.8	66000 32.1	55000 30.0	44000 27.6	33000 24.9	22000 22.0	11000 19.1	0 16.1	-
HGX66e/2070-4 HGX66e/2070-4 S	30	Q P	244000 35.5	223000 35.3	203000 35.0	185000 15.9	167000 33.8	137000 32.1	111000 30.0	88300 27.6	69600 24.9	53800 22.0	40600 19.1	29400 16.1	-
		Q P	213000 43.8	195000 43.0	177000 42.1	160000 19.5	146000 39.9	119000 37.2	95500 34.1	76100 30.7	59600 27.1	45600 23.4	33700 19.8	-	-
	40	Q P	183000 51.7	166000 50.3	151000 48.7	136000 22.9	123000 45.5	99900 41.6	80200 37.5	63400 33.1	49200 28.5	37000 24.0	-	-	-
		Q P	151000 42.0	139000 41.8	127000 41.4	115000 15.9	103000 39.9	81000 38.0	63000 35.6	49000 32.9	37000 29.8	25000 26.5	13000 23.1	1000 19.7	-
HGX88e/2400-4 HGX88e/2400-4 S	30	Q P	255000 51.1	232000 50.3	211000 49.3	186000 19.5	172000 47.0	140000 43.9	113000 40.3	89600 36.5	70100 32.4	53600 28.2	39600 24.0	-	-
		Q P	219000 59.8	199000 58.3	181000 56.7	163000 22.9	146000 53.6	119000 49.1	94800 44.3	74900 39.2	58000 34.1	43600 28.9	-	-	-
	40	Q P	183000 42.0	166000 41.8	151000 41.4	136000 15.9	123000 39.9	99900 38.0	80200 35.6	63400 32.9	49200 29.8	37000 26.5	25000 23.1	13000 19.7	-
		Q P	151000 59.8	139000 58.3	127000 56.7	115000 22.9	103000 53.6	81000 49.1	63000 44.3	49000 39.2	37000 34.1	25000 28.9	13000 -	1000 -	-
HGX88e/2735-4 HGX88e/2735-4 S	30	Q P	328000 47.5	300000 47.2	273000 46.8	248000 15.9	225000 45.3	184000 43.2	149000 40.5	119000 37.4	93100 34.0	72000 30.3	54200 26.5	39300 22.6	-
		Q P	289000 58.1	263000 57.1	240000 55.9	218000 19.5	196000 53.2	160000 49.7	129000 45.7	103000 41.4	79900 36.9	61100 32.2	45100 27.4	-	-
	40	Q P	248000 68.3	226000 66.5	205000 64.6	183000 22.9	167000 60.5	136000 55.5	109000 50.2	85400 44.6	66100 38.8	49700 33.0	-	-	-
		Q P	205000 55.9	183000 55.6	163000 55.1	143000 15.9	124000 53.4	103000 50.9	81000 47.7	63000 44.0	49000 39.9	37000 35.5	25000 31.0	13000 26.4	-
HGX88e/3235-4 HGX88e/3235-4 S	30	Q P	387000 55.9	354000 55.6	323000 55.1	285000 15.9	265000 53.4	217000 50.9	175000 47.7	140000 44.0	110000 39.9	84700 35.5	63800 31.0	46100 26.4	-
		Q P	341000 68.4	311000 67.2	283000 65.8	250000 19.5	232000 62.7	189000 58.6	152000 53.9	121000 48.7	94000 43.3	71800 37.7	53000 32.1	-	-
	40	Q P	293000 80.3	267000 78.2	242000 75.9	218000 22.9	197000 71.3	160000 65.4	128000 59.0	101000 52.4	77700 45.5	58300 38.6	-	-	-
		Q P	242000 68.4	218000 67.2	194000 65.8	170000 19.5	150000 62.7	126000 58.6	102000 53.9	78000 48.7	58000 43.3	40000 37.7	25000 32.1	10000 -	-

R449A | 50 Hz

HGX12P/60-4 S	30	Q P	7580 1.12	6940 1.13	6330 1.14	5760 1.14	4740 1.13	3860 1.08	31
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HG semi-hermetic compressors

Performance data

R449A | 50 Hz

Type		Cooling capacity Q _o [kW]												Power consumption P _e [kW]	
		Evaporating temperature °C													
		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX22e/160-4	30	Q P	20200	18500	16900	15400	12600	10200	8150	6450	5040	3860	2900	2100	1440
			2.92	2.88	2.83	2.78	2.61	2.53	2.40	2.23	2.02	1.80	1.57	1.35	1.14
			17600	16000	14600	13300	10800	8710	6960	5490	4260	3240	2390	1670	1040
HGX22e/160-4 S	40	Q P	3.63	3.53	3.44	3.34	3.09	2.91	2.69	2.44	2.17	190	163	139	118
			15000	13700	12500	11400	9040	7270	5780	4530	3490	2610	1870	1230	
			4.31	4.16	4.01	3.86	3.50	3.22	2.91	2.59	2.26	195	166	140	
HGX22e/190-4	30	Q P	24400	22300	20400	18600	15400	12600	10300	8220	6550	5150	3970	2970	2110
			3.55	3.50	3.44	3.37	3.33	3.13	2.91	2.69	2.46	2.22	1.97	1.71	1.44
			21200	19400	17700	16100	13400	10900	8840	7110	5650	4410	3360	2450	1630
HGX22e/190-4 S	40	Q P	4.43	4.31	4.19	4.07	3.93	3.63	3.32	3.01	2.71	2.40	2.09	1.78	1.47
			18200	16600	15100	13800	11400	9230	7460	5970	4710	3640	2710	1870	
			5.29	5.11	4.93	4.74	4.49	4.07	3.67	3.27	2.88	2.51	2.13	1.77	
HGX34e/215-4	30	Q P	27400	25100	22800	20800	16800	13600	10800	8460	6470	4820	3460	2360	1500
			3.46	3.47	3.46	3.44	3.35	3.18	2.95	2.69	2.41	2.12	1.84	1.57	1.34
			24000	21800	19800	17900	14300	11500	9010	6940	5210	3790	2640	1730	1030
HGX34e/215-4 S	40	Q P	4.56	4.46	4.35	4.22	3.99	3.65	3.29	2.91	2.54	2.18	1.85	1.56	1.33
			20400	18500	16700	15000	11800	9320	7230	5480	4050	2900	2000	1310	
			5.55	5.35	5.14	4.92	4.55	4.06	3.56	3.08	2.62	2.21	1.84	1.54	
HGX34e/255-4	30	Q P	32100	29400	26900	24600	19900	16300	13100	10300	7940	5940	4280	2940	1870
			3.57	3.70	3.79	3.84	3.90	3.81	3.61	3.35	3.02	2.66	2.28	1.91	1.57
			27800	25400	23200	21100	17100	13900	11100	8670	6630	4900	3470	2300	1360
HGX34e/255-4 S	40	Q P	4.81	4.83	4.82	4.78	4.71	4.44	4.09	3.69	3.24	2.78	2.32	1.89	1.50
			23100	21100	19200	17500	14000	11300	8980	7000	5310	3900	2740	1790	
			5.92	5.84	5.73	5.60	5.40	4.96	4.46	3.92	3.36	2.80	2.26	1.76	
HGX34e/315-4	30	Q P	40900	37300	33900	30800	24900	20100	16100	12700	9800	7420	5460	3840	2510
			4.81	4.87	4.90	4.90	4.73	4.56	4.31	3.99	3.61	3.19	2.75	2.31	1.87
			35500	32300	29300	26500	21300	17200	13700	10700	8190	6120	4390	2940	1710
HGX34e/315-4 S	40	Q P	6.19	6.15	6.08	5.98	5.64	5.30	4.89	4.41	3.90	3.36	2.81	2.26	1.73
			30000	27200	24600	22200	17800	14200	11300	8710	6620	4880	3410	2160	
			7.50	7.35	7.18	6.99	6.47	5.95	5.36	4.74	4.08	3.40	2.73	2.08	
HGX34e/380-4	30	Q P	48500	44300	40400	36800	29900	24400	19700	15700	12300	9410	7050	5080	3420
			6.14	6.17	6.17	6.14	5.92	5.69	5.36	4.95	4.48	3.97	3.43	2.88	2.33
			42100	38400	35000	31800	25700	20900	16800	13300	10400	7860	5760	3970	2410
HGX34e/380-4 S	40	Q P	7.78	7.70	7.58	7.44	7.03	6.59	6.06	5.48	4.85	4.19	3.51	2.84	2.18
			35600	32400	29400	26600	21400	17400	13900	11000	8480	6370	4560	2980	
			9.35	9.14	8.91	8.65	8.04	7.38	6.66	5.89	5.09	4.27	3.45	2.64	
HGX44e/475-4	30	Q P	61400	56200	51400	46800	38400	31300	25300	20100	15800	12200	9120	6650	4610
			7.14	7.26	7.33	7.36	7.22	6.98	6.59	6.10	5.52	4.88	4.20	3.52	2.85
			53900	49300	44900	40900	33300	27100	21800	17300	13400	10300	7550	5320	3420
HGX44e/475-4 S	40	Q P	9.39	9.35	9.26	9.12	8.73	8.19	7.55	6.81	6.02	5.20	4.36	3.54	2.75
			46300	42200	38400	34800	28100	22700	18100	14200	10900	8100	5760	3750	
			11.4	11.2	11.0	10.7	10.0	9.21	8.29	7.31	6.29	5.26	4.25	3.27	
HGX44e/565-4	30	Q P	73300	67100	61300	55900	45700	37400	30200	24100	19000	14700	11100	8140	5700
			8.47	8.62	8.71	8.73	8.61	8.31	7.85	7.25	6.55	5.78	4.97	4.15	3.35
			64400	58900	53700	48900	39700	32400	26100	20700	16200	12500	9260	6590	4300
HGX44e/565-4 S	40	Q P	11.1	11.1	10.9	10.8	10.4	9.79	9.01	8.12	7.16	6.17	5.16	4.17	3.24
			55500	50600	46000	41800	33600	27200	21800	17200	13300	9950	7150	4730	
			13.6	13.3	13.0	12.7	12.0	11.0	9.91	8.72	7.48	6.24	5.02	3.86	
HGX44e/665-4	30	Q P	85400	78200	71400	65100	53500	43600	35200	28000	21900	16900	12700	9180	6340
			9.91	10.0	10.1	10.2	10.1	9.77	9.23	8.54	7.72	6.83	5.88	4.92	3.98
			74900	68400	62400	56700	46300	37600	30200	23900	18600	14200	10500	7310	4660
HGX44e/665-4 S ¹⁾	40	Q P	13.0	13.0	12.8	12.7	12.2	11.4	10.5	9.54	8.43	7.28	6.10	4.95	3.85
			64200	58500	53200	48200	39000	31500	25100	19600	15100	11200	7890	5090	
			16.0	15.7	15.3	14.9	14.0	12.8	11.6	10.2	8.81	7.37	5.95	4.58	
HGX44e/770-4	30	Q P	98900	90600	82800	75500	62300	50900	41100	32700	25700	19900	15000	11000	7640
			11.4	11.6	11.8	11.8	11.6	11.2	10.6	9.87	8.93	7.90	6.80	5.69	4.60
			86800	79300	72300	65800	54100	44100	35400	28100	22000	16800	12500	8830	5740
HGX44e/770-4 S	40	Q P	15.2	15.1	14.9	14.7	14.1	13.2	12.2	11.0	9.75	8.41	7.06	5.72	4.45
			74500	67900	61800	56000	45800	37000	29600	23200	17900	13400	9570	6290	
			18.7	18.3	17.9	17.4	16.2	14.8	13.4	11.8	10.1	8.52	6.88	5.30	

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

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HG semi-hermetic compressors

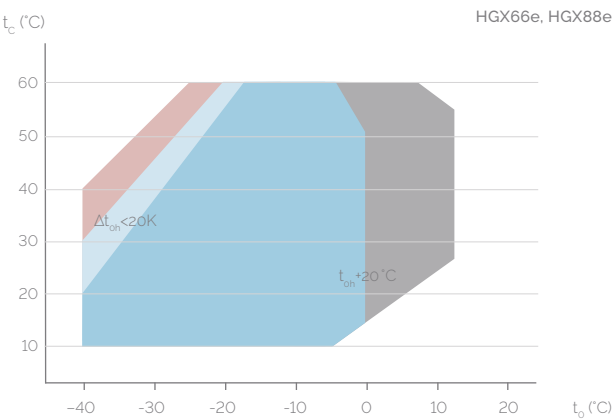
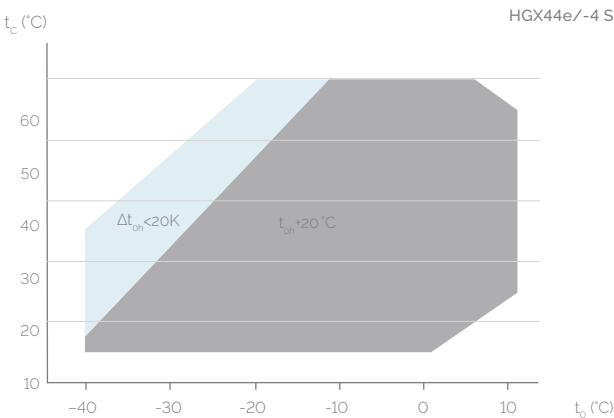
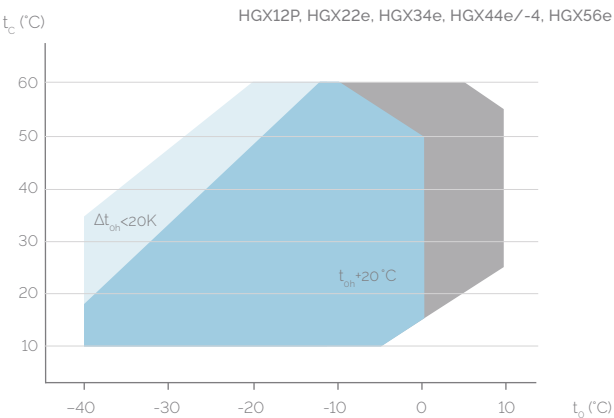
Performance data

R449A | 50 Hz

Type			Cooling capacity Q _o [kW]										Power consumption P _e [kW]			
			Evaporating temperature °C													
			12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
Cond.	temp. °C															
HGX56e/850-4	30	Q	110000	101000	91600	83500	68600	56100	45300	36200	28500	22000	16700	12300	8550	
		P	12.6	12.8	13.0	13.0	12.8	12.4	11.7	10.8	9.84	8.69	7.47	6.23	5.03	
			96000	87800	80100	72900	59600	48600	39200	31100	24400	18700	13900	9880	6450	
HGX56e/850-4 S	40	Q	16.7	16.6	16.4	16.2	15.5	14.6	13.4	12.1	10.7	9.26	7.75	6.27	4.86	
		P	82500	75200	68400	62100	50400	40900	32700	25800	19900	15000	10800	7100		
			20.5	20.1	19.6	19.0	17.9	16.4	14.8	13.0	11.2	9.38	7.56	5.80		
HGX56e/995-4	50	Q	129000	118000	108000	98000	80700	66100	53500	42800	33800	26200	19800	14400	9740	
		P	15.6	15.7	15.8	15.8	15.5	14.9	14.1	13.0	11.8	10.4	9.06	7.58	6.10	
			113000	103000	93700	85400	70100	57300	46300	36900	29000	22200	16400	11400	6860	
HGX56e/995-4 S	40	Q	20.2	20.0	19.8	19.4	18.6	17.4	16.1	14.5	12.9	11.1	9.31	7.48	5.68	
		P	96100	87800	80000	72800	59400	48400	38900	30800	23900	17900	12600	7900		
			24.5	24.0	23.5	22.8	21.4	19.7	17.8	15.7	13.6	11.4	9.19	6.99		
HGX56e/1155-4	30	Q	149000	136000	125000	114000	93100	76000	61400	48900	38500	29700	22400	16400	11500	
		P	17.9	18.2	18.4	18.5	18.3	17.6	16.6	15.4	13.9	12.3	10.5	8.85	7.15	
			131000	120000	109000	98800	80900	65800	52900	42000	32800	25100	18700	13300	8590	
HGX56e/1155-4 S	40	Q	23.7	23.5	23.3	23.0	22.1	20.7	19.1	17.2	15.2	13.1	11.0	8.90	6.91	
		P	112000	102000	92800	84200	68400	55300	44100	34700	26700	20000	14400	9420		
			29.0	28.5	27.8	27.0	25.4	23.3	21.0	18.5	15.9	13.2	10.7	8.23		
HGX66e/1340-4	50	Q	159000	145000	132000	114000	108000	87900	71000	56500	44400	34200	25600	18400		
		P	22.7	22.6	22.3	18.5	21.5	20.5	19.1	17.5	15.8	14.0	12.0	10.1		
			139000	127000	115000	98800	93600	76100	61100	48500	37700	28700	21000			
HGX66e/1340-4 S	40	Q	27.7	27.2	26.7	23.0	25.2	23.5	21.5	19.4	17.1	14.7	12.3			
		P	119000	108000	97900	84200	79200	64000	51100	40200	30900	23000				
			32.5	31.6	30.6	27.0	28.5	26.1	23.5	20.7	17.8	14.9				
HGX66e/1540-4	30	Q	182000	166000	152000	114000	124000	102000	81800	65300	51400	39700	30000	21700		
		P	26.1	26.0	25.7	18.5	24.9	23.7	22.1	20.3	18.4	16.2	14.1	11.9		
			160000	146000	133000	98800	108000	87700	70600	56200	43900	33600	24800			
HGX66e/1540-4 S	40	Q	32.1	31.5	30.8	23.0	29.3	27.3	25.0	22.6	20.0	17.3	14.5			
		P	137000	124000	113000	84200	91200	73900	59200	46800	36200	27200				
			37.7	36.7	35.6	27.0	33.3	30.5	27.4	24.3	21.0	17.6				
HGX66e/1750-4	30	Q	206000	189000	172000	114000	142000	116000	93600	74800	58900	45600	34400	24900		
		P	29.9	29.7	29.4	18.5	28.4	27.0	25.3	23.3	21.0	18.6	16.2	13.7		
			181000	165000	150000	98800	124000	101000	81000	64400	50400	38600	28500			
HGX66e/1750-4 S	40	Q	36.7	36.0	35.3	23.0	33.4	31.1	28.6	25.8	22.9	19.8	16.8			
		P	155000	141000	128000	84200	105000	84700	68000	53700	41600	31300				
			43.1	42.0	40.7	27.0	38.0	34.8	31.4	27.8	24.1	20.3				
HGX66e/2070-4	30	Q	242000	222000	202000	114000	167000	136000	111000	88000	69400	53700	40500	29400		
		P	35.3	35.2	34.8	18.5	33.7	32.0	29.9	27.5	24.8	22.0	19.0	16.1		
			212000	194000	176000	98800	145000	118000	95100	75800	59400	45500	33600			
HGX66e/2070-4 S	40	Q	43.6	42.8	41.9	23.0	39.7	37.0	33.9	30.6	27.0	23.4	19.7			
		P	181000	165000	150000	84200	123000	99300	79700	63100	49000	36900				
			51.4	50.0	48.5	27.0	45.3	41.5	37.3	33.0	28.5	24.0				
HGX88e/2400-4	30	Q	287000	263000	239000	114000	196000	160000	130000	104000	81500	63000	47500	34500		
		P	41.8	41.6	41.2	18.5	39.7	37.9	35.5	32.8	29.7	26.5	23.1	19.7		
			253000	231000	210000	98800	171000	140000	113000	89200	69800	53500	39600			
HGX88e/2400-4 S	40	Q	50.9	50.1	49.1	23.0	46.8	43.7	40.2	36.3	32.3	28.1	23.9			
		P	218000	198000	180000	84200	146000	118000	94300	74500	57800	43500				
			59.6	58.0	56.4	27.0	53.3	48.9	44.1	39.1	34.0	28.8				
HGX88e/2735-4	30	Q	326000	298000	272000	114000	224000	183000	148000	118000	92900	71800	54100	39300		
		P	47.3	47.1	46.6	18.5	45.1	43.0	40.4	37.3	33.9	30.2	26.4	22.6		
			287000	262000	238000	98800	195000	159000	128000	102000	79600	60900	45100			
HGX88e/2735-4 S	40	Q	57.9	56.9	55.7	23.0	53.0	49.5	45.6	41.3	36.8	32.1	27.4			
		P	247000	224000	204000	84200	166000	135000	108000	85000	65800	49600				
			68.0	66.2	64.3	27.0	60.2	55.3	50.0	44.4	38.7	32.9				
HGX88e/3235-4	30	Q	385000	352000	321000	114000	264000	216000	175000	139000	110000	84500	63700	46100		
		P	55.7	55.4	54.9	18.5	53.2	50.7	47.6	43.9	39.8	35.5	30.9	26.4		
			339000	309000	281000	98800	230000	188000	151000	120000	93700	71600	52900			
HGX88e/3235-4 S	40	Q	68.1	66.9	65.6	23.0	62.5	58.4	53.7	48.6	43.2	37.6	32.0			
		P	291000	265000	240000	84200	196000	159000	127000	100000	77400	58100				
			79.9	77.8	75.5	27.0	71.0	65.1	58.8	52.2	45.4	38.5				

HG semi-hermetic compressors
 Operating limits

R407A



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

- Unlimited application range
- Supplementary cooling or reduced suction gas temperature (Δt_{oh} < 20K)
- Supplementary cooling and reduced suction gas temperature (Δt_{oh} < 20K)
- Motor version -S- (more powerful motor)

Max. permissible operating pressure (LP/HP) ¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to the operating limits may occur when using a frequency converter.

Performance data
 The performance data for R407A are based on European Standard EN 12900 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling. 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 BOCK VAP software (vap.bock.de).

ASERCOM certified performance data



For compressors with this label, the performance data are certified according 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 BOCK compressors can be found at www.asercom.org and www.bock.de.

HG semi-hermetic compressors
 Performance data

R407A | 50 Hz

Type	Cond. temp. °C	Cooling capacity Q _o [kW]												Power consumption P _e [kW]		
		Evaporating temperature °C														
		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40			
HGX12P/60-4 S	30	Q 6820	6230	5680	4690	3810	3060	2420	1870	1430	1060	770	553			
		P 105	107	108	108	104	0.993	0.921	0.839	0.753	0.669	0.593	0.532			
	40	Q 5900	5390	4900	4030	3260	2610	2050	1580	1200	884	639	-			
HGX12P/75-4	30	Q 5030	4570	4150	3390	2730	2170	1690	1300	968	-	-	-			
		P 132	132	130	125	118	109	0.996	0.892	0.791	0.697	0.618	-			
	50	Q 157	154	150	140	129	117	105	0.927	0.811	-	-	-			
HGX12P/90-4	30	Q 8490	7760	7080	5850	4770	3830	3040	2360	1800	1350	989	715			
		P 130	133	134	134	130	123	114	1.03	0.928	0.823	0.728	0.653			
	40	Q 7350	6710	6120	5030	4090	3270	2580	2010	1530	1140	828	-			
HGX12P/110-4	30	Q 6260	5710	5180	4240	3430	2730	2140	1650	1250	-	-	-			
		P 196	192	187	177	163	148	132	116	101	-	-	-			
	50	Q 10100	9240	8430	6960	5680	4570	3630	2830	2170	1630	1200	872			
HGX12P/125-4	30	Q 157	160	162	159	154	146	135	122	109	0.970	0.856	0.764			
		P 8740	7990	7280	5990	4870	3910	3100	2410	1840	1380	1010	-			
	40	Q 199	198	196	186	176	162	147	132	117	102	0.909	-			
HGX12P/160-4	30	Q 7450	6790	6170	5050	4090	3270	2580	1990	1510	-	-	-			
		P 2.38	2.34	2.28	2.11	1.95	1.77	1.58	1.39	1.21	-	-	-			
	50	Q 11900	10900	9870	8150	6660	5360	4260	3330	2550	1920	1420	1040			
HGX12P/215-4	30	Q 184	188	190	187	181	171	158	144	128	113	100	0.893			
		P 10300	9340	8510	7000	5710	4590	3640	2840	2170	1630	1200	-			
	40	Q 2.35	2.34	2.31	2.20	2.07	1.92	1.74	1.55	1.37	1.21	1.07	-			
HGX12P/255-4	30	Q 8690	7930	7210	5910	4790	3840	3030	2350	1790	-	-	-			
		P 2.83	2.77	2.70	2.50	2.31	2.09	1.86	1.64	1.43	-	-	-			
HGX12P/315-4	30	Q 15200	13800	12600	10200	8240	6580	5180	4000	3030	2220	1570	1030			
		P 2.06	2.08	2.09	2.08	2.01	1.90	1.77	1.62	1.46	1.29	1.13	0.992			
	40	Q 13300	12000	10900	8810	7090	5630	4400	3370	2520	1830	1250	-			
HGX12P/355-4	30	Q 2.60	2.57	2.53	2.43	2.29	2.12	1.93	1.74	1.55	1.37	1.20	-			
		P 11300	10200	9170	7410	5920	4660	3620	2750	2040	-	-	-			
	50	Q 3.08	3.01	2.93	2.74	2.53	2.30	2.07	1.84	1.63	-	-	-			
HGX12P/415-4	30	Q 19300	17500	15900	12600	10200	8120	6450	5060	3920	2960	2130	1360			
		P 2.72	2.69	2.66	2.58	2.43	2.30	2.16	2.02	1.87	1.69	1.48	1.22			
	40	Q 17000	15400	13900	11100	8860	7060	5580	4350	3310	2400	1580	-			
HGX12P/455-4	30	Q 3.30	3.23	3.15	3.00	2.79	2.60	2.41	2.21	1.99	1.75	1.48	-			
		P 14700	13200	11900	9540	7630	6050	4720	3600	2630	-	-	-			
	50	Q 3.86	3.74	3.61	3.40	3.13	2.88	2.62	2.35	2.06	-	-	-			
HGX12P/515-4	30	Q 22500	20500	18600	15300	12600	10200	8100	6400	4970	3760	2750	1870			
		P 3.48	3.40	3.32	3.26	3.04	2.82	2.62	2.41	2.20	1.98	1.75	1.49			
	40	Q 19600	17800	16200	13400	10900	8760	6980	5490	4240	3180	2270	-			
HGX12P/565-4	30	Q 4.23	4.10	3.96	3.81	3.50	3.21	2.94	2.67	2.40	2.13	1.86	-			
		P 16800	15300	13900	11400	9190	7370	5850	4570	3510	-	-	-			
	50	Q 5.00	4.80	4.61	4.35	3.95	3.57	3.22	2.89	2.56	-	-	-			
HGX12P/615-4	30	Q 24600	22400	20400	16500	13300	10600	8200	6230	4590	3270	2220	1430			
		P 3.47	3.47	3.44	3.34	3.17	2.94	2.67	2.38	2.08	1.79	1.53	1.31			
	40	Q 21500	19500	17600	14100	11300	8800	6740	5020	3620	2500	1640	-			
HGX12P/655-4	30	Q 4.47	4.36	4.23	3.99	3.64	3.27	2.88	2.50	2.13	1.80	1.52	-			
		P 18200	16400	14800	11700	9170	7070	5310	3880	2730	-	-	-			
	50	Q 5.37	5.15	4.93	4.55	4.04	3.53	3.03	2.56	2.14	-	-	-			
HGX12P/715-4	30	Q 28900	26500	24100	19600	16000	12800	9990	7640	5670	4050	2760	1790			
		P 3.72	3.81	3.86	3.91	3.81	3.60	3.32	2.97	2.60	2.22	1.85	1.53			
	40	Q 25000	22800	20800	16800	13600	10900	8440	6400	4690	3290	2180	-			
HGX12P/755-4	30	Q 4.86	4.85	4.81	4.73	4.44	4.08	3.65	3.19	2.71	2.25	1.82	-			
		P 20900	19000	17300	13900	11200	8820	6810	5110	3700	-	-	-			
	50	Q 5.89	5.78	5.64	5.42	4.96	4.43	3.87	3.28	2.71	-	-	-			
HGX12P/815-4	30	Q 36600	33300	30200	24400	19700	15700	12300	9450	7100	5180	3630	2400			
		P 4.89	4.92	4.92	4.74	4.56	4.29	3.95	3.56	3.13	2.68	2.23	1.80			
	40	Q 31700	28800	26100	21000	16900	13400	10400	7920	5870	4180	2790	-			
HGX12P/855-4	30	Q 6.19	6.12	6.02	5.67	5.30	4.87	4.37	3.84	3.28	2.72	2.17	-			
		P 26800	24300	21900	17600	14000	11000	8480	6370	4620	-	-	-			
	50	Q 7.41	7.23	7.03	6.50	5.94	5.33	4.67	3.98	3.29	-	-	-			

Relating to 20 °C suction gas temperature without liquid subcooling

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

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HG semi-hermetic compressors

Performance data

R407A | 50 Hz

Type		Cooling capacity Q _o [kW]											Power consumption P _e [kW]	
		Evaporating temperature °C												
		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX34e/380-4 HGX34e/380-4 S	30	Q P	43800 6.24	39900 6.23	36200 6.19	29300 5.93	23900 5.68	19200 5.33	15200 4.91	11900 4.42	9030 3.89	6720 3.34	4830 2.79	3290 2.25
	40	Q P	37900 7.77	34500 7.64	31300 7.49	25300 7.05	20500 6.59	16500 6.04	13000 5.43	10100 4.77	7560 4.09	5510 3.40	3790 2.72	-
	50	Q P	32000 9.22	29100 8.97	26300 8.70	21200 8.08	17200 7.38	13700 6.62	10700 5.81	8180 4.97	6060 4.12	-	-	-
HGX44e/475-4 HGX44e/475-4 S	30	Q P	56800 7.37	51900 7.47	47300 7.51	38700 7.40	31500 7.15	25300 6.75	20000 6.22	15600 5.61	11900 4.95	8840 4.26	6390 3.57	4420 2.92
	40	Q P	49700 9.41	45300 9.35	41200 9.23	33500 8.86	27100 8.33	21700 7.67	17100 6.91	13200 6.09	9960 5.24	7310 4.39	5130 3.57	-
	50	Q P	42500 11.2	38600 11.0	35000 10.7	28300 10.1	22800 9.34	18100 8.41	14100 7.42	10800 6.39	8040 5.35	-	-	-
HGX44e/565-4 HGX44e/565-4 S	30	Q P	67800 8.75	61900 8.87	56400 8.92	46000 8.84	37500 8.53	30200 8.04	24000 7.41	18800 6.67	14400 5.87	10800 5.04	7830 4.22	5480 3.44
	40	Q P	59400 11.1	54200 11.1	49300 10.9	39900 10.6	32400 9.95	26000 9.15	20600 8.24	16000 7.25	12200 6.22	8970 5.20	6380 4.22	-
	50	Q P	51000 13.4	46300 13.1	42000 12.8	33700 12.1	27300 11.1	21800 10.0	17100 8.85	13200 7.60	9890 6.35	-	-	-
HGX44e/665-4 HGX44e/665-4 S ¹⁾	30	Q P	79000 10.2	72100 10.3	65700 10.4	53800 10.3	43800 10.0	35200 9.45	27800 8.71	21600 7.86	16500 6.93	12300 5.96	8820 5.00	6070 4.09
	40	Q P	69000 13.1	62900 13.0	57100 12.8	46500 12.4	37700 11.6	30100 10.7	23700 9.68	18300 8.53	13800 7.34	10100 6.15	7030 5.00	-
	50	Q P	58900 15.7	53500 15.4	48500 15.0	39200 14.2	31500 13.0	25000 11.7	19500 10.3	14900 8.94	11100 7.49	-	-	-
HGX44e/770-4 HGX44e/770-4 S	30	Q P	91500 11.8	83600 12.0	76200 12.0	62700 11.9	51100 11.5	41100 10.9	32600 10.0	25400 9.09	19500 8.01	14600 6.89	10600 5.78	7340 4.73
	40	Q P	80000 15.2	72900 15.1	66300 14.9	54400 14.3	44100 13.4	35300 12.4	27900 11.1	21600 9.86	16400 8.49	12100 7.11	8530 5.78	-
	50	Q P	68400 18.3	62200 18.0	56400 17.5	46000 16.4	37100 15.1	29500 13.6	23100 12.0	17800 10.3	13300 8.66	-	-	-
HGX56e/850-4 HGX56e/850-4 S	30	Q P	99300 13.0	90700 13.2	82500 13.2	69100 13.2	56300 12.7	45400 12.0	36000 11.1	28100 10.0	21600 8.82	16200 7.57	11800 6.33	8220 5.16
	40	Q P	86800 16.7	79000 16.6	71800 16.4	59900 15.8	48700 14.8	39000 13.7	30900 12.3	24000 10.8	18200 9.35	13500 7.82	9570 6.34	-
	50	Q P	74300 20.1	67500 19.7	61100 19.2	50700 18.1	40900 16.6	32700 15.0	25700 13.2	19800 11.4	14900 9.54	-	-	-
HGX56e/995-4 HGX56e/995-4 S	30	Q P	116000 15.6	106000 15.6	96400 15.6	79600 15.2	65300 14.6	52900 13.8	42200 12.7	33100 11.5	25500 10.2	19000 8.81	13600 7.32	9140 5.81
	40	Q P	103000 19.9	93500 19.6	85300 19.2	70000 18.3	57100 17.1	45900 15.7	36400 14.2	28300 12.5	21400 10.7	15600 8.90	10700 7.02	-
	50	Q P	88600 23.8	80700 23.2	73300 22.5	59700 21.0	48300 19.2	38500 17.3	30100 15.2	23100 13.0	17100 10.8	-	-	-
HGX56e/1155-4 HGX56e/1155-4 S	30	Q P	138000 18.6	126000 18.9	115000 19.0	93400 18.8	75800 18.2	60800 17.2	48000 15.9	37300 14.4	28400 12.7	21100 11.1	15200 9.43	10500 7.86
	40	Q P	121000 23.9	110000 23.7	99300 23.4	80800 22.6	65400 21.2	52200 19.6	41000 17.7	31600 15.7	23900 13.6	17500 11.5	12200 9.61	-
	50	Q P	103000 28.7	93400 28.1	84500 27.4	68300 25.9	54900 23.9	43500 21.6	33900 19.1	25900 16.6	19200 14.1	-	-	-
HGX66e/1340-4 HGX66e/1340-4 S	30	Q P	156000 22.3	142000 22.2	129000 22.0	105000 21.2	85200 20.1	68400 18.8	54200 17.3	42300 15.5	32400 13.6	24100 11.7	17200 9.77	11200 7.81
	40	Q P	136000 27.6	124000 27.0	113000 26.4	90900 25.0	73600 23.2	58900 21.2	46500 19.0	36000 16.7	27200 14.3	19700 11.9	-	-
	50	Q P	117000 32.4	106000 31.5	95500 30.5	76900 28.3	61900 25.8	49300 23.1	38600 20.3	29500 17.3	21700 14.4	-	-	-
HGX66e/1540-4 HGX66e/1540-4 S	30	Q P	179000 25.7	163000 25.5	148000 25.3	121000 24.5	97900 23.3	78800 21.8	62600 20.0	49100 18.0	37700 15.9	28300 13.7	20300 11.4	13400 9.24
	40	Q P	156000 31.9	142000 31.3	129000 30.6	105000 29.0	84800 27.0	68000 24.7	53900 22.2	42000 19.5	31900 16.8	23300 14.0	-	-
	50	Q P	134000 37.7	122000 36.6	110000 35.4	88600 33.0	71600 30.2	57200 27.1	44900 23.8	34600 20.4	25700 17.0	-	-	-

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature
without liquid subcooling

Motor version -S-
(more powerful motor)

Supplementary cooling or
reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R407A | 50 Hz

Type		Cooling capacity Q _o [kW]											Power consumption P _e [kW]	
		Evaporating temperature °C												
		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX66e/1750-4 HGX66e/1750-4 S	30	Q P	203000 29.4	185000 29.2	168000 28.9	138000 27.9	113000 26.6	90200 24.9	71700 22.9	56200 20.6	43300 18.2	32400 15.7	23300 13.2	15400 10.7
	40	Q P	177000 36.4	161000 35.8	147000 35.0	120000 33.1	97100 30.8	78000 28.2	61800 25.4	48200 22.4	36700 19.3	26800 16.1	-	-
	50	Q P	152000 43.0	138000 41.8	125000 40.5	102000 37.7	82000 34.4	65600 30.9	51600 27.3	39800 23.4	29600 19.6	-	-	-
HGX66e/2070-4 HGX66e/2070-4 S	30	Q P	239000 34.8	218000 34.6	198000 34.3	162000 33.1	132000 31.5	107000 29.5	84400 27.0	66200 24.4	51000 21.5	38200 18.5	27500 15.5	18200 12.5
	40	Q P	208000 43.3	189000 42.5	172000 41.5	141000 39.4	114000 36.6	91600 33.5	72700 30.1	56700 26.5	43200 22.8	31600 19.0	-	-
	50	Q P	178000 51.3	161000 49.9	146000 48.3	119000 45.0	96100 41.0	77000 36.8	60700 32.3	46800 27.7	34800 23.1	-	-	-
HGX88e/2400-4 HGX88e/2400-4 S	30	Q P	283000 41.2	258000 41.0	234000 40.6	191000 39.1	155000 37.3	125000 35.0	99200 32.2	77800 29.2	59900 25.9	44900 22.5	32300 19.0	21400 15.5
	40	Q P	248000 50.6	226000 49.7	205000 48.7	166000 46.4	135000 43.2	108000 39.6	85600 35.8	66700 31.7	50800 27.4	37200 23.1	-	-
	50	Q P	213000 59.5	194000 57.9	175000 56.2	141000 52.9	114000 48.4	91000 43.5	71600 38.4	55200 33.2	41100 27.9	-	-	-
HGX88e/2735-4 HGX88e/2735-4 S	30	Q P	321000 46.6	293000 46.4	266000 45.9	218000 44.4	177000 42.4	143000 39.8	114000 36.7	88600 33.3	68200 29.6	51100 25.7	36700 21.7	24300 17.7
	40	Q P	281000 57.5	256000 56.5	232000 55.3	190000 52.5	154000 49.0	124000 45.0	97600 40.7	76100 36.1	57900 31.3	42400 26.4	-	-
	50	Q P	242000 67.9	219000 66.0	199000 64.0	161000 59.8	131000 54.7	104000 49.3	81700 43.6	62900 37.8	46800 31.8	-	-	-
HGX88e/3235-4 HGX88e/3235-4 S	30	Q P	379000 54.9	346000 54.6	314000 54.1	257000 52.4	209000 49.9	168000 46.9	134000 43.2	105000 39.1	80300 34.7	60100 30.1	43100 25.4	28500 20.7
	40	Q P	332000 67.7	302000 66.5	274000 65.1	224000 61.9	181000 57.7	146000 53.0	115000 47.8	89500 42.3	68000 36.7	49700 30.9	-	-
	50	Q P	285000 79.8	259000 77.6	234000 75.2	190000 70.5	154000 64.5	123000 58.0	96100 51.2	73900 44.3	54900 37.2	-	-	-

Relating to 20 °C suction gas temperature
without liquid subcooling

Motor version -S-
(more powerful motor)

Supplementary cooling or
reduced suction gas temperature

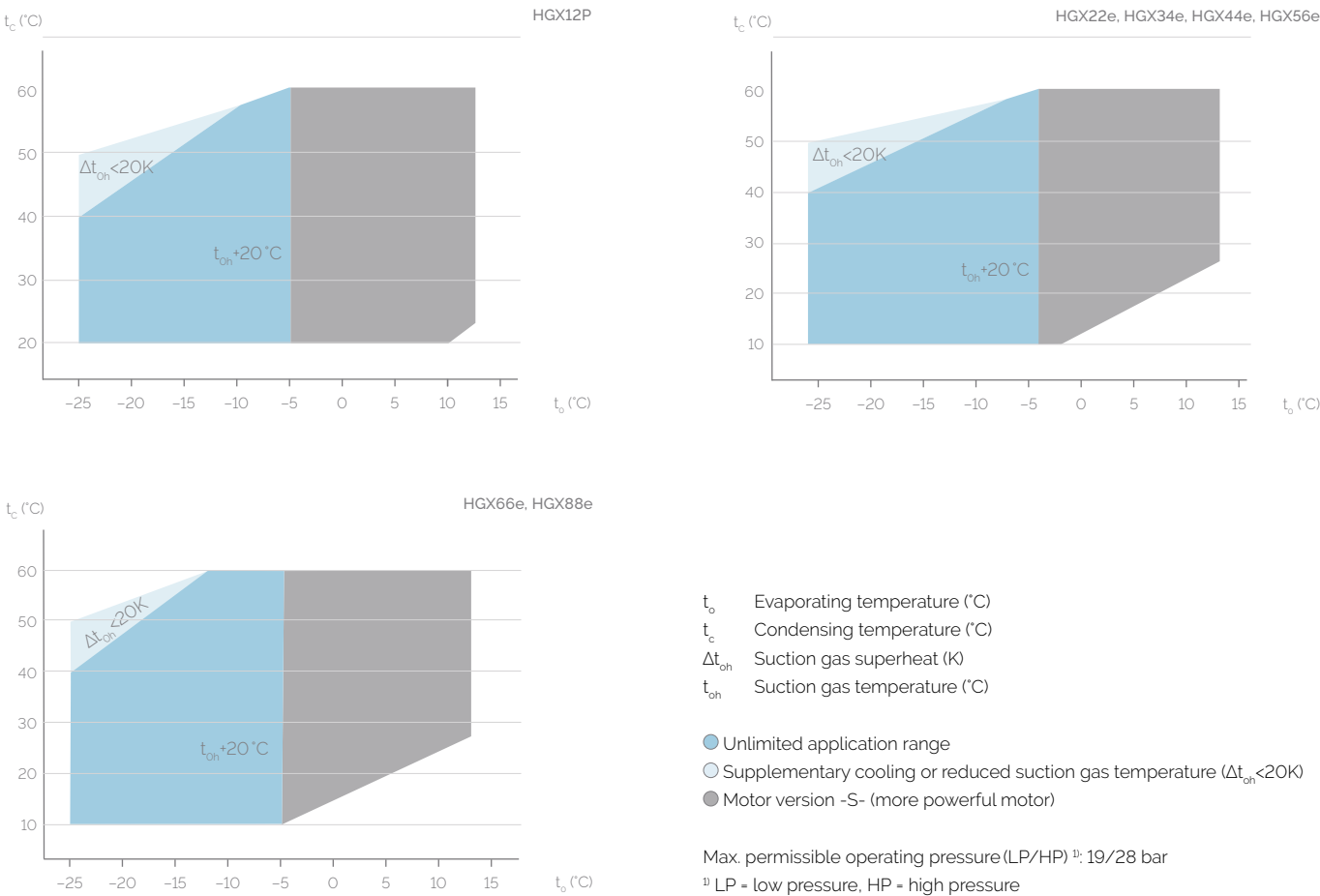
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HG semi-hermetic compressors

Operating limits

R407C



Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult 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 subcooling. Evaporation and condensing temperatures are based on the dew point values (saturated vapour conditions). A comprehensive modification to 20 °C suction gas temperature will follow at a later date.

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 BOCK VAP software (vap.bock.de).

HG semi-hermetic compressors

Performance data

R407C | 50 Hz

Type	Cond. temp. °C	Cooling capacity Q_o [kW]										Power consumption P_e [kW]	
		Evaporating temperature °C											
		12.5	10	7.5	5	0	-5	-10	-15	-20	-25		
HGX12P/60-4 S	30	Q P 6780 0.88	6180 0.90	5610 0.92	5080 0.92	4140 0.91	3330 0.88	2650 0.82	2080 0.76	1610 0.69	1230 0.62		
	40	Q P 5870 1.16	5340 1.16	4840 1.15	4380 1.13	3560 1.08	2860 1.01	2270 0.92	1780 0.83	1360 0.74	1020 0.66		
	50	Q P 5010 1.41	4550 1.39	4120 1.35	3720 1.31	3020 1.22	2420 1.12	1920 1.00	1490 0.90	1130 0.79	827 0.69		
HGX12P/75-4 HGX12P/75-4 S	30	Q P 8740 1.12	7960 1.16	7230 1.18	6550 1.18	5340 1.17	4300 1.13	3420 1.06	2680 0.98	2080 0.89	1580 0.79		
	40	Q P 7560 1.50	6880 1.49	6240 1.48	5650 1.46	4590 1.39	3690 1.30	2920 1.19	2290 1.07	1760 0.96	1320 0.84		
	50	Q P 6450 1.82	5860 1.79	5310 1.74	4800 1.69	3890 1.58	3120 1.44	2470 1.29	1920 1.15	1460 1.01	1070 0.89		
HGX12P/90-4 HGX12P/90-4 S	30	Q P 10500 1.34	9490 1.38	8620 1.40	7810 1.41	6360 1.40	5120 1.34	4080 1.26	3200 1.16	2480 1.05	1890 0.95		
	40	Q P 9020 1.79	8200 1.78	7440 1.77	6730 1.74	5470 1.66	4400 1.55	3490 1.42	2730 1.28	2090 1.13	1570 1.00		
	50	Q P 7690 2.17	6990 2.13	6330 2.08	5720 2.02	4640 1.88	3720 1.72	2940 1.55	2290 1.37	1740 1.21	1280 1.06		
HGX12P/110-4 HGX12P/110-4 S	30	Q P 12300 1.58	11200 1.62	10200 1.65	9180 1.66	7480 1.64	6020 1.58	4790 1.48	3760 1.37	2910 1.24	2220 1.11		
	40	Q P 10600 2.10	9640 2.10	8750 2.08	7910 2.05	6430 1.95	5170 1.82	4100 1.67	3200 1.50	2460 1.33	1850 1.18		
	50	Q P 9040 2.56	8210 2.51	7440 2.45	6730 2.38	5460 2.21	4370 2.02	3460 1.82	2690 1.61	2040 1.42	1500 1.25		
HGX22e/125-4 HGX22e/125-4 S	30	Q P 14400 1.78	13100 1.82	11900 1.85	10800 1.87	8790 1.85	7070 1.78	5630 1.67	4420 1.53	3420 1.39	2600 1.25		
	40	Q P 12500 2.36	11400 2.35	10300 2.33	9300 2.30	7560 2.19	6060 2.04	4800 1.87	3760 1.68	2890 1.5	2160 1.32		
	50	Q P 10700 2.87	9640 2.81	8740 2.75	7910 2.67	6410 2.48	5120 2.27	4050 2.04	3150 1.81	2400 1.59	1760 1.40		
HHGX22e/160-4 HGX22e/160-4 S	30	Q P 17600 2.18	16000 2.24	14500 2.28	13200 2.30	10700 2.27	8730 2.30	6950 2.16	5470 1.99	4240 1.79	3230 1.61		
	40	Q P 15200 2.90	13800 2.90	12500 2.87	11300 2.83	9180 2.69	7500 2.64	5950 2.42	4650 2.18	3580 1.94	2680 1.72		
	50	Q P 12900 3.53	11700 3.46	10700 3.38	9590 3.28	7780 3.05	6350 2.93	5020 2.64	3900 2.34	2970 2.06	2180 1.81		
HGX22e/190-4 HGX22e/190-4 S	30	Q P 21800 2.67	19900 2.74	18100 2.79	16400 2.81	13300 2.78	10800 2.83	8550 2.65	6700 2.44	5180 2.20	3960 1.98		
	40	Q P 18900 3.54	17200 3.54	15600 3.51	14100 3.46	11500 3.29	9220 3.25	7310 2.97	5710 2.68	4390 2.38	3290 2.10		
	50	Q P 16100 4.31	14600 4.23	13300 4.13	12000 4.01	9700 3.73	7790 3.60	6170 3.24	4810 2.87	3650 2.53	2670 2.22		
HGX34e/215-4 HGX34e/215-4 S	30	Q P 25600 3.45	23300 3.49	21100 3.50	19100 3.48	15600 3.39	12200 3.16	9720 2.94	7650 2.67	5910 2.38	4480 2.09		
	40	Q P 22400 4.38	20300 4.33	18400 4.26	16600 4.17	13400 3.94	10400 3.60	8190 3.25	6410 2.89	4920 2.52	3700 2.17		
	50	Q P 19100 5.19	17300 5.06	15600 4.91	14100 4.75	11300 4.39	8590 3.98	6820 3.54	5330 3.09	4100 2.66	3100 2.27		
HGX34e/255-4 HGX34e/255-4 S	30	Q P 29600 4.30	27000 4.30	24600 4.28	22300 4.23	18300 4.08	14500 3.84	11500 3.54	9040 3.20	7030 2.85	5300 2.48		
	40	Q P 26000 5.33	23600 5.24	21500 5.13	19500 5.00	15800 4.71	12300 4.38	9730 3.94	7660 3.50	5940 3.06	4430 2.63		
	50	Q P 22200 6.25	20200 6.08	18300 5.89	16500 5.69	13400 5.25	10200 4.83	8080 4.29	6420 3.76	5050 3.26	3820 2.79		
HGX34e/315-4 HGX34e/315-4 S	30	Q P 35900 4.95	32700 5.00	29800 5.01	27000 4.99	22100 4.86	17600 4.69	14100 4.34	11100 3.96	8590 3.55	6550 3.11		
	40	Q P 31300 6.32	28500 6.25	25900 6.16	23500 6.04	19200 5.72	15100 5.33	12000 4.85	9420 4.33	7260 3.80	5500 3.27		
	50	Q P 26800 7.63	24300 7.45	22100 7.24	20000 7.02	16200 6.50	12800 5.87	10200 5.25	7910 4.63	6060 3.99	4550 3.37		

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

vap.bock.de



HG semi-hermetic compressors

Performance data

R407C | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]										Power consumption P_e [kW]	
		Evaporating temperature °C											
		Cond. temp. °C	12.5	10	7.5	5	0	-5	-10	-15	-20	-25	
HGX34e/380-4	30	Q	43500	39600	36000	32700	26700	21600	17500	13900	10900	8310	
		P	6.40	6.35	6.27	6.17	5.93	5.84	5.38	4.91	4.42	3.90	
	40	Q	38000	34600	31400	28400	23200	18700	15100	12000	9320	7140	
HGX34e/380-4 S	50	Q	7.95	7.78	7.59	7.39	6.94	6.71	6.08	5.45	4.82	4.18	
		P	32200	29300	26500	24000	19600	15800	12800	10100	7900	6070	
HGX44e/475-4	30	Q	9.52	9.23	8.92	8.60	7.93	7.49	6.69	5.91	5.13	4.36	
		P	56600	51700	47100	42800	35200	28500	22900	18100	14100	10700	
	40	Q	7.20	7.25	7.25	7.21	7.03	6.66	6.24	5.73	5.18	4.59	
HGX44e/475-4 S	50	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	
	30	Q	43600	39700	36000	32600	26500	21200	16800	13100	9850	7100	
HGX44e/565-4	40	Q	10.80	10.50	10.30	10.00	9.33	8.54	7.69	6.80	5.90	5.02	
		P	67400	61600	56200	51100	42000	33900	27300	21700	17000	12900	
	50	Q	8.54	8.60	8.61	8.56	8.34	7.93	7.42	6.81	6.14	5.44	
HGX44e/565-4 S	30	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	
	40	Q	52200	47500	43100	39000	31800	25300	20100	15700	12000	8650	
HGX44e/665-4	50	Q	12.80	12.50	12.20	11.80	11.00	10.20	9.18	8.10	7.01	5.95	
		P	78700	71900	65500	59600	48900	40000	32200	25500	19800	15000	
	30	Q	10.00	10.00	10.00	10.00	9.76	9.23	8.65	7.95	7.17	6.36	
HGX44e/665-4 S ¹⁾	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	
	50	Q	60600	55100	49900	45200	36700	29700	23500	18300	13800	9890	
HGX44e/770-4	30	Q	15.10	14.70	14.40	13.90	13.00	11.80	10.60	9.43	8.18	6.96	
		P	92000	84000	76600	69600	57100	46300	37100	29300	22700	17000	
	40	Q	11.60	11.70	11.70	11.60	11.30	10.80	10.00	9.22	8.26	7.23	
HGX44e/770-4 S	50	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	
	30	Q	70400	64000	58000	52400	42500	34000	26800	20600	15400	10800	
HGX56e/850-4	40	Q	17.60	17.20	16.70	16.20	15.00	13.60	12.10	10.60	9.06	7.49	
		P	101000	92000	83900	76300	62800	50900	41000	32600	25400	19300	
	50	Q	12.7	12.8	12.8	12.7	12.4	11.8	11.1	10.2	9.23	8.17	
HGX56e/850-4 S	30	Q	89400	81500	74200	67400	55200	44500	35700	28100	21700	16100	
		P	16.2	16.0	15.8	15.4	14.7	13.7	12.5	11.3	10.0	8.68	
	40	Q	77600	70600	64100	58100	47300	38000	30200	23600	18000	13000	
HGX56e/995-4	50	Q	19.3	18.8	18.3	17.8	16.5	15.2	13.7	12.1	10.5	8.93	
		P	121000	111000	101000	91500	75400	61200	49300	39100	30500	23200	
	30	Q	14.3	14.5	14.6	14.6	14.4	13.8	13.0	11.9	10.7	9.45	
HGX56e/995-4 S	40	Q	107000	96900	88300	80300	65900	53300	42700	33600	25900	19400	
		P	18.8	18.7	18.5	18.2	17.3	16.2	14.8	13.3	11.6	10.0	
	50	Q	92100	83900	76400	69300	56700	45600	36300	28400	21600	15800	
HGX56e/1155-4	30	Q	23.1	22.6	22.0	21.4	19.9	18.2	16.3	14.3	12.2	10.2	
		P	139000	127000	115000	105000	85600	69200	55500	43800	33900	25400	
	40	Q	18.2	18.3	18.3	18.2	17.7	16.9	15.7	14.4	12.8	11.2	
HGX56e/1155-4 S	50	Q	123000	112000	102000	91800	74900	60100	47800	37300	28400	20700	
		P	23.1	22.9	22.5	22.0	20.8	19.4	17.6	15.7	13.7	11.7	
	30	Q	106000	96100	87100	78700	63800	50800	40000	30800	23000	16100	
HGX66e/1340-4	40	Q	27.4	26.8	26.0	25.2	23.4	21.3	19.0	16.6	14.1	11.6	
		P	164000	149000	136000	123000	101000	80800	64600	51000	39500	29900	
	50	Q	21.3	21.1	20.9	20.6	19.8	18.8	17.6	16.1	14.5	12.6	
HGX66e/1340-4 S	30	Q	144000	131000	119000	108000	87800	70300	56000	43900	33700	25100	
		P	26.4	25.9	25.4	24.8	23.4	21.7	19.9	17.9	15.6	13.2	
	40	Q	124000	113000	102000	92200	74900	59600	47300	36800	27900	20300	
HGX66e/1540-4	50	Q	31.3	30.5	29.6	28.6	26.5	24.2	21.7	19.0	16.1	13.1	
		P	187000	171000	156000	141000	116000	92900	74500	59000	45900	34800	
	30	Q	24.4	24.3	24.0	23.7	22.8	21.7	20.3	18.7	16.8	14.7	
HGX66e/1540-4 S	40	Q	165000	150000	137000	124000	102000	81000	64800	51000	39300	29400	
		P	30.5	29.9	29.3	28.6	27.0	25.2	23.1	20.8	18.3	15.5	
	50	Q	142000	129000	118000	107000	86400	69000	54900	43000	32800	24000	
		P	36.3	35.3	34.3	33.2	30.8	28.2	25.4	22.3	19.0	15.5	

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

vap.bock.de



HG semi-hermetic compressors

Performance data

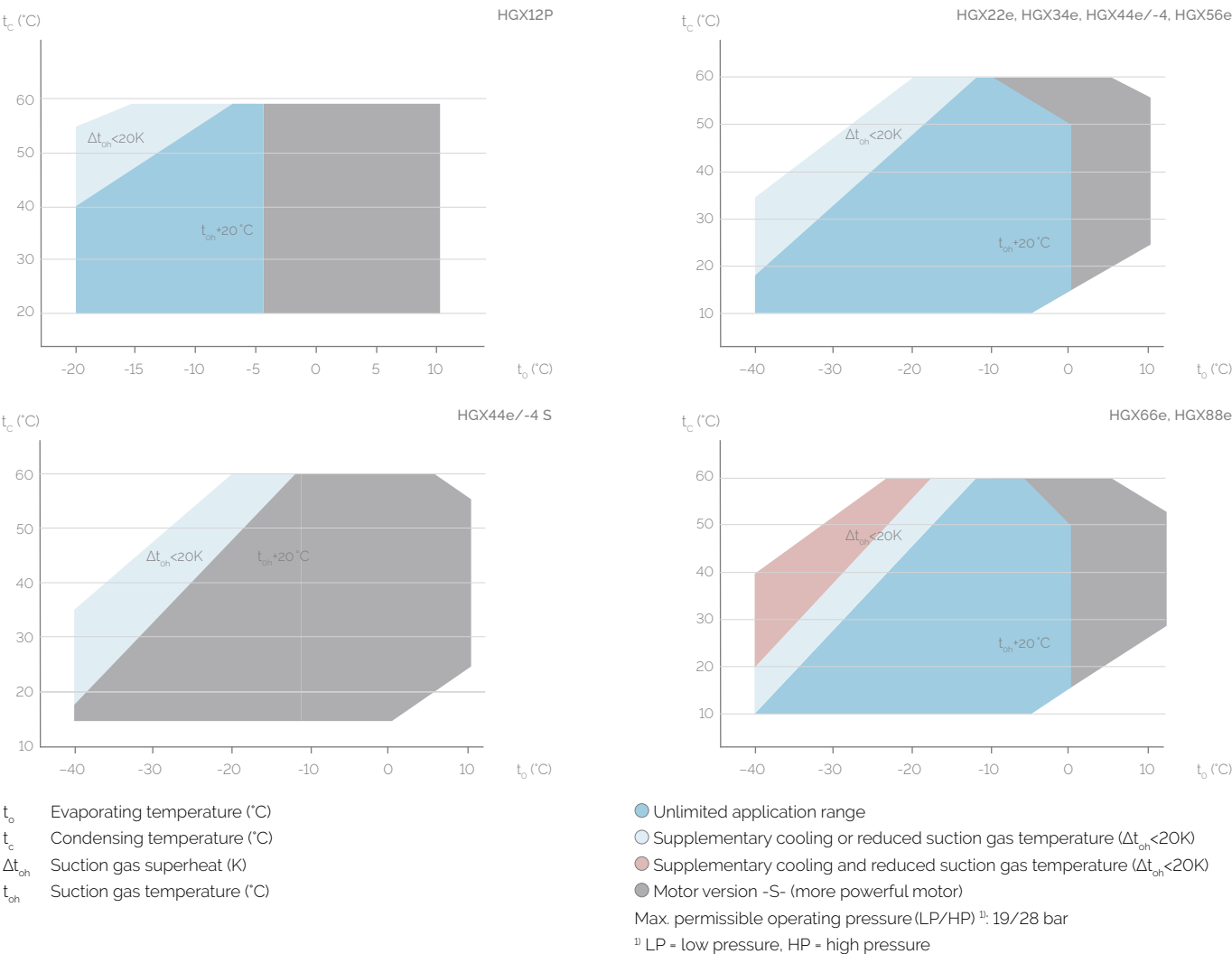
R407C | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]						Power consumption P_e [kW]				
		Evaporating temperature °C										
Cond. temp. °C		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	
HGX66e/1750-4 HGX66e/1750-4 S	30	Q P	212000 28.0	194000 27.8	177000 27.5	160000 27.1	132000 26.2	107000 24.8	85300 23.2	67500 21.4	52500 19.3	39900 16.9
		Q P	187000 34.9	171000 34.2	155000 33.5	141000 32.7	115000 31.0	92800 28.8	74200 26.4	58500 23.8	45100 21.0	33800 17.8
	50	Q P	161000 41.5	147000 40.4	133000 39.2	121000 38.0	98100 35.3	79100 32.3	63000 29.0	49400 25.5	37700 21.8	27600 17.8
		Q P	250000 33.1	228000 32.8	208000 32.5	189000 32.0	155000 30.9	126000 29.3	101000 27.5	79500 25.3	61900 22.8	47100 19.9
HGX66e/2070-4 HGX66e/2070-4 S	30	Q P	220000 41.4	200000 40.6	182000 39.8	165000 38.8	135000 36.7	109000 34.2	87300 31.3	68800 28.2	53200 24.8	39800 21.0
		Q P	189000 49.5	172000 48.1	156000 46.7	142000 45.2	116000 41.9	92800 38.4	74000 34.4	58100 30.2	44400 25.7	32500 21.0
	HGX88e/2400-4 HGX88e/2400-4 S	30	Q P	296000 39.3	270000 39.0	246000 38.6	223000 38.1	183000 36.9	147000 34.8	118000 32.7	93300 30.2	72600 27.3
Q P			261000 48.5	238000 47.7	217000 46.7	196000 45.7	161000 43.3	129000 40.4	103000 37.2	81000 33.6	62500 29.6	46800 25.4
50		Q P	226000 57.5	206000 56.0	187000 54.4	169000 52.7	138000 49.1	110000 45.3	87400 40.8	68500 36.0	52300 30.9	38400 25.5
	Q P	336000 44.4	306000 44.1	279000 43.6	253000 43.1	208000 41.7	168000 39.6	135000 37.3	107000 34.5	82700 31.2	62900 27.5	
HGX88e/2735-4 HGX88e/2735-4 S	30	Q P	296000 55.1	270000 54.1	246000 53.0	223000 51.8	182000 49.1	147000 45.9	118000 42.3	92300 38.2	71200 33.8	53300 29.1
		Q P	257000 65.5	233000 63.8	212000 61.9	192000 60.0	156000 55.8	126000 51.3	99700 46.3	78100 40.9	59600 35.2	43700 29.2
	HGX88e/3235-4 HGX88e/3235-4 S	30	Q P	396000 52.3	362000 51.9	329000 51.4	299000 50.8	245000 49.1	198000 46.7	159000 43.9	126000 40.5	97500 36.7
Q P			350000 64.9	319000 63.7	290000 62.4	263000 61.0	215000 57.8	173000 54.0	139000 49.7	109000 44.9	83800 39.7	62700 34.0
50		Q P	303000 77.1	275000 75.0	250000 72.8	226000 70.5	184000 65.6	148000 60.4	118000 54.4	91800 48.0	70000 41.2	51300 34.1

HG semi-hermetic compressors

Operating limits

R407F



Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter.
For further explanations consult www.bock.de.

Performance data

The performance data for R407F are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.
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 BOCK VAP software (vap.bock.de).

ASERCOM certified performance data



For compressors with this label, the performance data are certified according 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 BOCK compressors can be found at www.asercom.org and www.bock.de.

HG semi-hermetic compressors

Performance data

R407F | 50 Hz

Type	Cond. temp. °C	Cooling capacity Q _o [kW]												Power consumption P _e [kW]	
		Evaporating temperature °C													
		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40		
HGX12P/60-4 S	30	Q	7240	6570	5950	4840	3890	3080	2410	1850	-	-	-	-	-
		P	110	113	115	115	112	106	0.982	0.894	-	-	-	-	-
	40	Q	6290	5700	5150	4180	3340	2640	2040	1540	-	-	-	-	-
		P	141	142	140	136	127	117	106	0.948	-	-	-	-	-
	50	Q	5300	4800	4330	3490	2780	2170	1660	1220	-	-	-	-	-
		P	167	164	160	151	138	124	110	0.963	-	-	-	-	-
HGX12P/75-4 HGX12P/75-4 S	30	Q	9010	8200	7440	6090	4950	3960	3130	2430	-	-	-	-	-
		P	139	143	146	146	140	133	123	112	-	-	-	-	-
	40	Q	7850	7140	6470	5290	4310	3440	2690	2070	-	-	-	-	-
		P	182	182	180	174	162	149	136	121	-	-	-	-	-
	50	Q	6670	6060	5490	4480	3670	2910	2260	1720	-	-	-	-	-
		P	215	211	206	194	178	161	144	127	-	-	-	-	-
HGX12P/90-4 HGX12P/90-4 S	30	Q	10800	9780	8880	7270	5760	4620	3650	2840	-	-	-	-	-
		P	171	174	176	175	166	155	143	129	-	-	-	-	-
	40	Q	9380	8530	7740	6320	5020	4000	3140	2400	-	-	-	-	-
		P	218	217	214	206	189	173	155	138	-	-	-	-	-
	50	Q	7990	7260	6580	5370	4270	3370	2620	1980	-	-	-	-	-
		P	260	255	248	232	209	187	165	144	-	-	-	-	-
HGX12P/110-4 HGX12P/110-4 S	30	Q	12500	11300	10300	8420	6830	5510	4390	3440	-	-	-	-	-
		P	201	204	206	203	201	188	173	157	-	-	-	-	-
	40	Q	10900	9860	8960	7330	5970	4800	3790	2940	-	-	-	-	-
		P	254	252	250	240	231	211	189	168	-	-	-	-	-
	50	Q	9160	8330	7560	6180	5070	4040	3170	2430	-	-	-	-	-
		P	304	298	291	272	254	227	200	174	-	-	-	-	-
HGX22e/125-4 HGX22e/125-4 S	30	Q	15400	14100	12800	10600	8560	6860	5410	4190	3180	2350	1690	1160	-
		P	225	226	226	222	214	203	189	174	157	139	122	105	-
	40	Q	13600	12400	11200	9180	7420	5910	4630	3560	2670	1940	1360	-	-
		P	281	277	272	260	244	226	207	187	166	146	127	-	-
	50	Q	11700	10600	9580	7800	6260	4950	3840	2920	2160	-	-	-	-
		P	335	325	316	294	271	247	222	197	173	-	-	-	-
HHGX22e/160-4 HGX22e/160-4 S	30	Q	19600	17900	16300	13100	10600	8470	6740	5300	4110	3120	2280	1520	-
		P	298	293	288	277	261	246	232	217	201	181	158	130	-
	40	Q	17500	15900	14400	11600	9300	7440	5890	4580	3490	2540	1690	-	-
		P	359	349	339	322	299	279	258	237	214	187	157	-	-
	50	Q	15300	13800	12500	10200	8140	6460	5040	3820	2770	-	-	-	-
		P	420	405	390	367	337	309	280	251	219	-	-	-	-
HGX22e/190-4 HGX22e/190-4 S	30	Q	22700	20800	19000	15800	13000	10600	8450	6680	5200	3960	2940	2100	-
		P	385	373	362	352	327	304	282	260	238	214	188	159	-
	40	Q	20000	18300	16700	13900	11400	9180	7330	5770	4460	3370	2450	-	-
		P	464	446	430	412	377	346	316	287	258	229	198	-	-
	50	Q	17400	15900	14500	11900	9680	7790	6180	4830	3700	-	-	-	-
		P	547	524	502	472	427	385	346	309	272	-	-	-	-
HGX34e/215-4 HGX34e/215-4 S	30	Q	25900	23600	21400	17200	13900	11100	8570	6520	4820	3430	2320	1450	-
		P	362	361	357	348	329	305	277	247	217	188	161	138	-
	40	Q	22700	20600	18600	14800	11800	9230	7080	5290	3840	2680	1770	-	-
		P	470	457	443	418	381	341	301	262	224	191	163	-	-
	50	Q	19400	17500	15700	12300	9650	7460	5650	4180	3020	-	-	-	-
		P	568	545	520	480	426	372	320	272	229	-	-	-	-
HGX34e/255-4 HGX34e/255-4 S	30	Q	30300	27700	25200	20500	16700	13400	10500	8020	5970	4280	2910	1820	-
		P	383	392	398	405	394	373	344	310	272	233	196	161	-
	40	Q	26300	24000	21800	17600	14300	11400	8860	6760	5000	3540	2360	-	-
		P	505	504	499	492	462	425	381	334	286	239	194	-	-
	50	Q	22000	20000	18100	14500	11700	9230	7190	5470	4050	-	-	-	-
		P	615	603	588	567	519	465	407	347	289	-	-	-	-
HGX34e/315-4 HGX34e/315-4 S	30	Q	38500	34900	31700	25600	20600	16400	12900	9900	7460	5450	3800	2430	-
		P	504	507	507	491	472	445	411	371	327	282	236	191	-
	40	Q	33500	30400	27500	22100	17700	14000	11000	8350	6230	4470	3000	-	-
		P	644	636	625	590	552	507	457	402	346	289	232	-	-
	50	Q	28500	25700	23200	18500	14800	11600	8990	6840	5070	-	-	-	-
		P	776	757	735	680	623	559	492	422	351	-	-	-	-

Relating to 20 °C suction gas temperature without liquid subcooling

Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R407F | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]										Power consumption P_e [kW]		
		Evaporating temperature °C												
Cond. temp. °C		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX34e/380-4 HGX34e/380-4 S	30	Q P	45700 6.39	41600 6.39	37800 6.36	30700 6.15	25000 5.88	20100 5.53	15900 5.09	12400 4.60	9460 4.07	7040 3.51	5030 2.94	3320 2.38
	40	Q P	39900 8.05	36200 7.93	32900 7.77	26500 7.34	21500 6.85	17200 6.29	13600 5.67	10600 5.00	8000 4.31	5870 3.61	4050 2.92	
	50	Q P	33800 9.65	30700 9.39	27800 9.10	22300 8.45	18000 7.73	14400 6.94	11300 6.11	8760 5.26	6630 4.40			
HGX44e/475-4 HGX44e/475-4 S	30	Q P	58200 7.56	53100 7.67	48400 7.73	39600 7.62	32300 7.37	26000 6.98	20600 6.45	16100 5.84	12400 5.15	9210 4.43	6640 3.71	4520 3.00
	40	Q P	51000 9.81	46500 9.74	42400 9.63	34500 9.22	28100 8.67	22600 7.99	17900 7.21	13900 6.36	10500 5.46	7620 4.55	5210 3.65	
	50	Q P	43900 11.8	40000 11.6	36300 11.3	29400 10.6	23900 9.78	19100 8.81	15000 7.76	11500 6.67	8460 5.55			
HGX44e/565-4 HGX44e/565-4 S	30	Q P	69400 9.05	63400 9.18	57800 9.24	47100 9.13	38500 8.84	31000 8.36	24700 7.73	19400 6.99	14900 6.16	11200 5.30	8120 4.42	5600 3.57
	40	Q P	61000 11.7	55700 11.6	50700 11.5	41100 11.1	33500 10.4	27000 9.61	21500 8.66	16700 7.63	12800 6.54	9330 5.44	6460 4.36	
	50	Q P	52600 14.1	47900 13.8	43600 13.5	35100 12.8	28600 11.8	22900 10.6	18100 9.35	14000 8.02	10400 6.66			
HGX44e/665-4 HGX44e/665-4 S ¹⁾	30	Q P	81800 10.5	74700 10.6	68000 10.7	55700 10.6	45400 10.2	36500 9.72	29000 9.00	22600 8.15	17300 7.20	12900 6.20	9260 5.18	6270 4.19
	40	Q P	71600 13.6	65300 13.5	59400 13.4	48500 12.8	39400 12.0	31600 11.1	25000 10.0	19400 8.88	14700 7.63	10700 6.36	7220 5.11	
	50	Q P	61600 16.5	56000 16.2	50900 15.8	41300 14.8	33400 13.6	26700 12.3	20900 10.8	16000 9.33	11800 7.78			
HGX44e/770-4 HGX44e/770-4 S	30	Q P	93600 12.1	85500 12.3	77900 12.4	64300 12.3	52400 11.9	42200 11.3	33600 10.4	26300 9.50	20200 8.42	15100 7.29	10900 6.16	7350 5.08
	40	Q P	82000 15.8	74900 15.7	68200 15.5	56100 14.9	45700 14.0	36700 12.9	29100 11.7	22600 10.3	17100 8.99	12500 7.58	8480 6.20	
	50	Q P	70500 19.2	64300 18.8	58400 18.3	47900 17.2	38900 15.8	31100 14.3	24400 12.7	18700 11.0	13900 9.27			
HGX56e/850-4 HGX56e/850-4 S	30	Q P	104000 13.5	94600 13.7	86300 13.8	70700 13.6	57800 13.2	46600 12.5	37100 11.6	29100 10.4	22400 9.26	16800 7.96	12200 6.64	8390 5.36
	40	Q P	90800 17.5	82900 17.4	75500 17.2	61800 16.5	50400 15.5	40600 14.3	32200 12.9	25100 11.4	19100 9.82	14100 8.18	9680 6.55	
	50	Q P	78100 21.3	71200 20.8	64700 20.3	52700 19.1	42900 17.5	34400 15.8	27200 13.9	21000 12.0	15600 10.0			
HGX56e/995-4 HGX56e/995-4 S	30	Q P	122000 16.5	112000 16.5	102000 16.4	83700 16.0	68600 15.4	55500 14.5	44200 13.4	34600 12.1	26600 10.7	19800 9.23	14100 7.65	9420 6.04
	40	Q P	108000 20.9	98400 20.6	89700 20.2	73600 19.3	60000 18.0	48200 16.6	38100 15.0	29600 13.2	22300 11.3	16200 9.38	11000 7.36	
	50	Q P	93700 25.1	85400 24.4	77600 23.8	63100 22.2	51100 20.4	40700 18.4	31900 16.2	24300 13.9	17900 11.4			
HGX56e/1155-4 HGX56e/1155-4 S	30	Q P	141000 18.9	129000 19.2	117000 19.3	96000 19.2	78300 18.6	63100 17.6	50200 16.3	39300 14.8	30100 13.1	22500 11.3	16300 9.59	11100 7.89
	40	Q P	124000 24.6	113000 24.4	103000 24.1	83800 23.4	68200 22.0	54900 20.3	43500 18.3	33800 16.2	25600 14.0	18700 11.8	12700 9.65	
	50	Q P	106000 29.8	96600 29.2	87800 28.5	71500 27.0	58000 24.9	46400 22.5	36500 19.9	28000 17.2	20700 14.4			
HGX66e/1340-4 HGX66e/1340-4 S	30	Q P	164000 23.1	149000 23.0	136000 22.8	111000 22.1	89600 21.0	71900 19.6	56900 17.9	44300 16.1	33800 14.2	25000 12.2		
	40	Q P	144000 29.0	131000 28.5	119000 27.8	96300 26.3	78000 24.4	62400 22.3	49100 19.9	38000 17.5	28700 15.0			
	50	Q P	124000 34.5	113000 33.4	102000 32.3	82200 30.0	66200 27.3	52600 24.4	41100 21.4	31500 18.3				
HGX66e/1540-4 HGX66e/1540-4 S	30	Q P	187000 26.6	171000 26.5	156000 26.3	127000 25.5	103000 24.3	82900 22.7	65800 20.8	51400 18.7	39300 16.5	29300 14.2		
	40	Q P	165000 33.6	150000 32.9	137000 32.2	111000 30.5	89800 28.3	72000 25.9	57000 23.3	44300 20.5	33600 17.6			
	50	Q P	143000 40.1	130000 38.9	118000 37.6	94600 35.0	76400 31.9	61000 28.6	47900 25.1	36900 21.6				

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature
without liquid subcooling

Motor version -S-
(more powerful motor)

Supplementary cooling or
reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R407F | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]									Power consumption P_e [kW]			
		Evaporating temperature °C												
		Cond. temp. °C												
		10	7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
HGX66e/1750-4 HGX66e/1750-4 S	30	Q P	212000 30.5	194000 30.4	177000 30.1	145000 29.1	118000 27.7	94900 25.9	75300 23.8	58900 21.4	45100 18.9	33600 16.4		
		Q P	187000 38.3	171000 37.6	155000 36.8	127000 34.8	103000 32.3	82600 29.6	65300 26.6	50800 23.5	38600 20.2			
	40	Q P	162000 45.8	147000 44.4	133000 43.0	109000 40.0	87600 36.4	69900 32.7	55000 28.8	42400 24.8				
		Q P	250000 36.1	228000 36.0	207000 35.7	171000 34.5	139000 32.8	112000 30.7	88700 28.1	69300 25.3	53100 22.3	39700 19.3		
HGX66e/2070-4 HGX66e/2070-4 S	30	Q P	219000 45.6	200000 44.8	182000 43.8	149000 41.4	121000 38.5	97000 35.1	76800 31.5	59800 27.7	45400 23.9			
		Q P	189000 54.7	172000 53.1	156000 51.3	127000 47.8	103000 43.5	82000 38.9	64600 34.2	49900 29.3				
	40	Q P	296000 42.7	270000 42.5	246000 42.2	201000 40.8	163000 38.9	132000 36.4	105000 33.5	81400 30.3	62400 26.9	46500 23.3		
		Q P	262000 53.2	239000 52.3	217000 51.1	176000 48.8	143000 45.4	115000 41.6	90500 37.4	70400 33.1	53400 28.7			
HGX88e/2400-4 HGX88e/2400-4 S	30	Q P	227000 63.2	207000 61.4	187000 59.5	151000 56.1	122000 51.2	97100 45.9	76300 40.5	58800 35.0				
		Q P	336000 48.3	307000 48.1	279000 47.7	230000 46.3	187000 44.2	150000 41.5	119000 38.3	93000 34.7	71200 30.9	53100 26.9		
	40	Q P	297000 60.5	271000 59.4	246000 58.1	202000 55.0	164000 51.4	131000 47.2	104000 42.7	80400 37.9	61000 33.0			
		Q P	258000 72.2	234000 70.1	212000 67.9	173000 63.0	140000 57.7	112000 52.0	87300 46.1	67200 40.0				
HGX88e/2735-4 HGX88e/2735-4 S	30	Q P	397000 56.9	362000 56.7	330000 56.2	270000 54.5	220000 52.0	177000 48.7	140000 44.9	110000 40.6	83700 36.0	62300 31.3		
		Q P	351000 71.3	320000 69.9	290000 68.4	237000 65.1	192000 60.6	154000 55.5	122000 50.0	94400 44.3	71600 38.4			
	40	Q P	304000 84.9	276000 82.4	250000 79.8	203000 74.7	164000 68.2	131000 61.2	103000 54.0	78800 46.7				
		Q P												

Relating to 20 °C suction gas temperature
without liquid subcooling

Motor version -S-
(more powerful motor)

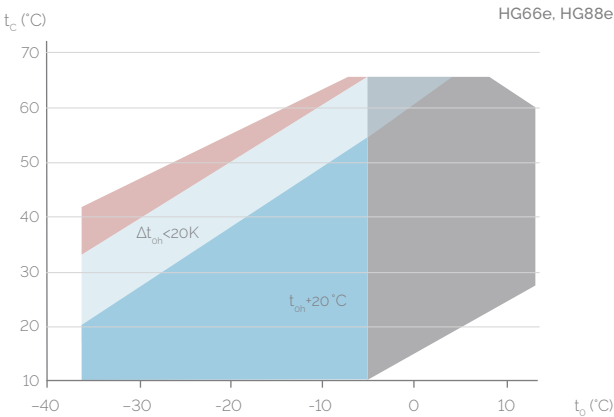
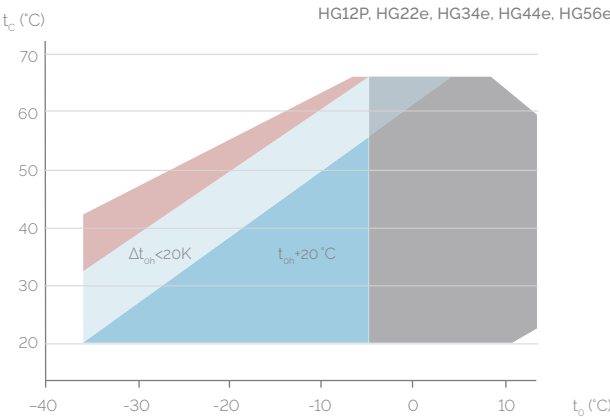
Supplementary cooling or
reduced suction gas temperature

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HG semi-hermetic compressors
 Operating limits

R22



- t_o

Evaporating temperature (°C)
- t_c

Condensing temperature (°C)
- Δt_{oh}

Suction gas superheat (K)
- t_{oh}

Suction gas temperature (°C)
- Unlimited application range
- Supplementary cooling or reduced suction gas temperature (Δt_{oh} < 20K)
- Supplementary cooling and reduced suction gas temperature (Δt_{oh} < 20K)
- Motor version -S- (more powerful motor)
- Max. permissible operating pressure (LP/HP) ¹⁾: 19/28 bar

¹⁾ LP = low pressure, HP = high pressure

Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter.
 For further explanations consult www.bock.de.

Performance data

The performance data for R22 are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

This results in significant differences compared to specifications with liquid undercooling and/or suction-gas temperatures. A comprehensive modification to 20 °C suction gas temperature will follow at a later date.

Conversion factor for 60 Hz = 1.2
 Performance data for other operating points, see BOCK VAP software (vap.bock.de).

HG semi-hermetic compressors
 Performance data

R22 | 50 Hz

Type	Cooling capacity Q _o [kW]												Power consumption P _e [kW]	
Cond. temp. °C		Evaporating temperature °C												
		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	
HGX12P/60-4 S ¹⁾	30	Q P 7120 0.889	6530 0.911	5980 0.927	5460 0.936	4520 0.939	3710 0.921	3000 0.886	2390 0.837	1870 0.776	1430 0.707	1040 0.632	708 0.553	
	40	Q P 6290 1.19	5760 1.19	5270 1.18	4800 1.17	3960 1.13	3230 1.08	2600 1.01	2050 0.936	1570 0.849	1160 0.758			
	50	Q P 5500 1.46	5030 1.44	4590 1.41	4170 1.38	3430 1.30	2780 1.21	2210 1.12	1720 1.01	1290 0.906				
HGX12P/75-4 ¹⁾ HGX12P/75-4 S ¹⁾	30	Q P 8890 1.11	8150 1.13	7460 1.15	6820 1.17	5650 1.17	4630 1.15	3750 1.10	2990 1.04	2340 0.970	1780 0.883	1300 0.789	885 0.691	
	40	Q P 7860 1.49	7200 1.49	6580 1.48	6000 1.46	4950 1.42	4040 1.35	3240 1.26	2560 1.16	1970 1.06	1450 0.947			
	50	Q P 6870 1.83	6280 1.80	5730 1.76	5210 1.72	4280 1.63	3470 1.52	2760 1.40	2150 1.26					
HGX12P/90-4 ¹⁾ HGX12P/90-4 S ¹⁾	30	Q P 10600 1.32	9720 1.35	8900 1.38	8130 1.39	6740 1.39	5520 1.37	4470 1.32	3570 1.24	2790 1.15	2120 1.05	1550 0.941	1060 0.825	
	40	Q P 9380 1.78	8590 1.77	7850 1.76	7160 1.75	5900 1.69	4810 1.61	3870 1.51	3050 1.39	2340 1.26	1730 1.12			
	50	Q P 8190 2.18	7490 2.15	6830 2.10	6220 2.06	5100 1.94	4140 1.81	3290 1.66	2560 1.51					
HGX12P/110-4 ¹⁾ HGX12P/110-4 S ¹⁾	30	Q P 12500 1.55	11500 1.59	10500 1.62	9560 1.64	7920 1.64	6490 1.61	5260 1.55	4190 1.46	3280 1.36	2500 1.23	1820 1.10	1240 0.970	
	40	Q P 11100 2.09	10100 2.09	9230 2.08	8410 2.05	6940 1.99	5660 1.89	4550 1.77	3590 1.63	2750 1.48	2030 1.32			
	50	Q P 9630 2.57	8800 2.52	8030 2.48	7310 2.42	6000 2.29	4860 2.13	3870 1.96	3010 1.77					
HGX22e/125-4 HGX22e/125-4 S ¹⁾	30	Q P 15700 1.94	14400 1.97	13200 1.99	12000 2.00	9930 1.98	8150 1.91	6630 1.82	5340 1.69	4250 1.55	3340 1.40	2580 1.25	1960 1.09	
	40	Q P 13800 2.54	12700 2.53	11600 2.50	10600 2.47	8740 2.37	7170 2.24	5840 2.08	4700 1.90	3730 1.72	2900 1.52			
	50	Q P 12000 3.11	11000 3.06	10000 2.99	9120 2.91	7540 2.73	6170 2.53	5010 2.31	4010 2.07					
HHGX22e/160-4 HGX22e/160-4 S ¹⁾	30	Q P 19400 2.40	17800 2.44	16300 2.46	14900 2.47	12300 2.44	10100 2.36	8190 2.24	6590 2.09	5240 1.92	4120 1.73	3190 1.54	2420 1.35	
	40	Q P 17100 3.13	15600 3.12	14300 3.09	13100 3.05	10800 2.93	8860 2.77	7200 2.57	5790 2.35	4590 2.11	3580 1.88			
	50	Q P 14800 3.84	13500 3.77	12400 3.69	11300 3.60	9300 3.38	7620 3.13	6180 2.85	4940 2.55					
HGX22e/190-4 HGX22e/190-4 S ¹⁾	30	Q P 23400 2.90	21400 2.94	19600 2.97	17900 2.98	14800 2.94	12200 2.84	9850 2.70	7920 2.52	6300 2.31	4950 2.09	3840 1.86	2910 1.63	
	40	Q P 20600 3.78	18900 3.76	17200 3.72	15700 3.67	13000 3.52	10700 3.32	8680 3.09	6980 2.83	5540 2.55	4320 2.27			
	50	Q P 17800 4.63	16300 4.54	14900 4.44	13600 4.33	11200 4.06	9200 3.76	7450 3.43	5960 3.08					
HGX34e/215-4 ¹⁾ HGX34e/215-4 S ¹⁾	30	Q P 26500 3.30	24300 3.35	22200 3.38	20300 3.39	16800 3.35	13900 3.25	11300 3.08	9010 2.88	7160 2.64	5620 2.38	4360 2.12	3310 1.86	
	40	Q P 23300 4.31	21400 4.29	19600 4.25	17900 4.19	14800 4.02	12200 3.80	9870 3.53	7930 3.23	6290 2.91	4910 2.58			
	50	Q P 20200 5.29	18500 5.19	17000 5.07	15500 4.94	12800 4.64	10500 4.29	8480 3.91	6780 3.51					
HGX34e/255-4 ¹⁾ HGX34e/255-4 S ¹⁾	30	Q P 31200 3.87	28600 3.94	26200 3.98	23900 3.99	19800 3.94	16300 3.82	13200 3.62	10600 3.37	8440 3.10	6630 2.80	5130 2.49	3890 2.19	
	40	Q P 27400 5.06	25100 5.04	23000 4.99	21000 4.92	17400 4.72	14300 4.46	11600 4.14	9330 3.79	7410 3.42	5780 3.03			
	50	Q P 23700 6.21	21800 6.09	19900 5.96	18200 5.80	15000 5.45	12300 5.04	9970 4.59	7970 4.12					
HGX34e/315-4 ¹⁾ HGX34e/315-4 S ¹⁾	30	Q P 38500 4.79	35300 4.87	32300 4.92	29500 4.93	24500 4.87	20100 4.71	16400 4.49	13200 4.19	10500 3.83	8200 3.45	6340 3.07	4800 2.70	
	40	Q P 33900 6.26	31100 6.23	28500 6.17	26000 6.09	21600 5.84	17700 5.51	14400 5.13	11600 4.69	9160 4.22	7140 3.74			
	50	Q P 29400 7.67	26900 7.53	24600 7.37	22500 7.18	18600 6.74	15200 6.23	12400 5.69	9850 5.10					

¹⁾ ASERCOM certified

Relating to 20 °C suction gas temperature
 without liquid subcooling

Motor version -S-
 (more powerful motor)

Supplementary cooling or
 reduced suction gas temperature

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HG semi-hermetic compressors

Performance data

R22 | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]												Power consumption P_e [kW]	
		Evaporating temperature °C													
		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35		
HGX34e/380-4	30	Q	46700	42800	39100	35700	29600	24300	19800	16000	12700	9950	7690	5830	
		P	5.82	5.92	5.97	5.99	5.91	5.72	5.43	5.06	4.64	4.19	3.73	3.29	
HGX34e/380-4 S	40	Q	41000	37600	34400	31400	26100	21400	17400	14000	11200	8650			
		P	7.60	7.56	7.49	7.39	7.08	6.68	6.21	5.68	5.12	4.54			
	50	Q	35500	32500	29800	27200	22500	18500	15000	12000					
		P	9.31	9.14	8.93	8.70	8.16	7.56	6.89	6.18					
HGX44e/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	
HGX44e/475-4 S	40	Q	52700	48300	44300	40500	33600	27400	22200	17800	14000	10700			
		P	9.17	9.15	9.08	8.97	8.66	8.19	7.63	6.99	6.29	5.54			
	50	Q	47000	43100	39300	35900	29600	24000	19300	15300					
		P	11.0	10.8	10.6	10.4	9.90	9.24	8.46	7.62					
HGX44e/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	
HGX44e/565-4 S	40	Q	62900	57700	52900	48400	40200	32600	26600	21300	16800	12900			
		P	10.8	10.8	10.7	10.6	10.2	9.79	9.11	8.33	7.48	6.58			
	50	Q	56300	51500	47100	43000	35500	28600	23200	18400					
		P	13.1	12.9	12.6	12.4	11.7	11.0	10.1	9.10					
HGX44e/665-4	30	Q	81000	74500	68300	62600	52100	43300	35300	28500	22600	17500	13200	9410	
		P	9.95	10.1	10.1	10.2	10.1	9.73	9.26	8.66	7.94	7.15	6.30	5.44	
HGX44e/665-4 S	40	Q	73100	67100	61500	56200	46600	38400	31200	24900	19600	14900			
		P	12.7	12.7	12.6	12.5	12.0	11.3	10.5	9.69	8.71	7.68			
	50	Q	65200	59700	54600	49700	41000	33600	27000	21400					
		P	15.4	15.2	14.9	14.5	13.8	12.8	11.7	10.5					
HGX44e/770-4	30	Q	93900	86300	79200	72600	60500	50000	40900	33000	26200	20400	15400	11100	
		P	11.5	11.7	11.8	11.8	11.7	11.3	10.8	10.1	9.28	8.35	7.36	6.36	
HGX44e/770-4 S	40	Q	84700	77800	71300	65200	54100	44500	36200	29000	22800	17500			
		P	14.8	14.8	14.6	14.5	13.9	13.2	12.3	11.3	10.1	8.97			
	50	Q	75600	69300	63300	57800	47700	39000	31500	25000					
		P	17.9	17.7	17.3	16.9	16.0	14.9	13.6	12.3					
HGX56e/850-4	30	Q	104000	95400	87600	80200	66900	55000	45000	36400	29000	22600	17100	12300	
		P	12.7	12.9	13.0	13.0	12.9	12.5	11.9	11.1	10.2	9.19	8.10	6.97	
HGX56e/850-4 S	40	Q	93700	86000	78800	72100	59900	49000	39900	32000	25200	19400			
		P	16.3	16.2	16.1	15.9	15.3	14.6	13.6	12.4	11.2	9.88			
	50	Q	83700	76600	70100	64000	52900	43000	34800	27600					
		P	19.6	19.4	19.0	18.6	17.6	16.5	15.1	13.6					
HGX56e/995-4	30	Q	122000	112000	103000	93700	78000	64700	52800	42600	33800	26200	19700	14100	
		P	14.9	15.1	15.2	15.3	15.1	14.5	13.8	12.9	11.8	10.6	9.42	8.14	
HGX56e/995-4 S	40	Q	110000	101000	91900	84000	69700	57400	46600	37300	29200	22300			
		P	19.1	19.1	18.9	18.7	18.0	16.9	15.7	14.4	13.0	11.4			
	50	Q	97500	89300	81600	74400	61300	50200	40400	32000					
		P	23.1	22.8	22.4	21.9	20.7	19.0	17.4	15.7					
HGX56e/1155-4	30	Q	141000	130000	119000	109000	90700	74700	61000	49300	39200	30500	23100	16600	
		P	18.0	18.2	18.4	18.5	18.3	17.7	16.9	15.8	14.4	13.0	11.4	9.89	
HGX56e/1155-4 S	40	Q	128000	117000	107000	97800	81200	66500	54000	43300	34100	26100			
		P	23.1	23.0	22.9	22.6	21.8	20.7	19.3	17.7	15.9	14.0			
	50	Q	114000	105000	95100	86800	71700	58300	47000	37300					
		P	27.9	27.5	27.0	26.4	24.9	23.4	21.4	19.3					
HGX66e/1340-4	30	Q	168000	155000	142000	131000	109000	89400	73100	59000	46800	36400	27700	20400	
		P	21.4	21.6	21.7	21.6	21.2	20.3	19.2	17.8	16.2	14.4	12.6	10.8	
HGX66e/1340-4 S	40	Q	152000	140000	128000	118000	97600	79700	64800	51900	40900	31400			
		P	27.4	27.1	26.8	26.3	25.1	23.5	21.7	19.7	17.5	15.3			
	50	Q	135000	124000	114000	104000	85600	69500	56100	44600					
		P	32.8	32.1	31.3	30.4	28.4	26.2	23.8	21.2					
HGX66e/1540-4	30	Q	192000	177000	163000	150000	126000	103000	84200	68100	54200	42300	32300	24000	
		P	24.6	24.8	24.9	24.9	24.4	23.5	22.2	20.6	18.8	16.8	14.7	12.6	
HGX66e/1540-4 S	40	Q	174000	160000	147000	135000	113000	91800	74800	60200	47500	36700			
		P	31.7	31.4	30.9	30.4	29.0	27.3	25.2	22.9	20.5	17.9			
	50	Q	155000	142000	130000	119000	98600	80200	65000	51900					
		P	38.1	37.3	36.3	35.3	33.1	30.6	27.8	24.8					

Relating to 20 °C suction gas temperature without liquid subcooling



Motor version -S- (more powerful motor)



Supplementary cooling or reduced suction gas temperature

vap.bock.de



HG semi-hermetic compressors

Performance data

R22 | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]										Power consumption P_e [kW]		
		Evaporating temperature °C												
Cond.		12.5	10	7.5	5	0	-5	-10	-15	-20	-25	-30	-35	
temp. °C														
HGX66e/1750-4	30	Q P	218000 28.2	201000 28.4	185000 28.5	170000 28.5	142000 27.9	118000 26.8	96400 25.4	78000 23.6	62100 21.5	48500 19.3	37100 16.9	27500 14.5
	40	Q P	197000 36.2	182000 35.8	167000 35.4	153000 34.8	128000 33.2	7106000 31.2	85800 28.8	69000 26.2	54500 23.5	42200 20.6		
		50	Q P	175000 43.5	161000 42.6	148000 41.6	135000 40.4	112000 37.8	91900 34.9	74600 31.7	59600 28.4			
HGX66e/2070-4	30	Q P	256000 33.3	236000 33.6	217000 33.7	200000 33.7	167000 33.0	139000 31.8	114000 30.0	91700 27.9	73100 25.4	57100 22.7	43700 19.9	32400 17.1
	40	Q P	231000 43.0	213000 42.6	196000 42.0	180000 41.3	150000 39.4	124000 37.1	101000 34.2	81100 31.1	64200 27.8	49700 24.3		
	50	Q P	205000 51.9	189000 50.8	173000 49.5	158000 48.1	132000 45.0	108000 41.6	87500 37.8	70000 33.7				
HGX88e/2400-4	30	Q P	304000 39.6	280000 39.9	258000 40.0	237000 40.0	198000 39.3	163000 37.6	134000 35.7	108000 33.2	85900 30.4	67200 27.3	51400 24.1	38100 20.8
	40	Q P	276000 50.3	254000 49.9	233000 49.2	214000 48.4	179000 46.3	146000 43.8	119000 40.6	95500 37.0	75500 33.1	58500 29.2		
	50	Q P	246000 60.1	226000 58.9	207000 57.5	190000 56.0	157000 52.6	128000 49.1	104000 44.7	82700 40.0				
HGX88e/2735-4	30	Q P	345000 44.7	318000 45.1	292000 45.3	269000 45.2	225000 44.4	186000 42.8	152000 40.6	123000 37.8	97900 34.7	76500 31.2	58500 27.5	43400 23.8
	40	Q P	313000 57.2	288000 56.6	265000 55.9	243000 55.0	202000 52.6	167000 49.6	136000 46.0	109000 42.0	86100 37.7	66600 33.3		
	50	Q P	279000 68.6	256000 67.2	235000 65.5	215000 63.8	179000 59.8	146000 55.5	119000 50.6	94300 45.4				
HGX88e/3235-4	30	Q P	407000 52.7	376000 53.1	346000 53.3	317000 53.2	266000 52.3	219000 50.4	180000 47.8	145000 44.5	116000 40.7	90100 36.6	68800 32.3	51000 27.9
	40	Q P	370000 67.3	340000 66.7	313000 65.8	286000 64.7	239000 61.8	196000 58.4	160000 54.1	129000 49.4	102000 44.3	78300 39.0		
	50	Q P	329000 80.7	303000 79.0	277000 77.1	254000 75.0	210000 70.3	172000 65.4	140000 59.5	111000 53.3				

HG semi-hermetic compressors

Technical data

HG																
Type	Number of cylinders	Displacement		Voltage ¹⁾	Electrical data			Starting current (rotor locked)	Weight	Connections ⁵⁾				Oil charge	Fre- quency range	
					Max. Working current ²⁾	Max. Power consump- tion ²⁾	Discharge line DV			Suction line SV						
		m³/h			A		kW			A		kg				
		50 Hz 1450 rpm	60 Hz 1740 rpm		Δ	Y		Δ	Y		mm	inch	mm	inch	Ltr.	Hz
HG12P/60-4 S	2	5.40	6.40	³⁾	6.8	3.9	2.2	40	23	48.0	12	1½	16	5⁄8	0.8	30-70
HG12P/75-4	2	6.70	8.10	³⁾	7.1	4.1	2.3	40	23	48.0	12	1½	16	5⁄8	0.8	30-70
HG12P/75-4 S	2	6.70	8.10	³⁾	8.0	4.6	2.6	43	25	49.0	12	1½	16	5⁄8	0.8	30-70
HG12P/90-4	2	8.00	9.60	³⁾	8.5	4.9	2.8	43	25	49.0	12	1½	16	5⁄8	0.8	30-70
HG12P/90-4 S	2	8.00	9.60	³⁾	9.1	5.3	3.0	45	26	49.0	12	1½	16	5⁄8	0.8	30-70
HG12P/110-4	2	9.40	11.30	³⁾	9.2	5.3	3.1	43	25	49.0	12	1½	16	5⁄8	0.8	30-70
HG12P/110-4 S	2	9.40	11.30	³⁾	10.6	6.1	3.6	45	26	49.0	12	1½	16	5⁄8	0.8	30-70
HG22e/125-4	2	11.10	13.30	³⁾	9.3	5.4	3.0	69	40	74.0	16	5⁄8	22	7⁄8	1.0	30-70
HG22e/125-4 S	2	11.10	13.30	³⁾	10.8	6.2	3.6	69	40	74.0	16	5⁄8	22	7⁄8	1.0	30-70
HG22e/160-4	2	13.70	16.40	³⁾	11.1	6.4	3.7	69	40	74.0	16	5⁄8	22	7⁄8	1.0	30-70
HG22e/160-4 S	2	13.70	16.40	³⁾	13.1	7.6	4.4	87	50	76.0	16	5⁄8	22	7⁄8	1.0	30-70
HG22e/190-4	2	16.50	19.80	³⁾	13.8	8.0	4.8	69	40	74.0	16	5⁄8	22	7⁄8	1.0	30-70
HG22e/190-4 S	2	16.50	19.80	³⁾	16.2	9.4	5.6	87	50	75.0	16	5⁄8	22	7⁄8	1.0	30-70
HG34e/215-4	4	18.80	22.60	³⁾	14.0	8.1	4.8	87	50	92.0	22	7⁄8	28	1½	1.2	25-70
HG34e/215-4 S	4	18.80	22.60	³⁾	18.3	10.5	6.0	132	76	97.0	22	7⁄8	28	1½	1.2	25-70
HG34e/255-4	4	22.10	26.60	³⁾	17.0	9.8	6.0	87	50	92.0	22	7⁄8	28	1½	1.2	25-70
HG34e/255-4 S	4	22.10	26.60	³⁾	21.1	12.2	7.2	132	76	96.0	22	7⁄8	28	1½	1.2	25-70
HG34e/315-4	4	27.30	32.80	³⁾	21.1	12.2	7.4	111	64	94.0	22	7⁄8	28	1½	1.2	25-70
HG34e/315-4 S	4	27.30	32.80	³⁾	25.5	14.7	8.9	132	76	97.0	22	7⁄8	28	1½	1.2	25-70
HG34e/380-4	4	33.10	39.70	³⁾	26.1	15.1	9.3	111	64	93.0	22	7⁄8	28	1½	1.2	25-70
HG34e/380-4 S	4	33.10	39.70	³⁾	31.2	18.0	11.1	132	76	96.0	22	7⁄8	28	1½	1.2	25-70
				PW 1+2*			PW1/PW1+2*									
HG44e/475-4	4	41.30	49.60	⁴⁾	19.0		11.0	83	109	164.0	28	1½	35	1¾	2.3	25-70
HG44e/475-4 S	4	41.30	49.60	⁴⁾	23.0		13.1	115	150	168.0	28	1½	35	1¾	2.3	25-70
HG44e/565-4	4	49.20	59.00	⁴⁾	22.0		13.2	83	109	164.0	28	1½	35	1¾	2.3	25-70
HG44e/565-4 S	4	49.20	59.00	⁴⁾	26.0		15.6	133	171	170.0	28	1½	42	1⅝	2.3	25-70
HG44e/665-4	4	57.70	69.20	⁴⁾	26.0		15.4	115	150	171.0	28	1½	42	1⅝	2.3	25-70
HG44e/665-4 S	4	57.70	69.20	⁴⁾	30.0		18.3	133	171	168.0	28	1½	42	1⅝	2.3	25-70
HG44e/770-4	4	67.00	80.40	⁴⁾	30.0		17.8	133	171	168.0	28	1½	42	1⅝	2.3	25-70
HG44e/770-4 S	4	67.00	80.40	⁴⁾	35.0		21.4	133	171	168.0	28	1½	42	1⅝	2.3	25-70
HG56e/850-4	6	73.80	88.60	⁴⁾	32.6		19.7	133	171	194.3	35	1¾	54	2½	2.7	25-70
HG56e/850-4 S	6	73.80	88.60	⁴⁾	39.4		23.5	162	210	211.1	35	1¾	54	2½	2.7	25-70
HG56e/995-4	6	86.60	103.90	⁴⁾	38.9		23.2	162	210	194.3	35	1¾	54	2½	2.7	25-70
HG56e/995-4 S	6	86.60	103.90	⁴⁾	46.4		27.7	189	246	211.3	35	1¾	54	2½	2.7	25-70
HG56e/1155-4	6	100.40	120.50	⁴⁾	46.9		28.0	189	246	211.8	35	1¾	54	2½	2.7	25-70
HG56e/1155-4 S	6	100.40	120.50	⁴⁾	58.3		33.3	253	330	220.6	35	1¾	54	2½	2.7	25-70

*PW = Part Winding, motors for part winding start

1 = first part winding

2 = second part winding

HG semi-hermetic compressors

Technical data

HG																
Type	Number of cylinders	Displacement 50 Hz/60Hz (1450/1740 rpm)		Voltage ¹⁾	Electrical data			Starting current (rotor locked)	Weight	Connections ⁵⁾				Oil charge	Fre- quency range	
					Max. Working current ²⁾	Max. Power consump- tion ²⁾	Discharge line DV			Suction line SV						
		m³/h			A		kW			A		kg				
		50 Hz 1450 rpm	60 Hz 1740 rpm		Δ	Y		Δ	Y		mm	inch	mm	inch	Ltr.	Hz
HG66e/1340-4	6	116.50	139.80	4)	53.7		31.9	170	275	282.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/1340-4 S	6	116.50	139.80	4)	65.3		38.1	196	335	287.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/1540-4	6	133.80	160.50	4)	62.1		37.2	170	275	280.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/1540-4 S	6	133.80	160.50	4)	75.0		44.4	196	335	285.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/1750-4	6	152.20	182.60	4)	71.9		42.4	196	335	280.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/1750-4 S	6	152.20	182.60	4)	86.8		50.7	222	361	282.0	42	1 5⁄8	54	2 1⁄8	4.4	25–60
HG66e/2070-4	6	180.00	216.00	4)	85.1		50.7	196	335	276.0	42	1 5⁄8	64	2 1⁄8	4.4	25–60
HG66e/2070-4 S	6	180.00	216.00	4)	103.0		60.7	222	361	278.0	42	1 5⁄8	64	2 1⁄8	4.4	25–60
HG88e/2400-4	8	209.10	250.90	4)	101.0		59.5	298	438	452.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60
HG88e/2400-4 S	8	209.10	250.90	4)	120.0		69.8	447	657	452.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60
HG88e/2735-4	8	237.90	285.50	4)	116.0		67.1	386	567	455.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60
HG88e/2735-4 S	8	237.90	285.50	4)	136.0		80.0	447	657	464.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60
HG88e/3235-4	8	281.30	337.60	4)	135.0		79.2	447	657	459.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60
HG88e/3235-4 S	8	281.30	337.60	4)	162.0		93.9	538	791	467.0	54	2 1⁄8	76	3 1⁄8	9.6	25–60

*PW = Part Winding, motors for part winding start

1 = first part winding

2 = second part winding

Explanations

- 1) Tolerance (± 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 50 Hz operation. For 60 Hz 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) 220 – 240 V Δ / 380 – 420 V Y - 3 - 50 Hz, 265 – 290 V Δ / 440 – 480 V Y - 3 - 60 Hz

4) PW = Part Winding, motors for part winding start (no start unloaders required)

• Winding ratios:
HG44e, HG56e, HG66e, HG88e = 50 % / 50 %

• Designs for Y/Δ on request

5) For soldering connections

Oil sump heater 110-240 V - 1 - 50 / 60 Hz (option)

- HG12P, HG22e, HG34e: 50–120 W
- PTC heater, self-regulating, installation in housing bore

Oil sump heater 230 V - 1 - 50 / 60 Hz (option)

- HG44e, HG56e, HG66e: 160 W, installation in housing bore
- HG88e: 200 W, installation in immersion sleeve
- Permanently set version

1

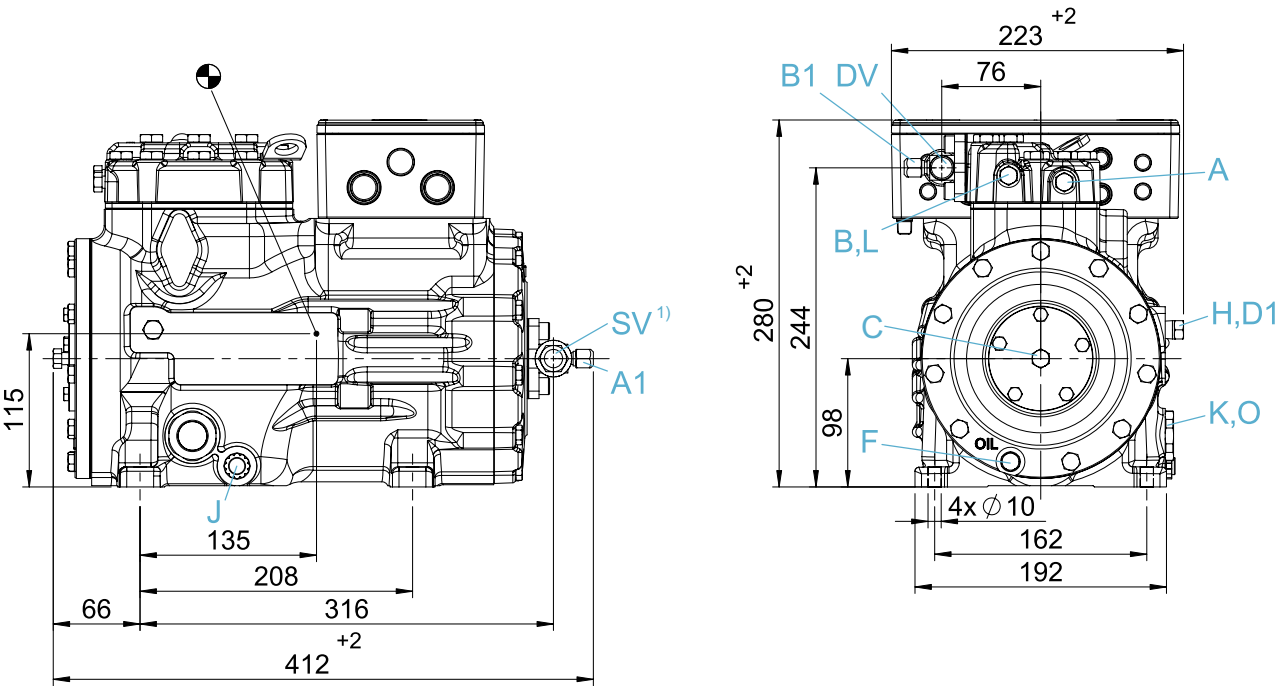
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3

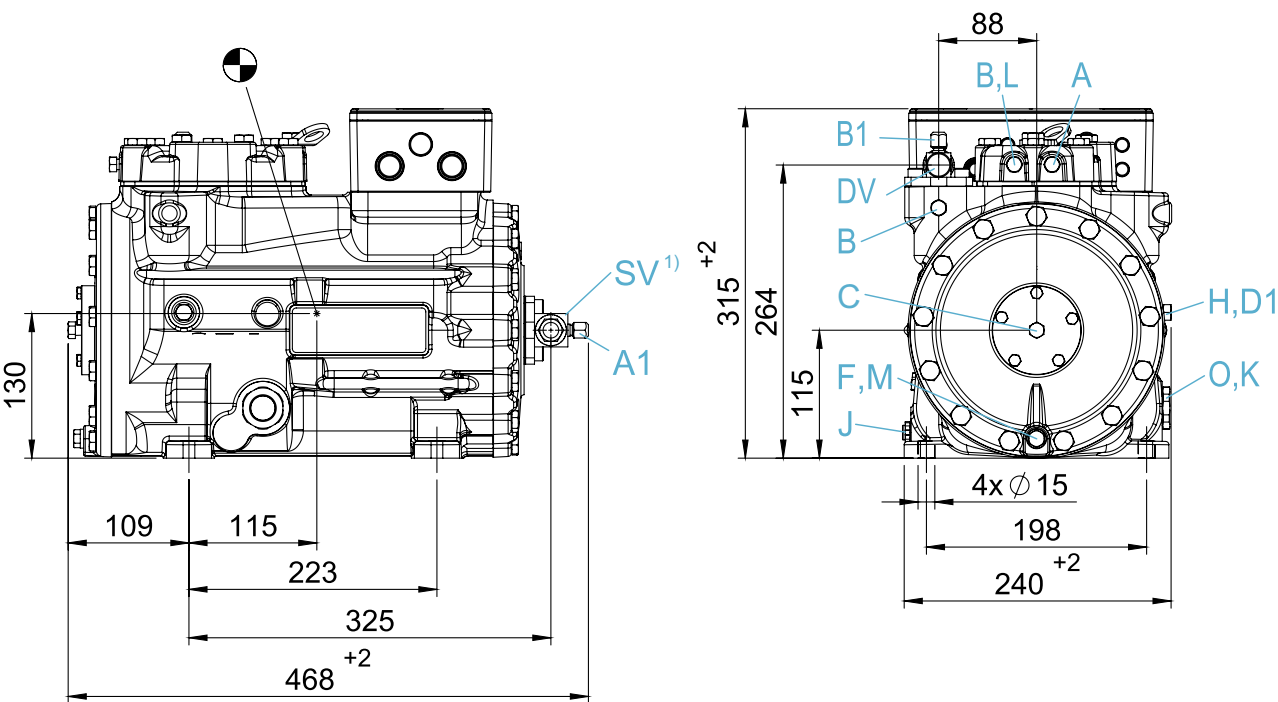
HG semi-hermetic compressors

Dimensions and connections

HG12P » HG12P/60-4 S » HG12P/75-4 » HG12P/75-4 S
HG12P/90-4 » HG12P/90-4 S » HG12P/110-4 » HG12P/110-4 S



HG22e » HG22e/125-4 » HG22e/125-4 S » HG22e/160-4 » HG22e/160-4 S
HG22e/190-4 » HG22e/190-4 S



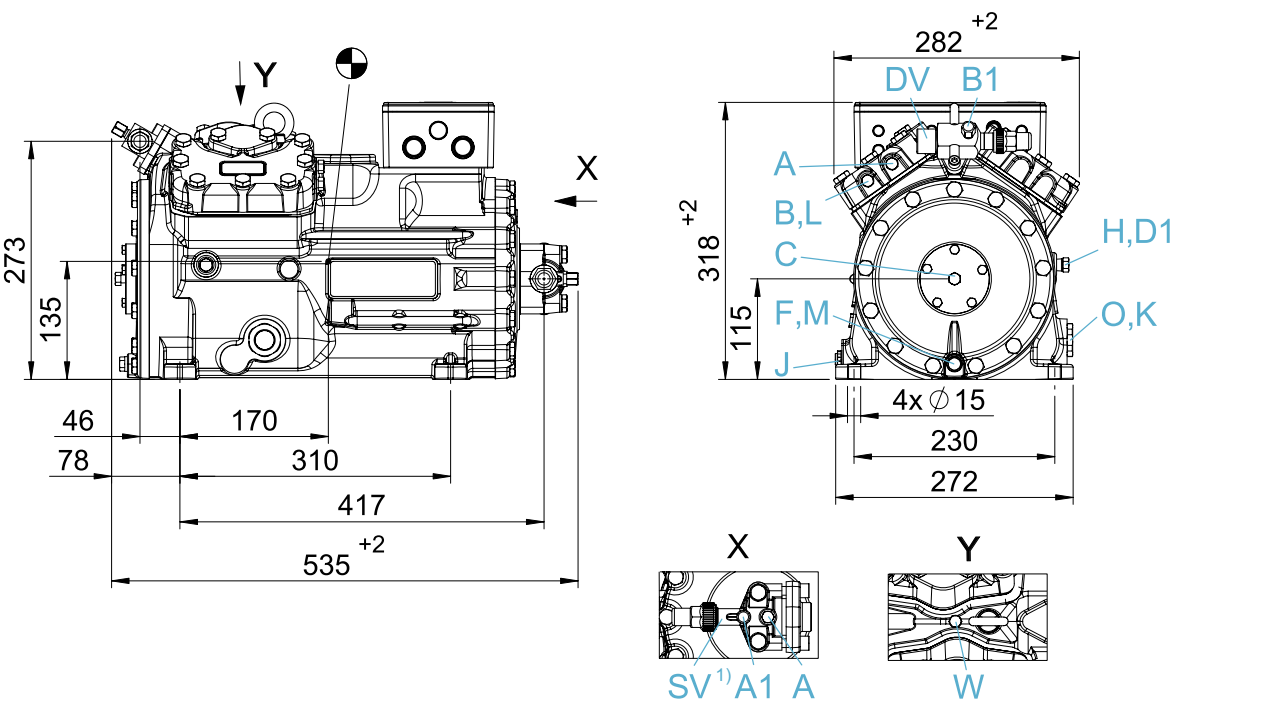
Dimensions in mm
● Center of gravity
¹⁾ SV 90° rotatable

Connections see page 64
Dimensions for anti-vibration pad see page 61

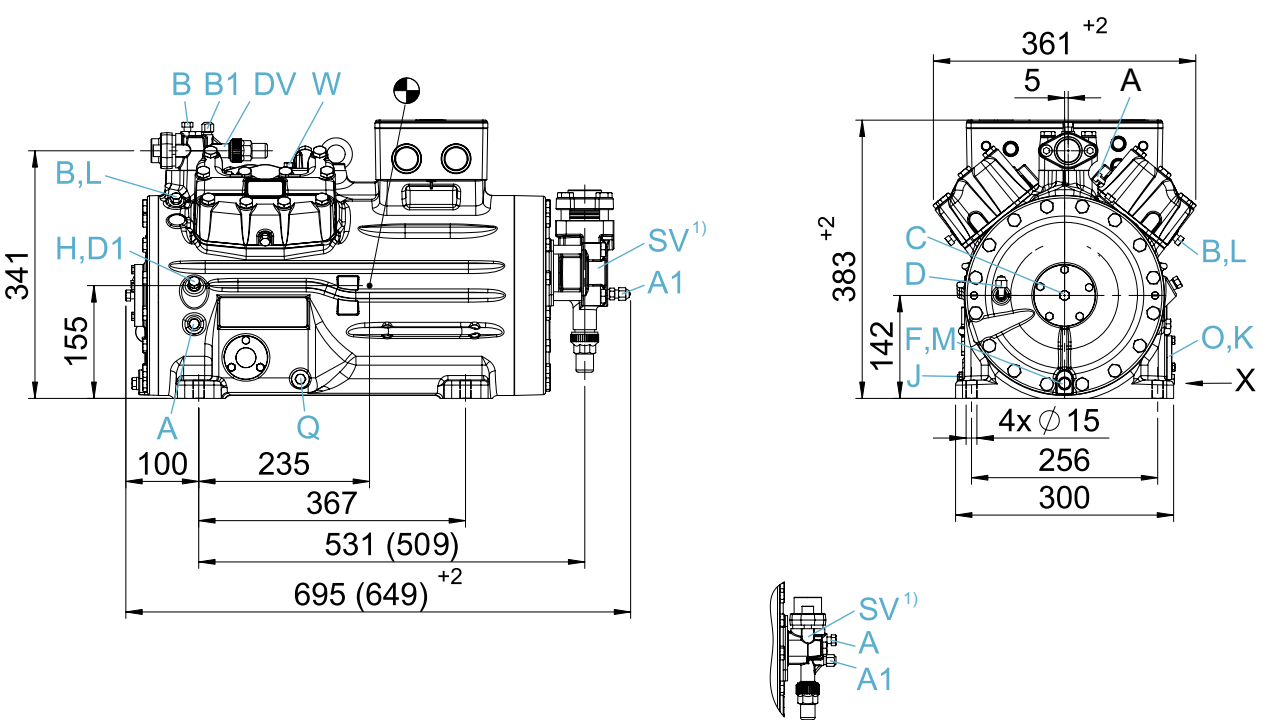
HG semi-hermetic compressors

Dimensions and connections

HG34e » HG34e/215-4 » HG34e/215-4 S » HG34e/255-4 » HG34e/255-4 S
HG34e/315-4 » HG34e/315-4 S » HG34e/380-4 » HG34e/380-4 S



HG44e » HG44e/475-4 » HG44e/475-4 S » HG44e/565-4 » HG44e/565-4 S
HG44e/665-4 » HG44e/665-4 S

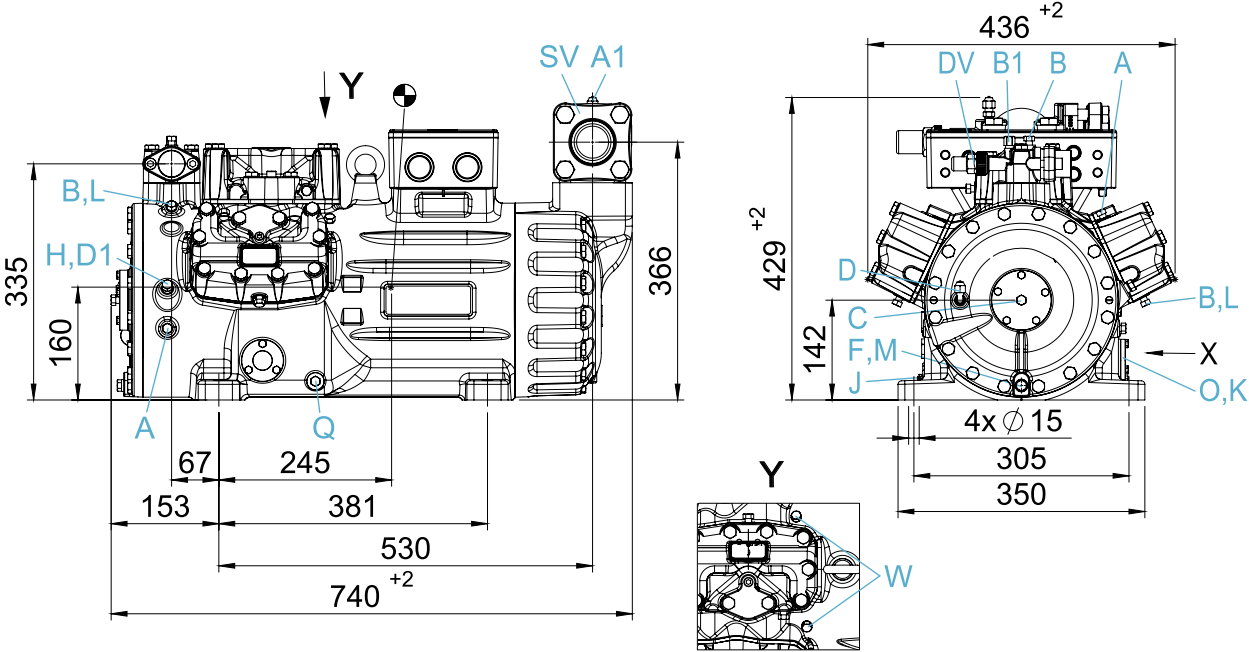


Dimensions in mm
● Center of gravity
¹⁾ SV 90° rotatable

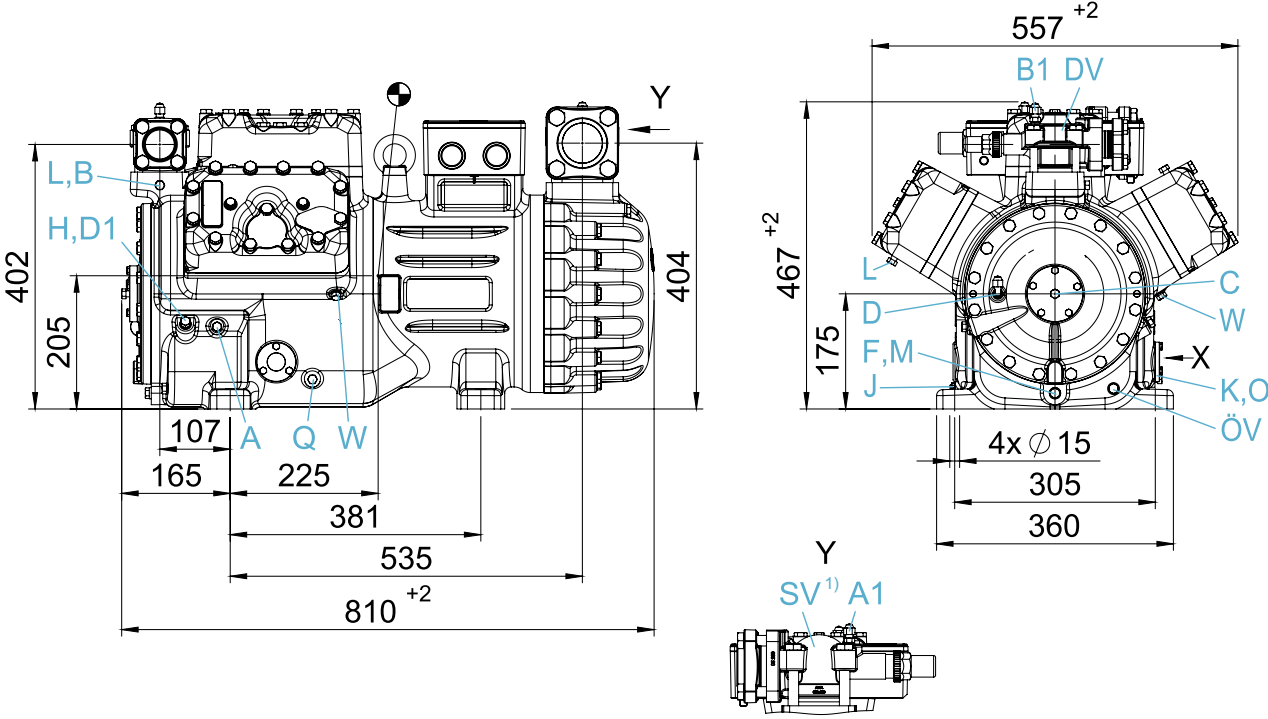
Connections see page 64
Dimensions for anti-vibration pad see page 61

HG semi-hermetic compressors
 Dimensions and connections

HG56e » HG56e/850-4 » HG56e/850-4 S » HG56e/995-4
 HG56e/995-4 S » HG56e/1155-4 » HG56e/1155-4 S



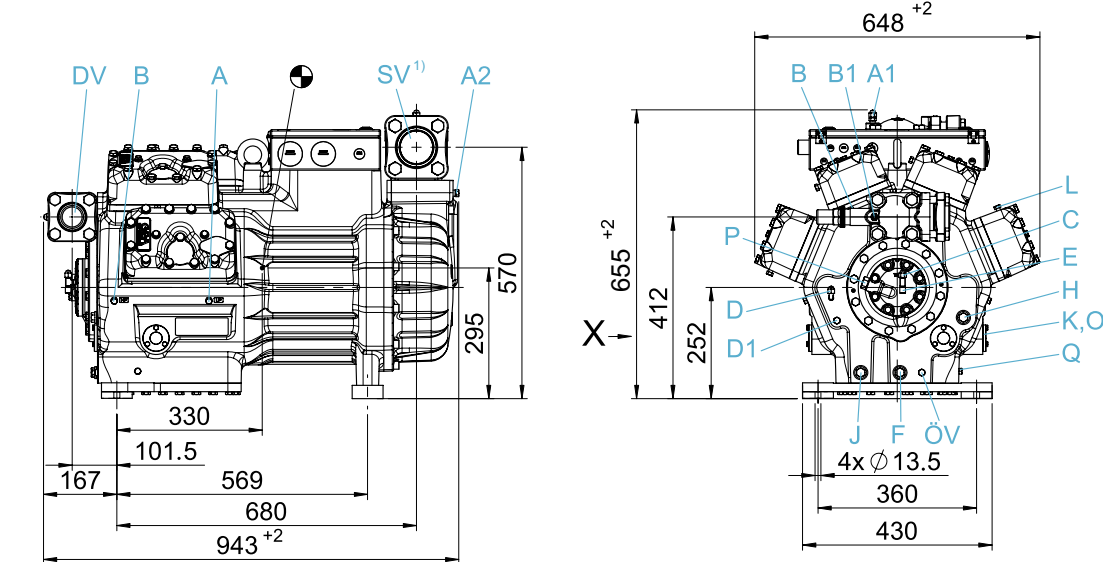
HG66e » HG66e/1340-4 » HG66e/1340-4 S » HG66e/1540-4 » HG66e/1540-4 S
 HG66e/1750-4 » HG66e/1750-4 S » HG66e/2070-4 » HG66e/2070-4 S



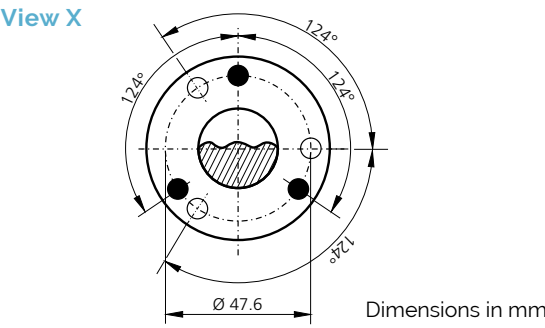
Dimensions in mm
 Center of gravity
¹⁾ SV 180° rotatable
 Connections see page 64
 Dimensions for anti-vibration pad see page 61

HG semi-hermetic compressors
 Dimensions and connections

HG88e » HG88e/2400-4 » HG88e/2400-4 S » HG88e/2735-4
 HG88e/2735-4 S » HG88e/3235-4 » HG88e/3235-4 S



Dimensions in mm
 Center of gravity
¹⁾ SV 180° rotatable
 Connections see page 64
 Dimensions for anti-vibration pad see below



Dimensions for anti-vibration pad

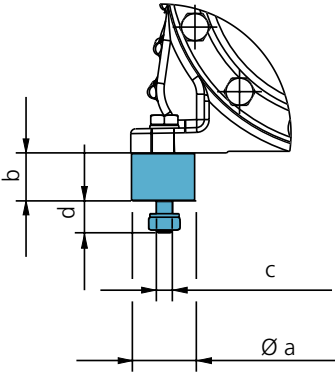
Type	Ø a	b	c	d
HG12P	30	30	M8	20
HG22e	40	30	M10	20
HG34e	40	30	M10	20
HG44e	50	30	M12	25
HG56e	50	30	M12	25
HG66e	50	30	M12	25
HG88e	70	45	M12	37

Dimensions in mm

Possibility to connect to oil level regulator

HG44e, HG56e, HG66e, HG88e

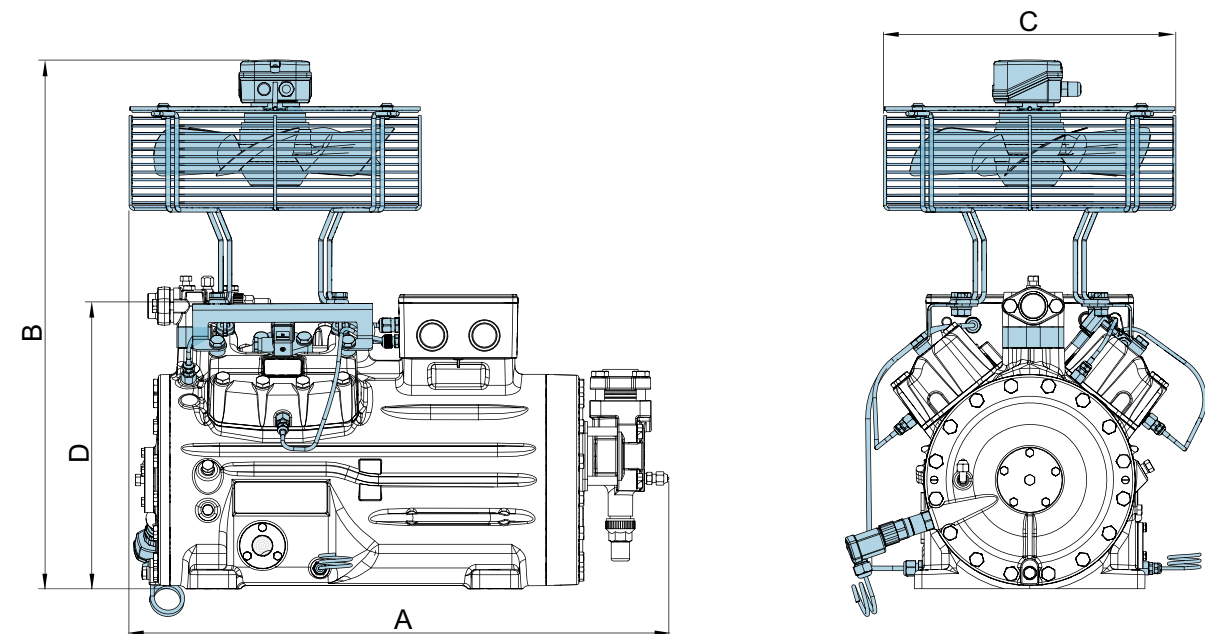
- Three-hole connection for oil level regulator of brands ESK, AC+R, CARLY (3 x M6 x 10 deep)
- Three-hole connection for oil level regulator of brand TRAXOIL (3 x M6 x 10 deep)



HG semi-hermetic compressors
 Dimensions and connections

HG12P HG22e HG34e HG44e HG56e

Dimensions with accessories



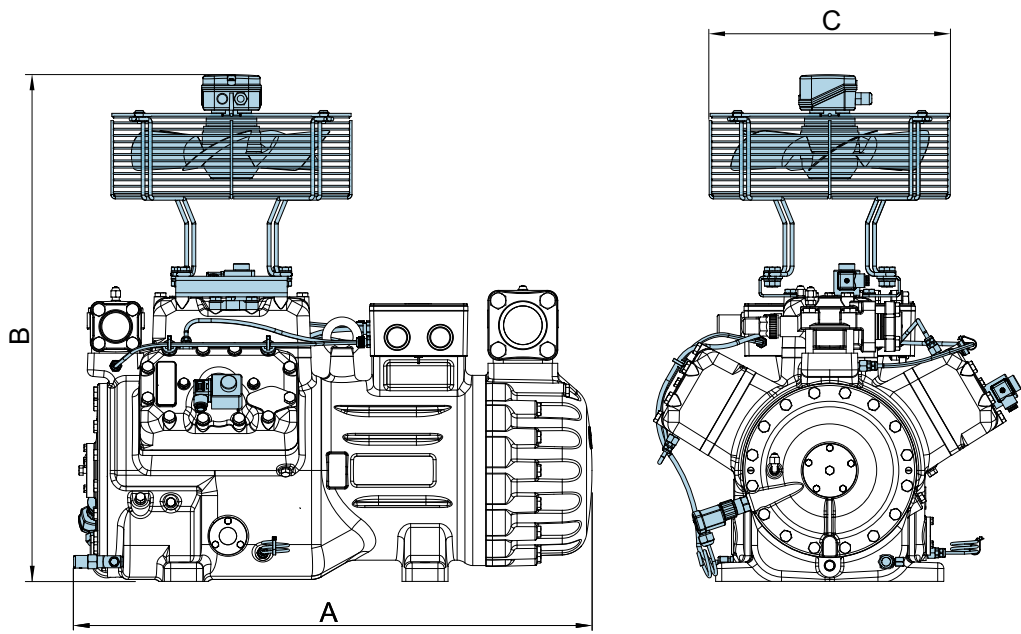
Type	A	B	C	D
HG12P	ca. 460	ca. 500	ca. 315	–
HG22e	ca. 525	ca. 610	ca. 380	–
HG34e	ca. 580	ca. 640	ca. 380	–
HG44e	ca. 710	ca. 685	ca. 380	368
HG56e	–	ca. 710	ca. 380	–

Dimensions in mm

HG semi-hermetic compressors
 Dimensions and connections

HG66e

Dimensions with accessories

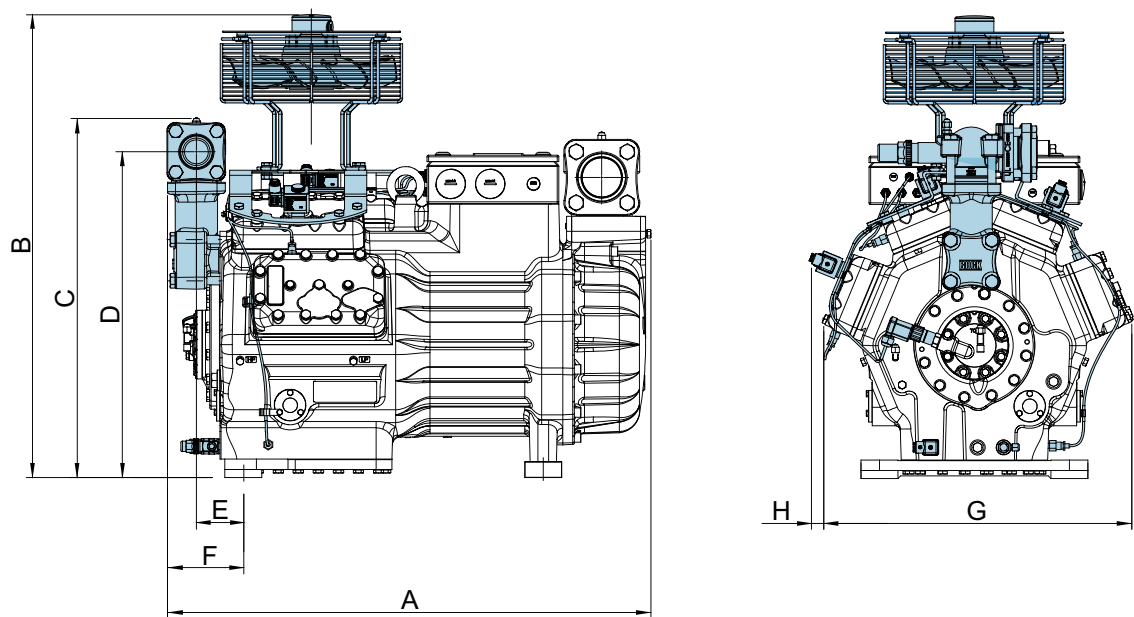


Type	A	B	C
HG66e	ca. 820	ca. 800	ca. 380

Dimensions in mm

HG88e

Dimensions with accessories



Type	A	B	C	D	E	F	G	H
HG88e	ca. 920	ca. 880	ca. 680	617	90	145	ca. 610	ca. 20

Dimensions in mm

HG semi-hermetic compressors
 Dimensions and connections

Connections		HG12P	HG22e	HG34e	HG44e	HG56e	HG66e	HG88e
SV	Suction line	Please refer to technical data page 56						
DV	Discharge line							
A	Connection suction side, not lockable	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
A1	Connection suction side, lockable	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF
A2	Connection suction side, not lockable	-	-	-	-	-	-	1/4" NPTF
B	Connection discharge side, not lockable	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
B1	Connection discharge side, lockable	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF
C	Connection oil pressure safety switch HP	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	7/16" UNF
D	Connection oil pressure safety switch LP	-	-	-	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF
D1	Connection oil return from oil separator	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF
F	Oil drain plug	M8	M12 x 1.5	M12 x 1.5	M12 x 1.5	M12 x 1.5	M12 x 1.5	M22 x 1.5
H	Oil charge plug	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	M22 x 1.5
J	Connection oil sump heater	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	M22 x 1.5
K	Sight glass	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	3 hole M6	3 hole M6	3 hole M6	3 hole M6
L	Connection thermal protection thermostat	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
M	Oil strainer	-	M12 x 1.5	M12 x 1.5	M12 x 1.5	M12 x 1.5	M12 x 1.5	M22 x 1.5
O	Connection oil level regulator	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	1)	1)	1)	1)
ÖV	Connection oil service valve	-	-	-	-	-	1/4" NPTF	1/4" NPTF
P	Connection oil pressure differential sensor	-	-	-	-	-	-	M20 x 1.5
Q	Connection oil temperature sensor	-	-	-	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
W	Connection for refrigerant injection	-	-	1/8" NPTF	1/8" NPTF	2 1/8" NPTF	2 1/8" NPTF	-

¹⁾ Dimensions see view X page 61

HG semi-hermetic compressors
 Scope of supply and accessories

		HG12P	HG22e	HG34e	HG44e	HG56e	HG66e	HG88e
Semi-hermetic two-cylinder reciprocating compressor with drive motor for direct start 220 - 240 V Δ / 380 - 420 V Y - 3 - 50 Hz 265 - 290 V Δ / 440 - 480 V Y - 3 - 60 Hz		●	●	-	-	-	-	-
Semi-hermetic four-cylinder reciprocating compressor with drive motor for direct start 220 - 240 V Δ / 380 - 420 V Y - 3 - 50 Hz 265 - 290 V Δ / 440 - 480 V Y - 3 - 60 Hz		-	-	●	-	-	-	-
Semi-hermetic four-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380 - 420 V Y/YY - 3 - 50 Hz 440 - 480 V Y/YY - 3 - 60 Hz		-	-	-	●	-	-	-
LSemi-hermetic six-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380 - 420 V Y/YY - 3 - 50 Hz 440 - 480 V Y/YY - 3 - 60 Hz		-	-	-	-	●	●	-
Semi-hermetic eight-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380 - 420 V Y/YY - 3 - 50 Hz 440 - 480 V Y/YY - 3 - 60 Hz		-	-	-	-	-	-	●
Special voltage and/or frequency		○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾
Winding protection with PTC resistor sensors with electronic triggering unit INT69 G (230 V)		●	●	●	●	●	●	●
1 Thermal protection PTC		○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾
Oil pump		●	●	●	●	●	●	●
Oil charge: FUCHS Reniso SP46, HGX: FUCHS Rensio Triton SE55		●	●	●	●	●	●	●
Inert gas charge		●	●	●	●	●	●	●
4 anti-vibration pads		● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
Internal safety valve		-	-	-	●	●	●	●
Suction and discharge line valve		●	●	●	●	●	●	●
Sight glasses	One	●	●	●	●	●	●	-
	Three	-	-	-	-	-	-	●
2 Oil sump heater	110 - 240 V - 1 - 50 / 60 Hz, 50 - 120 W, PTC heater, self-regulating	○ ²⁾	○ ²⁾	○ ²⁾	-	-	-	-
	220 - 240 V - 1 - 50 / 60 Hz, 160 W	-	-	-	○ ²⁾	○ ²⁾	○ ²⁾	-
	220 - 240 V - 1 - 50 / 60 Hz, 200 W	-	-	-	-	-	-	○ ²⁾
Rear bearing flange prepared for oil differential pressure sensor		-	-	-	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾
3 Oil differential pressure sensor DELTA-P II 220 - 240 V - 1 - 50 / 60 Hz		-	-	-	○ ¹⁾	○ ¹⁾	○ ¹⁾	○ ¹⁾
4 Oil pressure safety switch	230 V - 1 - 50/60 Hz, IP20 MP54	-	-	-	○ ¹⁾	○ ¹⁾	○ ¹⁾	○ ¹⁾
	230 V - 1 - 50/60 Hz, IP20 MP55	○ ¹⁾	○ ¹⁾	○ ¹⁾	-	-	-	-
5 Oil service valve		-	-	-	-	-	○ ²⁾	○ ²⁾
6 Capacity regulator	1 capacity regulator = 50 % residual capacity	-	-	○ ²⁾	○ ²⁾	-	-	-
	1 - 2 capacity regulators = 66 / 33 % residual capacity	-	-	-	-	○ ²⁾	○ ²⁾	-
	1 - 3 capacity regulators = 75 / 50 / 25 % residual capacity	-	-	-	-	-	-	○ ²⁾

¹⁾ Enclosed ²⁾ Mounted ³⁾ On request
⁴⁾ Only possible with additional adapter

● Scope of supply (standard)
 ○ Available accessories



HG semi-hermetic compressors
 Scope of supply and accessories

		HG12P	HG22e	HG34e	HG44e	HG56e	HG66e	HG88e
7	Prepared for capacity regulator			2)	2)	2)	2)	2)
	1 cylinder cover	–	–	–	–	–	–	–
	2 cylinder covers	–	–	–	–	–	–	–
8	Oil temperature sensor	–	–	–	–	–	–	–
	3 cylinder covers	–	–	–	–	–	–	–
Start unloader by means of ESS (Electronic Soft Start)								
9	400 V - 3 - 50 / 60 Hz, IP20, (connection clamps IP00) for installation in switch cabinet	–	1)	1)	1)	1)	1)	–
		–	–	–	–	–	–	–
Connection piece suction and discharge valve in welded construction		–	–	–	–	–	–	–
11	Additional fan	–	–	–	–	–	–	–
	230 V - 1 - 50 Hz, 97 W, IP44,	1)	1)	1)	1)	1)	1)	1)
	230 V - 1 - 60 Hz, 128 W, Voltage range ± 10%	–	–	–	–	–	–	–
Intermediate flange for discharge line valve on right or left, seen from oil pump		–	–	–	–	–	–	–
13	INT69 G Diagnose 115 / 230 V Ac, 50 / 60 Hz, IP00 (INT69 G not applicable)	–	1)	1)	1)	1)	1)	–
		–	–	–	–	–	–	–
14	INT69 GTML Diagnose 115 / 230 V Ac, 50 / 60 Hz, IP00, incl. oil differential pressure sensor	–	–	–	–	–	–	2)
	INT250, thermal protection thermostat (PTC) per cylinder cover (INT69 G not applicable)	–	–	–	–	–	–	–
15	DP – modbus gateway 115 / 230 V Ac, 50 / 60 Hz, IP00 incl. adapter cable	–	1)	1)	1)	1)	1)	1)
16	Modbus – LAN gateway 230 V Ac, 50 / 60 Hz, IP00	–	1)	1)	1)	1)	1)	1)
17	USB converter for INT69 G Diagnose and INT69 GTML Diagnose	–	1)	1)	1)	1)	1)	1)
Connection for oil level regulator of brands ESK, AC+ R or CARLY		4)	4)	4)	4)	4)	4)	4)
Connection for oil level regulator of brand Traxoil		4)	4)	4)	4)	4)	4)	4)

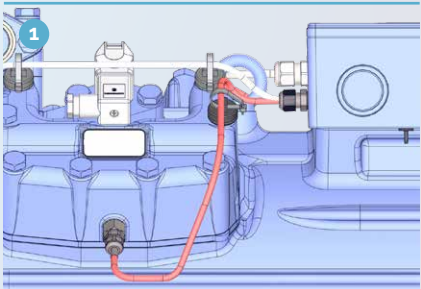
1) Enclosed 2) Mounted 3) On request
 4) Only possible with additional adapter

● Scope of supply (standard)
 ○ Available accessories

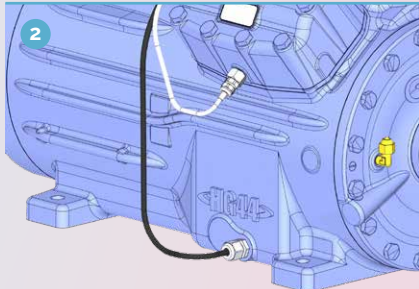


HG semi-hermetic compressors
 Accessories

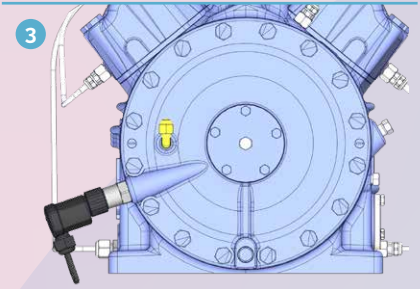
Thermal protection thermostat



Oil sump heater



Oil differential pressure sensor



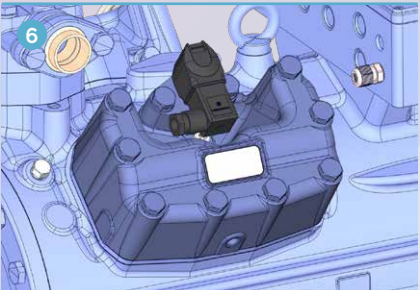
Oil pressure safety switch



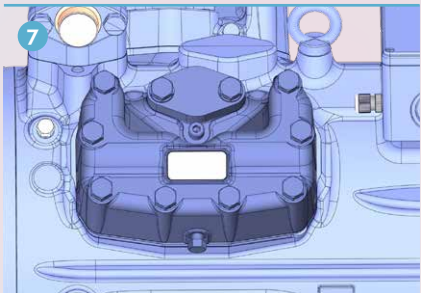
Oil service valve



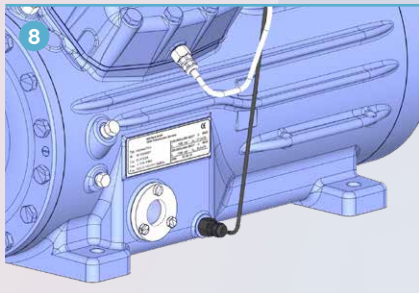
Capacity regulator



Prepared for capacity regulator



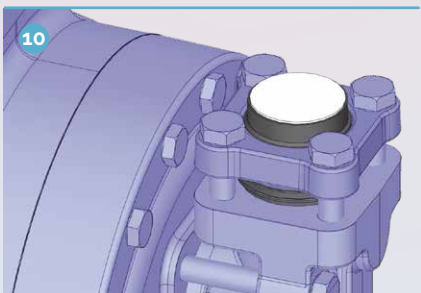
Oil temperature sensor



ESS Electronic Soft Start



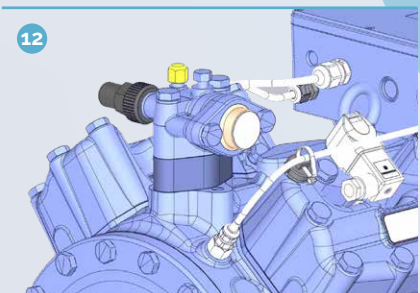
Connection piece in welded construction



Additional fan

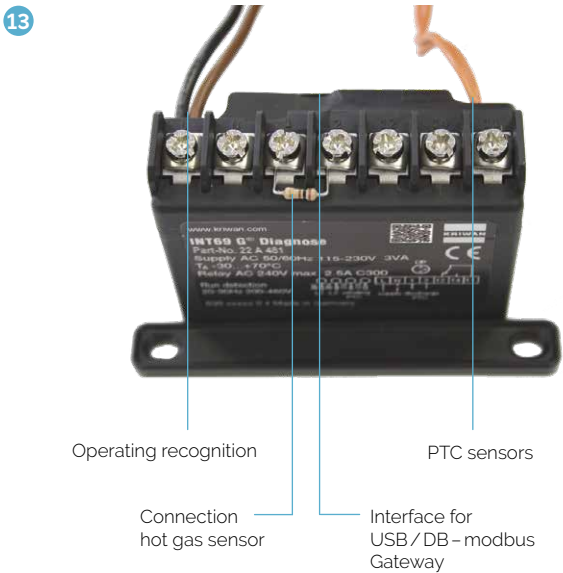


Intermediate flange for discharge line valve

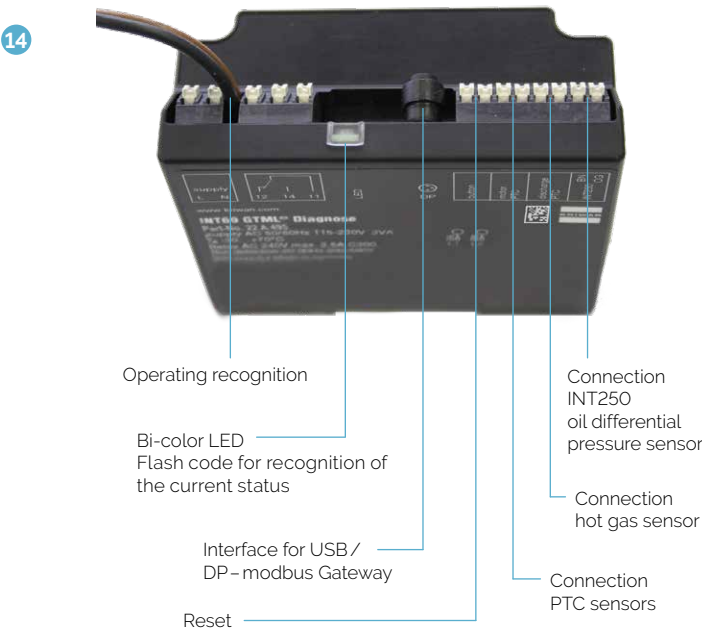


HG semi-hermetic compressors
 Accessories

INT69 G Diagnose



INT69 GTML Diagnose



DP – modbus Gateway



Modbus – LAN Gateway



USB converter



INT69 G Motor Protection

Technical Data

Unit designation	INT69 G (Standard)	INT69 G Diagnose	INT69 GTML 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	AC 115 – 230 V - 1- 50/60 Hz ± 10 % 3 VA
Relay	AC 240 V, 2.5 A, C300	AC 240 V, 2.5 A, C300	AC 240 V, 2.5 A, C300
Dimensions L/W/H	53 × 33 × 68 mm	50 × 33 × 68 mm	87 × 40 × 81.5 mm

HG semi-hermetic compressors
 Accessories

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

Advantages:

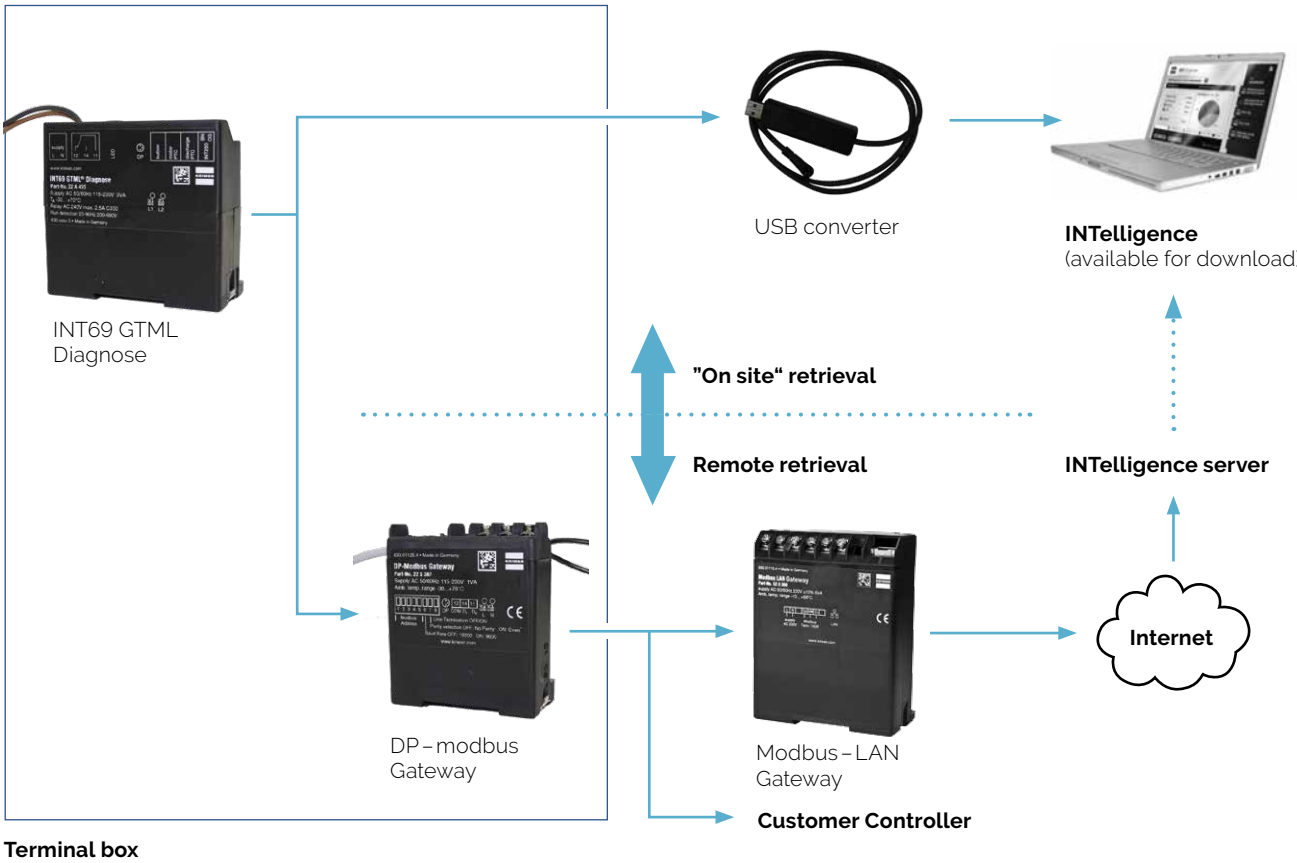
- Simple operation
- Immediate diagnosis and precise problem solving
- Specially adaptable to the user's needs

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

Protection

Communication

Software



Bock HA semi-hermetic compressors

Bock HA22e – HA44e

- 72 At a glance
- 76 Operating limits and performance data
- 88 Technical data
- 89 Dimensions and connections
- 94 Scope of supply & accessories

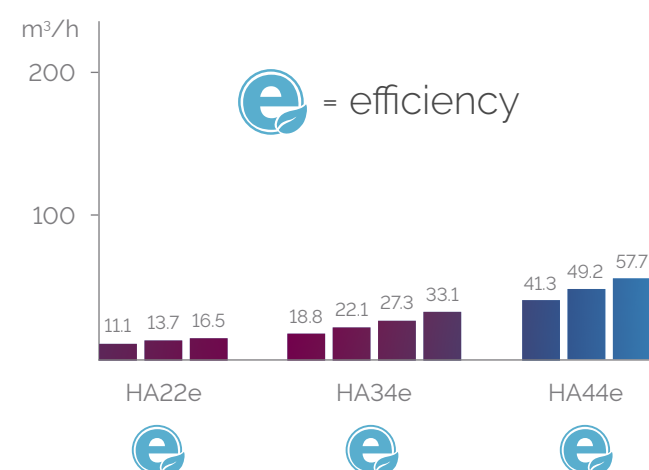


Bock HA semi-hermetic compressors

The "HA principle" of air-cooled compressors, specially developed by BOCK, is the most efficient semi-hermetic solution for low-temperature applications. It employs a direct-suction compressor combined with an air-cooled drive motor.

The current programm

3 model sizes with 10 capacity stages from 11.1 to 57.7 m³/h (50 Hz)



HA44e

HA semi-hermetic compressors At a glance

Low-temperature applications place greater demands on compressors. This applies particularly to suction-gas-cooled semi-hermetic compressors. Within low-temperature applications the refrigerant mass flow is smaller and is heated up disproportionately by the drive motor. This has the following effects on the operation of the compressor.

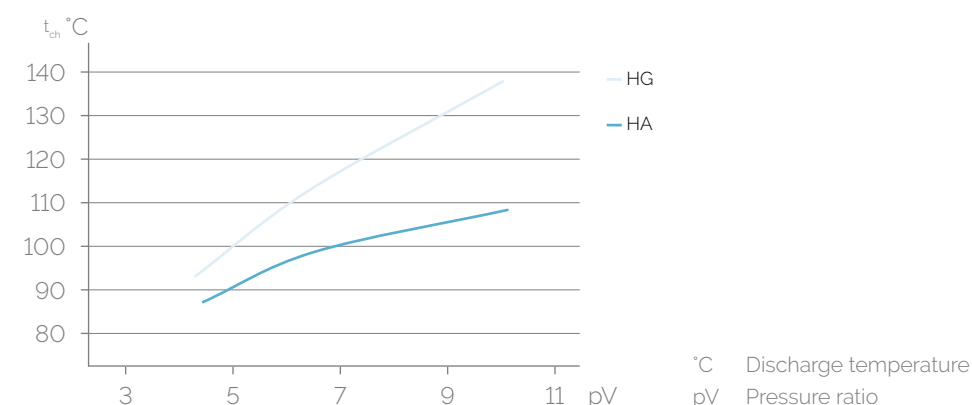
- The volumetric efficiency is reduced due to the decreasing specific density
- The discharge temperature and oil temperature are higher. This means that the oil ages more quickly and the lubrication properties deteriorate

This particularly affects refrigerants with a high isentropic exponent, such as the new HFO/HFC blends with lower GWP, which are envisaged as transitional R404A replacement refrigerants.

For these refrigerants in low-temperature applications with suction-gas-cooled semi-hermetic compressors it is important that special technical measures are envisaged for reduction of the discharge temperature!

The suction gas in BOCK air-cooled HA compressors is not heated additionally, but rather fed directly into the cylinders without diversions via the motor. A compact ventilation unit is integrated to cool the motor and provide air flow for the cylinder heads, partially cooling them as well. This solution reduces the discharge temperature, increasing capacity and extending the range of applications.

HA vs. HG R449A discharge temperature



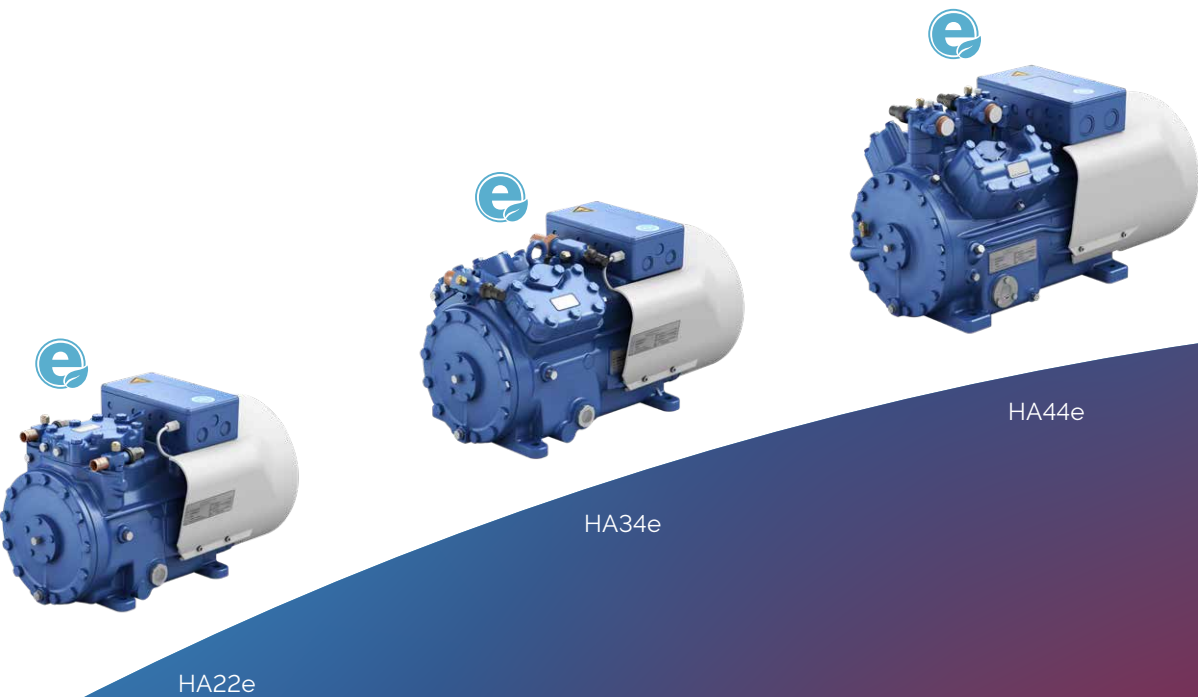
Type key

HAX44e / 465-4

- Number of poles
- Swept volume
- Series ³⁾
- Number of cylinders
- Size
- Ester oil filling ²⁾
- Series ¹⁾

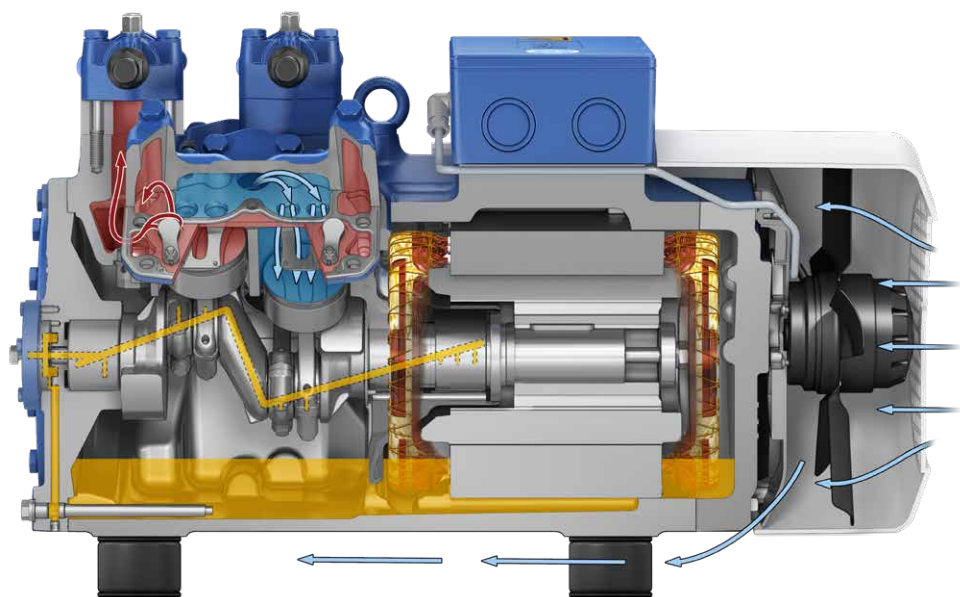
- ¹⁾ HA = Hermetic Air-Cooled (low temperature application)
- ²⁾ X = Ester oil filling
(HFC refrigerants e.g. R134a, R404A, R507, R407C)
- ³⁾ e = Additional marker for e-series compressors
P = Additional marker for Pluscom compressors

HA semi-hermetic compressors
Overview



HA semi-hermetic compressors
Overview

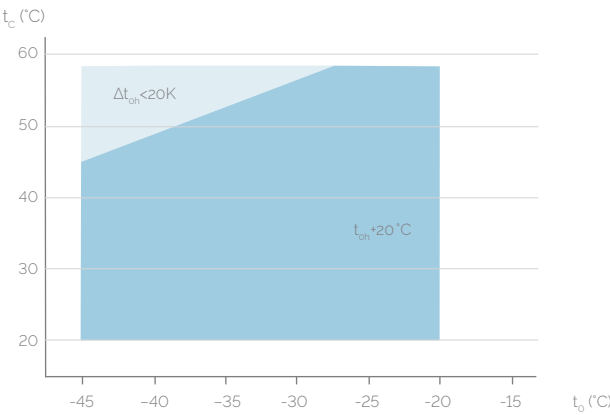
HA44e sectional drawing



HA semi-hermetic compressors

Operating limits

R404A/R507



Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data

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

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 BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R404A/R507 | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [kW]						Power consumption P_e [kW]	
		Evaporating temperature °C						P_e [kW]	
		Cond. temp. °C		-20	-25	-30	-35	-40	-45
HA22e/125-4	30	Q P		4730 191	3800 171	2990 151	2300 131	1720 113	1250 0.94
	40	Q P		3960 2.09	3160 184	2470 160	1880 137	1390 114	978 0.92
	50	Q P		3220 2.21	2540 192	1960 164	1460 136	1040 1.09	690 0.83
HA22e/160-4	30	Q P		5840 2.36	4690 2.11	3690 186	2830 162	2120 139	1540 116
	40	Q P		4890 2.58	3900 2.27	3050 197	2320 169	1710 141	1210 113
	50	Q P		3970 2.73	3140 2.37	2420 2.02	1800 168	1290 1.35	851 1.03
HA22e/190-4	30	Q P		7070 2.86	5670 2.55	4460 2.25	3430 196	2570 168	1870 141
	40	Q P		5920 3.12	4720 2.75	3690 2.39	2810 2.04	2070 1.70	1460 1.37
	50	Q P		4800 3.31	3800 2.87	2930 2.45	2180 2.04	1550 1.64	1030 1.24
HA34e/215-4	30	Q P		8050 3.26	6450 2.90	5080 2.57	3900 2.24	2920 192	2130 160
	40	Q P		6740 3.55	5380 3.13	4200 2.72	3200 2.33	2350 194	1670 156
	50	Q P		5470 3.77	4320 3.27	3330 2.79	2480 2.32	1770 1.86	1180 1.41
HA34e/255-4	30	Q P		9460 3.83	7590 3.42	5970 3.02	4590 2.63	3440 2.26	2500 188
	40	Q P		7920 4.18	6320 3.68	4940 3.20	3760 2.74	2770 2.28	1960 184
	50	Q P		6430 4.43	5080 3.84	3920 3.28	2920 2.73	2080 2.19	1380 1.66
HA34e/315-4	30	Q P		11700 4.73	9370 4.22	7370 3.73	5660 3.25	4240 2.79	3080 2.33
	40	Q P		9780 5.16	7800 4.54	6090 3.95	4640 3.38	3420 2.82	2420 2.27
	50	Q P		7930 5.47	6270 4.75	4830 4.05	3600 3.37	2570 2.71	1710 2.06
HA34e/380-4	30	Q P		14200 5.50	11400 4.96	8910 4.39	6850 3.81	5130 3.22	3730 2.65
	40	Q P		11900 5.95	9440 5.28	7370 4.58	5610 3.86	4130 3.16	2920 2.74
	50	Q P		9600 6.25	7590 5.43	5850 4.59	4360 3.74	3100 3.28	2060 2.07
HA44e/475-4	30	Q P		18700 6.64	15100 6.01	11900 5.35	9100 4.66	6800 3.95	4890 3.24
	40	Q P		15700 7.13	12600 6.32	9760 5.47	7430 4.62	5450 3.76	3810 2.91
	50	Q P		12900 7.44	10200 6.43	7830 5.41	5880 4.39	4230 3.38	2850 2.40
HA44e/565-4	30	Q P		21900 8.08	17600 7.36	13900 6.58	10800 5.77	8040 4.93	5800 4.09
	40	Q P		18400 8.73	14700 7.79	11500 6.82	8770 5.83	6470 4.83	4530 3.84
	50	Q P		15100 9.17	11900 8.02	9230 6.85	6950 5.68	5020 4.52	3400 3.39
HA44e/665-4	30	Q P		25000 9.33	20200 8.43	16000 7.49	12400 6.52	9310 5.53	6750 4.55
	40	Q P		21100 10.10	16900 8.97	13300 7.79	10200 6.60	7480 5.42	5270 4.27
	50	Q P		17200 10.70	13700 9.29	10600 7.87	8010 6.47	5810 5.10	3960 3.78

Relating to 20 °C suction gas temperature without liquid subcooling

Reduced suction gas temperature

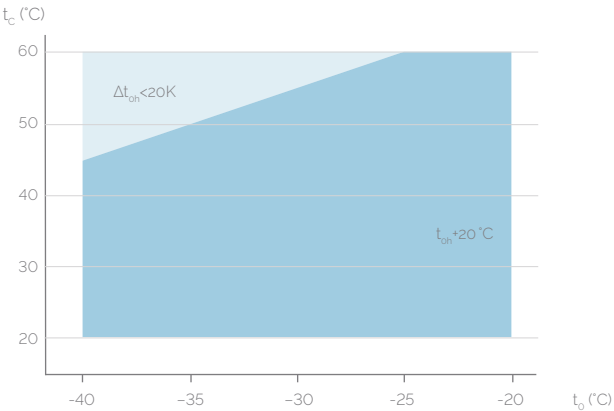


vap.bock.de

HA semi-hermetic compressors

Operating limits

R448A



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

● Unlimited application range
○ Reduced suction gas temperature

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data
The performance data for R448A are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

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 BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R448A | 50 Hz

Type		Cooling capacity Q_o [W]					Power consumption P_e [kW]	
		Cond. temp. °C	Evaporating temperature °C					
			-20	-25	-30	-35	-40	
HA22e/125-4	30	Q	4190	3250	2450	1780	1230	
		P	170	153	136	118	100	
	40	Q	3530	2700	2000	1410	915	
HA22e/160-4	30	Q	181	159	138	116	0.96	
		P	2910	2190	1570	1060	631	
	40	Q	187	162	136	112	0.88	
HA22e/190-4	30	Q	5220	4030	3020	2170	1470	
		P	203	183	162	139	117	
	40	Q	4420	3350	2450	1700	1070	
HA22e/215-4	30	Q	217	190	164	137	110	
		P	3640	2700	1910	1250	691	
	40	Q	225	193	161	130	100	
HA22e/255-4	30	Q	6310	4940	3780	2810	2010	
		P	248	223	197	171	145	
	40	Q	5440	4210	3170	2300	1570	
HA22e/315-4	30	Q	267	235	203	171	140	
		P	4570	3470	2550	1780	1140	
	40	Q	280	241	203	166	130	
HA22e/380-4	30	Q	6790	5230	3920	2810	1900	
		P	259	232	203	174	144	
	40	Q	5690	4300	3120	2130	1310	
HA22e/475-4	30	Q	278	241	204	167	131	
		P	4600	3370	2330	1460	731	
	40	Q	287	241	196	152	110	
HA22e/565-4	30	Q	8250	6410	4850	3540	2460	
		P	316	281	245	208	172	
	40	Q	6980	5340	3960	2800	1840	
HA22e/665-4	30	Q	339	294	249	205	162	
		P	5740	4310	3100	2090	1240	
	40	Q	354	299	246	194	145	
HA22e/775-4	30	Q	10400	8020	6020	4370	3010	
		P	386	344	300	255	212	
	40	Q	8790	6670	4890	3410	2220	
HA22e/880-4	30	Q	416	360	305	251	199	
		P	7190	5320	3770	2490	1460	
	40	Q	434	366	300	236	177	
HA22e/1000-4	30	Q	12700	9820	7430	5430	3780	
		P	476	423	369	314	260	
	40	Q	10800	8220	6070	4260	2770	
HA22e/1125-4	30	Q	517	450	382	315	250	
		P	8860	6600	4690	3090	1760	
	40	Q	544	462	380	301	226	
HA22e/1250-4	30	Q	16300	12600	9480	6890	4750	
		P	579	518	454	387	321	
	40	Q	13900	10600	7750	5420	3490	
HA22e/1400-4	30	Q	621	541	460	378	298	
		P	11500	8500	6040	3970	2250	
	40	Q	647	548	449	352	258	
HA22e/1575-4	30	Q	20200	15700	11900	8740	6130	
		P	706	633	557	478	399	
	40	Q	17400	13400	9920	7070	4710	
HA22e/1750-4	30	Q	763	670	574	478	384	
		P	14600	11000	7950	5420	3310	
	40	Q	802	688	574	461	353	
HA22e/1925-4	30	Q	22800	17800	13600	9960	7030	
		P	806	719	627	534	442	
	40	Q	19700	15100	11300	8100	5450	
HA22e/2100-4	30	Q	876	763	649	536	426	
		P	16500	12500	9090	6270	3910	
	40	Q	927	788	652	519	393	

Relating to 20 °C suction gas temperature without liquid subcooling

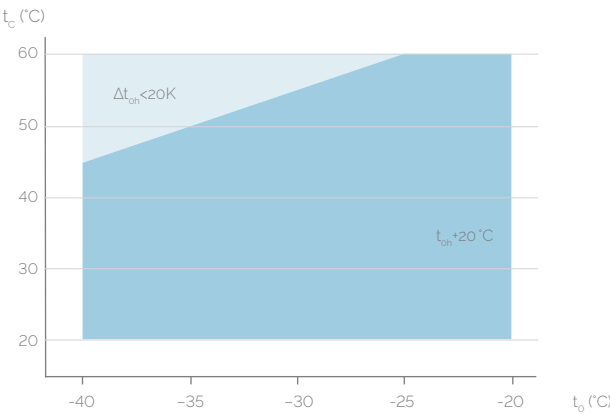
Reduced suction gas temperature



HA semi-hermetic compressors

Operating limits

R449A



to Evaporating temperature (°C)
tc Condensing temperature (°C)
 Δt_{oh} Suction gas superheat (K)
toh Suction gas temperature (°C)

● Unlimited application range
○ Reduced suction gas temperature

Max. permissible operating pressure (LP/HP)¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data
The performance data for R449A are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

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 BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R449A | 50 Hz

Type			Cooling capacity Q _o [W]				Power consumption	
							P _e [kW]	
			Evaporating temperature °C					
Cond. temp. °C			-20	-25	-30	-35	-40	
HA22e/125-4	30	Q	4170	3240	2440	1780	1230	
		P	169	153	135	118	100	
	40	Q	3520	2690	1990	1400	912	
		P	180	159	137	116	0.96	
	50	Q	2890	2170	1570	1060	628	
		P	187	161	136	111	0.88	
HA22e/160-4	30	Q	5200	4010	3010	2160	1470	
		P	203	183	161	139	117	
	40	Q	4400	3340	2440	1690	1070	
		P	216	190	163	136	110	
	50	Q	3620	2680	1900	1240	688	
		P	224	192	160	129	100	
HA22e/190-4	30	Q	6280	4920	3770	2800	2010	
		P	247	222	196	170	144	
	40	Q	5420	4190	3150	2290	1570	
		P	266	234	202	170	140	
	50	Q	4540	3450	2540	1770	1130	
		P	279	240	202	165	130	
HA34e/215-4	30	Q	6760	5220	3900	2810	1900	
		P	259	231	203	174	144	
	40	Q	5670	4280	3110	2130	1310	
		P	276	240	203	167	131	
	50	Q	4580	3350	2320	1450	728	
		P	286	240	196	152	110	
HA34e/255-4	30	Q	8220	6390	4830	3530	2460	
		P	315	280	244	208	172	
	40	Q	6940	5320	3940	2790	1830	
		P	337	293	248	204	162	
	50	Q	5700	4280	3080	2080	1240	
		P	352	298	245	194	145	
HA34e/315-4	30	Q	10400	7990	6010	4360	3010	
		P	385	342	299	255	211	
	40	Q	8740	6640	4870	3400	2210	
		P	414	359	304	250	199	
	50	Q	7150	5290	3750	2480	1450	
		P	432	365	299	236	177	
HA34e/380-4	30	Q	12600	9790	7410	5420	3770	
		P	474	422	368	314	260	
	40	Q	10800	8180	6040	4250	2760	
		P	515	448	381	314	249	
	50	Q	8800	6560	4660	3070	1750	
		P	542	460	379	300	225	
HA44e/475-4	30	Q	16200	12600	9450	6870	4740	
		P	577	516	452	386	320	
	40	Q	13800	10500	7720	5400	3480	
		P	619	539	458	377	297	
	50	Q	11400	8450	6000	3950	2240	
		P	644	546	447	351	258	
HA44e/565-4	30	Q	20100	15700	11900	8720	6120	
		P	703	631	555	477	398	
	40	Q	17300	13300	9880	7050	4690	
		P	760	667	572	477	383	
	50	Q	14500	11000	7910	5390	3290	
		P	799	685	572	460	352	
HA44e/665-4	30	Q	22700	17700	13500	9940	7020	
		P	804	716	626	533	441	
	40	Q	19600	15100	11300	8070	5430	
		P	873	760	647	534	425	
	50	Q	16400	12400	9040	6240	3890	
		P	923	785	649	518	392	

Relating to 20 °C suction gas temperature without liquid subcooling

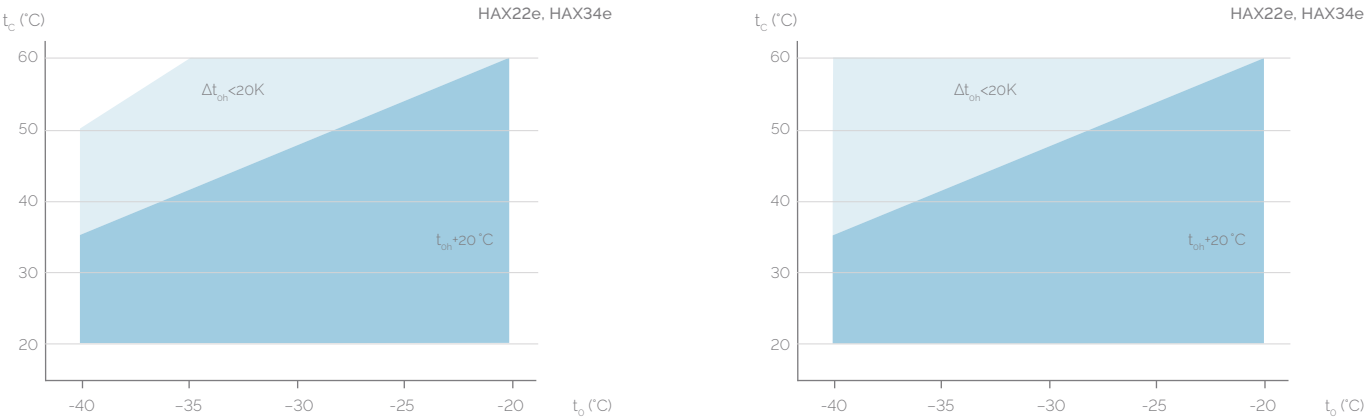
Reduced suction gas temperature



HA semi-hermetic compressors

Operating limits

R407A



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

● Unlimited application range
○ Reduced suction gas temperature

Max. permissible operating pressure (LP/HP) ¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data
The performance data for R407A are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

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 BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R407A | 50 Hz

Type			Cooling capacity Q _o [kW]					Power consumption	
			Evaporating temperature °C					P _e [kW]	
	Cond. temp. °C		-20	-25	-30	-35	-40		
HA22e/125-4	30	Q	4090	3120	2330	1680	1140		
		P	165	148	130	112	0.95		
	40	Q	3460	2600	1900	1310	804		
HA22e/160-4	30	Q	5110	3890	2870	2030	1350		
		P	198	177	154	132	110		
	40	Q	4330	3230	2310	1550	920		
HA22e/190-4	30	Q	6160	4750	3610	2670	1880		
		P	241	215	188	162	136		
	40	Q	5330	4060	3020	2150	1400		
HA34e/215-4	30	Q	6700	5120	3790	2680	1770		
		P	251	225	197	168	139		
	40	Q	5630	4200	3000	2000	1170		
HA34e/255-4	30	Q	8160	6290	4710	3390	2310		
		P	305	271	237	201	166		
	40	Q	6920	5240	3820	2640	1660		
HA34e/315-4	30	Q	10300	7850	5850	4180	2810		
		P	376	333	288	242	197		
	40	Q	8630	6500	4710	3220	1990		
HA34e/380-4	30	Q	12500	9590	7220	5230	3540		
		P	464	410	355	298	242		
	40	Q	10600	8010	5870	4060	2480		
HA44e/475-4	30	Q	15800	12200	9080	6510	4400		
		P	569	508	444	378	311		
	40	Q	13400	10100	7350	5050	3160		
HA44e/565-4	30	Q	19600	15200	11400	8280	5710		
		P	694	622	545	466	388		
	40	Q	16800	12800	9430	6630	4310		
HA44e/665-4	30	Q	22200	17200	13000	9450	6560		
		P	793	705	614	521	429		
	40	Q	19000	14600	10800	7600	5000		
HA44e/665-4	30	Q	15900	11900	8570	5800	3490		
		P	9.03	7.65	6.29	4.97	3.72		

Relating to 20 °C suction gas temperature without liquid subcooling

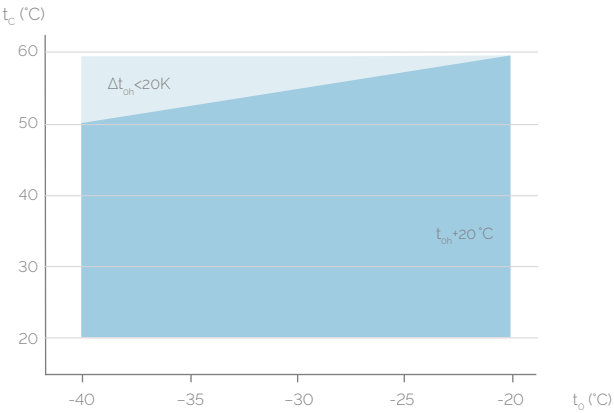
Reduced suction gas temperature

vap.bock.de

HA semi-hermetic compressors

Operating limits

R407F



Notes

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data
The performance data for R407F are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

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 BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R407F | 50 Hz

Type	Cond. temp. °C		Cooling capacity Q _o [kW]					Power consumption P _e [kW]	
			Evaporating temperature °C						
			-20	-25	-30	-35	-40		
HA22e/125-4	30	Q	4300	3270	2420	1730	1190		
		P	172	154	135	117	100		
	40	Q	3670	2740	1990	1380	912		
HA22e/160-4		P	184	160	137	115	0.96		
	50	Q	3030	2220	1570	1060	669		
		P	190	162	135	111	0.90		
HA22e/190-4	30	Q	5370	4060	2980	2110	1420		
		P	206	184	161	138	117		
	40	Q	4590	3400	2440	1660	1060		
HA22e/215-4		P	220	191	162	136	111		
	50	Q	3790	2750	1900	1230	722		
		P	228	193	159	129	102		
HA22e/255-4	30	Q	6490	4990	3750	2740	1960		
		P	252	224	196	170	145		
	40	Q	5660	4280	3160	2260	1580		
HA22e/315-4		P	272	236	202	170	141		
	50	Q	4770	3540	2550	1780	1210		
		P	284	241	201	165	133		
HA34e/215-4	30	Q	7030	5370	3970	2820	1910		
		P	267	237	206	175	145		
	40	Q	5930	4440	3180	2150	1330		
HA34e/255-4		P	286	247	207	168	132		
	50	Q	4800	3480	2360	1450	726		
		P	294	245	197	151	109		
HA34e/315-4	30	Q	8540	6570	4920	3560	2480		
		P	325	287	248	209	173		
	40	Q	7270	5510	4040	2840	1880		
HA34e/380-4		P	349	300	252	206	164		
	50	Q	6000	4450	3170	2120	1290		
		P	363	305	248	194	146		
HA44e/475-4	30	Q	10800	8160	6000	4240	2860		
		P	403	353	303	254	209		
	40	Q	9110	6770	4860	3320	2120		
HA44e/565-4		P	433	369	307	249	197		
	50	Q	7460	5410	3760	2450	1450		
		P	450	373	301	235	178		
HA44e/665-4	30	Q	13100	9990	7400	5280	3580		
		P	497	436	374	314	257		
	40	Q	11200	8350	6030	4140	2630		
HA44e/765-4		P	538	461	385	313	247		
	50	Q	9190	6700	4650	3010	1720		
		P	564	471	382	300	225		
HA44e/865-4	30	Q	17000	13000	9640	6910	4670		
		P	599	534	465	395	325		
	40	Q	14500	11000	7980	5560	3570		
HA44e/965-4		P	642	559	475	393	313		
	50	Q	11900	8800	6260	4170	2460		
		P	668	567	469	375	287		
HA44e/1065-4	30	Q	21100	16200	12100	8770	6050		
		P	730	652	572	489	405		
	40	Q	18200	13900	10300	7270	4850		
HA44e/1165-4		P	788	691	594	499	406		
	50	Q	15200	11400	8270	5730	3640		
		P	828	713	601	494	394		
HA44e/1265-4	30	Q	23900	18300	13800	10100	6950		
		P	835	742	645	547	449		
	40	Q	20600	15700	11700	8350	5620		
HA44e/1365-4		P	907	790	673	560	453		
	50	Q	17200	13000	9480	6650	4310		
		P	959	819	686	560	445		

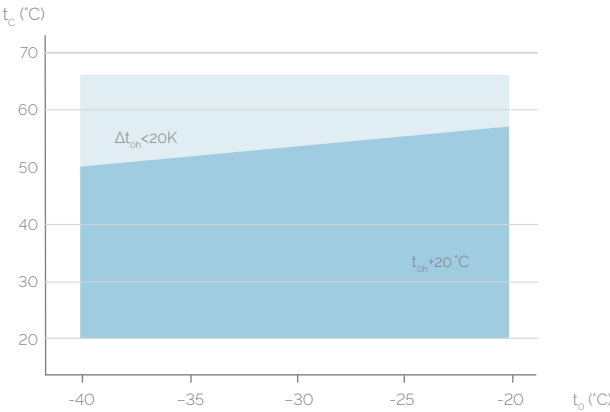
Relating to 20 °C suction gas temperature without liquid subcooling



HA semi-hermetic compressors

Operating limits

R22



R22 Notes

Operating limits

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

Restrictions to operating limits may occur when using a frequency converter. For further explanations consult www.bock.de.

Performance data

The performance data for R22 are based on European Standard EN 12900 with a 50 Hz power supply frequency. This signifies: 20 °C suction gas temperature without liquid subcooling.

This results in significant differences compared to specifications with liquid undercooling and/or suction-gas temperatures. A comprehensive modification to 20 °C suction gas temperature will follow at a later date.

Conversion factor for 60 Hz = 1.2
Performance data for other operating points, see BOCK VAP software (vap.bock.de).

HA semi-hermetic compressors

Performance data

R22 | 50 Hz

Type			Cooling capacity Q_o [kW]					Power consumption	
								P_e [kW]	
	Cond. temp. °C		Evaporating temperature °C						
HA22e/125-4	30	Q	4270	3360	2590	1930	1390		
		P	173	158	142	126	109		
	40	Q	3710	2890	2190	1600	1100		
HA22e/160-4	30	Q	186	167	147	127	107		
		P	3180	2440	1820	1290	836		
	50	Q	196	173	149	125	103		
HA22e/190-4	30	Q	5330	4180	3200	2370	1680		
		P	207	189	170	150	129		
	40	Q	4650	3600	2700	1950	1310		
HA22e/215-4	30	Q	223	200	175	150	126		
		P	3980	3040	2230	1540	960		
	50	Q	235	206	177	148	119		
HA22e/255-4	30	Q	6400	5080	3960	3010	2230		
		P	252	229	206	182	157		
	40	Q	5670	4460	3430	2560	1840		
HA22e/315-4	30	Q	274	245	215	186	157		
		P	4950	3840	2910	2120	1450		
	50	Q	292	256	221	186	152		
HA34e/215-4	30	Q	6950	5450	4180	3100	2200		
		P	265	241	215	189	162		
	40	Q	6030	4660	3490	2500	1670		
HA34e/255-4	30	Q	287	255	222	188	154		
		P	5110	3870	2800	1900	1140		
	50	Q	304	263	221	180	141		
HA34e/315-4	30	Q	8420	6640	5130	3850	2780		
		P	322	290	258	224	191		
	40	Q	7340	5720	4350	3190	2220		
HA34e/380-4	30	Q	349	309	268	227	186		
		P	6290	4840	3600	2560	1680		
	50	Q	371	321	272	223	177		
HA44e/475-4	30	Q	10600	8310	6380	4750	3410		
		P	392	355	315	275	235		
	40	Q	9240	7150	5390	3910	2690		
HA44e/565-4	30	Q	429	379	328	278	229		
		P	7890	6010	4420	3090	1990		
	50	Q	456	394	332	273	216		
HA44e/665-4	30	Q	12900	10200	7830	5880	4250		
		P	482	435	386	336	285		
	40	Q	11300	8780	6650	4850	3350		
HA44e/775-4	30	Q	531	470	408	345	284		
		P	9670	7400	5460	3820	2430		
	50	Q	568	492	417	343	271		
HA44e/885-4	30	Q	16600	13100	10100	7510	5390		
		P	588	535	477	417	356		
	40	Q	14600	11300	8550	6220	4270		
HA44e/995-4	30	Q	640	569	495	419	344		
		P	12600	9580	7070	4940	3150		
	50	Q	679	589	498	408	319		
HA44e/1105-4	30	Q	20500	16200	12500	9420	6850		
		P	715	651	582	510	437		
	40	Q	18100	14200	10900	7970	5590		
HA44e/1215-4	30	Q	783	698	611	523	434		
		P	15800	12200	9120	6520	4330		
	50	Q	835	731	626	521	418		
HA44e/1325-4	30	Q	23200	18400	14300	10800	7850		
		P	817	739	657	572	486		
	40	Q	20500	16100	12300	9120	6450		
HA44e/1435-4	30	Q	899	797	692	587	484		
		P	17900	13900	10500	7520	5070		
	50	Q	965	838	712	588	468		

Relating to 20 °C suction gas temperature without liquid subcooling

Reduced suction gas temperature



HA semi-hermetic compressors

Technical data

HA																	
Type	Number of cylinders	Displacement		Electrical data							Weight	Connections ⁵⁾				Oil charge	Fre- quency range
				Voltage ¹⁾	Max. Working current ²⁾		Max. Power consumption ²⁾		Starting current (rotor locked)			Discharge line DV	Suction line SV				
		m³/h			A		kW		A		kg						
		50 Hz 1450 rpm	60 Hz 1740 rpm		Δ	Y		Δ	Y		mm	inch	mm	inch	Ltr.	Hz	
HA22e/125-4	2	11.10	13.30	3)	8.1	4.7	2.4	69	40	75.5	12	1½	16	5⁄8	0.9	30–70	
HA22e/160-4	2	13.70	16.40	3)	9.6	5.5	2.9	87	50	77.5	12	1½	16	5⁄8	0.9	30–70	
HA22e/190-4	2	16.50	19.80	3)	10.9	6.3	3.5	87	50	76.5	12	1½	16	5⁄8	0.9	30–70	
HA34e/215-4	4	18.80	22.60	3)	12.1	7.0	4.0	87	50	94.0	16	5⁄8	22	7⁄8	1.2	25–70	
HA34e/255-4	4	22.10	26.60	3)	13.8	8.0	4.7	87	50	93.5	16	5⁄8	22	7⁄8	1.2	25–70	
HA34e/315-4	4	27.30	32.80	3)	17.1	9.9	5.8	111	64	96.5	16	5⁄8	22	7⁄8	1.2	25–70	
HA34e/380-4	4	33.10	39.70	3)	19.4	11.2	6.4	132	76	96.0	16	5⁄8	22	7⁄8	1.2	25–70	
					PW 1+2*			PW1/PW1+2*									
HA44e/475-4	4	41.30	49.60	4)	15.2		7.6	87	149	174.0	28	1 1⁄8	35	1 3⁄8	2.3	25–70	
HA44e/565-4	4	49.20	59.00	4)	18.3		9.4	101	174	178.5	28	1 1⁄8	35	1 3⁄8	2.3	25–70	
HA44e/665-4	4	57.70	69.30	4)	20.3		11.0	101	174	173.5	28	1 1⁄8	35	1 3⁄8	2.3	25–70	

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

Explanations

- 1) Tolerance (± 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 50 Hz operation. For 60 Hz 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

Oil sump heater 110-240 V - 1 - 50 / 60 Hz (option)

- HA22e, HA34e: 50-120 W
- PTC heater, self-regulating, installation in housing bore

Oil sump heater 230 V - 1 - 50 / 60 Hz (option)

- HA44e: 160 W
- Permanently set version, installation in immersion sleeve

- 3) 220 – 240 V Δ / 380 – 420 V Y - 3 - 50 Hz,
265 – 290 V Δ / 440 – 480 V Y - 3 - 60 Hz
- 4) PW = Part Winding, motors for part winding start (no start unloaders required)
• Winding ratios: HA44e = 50 % / 50 %
• Designs for Y/Δ on request
- 5) For soldering connections

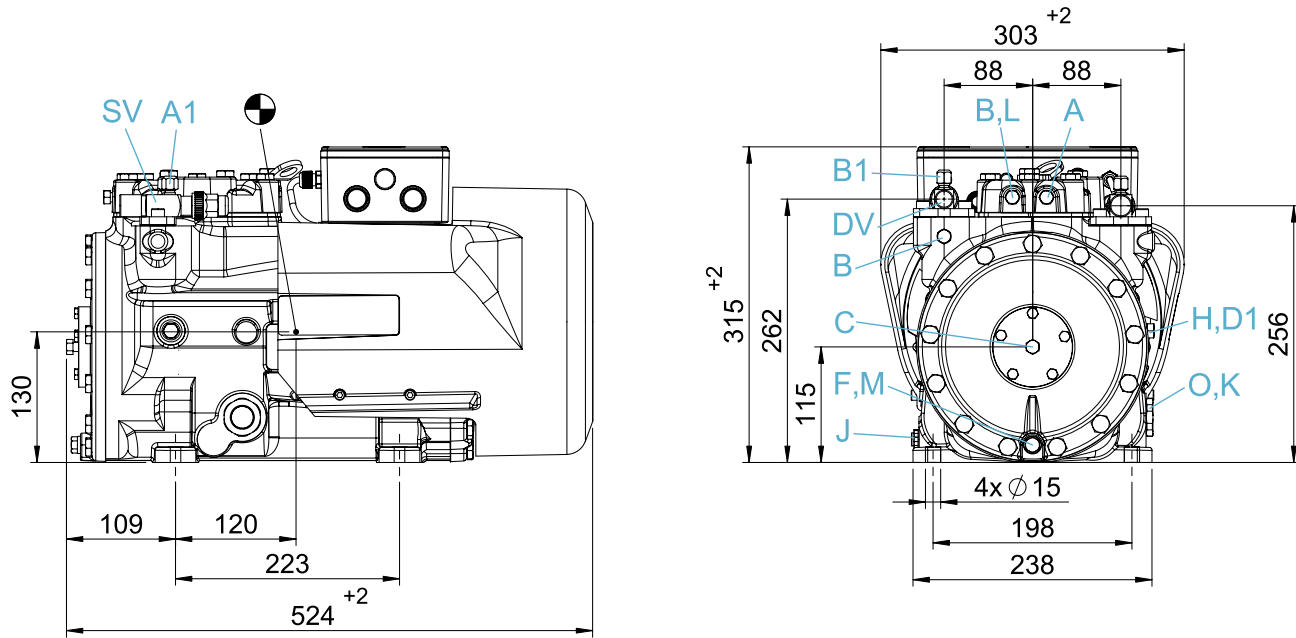
Fan motors for the HA version 230 V - 1 - 50/60 Hz

- HA22e, HA34e: 38 W / 0.17 A
- HA44e: 140 W / 0.71 A

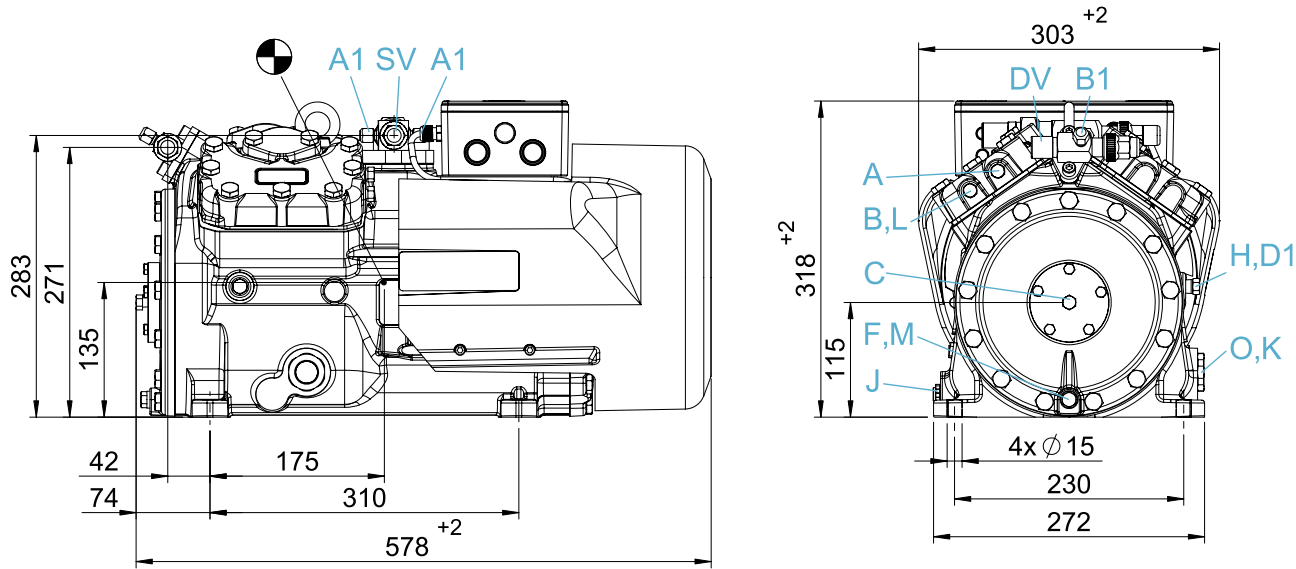
HA semi-hermetic compressors

Dimensions and connections

HA22e » HA22e/125-4 » HA22e/160-4 » HA22e/190-4



HA34e » HA34e/215-4 » HA34e/255-4 » HA34e/315-4 » HA34e/380-4



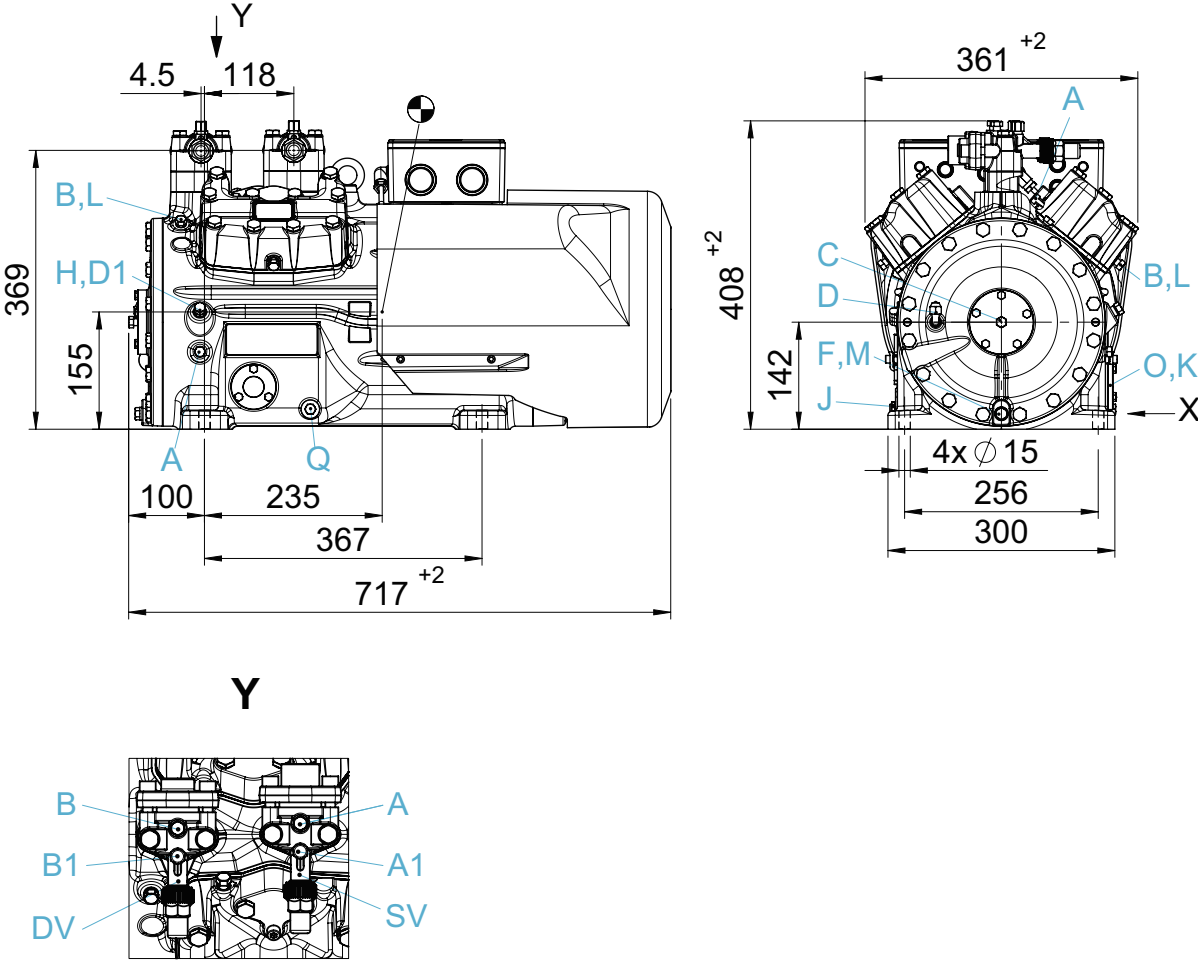
Dimensions in mm
Center of gravity

Connections see page 93
Dimensions for anti-vibration pad see page 91
Dimensions for view X see page 91

HA semi-hermetic compressors

Dimensions and connections

HA44e » HA44e/475-4 » HA44e/565-4 » HA44e/665-4



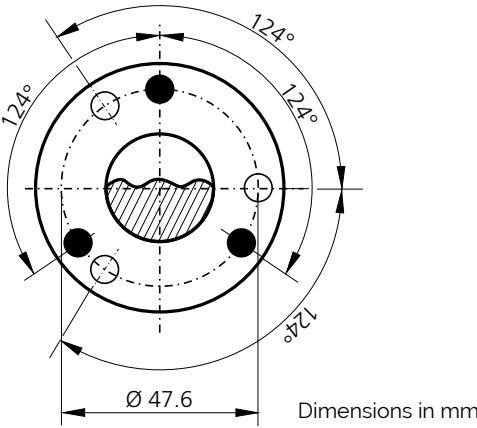
Dimensions in mm
● Center of gravity

Connections see page 93
Dimensions for anti-vibration pad see page 91
Dimensions for view X see page 91

HA semi-hermetic compressors

Dimensions and connections

View X



Possibility to connect to oil level regulator

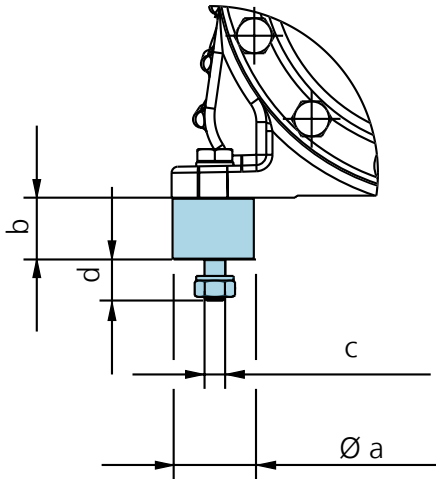
HA44e

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

Dimensions for anti-vibration pad

Type	Ø a	b	c	d
HA22e	40	30	M10	20
HA34e	40	30	M10	20
HA44e	50	30	M12	25

Dimensions in mm

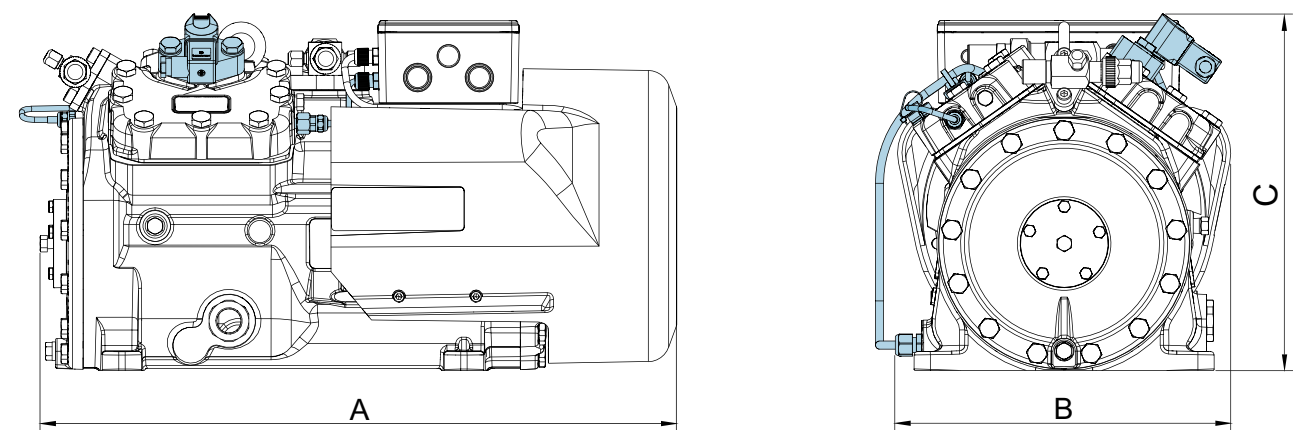


HA semi-hermetic compressors

Dimensions and connections

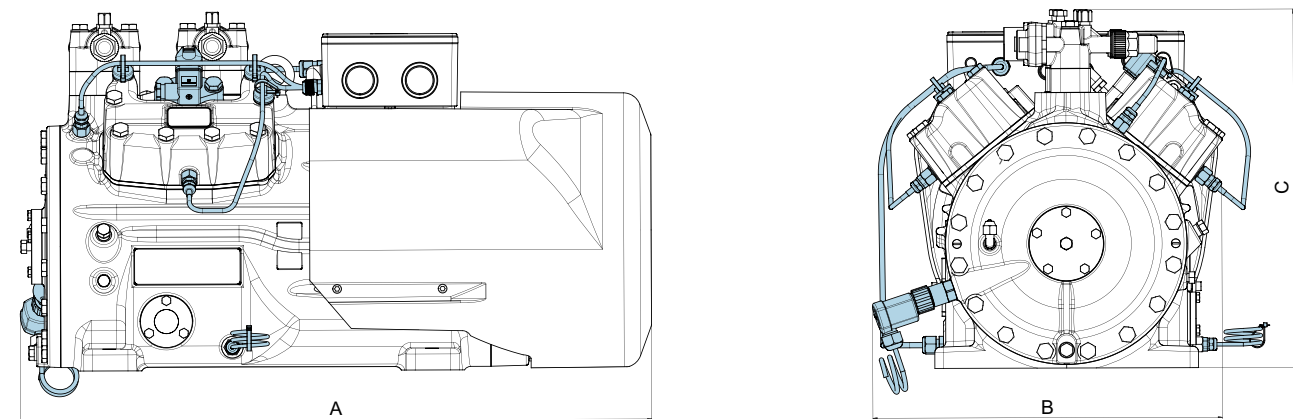
HA22e HA34e

Dimensions with accessories



HA44e

Dimensions with accessories



Type	A	B	C
HA22e	ca. 525	ca. 305	ca. 315
HA34e	ca. 600	ca. 305	ca. 325
HA44e	ca. 720	ca. 400	ca. 410

Dimensions in mm

HA semi-hermetic compressors

Connections

HA22e HA34e HA44e

Connections		HA22e	HA34e	HA44e
SV	Suction line	Please refer to technical data page 88		
DV	Discharge line			
A	Connection suction side, not lockable	1/8" NPTF	1/8" NPTF	1/8" NPTF
A1	Connection suction side, lockable	7/16" UNF	7/16" UNF	7/16" UNF
B	Connection discharge side, not lockable	1/8" NPTF	1/8" NPTF	1/8" NPTF
B1	Connection discharge side, lockable	7/16" UNF	7/16" UNF	7/16" UNF
C	Connection oil pressure safety switch HP	1/8" NPTF	1/8" NPTF	1/8" NPTF
D	Connection oil pressure safety switch LP	-	-	7/16" UNF
D1	Connection oil return from oil separator	1/4" NPTF	1/4" NPTF	1/4" NPTF
F	Oil drain plug	M12 x 15	M12 x 15	M12 x 15
H	Oil charge plug	1/4" NPTF	1/4" NPTF	1/4" NPTF
J	Connection oil sump heater	3/8" NPTF	3/8" NPTF	3/8" NPTF
K	Sight glass	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	3 hole M6
L	Connection thermal protection thermostat	1/8" NPTF	1/8" NPTF	1/8" NPTF
M	Oil strainer	M12 x 15	M12 x 15	M12 x 15
O	Connection oil level regulator	1 1/8" - 18 UNEF	1 1/8" - 18 UNEF	3 hole M6
Q	Connection oil temperature sensor	-	-	1/8" NPTF

HA semi-hermetic compressors

Scope of supply and accessories

	HA22e	HA34e	HA44e
Semi-hermetic two-cylinder reciprocating compressor with drive motor for direct start 220–240 V Δ / 380–420 V Y - 3 - 50 Hz 265–290 V Δ / 440–480 V Y - 3 - 60 Hz	●	–	–
Semi-hermetic four-cylinder reciprocating compressor with drive motor for direct start 220–240 V Δ / 380–420 V Y - 3 - 50 Hz 265–290 V Δ / 440–480 V Y - 3 - 60 Hz	–	●	–
Semi-hermetic four-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380–420 V Y/YY - 3 - 50 Hz 440–480 V Y/YY - 3 - 60 Hz	–	–	●
Special voltage and/or frequency	○ ³⁾	○ ³⁾	○ ³⁾
Motor is cooled by an integrated fan with air deflection hood 230 V - 1 - 50 / 60 Hz, IP44 38 W, 0.17	●	●	–
Motor is cooled by an integrated fan with air deflection hood 230 V - 1 - 50 / 60 Hz, IP44 140 W, 0.71 A	–	–	●
Winding protection with PTC resistor sensors with electronic triggering unit INT69 G	●	●	●
1 Thermal protection PTC	○ ²⁾	○ ²⁾	○ ²⁾
Oil pump	●	●	●
Oil charge: HA: FUCHS Reniso SP46, HAX: FUCHS Reniso Triton SE55	●	●	●
Inert gas charge	●	●	●
4 anti-vibration pads	● ¹⁾	● ¹⁾	● ¹⁾
Internal safety valve	–	–	●
Suction and discharge line valve	●	●	●
Sight glasses	●	●	●
2 Oil sump heater 110–240 V - 1 - 50 / 60 Hz, 50–120 W, PTC heater, self-regulating	○ ²⁾	○ ²⁾	–
220–240 V - 1 - 50 / 60 Hz, 160 W	–	–	○ ²⁾
Rear bearing flange prepared for oil differential pressure sensor	–	–	○ ²⁾
3 Oil differential pressure sensor DELTA-P II 220–240 V - 1 - 50 / 60 Hz	–	–	○ ¹⁾
4 Oil pressure safety switch 230 V - 1 - 50/60 Hz, IP20 MP54	–	–	○ ¹⁾
230 V - 1 - 50/60 Hz, IP20 MP55	○ ¹⁾	○ ¹⁾	–
6 Capacity regulator 230 V - 1 - 50/60 Hz, IP65 1 capacity regulator = 50 % residual capacity	–	○ ²⁾	○ ²⁾

¹⁾ Enclosed ²⁾ Mounted ³⁾ On request
⁴⁾ Only possible with additional adapter

● Scope of supply (standard)
○ Available accessories



● Pictures see page 67/68

HA semi-hermetic compressors

Scope of supply and accessories

	HA22e	HA34e	HA44e
7 Prepared for capacity regulator (1 cylinder cover)	–	○ ²⁾	○ ²⁾
8 Oil temperature sensor	–	–	○ ²⁾
Start unloader by means of ESS (Electronic Soft Start) 9 400 V - 3 - 50 / 60 Hz, IP20, (connection clamps IP00) for installation in switch cabinet	○ ¹⁾	○ ¹⁾	○ ¹⁾
12 Intermediate flange for discharge line valve on right or left, seen from oil pump	–	–	○ ¹⁾
13 INT69 G Diagnose 115 / 230 V Ac, 50 / 60 Hz, IP00 (INT69 G not applicable)	○ ²⁾	○ ²⁾	○ ²⁾
15 DP – modbus gateway 115 / 230 V Ac, 50 / 60 Hz, IP00 incl. adapter cable	○ ¹⁾	○ ¹⁾	○ ¹⁾
16 Modbus – LAN gateway 230 V Ac, 50 / 60 Hz, IP00	○ ¹⁾	○ ¹⁾	○ ¹⁾
17 USB converter for INT69 G Diagnose and INT69 GTML Diagnose	○ ¹⁾	○ ¹⁾	○ ¹⁾
Connection for oil level regulator of brands ESK, AC+ R or CARLY	● ⁴⁾	● ⁴⁾	●
Connection for oil level regulator of brand Traxoil	● ⁴⁾	● ⁴⁾	● ⁴⁾

¹⁾ Enclosed ²⁾ Mounted ³⁾ On request
⁴⁾ Only possible with additional adapter

● Scope of supply (standard)
○ Available accessories



● Pictures see page 67/68

Bock HGZ semi-hermetic compressors

Bock HGZ7 two-stage

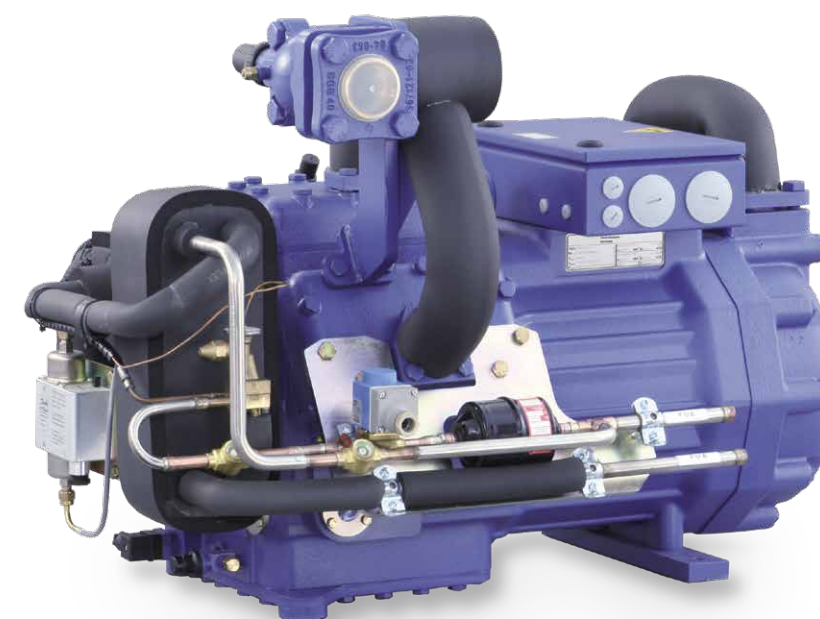
98 At a glance

100 Operating limits and performance data

104 Technical data

104 Dimensions and connections

107 Scope of supply & accessories



Bock HGZ two-stage semi-hermetic compressors

A two-stage variant based on the Bock HG semi-hermetic 6-cylinder range is available for extended use in the domain of deep-freezing.

The two stage system consists of:

- Liquid subcooler
- Re-injection valve
- Solenoid valve
- Sight glass
- Filter drier

Special features:

- 6-cylinder design
- LP/HP stage ratio 2:1
- 2-stage operation with liquid subcooler
- Re-injection valve adapted to refrigerant and application
- Extremely reliable and economic compressor design

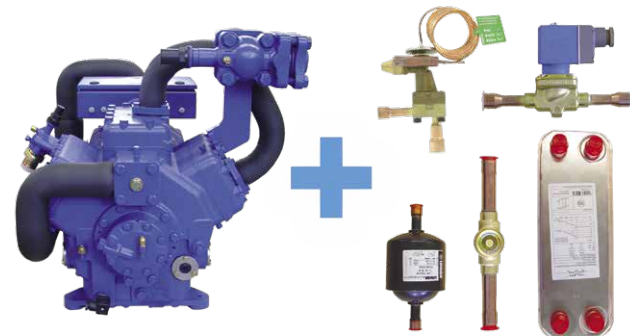
For more information on the HG7 basic compressor see chapter "Single-stage semi-hermetic BOCK compressors".

Type	Displacement (50 Hz) LP	Displacement (50 Hz) HP
HGZ7/1620-4 R448A/R449A HGZX7/1620-4 R404A/R507 HGZX7/1620-4 R410A HGZ7/1620-4 R22	93.70 m³/h	46.90 m³/h
HGZ7/1860-4 R448A/R449A HGZX7/1860-4 R404A/R507 HGZX7/1860-4 R410A HGZ7/1860-4 R22	107.60 m³/h	53.80 m³/h
HGZ7/2110-4 R448A/R449A HGZX7/2110-4 R404A/R507 HGZX7/2110-4 R410A HGZ7/2110-4 R22	122.40 m³/h	61.20 m³/h

The two possible designs of the HGZ7

Design version: everything enclosed separately

Medium-pressure mixed line mounted on the compressor. Insulated, liquid subcooler, expansion valve, solenoid valve, sight glass, filter drier, everything enclosed separately for individual, external mounting.



Design version: mounted directly to the compressor

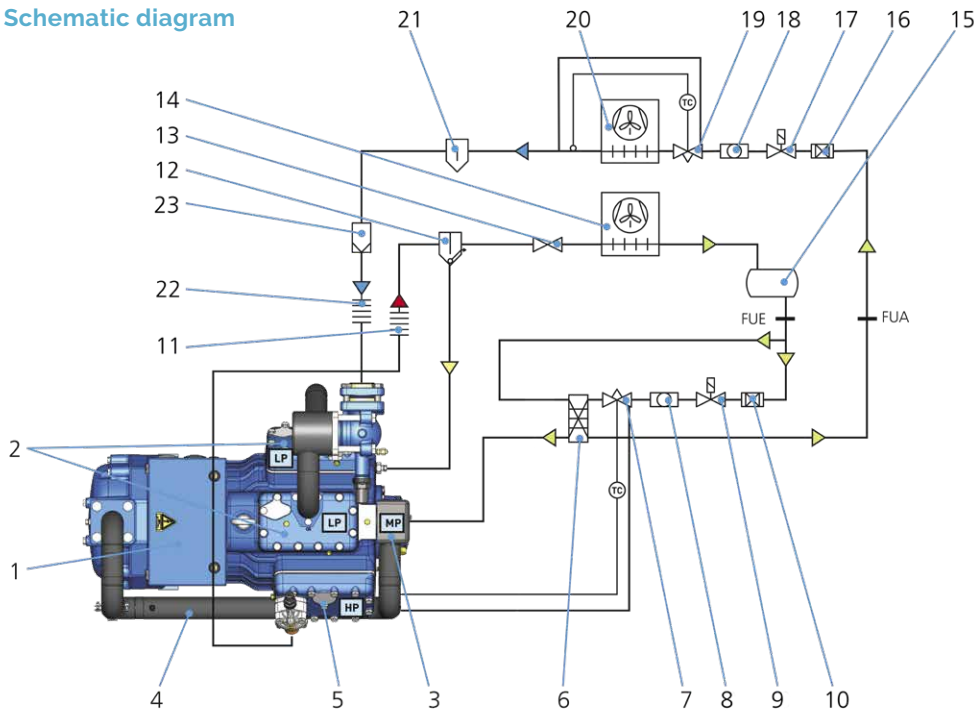
Liquid subcooler, expansion valve, solenoid valve, sight glass, filter dryer mounted directly to the compressor, lined and insulated.



Image similar

HGZ two-stage semi-hermetic compressors Spezial features

Refrigeration circuit with
two-stage compressor – Schematic diagram



Explanations

- | | | |
|-------------------------------------|-------------------------------------|------------------------------------|
| 1) Compressor | 11) Vibration damper, pressure line | 21) Liquid separator |
| 2) Cylinder LP-stage | 12) Oil separator | 22) Vibration damper, suction line |
| 3) Intermediate pressure chamber MP | 13) Non-return valve | 23) Filter suction line |
| 4) Intermediate pressure line MP | 14) Condenser | |
| 5) Cylinder HP-stage | 15) Refrigerant receiver | |
| 6) Subcooler* | 16) Filter drier | |
| 7) Re-injection valve* | 17) Solenoid valve | |
| 8) Sight glass* | 18) Sight glass | |
| 9) Solenoid valve* | 19) Expansion valve (evaporator) | |
| 10) Filter drier* | 20) Evaporator | |
- LP = Low pressure
MP = Medium pressure
HP = High pressure
FUE = Liquid subcooler, inlet
FUA = Liquid subcooler, outlet

* Components for subcooling system not supplied as standard

Type key

HGZX7 / 2110 - 4R404A

- | | |
|--------|---|
| 1) HGZ | = Hermetic Gas-Cooled (suction-gas-cooled), two-stage |
| 2) X | = Ester oil filling (HFC refrigerants R404A, R410A) |
| 3) e | = Possible refrigerants are R404A, R410A, R22 |
- Refrigerant ³⁾
Number of poles
Swept volume
Size
Ester oil filling ²⁾
Series ¹⁾

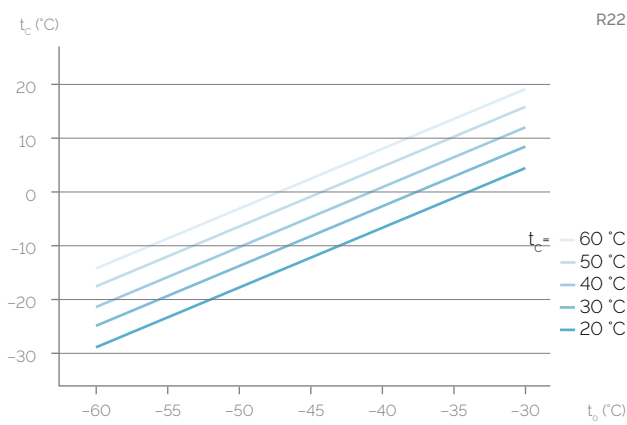
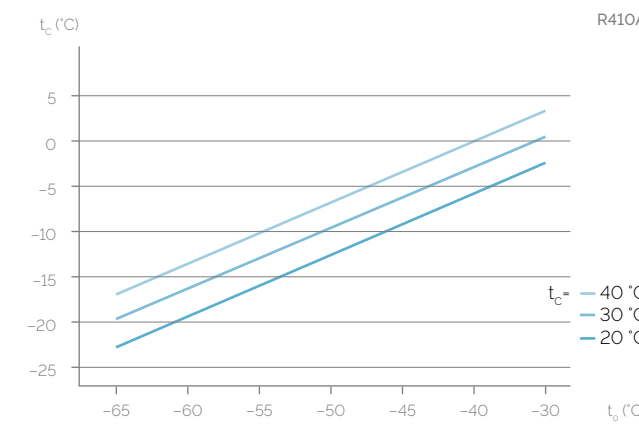
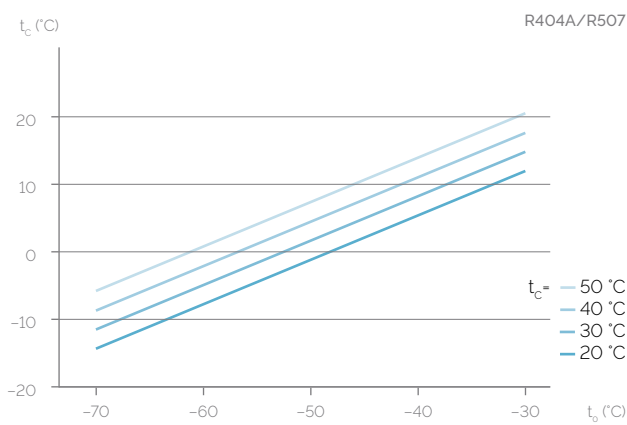
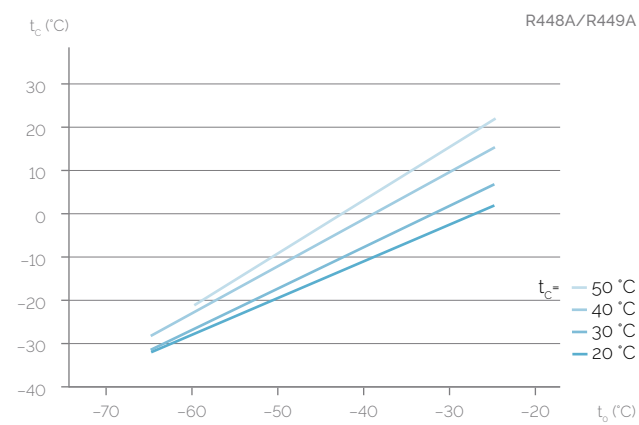
HGZ two-stage semi-hermetic compressors

Operating limits

Subcooling temperature

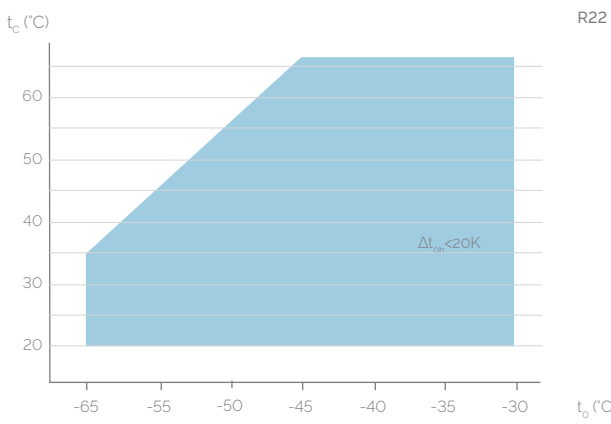
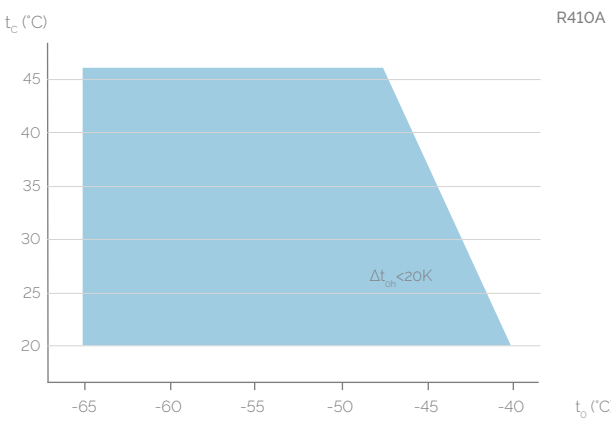
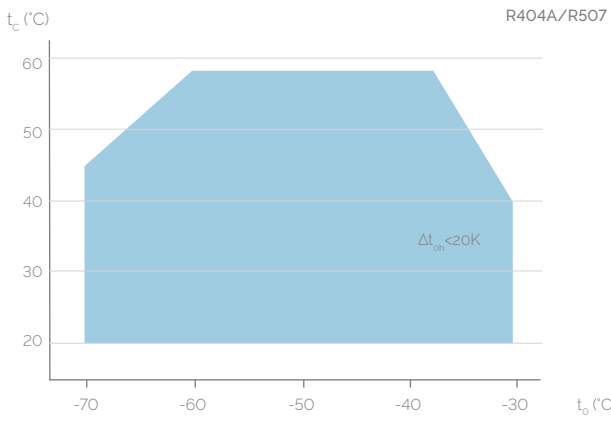
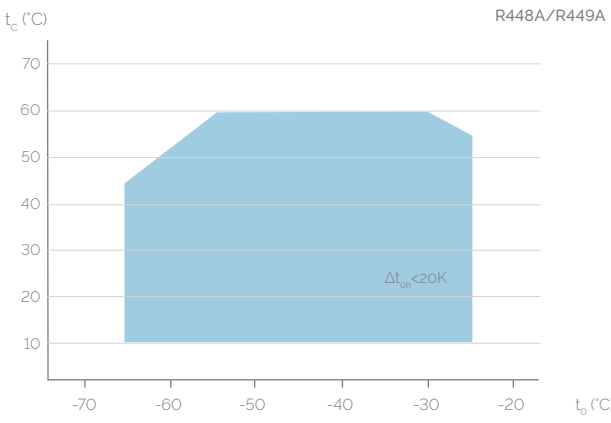
Defined with the help of the diagram by approximately calculating the subcooling temperature arising in the relevant operating conditions (t_o/t_c).

Subcooling temperature calculation diagram for the intermediate cooler outlet



HGZ two-stage semi-hermetic compressors

Operating limits



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

● Application range

Max. permissible operating pressure (LP/HP) ¹⁾: 19/28 bar
¹⁾ LP = low pressure, HP = high pressure

Notes

Operating limits

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

Performance data

The stated performance values are based on 10 K suction gas superheat with liquid subcooling, operating at 50 Hz.

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

Conversion factor für 60 Hz = 1.2
Performance data for other operating points, see BOCK VAP software (vap.bock.de).

HGZ two-stage semi-hermetic compressors

Performance data

R448A | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [W]							Power consumption	
									P_e [kW]	
		Evaporating temperature °C								
Cond. temp. °C		-30	-35	-40	-45	-50	-55	-60		
HGZX7/1620-4	30	Q P 30500 1710	25000 1550	19900 1390	15500 1230	11700 1080	8650 951	6420 832		
	40	Q P 28900 1910	23700 1720	19000 1540	14900 1360	11400 1200	8460 1040	6360 906		
	50	Q P 27000 2100	22300 1900	18000 1700	14200 1510	10900 1320	8260 1150	6330 995		
HGZX7/1860-4	30	Q P 35100 1970	28700 1780	22900 1590	17800 1410	13500 1240	9930 1090	7370 956		
	40	Q P 33100 2190	27200 1980	21800 1770	17100 1570	13000 1380	9720 1200	7300 1040		
	50	Q P 31000 2420	25600 2180	20600 1960	16300 1730	12500 1520	9480 1320	7270 1140		
HGZX7/2110-4	30	Q P 39900 2240	32600 2020	26000 1810	20200 1610	15300 1410	11300 1240	8380 1080		
	40	Q P 37700 2490	31000 2250	24800 2020	19400 1780	14800 1560	11100 1360	8310 1180		
	50	Q P 35200 2750	29100 2490	23500 2230	18500 1970	14200 1730	10800 1500	8260 1300		

R449A | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [W]							Power consumption	
									P_e [kW]	
		Evaporating temperature °C								
Cond. temp. °C		-30	-35	-40	-45	-50	-55	-60		
HGZX7/1620-4	30	Q P 30500 1700	24900 1540	19900 1380	15500 1230	11700 1080	8660 949	6430 831		
	40	Q P 28800 1900	23700 1720	19000 1540	14900 1360	11400 1190	8470 1040	6370 905		
	50	Q P 26900 2090	22200 1890	17900 1700	14100 1500	10900 1320	8260 1150	6340 993		
HGZX7/1860-4	30	Q P 35000 1960	28600 1770	22900 1590	17800 1410	13500 1240	9950 1090	7390 955		
	40	Q P 33000 2180	27200 1970	21800 1760	17100 1560	13000 1370	9730 1190	7320 1030		
	50	Q P 30800 2400	25500 2180	20600 1950	16200 1730	12500 1510	9490 1320	7280 1140		
HGZX7/2110-4	30	Q P 39800 2230	32500 2020	26000 1810	20200 1600	15300 1410	11400 1240	8400 1080		
	40	Q P 37600 2480	30900 2240	24800 2010	19400 1780	14800 1560	11100 1360	8330 1180		
	50	Q P 35100 2740	29000 2480	23400 2220	18500 1960	14200 1720	10800 1500	8280 1290		

R404A/R507 | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [W]								Power consumption		
										P_e [kW]		
		Evaporating temperature °C										
Cond. temp. °C		-30	-35	-40	-45	-50	-55	-60	-65	-70		
HGZX7/1620-4	30	Q P 34869 2117	28471 1941	23098 1763	18628 1584	14936 1405	11899 1231	9394 1061	7296 899	5482 746		
	40	Q P 33437 2342	27315 2142	22181 1940	17910 1739	14380 1541	11467 1348	9047 1161	6997 984	5192 817		
	50	Q P -	25860 2349	20950 2124	16866 1902	13484 1684	10680 1472	8332 1268	6315 1075	-	-	
HGZX7/1860-4	30	Q P 40042 2431	32694 2229	26525 2024	21391 1818	17152 1614	13665 1413	10787 1219	8378 1032	6294 856		
	40	Q P 38397 2690	31367 2460	25471 2228	20567 1997	16514 1770	13169 1548	10390 1334	8035 1130	5962 938		
	50	Q P -	29696 2698	24057 2439	19367 2184	15484 1933	12265 1690	9568 1456	7252 1235	-	-	
HGZX7/2110-4	30	Q P 45550 2766	37191 2536	30173 2303	24334 2069	19511 1836	15544 1608	12271 1386	9530 1174	7160 974		
	40	Q P 43679 3060	35681 2798	28974 2534	23396 2272	18785 2013	14980 1761	11819 1517	9140 1285	6782 1067		
	50	Q P -	33780 3069	27366 2775	22031 2484	17614 2199	13952 1923	10884 1657	8249 1404	-	-	

HGZ two-stage semi-hermetic compressors

Performance data

R410A | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [W]					Power consumption	
							P_e [kW]	
		Evaporating temperature °C						
Cond. temp. °C		-45	-50	-55	-60	-65		
HGZX7/1620-4	30	Q P 25354 2289	19967 2080	15285 1867	11396 1643	8385 1400		
	50	Q P - -	19131 2287	14630 2063	10868 1825	7930 1568		
HGZX7/1860-4	30	Q P 29182 2628	22859 2389	17530 2144	13136 1887	9614 1608		
	50	Q P - -	21959 2626	16774 2368	12508 2096	9101 1800		
HGZX7/2110-4	30	Q P 33195 2990	26003 2717	19941 2439	14943 2146	10937 1829		
	50	Q P - -	24980 2987	19082 2694	14229 2384	10352 2048		

R449A | 50 Hz

Type		Cooling capacity $\dot{Q}_0$ [W]							Power consumption	
									P_e [kW]	
		Evaporating temperature °C								
Cond. temp. °C		-30	-35	-40	-45	-50	-55	-60		
HGZX7/1620-4	30	Q P 29711 1826	24214 1681	19448 1540	15365 1403	11921 1270	9070 1141	6765 1016		
	40	Q P 29059 2023	23630 1852	18930 1686	14914 1523	11537 1364	8753 1210	- -		
	50	Q P 28355 2230	22992 2033	18360 1841	14411 1653	11100 1469	- -	- -		
	60	Q P 27598 2447	22302 2225	17736 2007	13854 1793	- -	- -	- -		
HGZX7/1860-4	30	Q P 30088 2097	27881 1931	22408 1769	17669 1611	13664 1458	10393 1310	7855 1167		
	40	Q P 33296 2323	27181 2127	21800 1936	17153 1749	13240 1567	10061 1389	- -		
	50	Q P 32434 2560	26411 2335	21122 2114	16567 1898	12746 1668	- -	- -		
	60	Q P 31503 2809	25572 2554	20375 2304	15912 2059	- -	- -	- -		
HGZX7/2110-4	30	Q P 38811 2386	31632 2196	25406 2012	20072 1833	15573 1659	11848 1491	8837 1327		
	40	Q P 37960 2643	30868 2420	24729 2202	19483 1989	15071 1782	11433 1580	- -		
	50	Q P 37040 2913	30035 2656	23984 2405	18825 2159	14500 1918	- -	- -		
	60	Q P 36050 3196	29133 2906	23169 2621	18097 2342	- -	- -	- -		

* Performance data 50 Hz relative to 10 K suction gas superheat with liquid subcooling

HGZ two-stage semi-hermetic compressors

Technical data / Dimensions and connections

HGZ7													Two-Stage Compressors					
Type	Number of cylinders	Displacement		Displacement		Voltage ¹⁾	Electrical data				Weight	Oil charge						
		50 Hz (1450 rpm)		60Hz (1.740 rpm)			Max. Working current ²⁾	Max. Power consumption ²⁾	Starting current (rotor locked)									
		m³/h							A				kW		A		kg	
			LP**	HP**	LP**				HP**				Δ / Y		Δ	Y		Ltr.
							PW1+2'		PW1 / PW1+2'									
HGZ7/1620-4 R448A/R449A																		
HGZX7/1620-4 R404A		6	93.70	46.90	112.50	56.20	3)	50	270	175	269	294	4.5					
HGZX7/1620-4 R410A																		
HGZ7/1620-4 R22																		
HA34e/215-4		6	10760	53.80	129.10	64.60	3)	55	30.0	175	269	291	4.5					
HA34e/255-4																		
HA34e/315-4																		
HA34e/380-4																		
HA34e/215-4																		
HA34e/255-4		6	122.40	61.20	146.90	73.40	3)	68	36.0	232	357	289	4.5					
HA34e/315-4																		
HA34e/380-4																		

*PW = Part Winding, motors for part winding start 1 = first part winding 2 = second part winding ** LP = low pressure HP = high pressure

Oil sump heater 230 V - 1 - 50 / 60 Hz (option)

- Permanently set version, installation in immersion sleeve

Explanations

- 1) Tolerance (± 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 50 Hz operation. For 60 Hz operation, the specifications have to be multiplied by the factor 1.2. The max. working current remains unchanged.

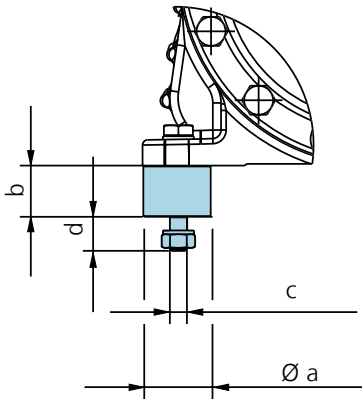
• Take account of the max. operating current / max. power consumption when designing contactors, leads and fuses.

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: 50 % / 50 %

Dimensions for anti-vibration pad

Type	Ø a	b	c	d
HGZ7	50	30	M10	25

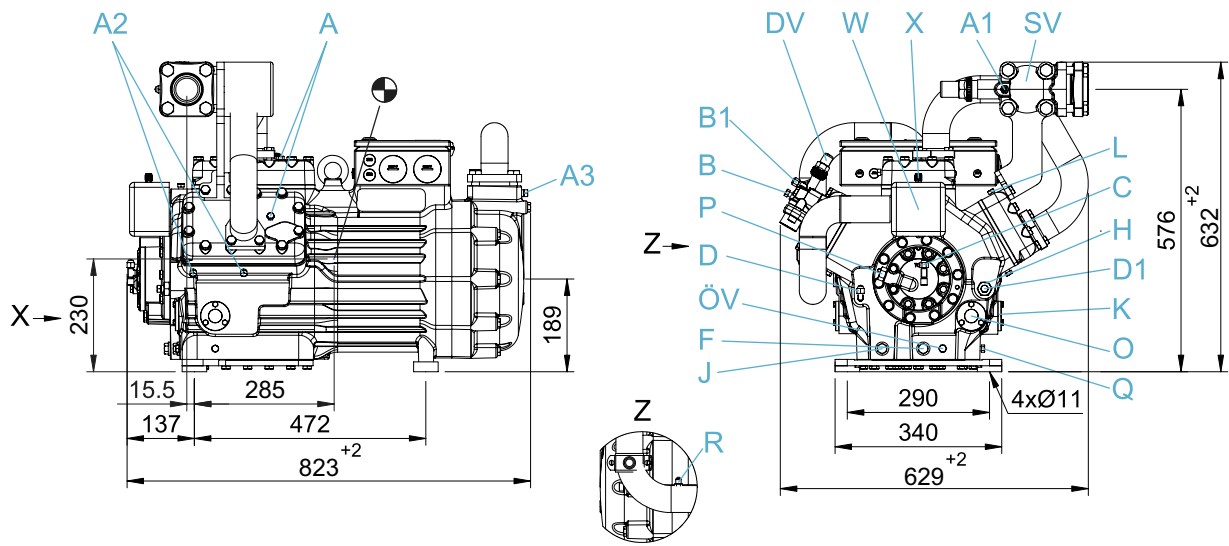
Dimensions in mm



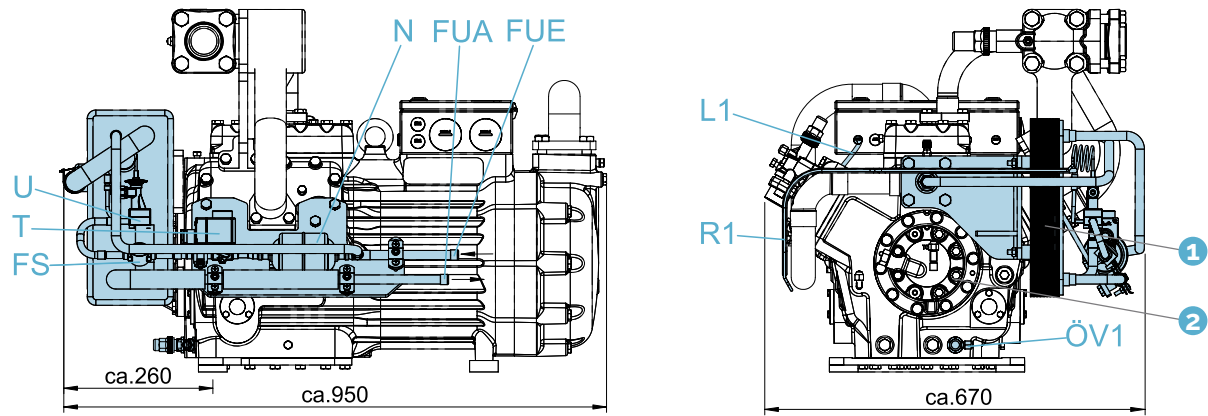
HGZ two-stage semi-hermetic compressors

Dimensions and connections

HGZ7 - Series	Liquid subcooler with accessories supplied separately
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HGZ7 - Option	Liquid subcooler with complete accessories directly mounted onto the compressor
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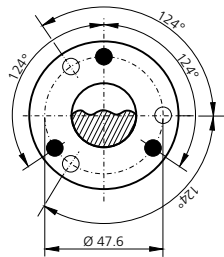


- 1 Liquid subcooler with accessories 2 Oil service valve

Dimensions in mm
● Center of gravity

Connections see page 109
Rigid fixing without anti-vibration pad
Dimensions for view X see below

View X



- Possibility to connect to oil level regulator
- HGZ7
- Three-hole connection for oil level regulator of brands ESK, AC+R, CARLY (3 x M6 x 10 deep)
 - Three-hole connection for oil level regulator of brand TRAXOIL (3 x M6 x 10 deep)
- Dimensions in mm

1

2

3

HGZ two-stage semi-hermetic compressors

Dimensions and connections

Connections – Series		HGZ7
SV	Suction line	Ø 54 mm 2 1/8"
DV	Discharge line	Ø 35 mm 1 3/8"
A	Connection suction side, not lockable	1/8" NPTF
A1	Connection suction side, lockable	7/16" UNF
A2	Connection suction side, not lockable	1/8" NPTF
A3	Connection intermediate pressure, not lockable	1/4" NPTF
B	Connection discharge side, not lockable	1/8" NPTF
B1	Connection discharge side, lockable	7/16" UNF
C	Connection oil pressure safety switch HP	7/16" UNF
D	Connection oil pressure safety switch LP	7/16" UNF
D1	Connection oil return from oil separator	1/4" NPTF
F	Oil drain plug	M22 x 1.5
H	Oil charge plug	M22 x 1.5
J	Connection oil sump heater	M22 x 1.5
K	Sight glass	3 hole M6
L	Connection thermal protection thermostat	1/8" NPTF
O	Connection oil level regulator	1)
ÖV	Connection oil service valve	1/4" NPTF
P	Connection oil pressure differential sensor	M20 x 1.5
Q	Connection oil temperature sensor	1/8" NPTF
R	Connection equalizer for injection valve	7/16" UNF
W	Connection for refrigerant injection	M22 x 1.5
X	Connection for Schrader valve for intermediate pressure manometer	7/16" UNF

1) Dimensions see view X page 105

Connections – Option		HGZ7
FUE	Liquid subcooler	Ø 16 mm 5/8"
FUA	Liquid subcooler	Ø 16 mm 5/8"
FS	Sight glass liquid subcooler	Ø 12 mm
L1	Thermal protection thermostat	1/8" NPTF
N	Filter drier	Ø 12 mm
ÖV1	Oil service valve	7/16" UNF
R1	Equalizer for injection valve	Ø 6 mm
T	Solenoid valve	Ø 12 mm
U	Re-injection valve – dependent on refrigerant	Ø 12 mm

HGZ two-stage semi-hermetic compressors

Scope of supply and accessories

		HGZ7
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		●
Special voltage and/or frequency		○ 3)
Cylinder design in W form, LP/HP stage ratio 2:1		●
1 Intermediate pressure line mounted and insulated		●
2 Winding protection with PTC sensors and MP10 electronic motor protection		●
Oil pump		●
3 Oil pump cover with screw connection for oil differential pressure sensor DELTA-P II		●
4 Direct connection possibility for oil level regulators ESK, AC+R or CARLY		●
Direct connection possibility for oil level regulators Traxoil		● 4)
Oil charge	HGZ: FUCHS Reniso SP46	●
	HGZX: FUCHS Reniso Triton SE55	●
5 Two sight glasses		●
Internal safety valve		●
6 Suction line Shut-off valve		●
7 Discharge line Shut-off valve		●
Inert gas charge		●
4 anti-vibration pads		●
Liquid subcooler, re-injection valve, solenoid valve 230 V - 1 - 50 / 60 Hz, sight glass, filter drier, supplied separately for individual, external installation. Assembly is mandatory for the function of the compressor.		○ 1)
Liquid subcooler, re-injection valve, solenoid valve 230 V - 1 - 50 / 60 Hz, sight glass, filter drier, directly mounted onto the compressor, fully assembled and insulated with pipes ready for connection.		○ 2)
10 Oil sump heater 220 – 240 V - 1 - 50 / 60 Hz, 140 W		○ 2)
11 Thermal protection thermostat (PTC sensor) 230 V - 1 - 50 / 60 Hz		○ 2)
12 Oil pressure safety switch MP 54, 230 V - 1 - 50 / 60 Hz, IP20		○ 1)
13 Oil differential pressure sensor DELTA-P II, 220 – 240 V - 1 - 50 / 60 Hz		○ 1)
14 Oil service valve		○ 2)
15 Oil temperature sensor		○ 2)

1) Enclosed 2) Mounted 3) On request
4) Only possible with additional adapter

● Scope of supply (standard)
○ Available accessories



HGZ two-stage semi-hermetic compressors

Accessories

Intermediate pressure line



Winding protection



Oil pump cover



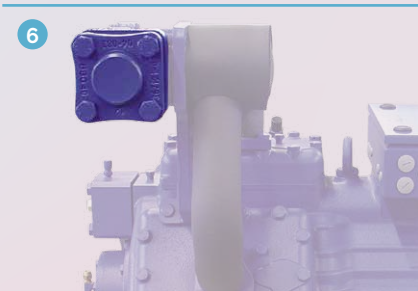
Direct connection possibility



Sight glasses



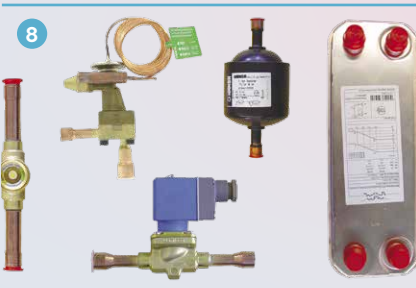
Suction line shut-off valve



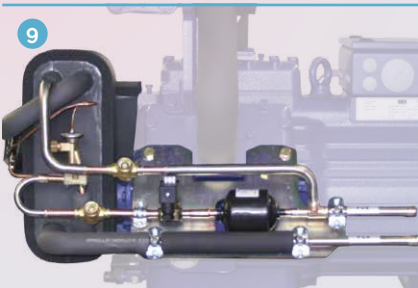
Discharge line shut-off valve



Components enclosed separately



Components mounted directly



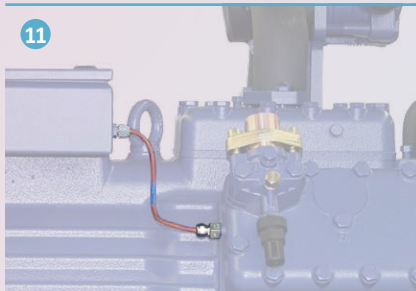
HGZ two-stage semi-hermetic compressors

Accessories

Oil sump heater



Thermal protection thermostat



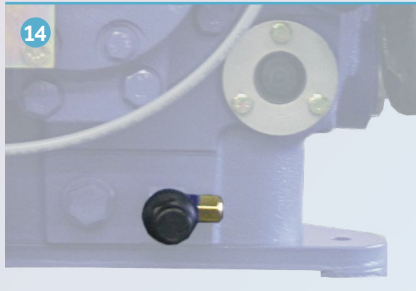
Oil pressure safety switch



Oil differential pressure sensor



Oil service valve



Oil temperature sensor



BOCK service and support

Up-to-date information, training and tools about BOCK CO₂ compressors, compressors for hydrocarbons and solutions for other refrigerants. Use our expertise for your daily practice – online and free of charge

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BOCK VAP

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BOCK training courses

Together with Danfoss, BOCK offers special (online) user training courses. For this purpose, a complete transcritical supermarket refrigeration system with the latest CO₂ technology is in operation at the BOCK training center – with heat recovery + air conditioning + parallel compression + ejector – in order to make the seminars more practical.

BOCKshop

The online catalog in the **BOCKshop** is the best choice to find spare parts for your BOCK compressor easily and quickly around the clock. Including all Ex-drawings and parts lists as well as further information also for printing.

» bockshop.bock.de

BOCKCO₂Tool

The strengths of the **BOCKCO₂Tool** based on Excel: Support for the selection of CO₂ compressors, e.g. by displaying the system schematic as RI flow diagram and refrigeration circuit in log-p-h-diagram, as well as selecting compressors in rack systems and for special CO₂ systems such as booster systems.

» Usage on request: vap@bock.de

BOCKVAP

The BOCK compressor selection program (VAP) is the perfect tool, to find suitable compressors or condensing units for your stationary or mobile application: Simply enter cooling capacity and operating conditions and the suitable components will be displayed immediately. In addition, the tool provides you with further information, e.g. application limits, performance data, dimensions and connections, scope of delivery, accessories, 3 D compressor models and much more.

Another advantage: **BOCKVAP** is available to you free of charge as an online and offline version for PC installation.

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BOCK is one of the world's technology and innovation leaders in the development of environmentally friendly, economical solutions in the field of refrigeration and air-conditioning technology, including heat pumps and heat recovery – with one of the world's largest portfolios of compressors for natural refrigerants such as CO₂ (R744), hydrocarbons and other low-GWP refrigerants.

BOCK

Bock GmbH

Benzstraße 7
72636 Frickenhausen
Germany
Tel +49 7022 9454-0
Fax +49 7022 9454-137
bock.de

