

BOCK HC Compressors

Semi-hermetic Compressors
for Hydrocarbons

BOCK

colour the world
of tomorrow

HC Compressors for Hydrocarbons

Semi-hermetic Compressors for Hydrocarbons

Natural refrigerants are on the advance

For various applications, such as in the field of super-market refrigeration and chiller systems, hydrocarbons have established themselves as another natural alternative. The BOCK compressors of the hydrocarbon series meet all the requirements of the F-gas regulation. They can be used long term and therefore offer increased planning dependability for system manufacturers, users, and investors.

Due to the flammability of hydrocarbons, the compressor and the equipment has some safety related modifications.

Special features

Based on our current semi-hermetic product range, BOCK now offers an alternative compressor variant especially for use with hydrocarbons.

Compressors in HC design have the following features:

- Durable driving gear
- Thermal protection thermostat (recommended)
- Oil sump heater (necessary)
- Special oil charge
- Motor protection INT69 G for installation in the switch cabinet
- Optimized for all hydrocarbon requirements

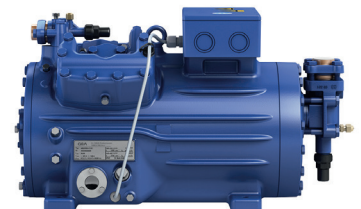
Important notes

We must explicitly point out that these compressors are a special edition and that compressors filled with hydrocarbons are to be operated by trained specialists only. Please see assembly instructions for additional important guidance. To ensure compliance with the safety measures, an additional agreement on, hydrocarbons as a refrigerant (Bock Art. No. 09996) has to be signed.



Think **green**,
choose **blue**.

BOCK Compressors for natural refrigerants



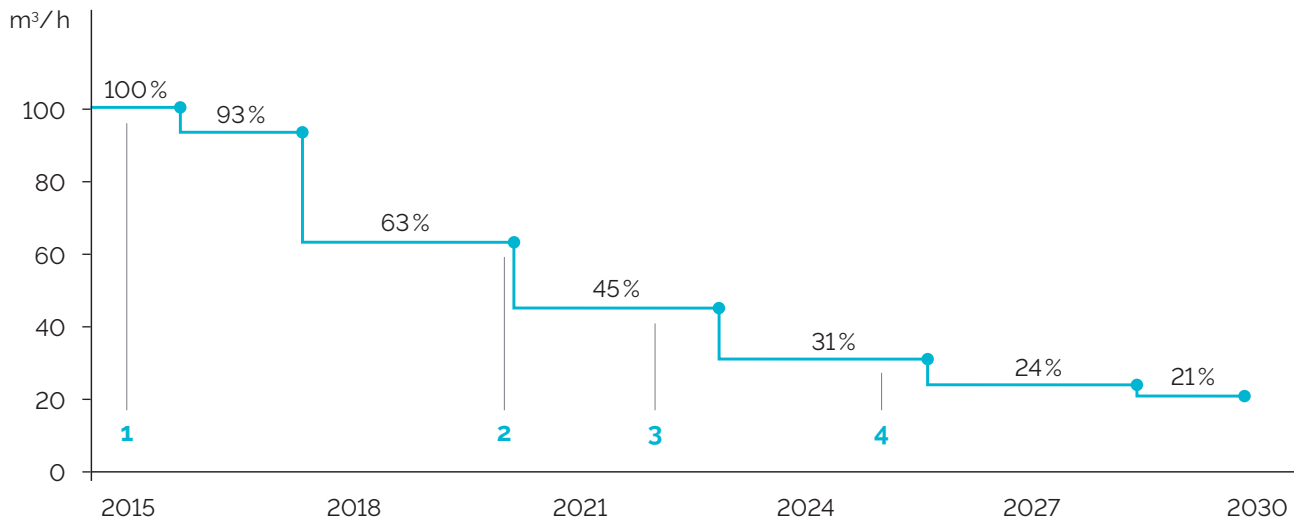
F-gas regulation – HFC on the way out

Since 2006, the F-gas regulation (EC) No 842 / 2006 has been governing the use of fluorinated hydrocarbons (HFC) in technical refrigeration systems. The reason why emissions into the atmosphere must be kept within limits is that the heat-absorbing properties of HFC represent a cause of the greenhouse effect and global climate warming. Since the beginning of 2015, the new F-gas regulation EU 517 / 2014 is effective. Planners, manufacturers, implementers and operators of refrigeration systems must undergo considerable reorientation. The new directive narrows their choice of applicable refrigerants more than ever, marking a fundamental turn away from refrigerants with a strong greenhouse effect.

The goal set for the year 2030 is to reduce emissions of partly fluorinated hydrocarbons (HFC) to one fifth of the average output of 2009 – 2012. In the near future, equipment for refrigerants with high greenhouse potential will be banned from the market, and refilling of existing systems will be subject to restrictions.

As a technology partner for refrigeration, air-conditioning and heating applications, Bock offers comprehensive advice and support for your switch to the natural refrigerants carbon dioxide (CO₂) and hydrocarbons (HC). An extensive portfolio of compressors is available for any task.

Development of market prohibitions



1 2015:

Household refrigeration appliances (GWP ≥ 150)

2 2020:

Mobile room AC systems (hermetically sealed systems) (GWP ≥ 150)

Stationary refrigeration systems (GWP ≥ 2500)

Prohibited: e.g. R404A, R507

Refrigerators and freezers for commercial use (hermetically sealed systems) (GWP ≥ 2500)

3 2022:

Multipack centralized commercial refrigeration systems > 40 kW (GWP ≥ 150) – except primary circuit of cascaded systems (GWP ≥ 1500)

Refrigerators and freezers for commercial use (hermetically sealed systems) (GWP ≥ 150)

4 2025:

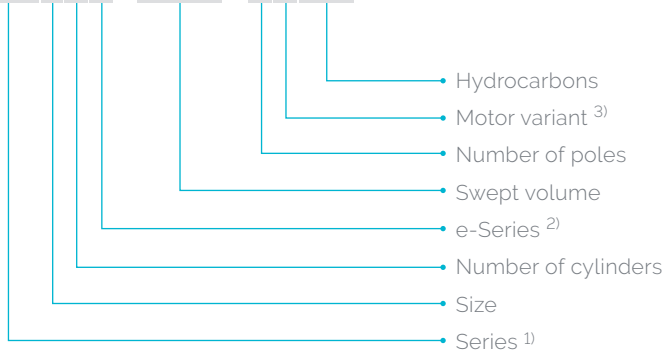
Single-split AC systems < 3 kg charge (GWP ≥ 750)

HC Compressors for Hydrocarbons

At a glance

Type key – Compressors for hydrocarbons

HG 56e - 1155 - 4SHC



- ¹⁾ HG = Hermetic gas-cooled (suction-gas-cooled))
²⁾ = Additional marker for e-series compressors
³⁾ S = More powerful motor, e.g. air-conditioning applications

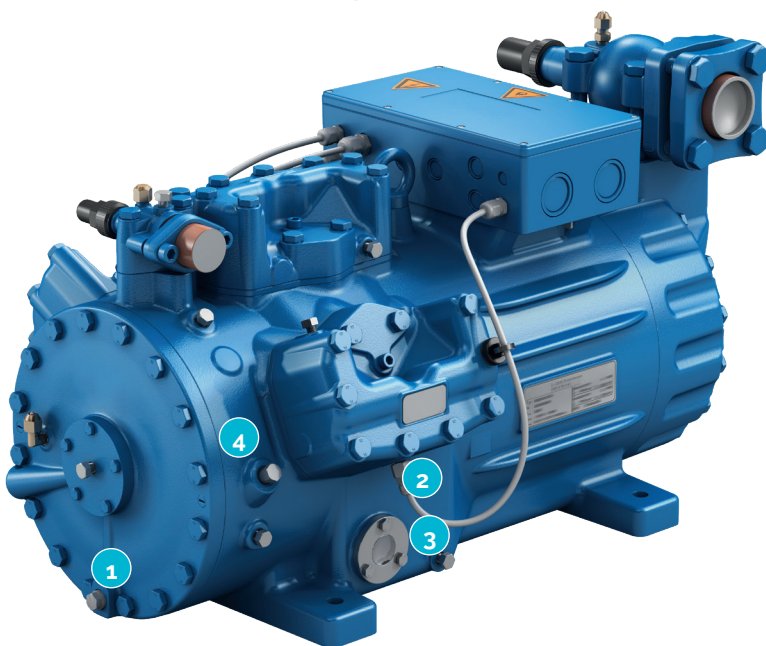
Overview of hydrocarbons

Refrigerant	Composition (formula)	Name	ODP ¹⁾ [R11=1,0]	GWP ^{1) 2)} (100a) [CO ₂ =1,0]	Safety group ¹⁾	Practical limit [kg/m ³] ¹⁾
R290	C ₃ H ₈	Propan	0	3	A3	0,008
R1270	C ₃ H ₆	Propylen	0	2	A3	0,008

¹⁾ According to EN378-1:2018-4 ²⁾ Time horizon 100 years – according to IPCC IV

Further hydrocarbons on request.

Differences to a standard compressor



Optimized for all hydrocarbon requirements

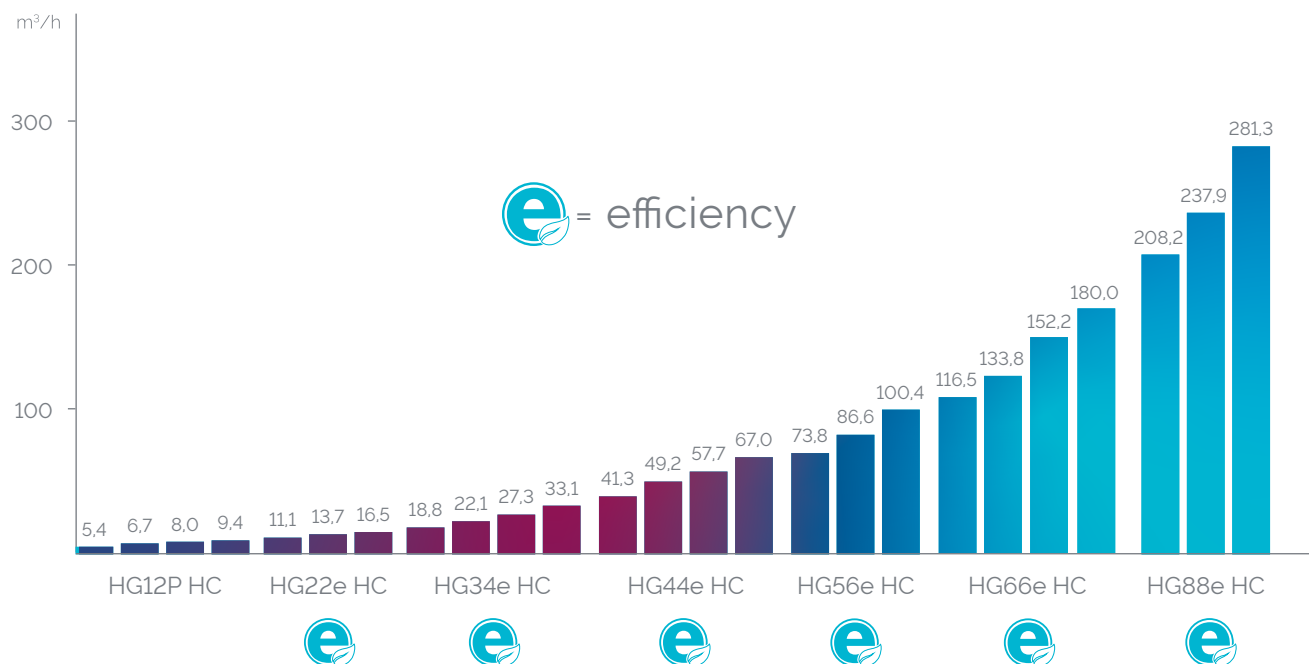
- 1 Oil sump heater (necessary)
- 2 Thermal protection thermostat (recommended)
- 3 Special oil charge
- 4 Durable driving gear for demanding applications with hydrocarbons
- 5 Electronic motor protection INT69 G enclosed for installation in the switch cabinet

HC Compressors for Hydrocarbons

At a glance

The current program

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



With technical optimizations we continuously improve the energy consumption of our compressors. The compressors of the e-series set a new standard when it comes to motor efficiency, gas flow and efficiency of the valve system. All this results in a higher refrigerating capacity of the compressor at a lower drive power.

Additionally, **ATEX compressors** are available that can be operated with hydrocarbons as well. You can find more information on these compressors in our ATEX catalog.



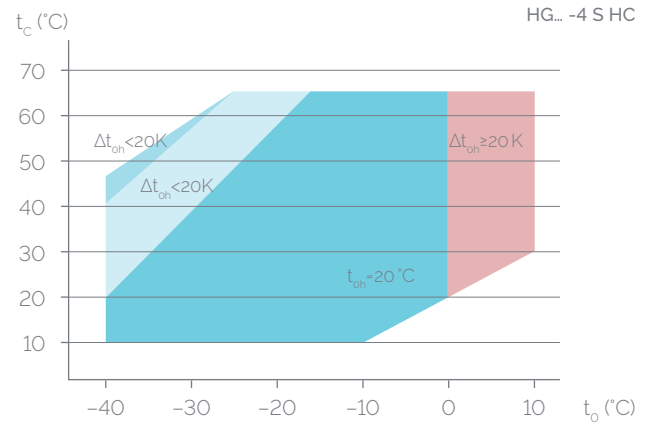
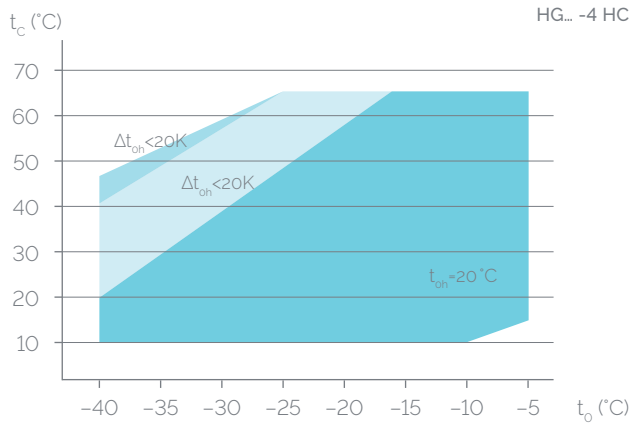
COMPRESSOR SELECTION PROGRAM

Current information on technical data, performance data, operating limits and much more can be done online via the BOCK compressor selection program (VAP): vap.bock.de

HC Compressors for Hydrocarbons

Operating limits

R290



Diagrams for other areas available on request

The use of other hydrocarbons is permitted only following prior written approval from Bock

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

- Required minimum superheat $\Delta t_{oh} = 20$ K
- Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20$ K)
- Required minimum superheat $\Delta t_{oh} = 20$ K,
Suction gas temperature ist dementsprechend anzupassen
- Supplementary cooling and reduced suction gas temperature ($\Delta t_{oh} < 20$ K)

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. In the dark blue and gray application area a minimum superheat $\Delta t_{oh} = 20$ K must be applied. If necessary there must be planned an internal heatexchanger IHX. Compressor application limits should not be chosen for design purposes or continuous operation.

Performance data

The performance data are based on 20 °C suction gas superheat without liquid subcooling, at 50 Hz power supply frequency. These are computed, preliminary values. Variations cannot be excluded. Please follow the guidance regarding suction gas superheat.

Conversion factor for 60 Hz = 1.2

Further information can be found online at vap.bock.de



HC Compressors for Hydrocarbons

Performance data

R290 50 Hz										
Type	Displacement m ³ /h (50 Hz)	Cooling capacity Q ₀ [W]						Drive power P _e [kW]		
		Low temperature ¹⁾			Medium temperature ²⁾			Air-conditioning ³⁾		
		Q ₀	P _e	EER/COP*	Q ₀	P _e	EER/COP*	Q ₀	P _e	EER/COP*
HG12P/60-4 S HC	5.40	725	0.586	1.24	2360	0.997	2.37	3810	1.21	3.14
HG12P/75-4 HC	6.70	911	0.724	1.26	2830	1.22	2.31			
HG12P/75-4 S HC	6.70	885	0.727	1.22	2900	1.23	2.34	4670	1.50	3.11
HG12P/90-4 HC	8.00	1150	0.843	1.36	3400	1.46	2.32			
HG12P/90-4 S HC	8.00	1120	0.835	1.35	3430	1.41	2.42	5540	1.73	3.20
HG12P/110-4 HC	9.40	1370	0.991	1.38	4000	1.72	2.32			
HG12P/110-4 S HC	9.40	1340	0.982	1.37	4050	1.66	2.43	6500	2.03	3.20
HG22e/125-4 HC	11.10	1430	0.923	1.55	4880	2.07	2.36			
HG22e/125-4 S HC	11.10	1400	0.963	1.45	4910	2.04	2.41	8170	2.68	3.05
HG22e/160-4 HC	13.70	1820	1.19	1.52	6090	2.63	2.31			
HG22e/160-4 S HC	13.70	1780	1.21	1.47	6090	2.56	2.38	10200	3.35	3.01
HG22e/190-4 HC	16.50	2340	1.53	1.53	7510	3.20	2.35			
HG22e/190-4 S HC	16.50	2320	1.54	1.51	7610	3.12	2.43	12500	4.06	3.06
HG34e/215-4 HC	18.80	2310	1.56	1.48	8140	3.45	2.36			
HG34e/215-4 S HC	18.80	2210	1.60	1.39	8210	3.37	2.44	13700	4.38	3.13
HG34e/255-4 HC	22.10	2840	1.87	1.52	9700	4.09	2.37			
HG34e/255-4 S HC	22.10	2780	1.92	1.45	9780	3.99	2.45	16200	5.18	3.12
HG34e/315-4 HC	27.30	3590	2.47	1.45	12200	5.09	2.39			
HG34e/315-4 S HC	27.30	3530	2.50	1.41	12300	4.95	2.47	20100	6.32	3.18
HG34e/380-4 HC	33.10	4630	3.21	1.45	15100	6.24	2.42			
HG34e/380-4 S HC	33.10	4550	3.19	1.43	15300	6.16	2.48	25000	7.83	3.19
HG44e/475-4 HC	41.30	5540	3.77	1.47	18500	7.71	2.39			
HG44e/475-4 S HC	41.30	5380	3.84	1.40	18600	7.23	2.57	30700	9.02	3.40
HG44e/565-4 HC	49.20	5950	4.11	1.45	21300	8.72	2.44			
HG44e/565-4 S HC	49.20	5910	4.24	1.40	21500	8.42	2.55	35700	10.6	3.37
HG44e/665-4 HC	57.70	7420	5.15	1.44	25500	10.5	2.41			
HG44e/665-4 S HC	57.70	7200	5.24	1.38	25600	10.0	2.56	42100	12.5	3.36

The performance data are based on 20 °C suction gas superheat without liquid subcooling at 50 Hz power supply frequency.

These are computed preliminary values. Variations cannot be excluded. Please observe the following marking notes:

■ Supplementary cooling or reduced suction gas temperature

■ Adjustment of the suction gas temperature to t_{0h} = 25 °C necessary (to comply with the required minimum superhe_{at} Δt_{0h} = 20 K)

Conversion factor for 60 Hz = 1.2

Performance data for other operating points, see Bock (VAP) software.

¹⁾ Evaporation temperature -35 °C / Condensing temperature +40 °C / Suction gas temperature +20 °C

²⁾ Evaporation temperature -10 °C / Condensing temperature +45 °C / Suction gas temperature +20 °C

³⁾ Evaporation temperature +5 °C / Condensing temperature +50 °C / Suction gas temperature +25 °C

*EER/COP = Energy Efficiency Ratio

HC Compressors for Hydrocarbons

Performance data

R290 | 50 Hz

Type	Displacement m ³ /h (50 Hz)	Cooling capacity Q ₀ [W]						Drive power P _e [kW]		
		Low temperature ¹⁾			Medium temperature ²⁾			Air-conditioning ³⁾		
		Q ₀	P _e	EER/COP*	Q ₀	P _e	EER/COP*	Q ₀	P _e	EER/COP*
HG44e/770-4 HC	67.00	8590	6.02	1.43	30000	11.6	2.58			
HG44e/770-4 S HC	67.00	8590	6.02	1.43	30000	11.6	2.58	49500	14.6	3.39
HG56e/850-4 HC	73.80	10600	7.31	1.45	33900	13.6	2.48			
HG56e/850-4 S HC	73.80	9850	7.07	1.40	33700	13.0	2.57	55600	16.3	3.41
HG56e/995-4 HC	86.60	12600	8.74	1.44	40100	16.3	2.45			
HG56e/995-4 S HC	86.60	12200	8.46	1.43	40000	15.4	2.59	65500	19.2	3.41
HG56e/1155-4 HC	100.40	13300	9.57	1.39	45000	18.0	2.49			
HG56e/1155-4 S HC	100.40	12200	9.09	1.34	44700	17.3	2.57	74000	21.7	3.40
HG66e/1340-4 HC	116.50	14600	10.7	1.36	52000	20.2	2.57			
HG66e/1340-4 S HC	116.50	14700	10.9	1.34	52400	20.3	2.58	86400	25.5	3.39
HG66e/1540-4 HC	133.80	17200	12.6	1.37	60100	23.4	2.56			
HG66e/1540-4 S HC	133.80	17300	12.8	1.35	60600	23.5	2.58	99400	29.5	3.37
HG66e/1750-4 HC	152.20	19800	14.5	1.36	68800	26.8	2.57			
HG66e/1750-4 S HC	152.20	19700	14.7	1.34	68800	26.9	2.56	113000	33.7	3.34
HG66e/2070-4 HC	180.00	23300	17.0	1.37	80900	31.7	2.55			
HG66e/2070-4 S HC	180.00	23300	17.2	1.35	81000	31.8	2.54	133000	40.0	3.31
HG88e/2400-4 HC	209.10	27400	20.8	1.32	95300	37.6	2.53			
HG88e/2400-4 S HC	209.10	27500	21.3	1.29	96000	38.0	2.53	158000	47.0	3.35
HG88e/2735-4 HC	237.90	31200	23.8	1.31	109000	42.8	2.54			
HG88e/2735-4 S HC	237.90	31200	24.0	1.30	109000	42.9	2.54	179000	53.4	3.35
HG88e/3235-4 HC	281.30	36600	27.8	1.32	129000	50.3	2.55			
HG88e/3235-4 S HC	281.30	36700	28.1	1.30	129000	50.5	2.55	212000	62.8	3.36

The performance data are based on 20 °C suction gas superheat without liquid subcooling at 50 Hz power supply frequency.

These are computed preliminary values. Variations cannot be excluded. Please observe the following marking notes:

■ Supplementary cooling or reduced suction gas temperature

■ Adjustment of the suction gas temperature to t_{on} = 25 °C necessary (to comply with the required minimum superhe_{at} Δt_{0h} = 20 K)

Conversion factor for 60 Hz = 1.2

Performance data for other operating points, see Bock (VAP) software.

¹⁾ Evaporation temperature -35 °C / Condensing temperature +40 °C / Suction gas temperature +20 °C

²⁾ Evaporation temperature -10 °C / Condensing temperature +45 °C / Suction gas temperature +20 °C

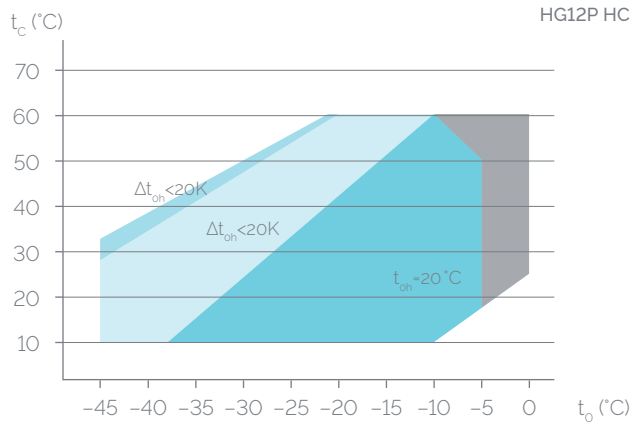
³⁾ Evaporation temperature +5 °C / Condensing temperature +50 °C / Suction gas temperature +25 °C

*EER/COP = Energy Efficiency Ratio

HC Compressors for Hydrocarbons

Operating limits

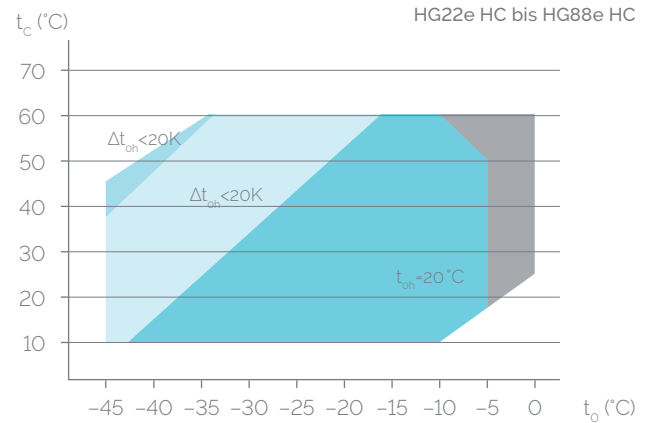
R1270



Diagrams for other areas available on request

The use of other hydrocarbons is permitted only following prior written approval from Bock

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



- Required minimum superheat $\Delta t_{oh} = 20$ K
- Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20$ K)
- Motorversion -S- (leistungsstärkerer Motor)
- Required minimum superheat $\Delta t_{oh} = 20$ K
- Supplementary cooling and reduced suction gas temperature ($\Delta t_{oh} < 20$ K)

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. In the dark blue and gray application area a minimum superheat $\Delta t_{oh} = 20$ K must be applied. If necessary there must be planned an internal heat exchanger IHX. Compressor application limits should not be chosen for design purposes or continuous operation.

Performance data

The performance data are based on 20 °C suction gas superheat without liquid subcooling, at 50 Hz power supply frequency. These are computed, preliminary values. Variations cannot be excluded. Please follow the guidance regarding suction gas superheat.

Conversion factor for 60 Hz = 1.2

Further information can be found online at vap.bock.de



HC Compressors for Hydrocarbons

Performance data

R1270 | 50 Hz

Type	Displacement m ³ /h (50 Hz)	Cooling capacity Q _c [W]			Drive power P _e [kW]		
		Low temperature ¹⁾			Medium temperature ²⁾		
		Q _c	P _e	EER/COP*	Q _c	P _e	EER/COP*
HG12P/60-4 S HC	5.40	925	0.794	117	2790	1.32	2.11
HG12P/75-4 HC	6.70	1210	1.000	120	3470	1.66	2.09
HG12P/75-4 S HC	6.70	1160	0.992	117	3460	1.64	2.11
HG12P/90-4 HC	8.00	1420	1.15	123	4150	1.97	2.10
HG12P/90-4 S HC	8.00	1380	1.17	117	4140	1.95	2.12
HG12P/110-4 HC	9.40	1670	1.38	121	4870	2.32	2.10
HG12P/110-4 S HC	9.40	1630	1.37	119	4850	2.30	2.10
HG22e/125-4 HC	11.10	1960	1.32	147	5960	2.56	2.33
HG22e/125-4 S HC	11.10	1980	1.36	145	5970	2.52	2.37
HG22e/160-4 HC	13.70	2470	1.69	146	7420	3.25	2.28
HG22e/160-4 S HC	13.70	2480	1.70	146	7450	3.17	2.35
HG22e/190-4 HC	16.50	3110	2.14	145	9090	3.93	2.31
HG22e/190-4 S HC	16.50	3180	2.17	146	9170	3.86	2.38
HG34e/215-4 HC	18.80	3190	2.21	145	9960	4.21	2.37
HG34e/215-4 S HC	18.80	3210	2.23	144	9960	4.13	2.42
HG34e/255-4 HC	22.10	3910	2.69	146	11900	5.00	2.37
HG34e/255-4 S HC	22.10	3940	2.71	145	11900	4.91	2.42
HG34e/315-4 HC	27.30	4910	3.45	143	14900	6.16	2.41
HG34e/315-4 S HC	27.30	4960	3.49	142	14900	6.04	2.46
HG34e/380-4 HC	33.10	6250	4.39	143	18200	7.47	2.44
HG34e/380-4 S HC	33.10	6400	4.39	146	18400	7.45	2.47
HG44e/475-4 HC	41.30	8400	5.53	152	24000	9.58	2.50
HG44e/475-4 S HC	41.30	7870	5.02	157	23300	8.85	2.63
HG44e/565-4 HC	49.20	9070	5.91	154	27400	10.7	2.55
HG44e/565-4 S HC	49.20	8470	5.40	157	26800	10.1	2.64
HG44e/665-4 HC	57.70	11000	7.13	155	32500	12.9	2.51
HG44e/665-4 S HC	57.70	10500	6.65	158	32600	12.0	2.71

The performance data are based on 20 °C suction gas superheat without liquid subcooling at 50 Hz power supply frequency.

These are computed preliminary values. Variations cannot be excluded. Please observe the following marking notes:

■ Supplementary cooling or reduced suction gas temperature

Conversion factor for 60 Hz = 1.2

Performance data for other operating points, see Bock (VAP) software.

¹⁾ Evaporating temperature -35 °C / Condensing temperature +40 °C / Suction gas superheat +20 °C

²⁾ Evaporating temperature -10 °C / Condensing temperature +45 °C / Suction gas superheat +20 °C

*EER/COP = Cooling capacityszahl

HC Compressors for Hydrocarbons

Performance data

R1270 | 50 Hz

Type	Displacement m ³ /h (50 Hz)	Cooling capacity Q ₀ [W]			Drive power P _e [kW]		
		Low temperature ¹⁾			Medium temperature ²⁾		
		Q ₀	P _e	EER/COP*	Q ₀	P _e	EER/COP*
HG44e/770-4 HC	67.00	11900	7.60	156	36900	13.9	2.64
HG44e/770-4 S HC	67.00	11900	7.60	156	36900	13.9	2.64
HG56e/850-4 HC	73.80	14700	9.39	156	42300	16.5	2.56
HG56e/850-4 S HC	73.80	13800	8.74	158	41300	15.7	2.63
HG56e/995-4 HC	86.60	16800	10.5	158	48900	19.3	2.53
HG56e/995-4 S HC	86.60	16600	10.3	160	48900	18.3	2.66
HG56e/1155-4 HC	100.40	17900	11.3	157	55500	21.2	2.61
HG56e/1155-4 S HC	100.40	17100	11.0	155	54300	20.5	2.64
HG66e/1340-4 HC	116.50	19300	12.2	158	61700	23.6	2.61
HG66e/1340-4 S HC	116.50	19400	12.4	156	62200	23.6	2.63
HG66e/1540-4 HC	133.80	22700	14.3	158	71100	27.4	2.59
HG66e/1540-4 S HC	133.80	22800	14.5	157	71800	27.4	2.62
HG66e/1750-4 HC	152.20	26100	16.5	158	81500	31.3	2.60
HG66e/1750-4 S HC	152.20	26100	16.7	156	81600	31.4	2.60
HG66e/2070-4 HC	180.00	30800	19.4	158	95600	37.2	2.57
HG66e/2070-4 S HC	180.00	30700	19.6	157	95800	37.2	2.58
HG88e/2400-4 HC	209.10	36200	23.5	154	113000	43.9	2.57
HG88e/2400-4 S HC	209.10	36300	24.1	151	114000	44.0	2.59
HG88e/2735-4 HC	237.90	41200	26.9	153	129000	49.8	2.59
HG88e/2735-4 S HC	237.90	41200	27.1	152	130000	49.8	2.60
HG88e/3235-4 HC	281.30	48400	31.5	154	152000	58.6	2.59
HG88e/3235-4 S HC	281.30	48400	31.8	152	153000	58.5	2.61

The performance data are based on 20 °C suction gas superheat without liquid subcooling at 50 Hz power supply frequency.

These are computed preliminary values. Variations cannot be excluded. Please observe the following marking notes:

■ Supplementary cooling or reduced suction gas temperature

Conversion factor for 60 Hz = 1.2

Performance data for other operating points, see Bock (VAP) software.

¹⁾ Evaporating temperature -35 °C / Condensing temperature +40 °C / Suction gas superheat +20 °C

²⁾ Evaporating temperature -10 °C / Condensing temperature +45 °C / Suction gas superheat +20 °C

*EER/COP = Cooling capacityszahl

HC Compressors for Hydrocarbons

Technical data

HC

Type	Number of cylinders	Displacement 50/60 Hz 1450/1740 rpm m ³ /h	Electrical data				Weight kg	Connections ⁵⁾		Oil charge ltr	Frequency range ⁶⁾ Hz
			Voltage ¹⁾	Max. working current ²⁾	Max. power consump- tion ²⁾	Starting current (rotor blocked)		Discharge line DV	Suction line SV		
			Δ / Y	A	kW	A		mm inch	mm inch		
HG12P/60-4 S HC	2	5.40 / 6.40	³⁾	6.8 / 3.9	2.2	40 / 23	48	12 1/2	16 5/8	0.8	30-70
HG12P/75-4 HC	2	6.70 / 8.10	³⁾	7.1 / 4.1	2.3	40 / 23	49	12 1/2	16 5/8	0.8	30-70
HG12P/75-4 S HC	2	6.70 / 8.10	³⁾	8.0 / 4.6	2.6	43 / 25	49	12 1/2	16 5/8	0.8	30-70
HG12P/90-4 HC	2	8.00 / 9.60	³⁾	8.5 / 4.9	2.8	43 / 25	49	12 1/2	16 5/8	0.8	30-70
HG12P/90-4 S HC	2	8.00 / 9.60	³⁾	9.1 / 5.3	3.0	45 / 26	49	12 1/2	16 5/8	0.8	30-70
HG12P/110-4 HC	2	9.40 / 11.30	³⁾	9.2 / 5.3	3.1	43 / 25	49	12 1/2	16 5/8	0.8	30-70
HG12P/110-4 S HC	2	9.40 / 11.30	³⁾	10.6 / 6.1	3.6	45 / 26	49	12 1/2	16 5/8	0.8	30-70
HG22e/125-4 HC	2	11.10 / 13.30	³⁾	9.3 / 5.4	3.0	69 / 40	73	16 5/8	22 7/8	1.1	30-70
HG22e/125-4 S HC	2	11.10 / 13.30	³⁾	10.8 / 6.2	3.6	69 / 40	73	16 5/8	22 7/8	1.1	30-70
HG22e/160-4 HC	2	13.70 / 16.40	³⁾	11.3 / 6.5	3.8	69 / 40	73	16 5/8	22 7/8	1.1	30-70
HG22e/160-4 S HC	2	13.70 / 16.40	³⁾	13.1 / 7.6	4.5	87 / 50	75	16 5/8	22 7/8	1.1	30-70
HG22e/190-4 HC	2	16.50 / 19.80	³⁾	13.8 / 8.0	4.8	69 / 40	73	16 5/8	22 7/8	1.1	30-70
HG22e/190-4 S HC	2	16.50 / 19.80	³⁾	16.2 / 9.4	5.6	87 / 50	75	16 5/8	22 7/8	1.1	30-70
HG34e/215-4 HC	4	18.80 / 22.60	³⁾	14.0 / 8.1	4.8	87 / 50	91	22 7/8	28 1 1/8	1.3	25-70
HG34e/215-4 S HC	4	18.80 / 22.60	³⁾	18.3 / 10.5	6.0	132 / 76	98	22 7/8	28 1 1/8	1.3	25-70
HG34e/255-4 HC	4	22.10 / 26.60	³⁾	17.0 / 9.8	6.0	87 / 50	91	22 7/8	28 1 1/8	1.3	25-70
HG34e/255-4 S HC	4	22.10 / 26.60	³⁾	21.1 / 12.2	7.2	132 / 76	97	22 7/8	28 1 1/8	1.3	25-70
HG34e/315-4 HC	4	27.30 / 32.80	³⁾	21.1 / 12.2	7.4	111 / 64	93	22 7/8	28 1 1/8	1.3	25-70
HG34e/315-4 S HC	4	27.30 / 32.80	³⁾	25.5 / 14.7	8.9	132 / 76	97	22 7/8	28 1 1/8	1.3	25-70
HG34e/380-4 HC	4	33.10 / 39.70	³⁾	26.1 / 15.1	9.3	111 / 64	93	22 7/8	28 1 1/8	1.3	25-70
HG34e/380-4 S HC	4	33.10 / 39.70	³⁾	31.2 / 18.0	11.1	132 / 76	96	22 7/8	28 1 1/8	1.3	25-70

HC Compressors for Hydrocarbons

Technical data

HC											
Type	Number of cylinders	Displacement 50/60 Hz 1450/1740 rpm	Electrical data				Weight	Connections ⁵⁾		Oil charge	Frequency range ⁶⁾
			Voltage ¹⁾	Max. working current ²⁾	Max. power consump- tion ²⁾	Starting current (rotor blocked)		Discharge line DV	Suction line SV		
		m³/h	A	kW	A	kg	mm inch	mm inch	ltr	Hz	
			PW 1+2			PW1/PW 1+2					
HG44e/475-4 HC	4	41.30 / 49.60	4)	19.0	11.0	65 / 109	166	28 1 ¹ / ₈	35 1 ³ / ₈	2.7	25–70
HG44e/475-4 S HC	4	41.30 / 49.60	4)	23.0	13.1	87 / 149	171	28 1 ¹ / ₈	35 1 ³ / ₈	2.7	25–70
HG44e/565-4 HC	4	49.20 / 59.00	4)	22.0	13.2	65 / 109	166	28 1 ¹ / ₈	35 1 ³ / ₈	2.7	25–70
HG44e/565-4 S HC	4	49.20 / 59.00	4)	26.0	15.6	101 / 174	173	28 1 ¹ / ₈	42 1 ⁵ / ₈	2.7	25–70
HG44e/665-4 HC	4	57.70 / 69.30	4)	26.0	15.4	87 / 149	174	28 1 ¹ / ₈	42 1 ⁵ / ₈	2.7	25–70
HG44e/665-4 S HC	4	57.70 / 69.30	4)	30.0	18.3	101 / 174	171	28 1 ¹ / ₈	42 1 ⁵ / ₈	2.7	25–70
HG44e/770-4 HC	4	67.00 / 80.40	4)	30.0	17.8	101 / 174	171	28 1 ¹ / ₈	42 1 ⁵ / ₈	2.7	25–70
HG44e/770-4 S HC	4	67.00 / 80.40	4)	35.0	21.4	101 / 174	171	28 1 ¹ / ₈	42 1 ⁵ / ₈	2.7	25–70
HG56e/850-4 HC	6	73.80 / 88.60	4)	32.6	19.7	101 / 174	195	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG56e/850-4 S HC	6	73.80 / 88.60	4)	39.4	23.5	125 / 209	212	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG56e/995-4 HC	6	86.60 / 103.90	4)	38.9	23.2	125 / 209	209	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG56e/995-4 S HC	6	86.60 / 103.90	4)	46.4	27.7	149 / 246	212	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG56e/1155-4 HC	6	100.40 / 120.50	4)	46.9	28.0	149 / 246	213	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG56e/1155-4 S HC	6	100.40 / 120.50	4)	58.3	33.3	196 / 335	221	35 1 ³ / ₈	54 2 ¹ / ₈	3.3	25–70
HG66e/1340-4 HC	6	116.50 / 139.80	4)	53.7	31.9	170 / 275	282	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/1340-4 S HC	6	116.50 / 139.80	4)	65.3	38.1	196 / 335	287	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/1540-4 HC	6	133.80 / 160.50	4)	62.1	37.2	170 / 275	280	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/1540-4 S HC	6	133.80 / 160.50	4)	75.0	44.4	196 / 335	285	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/1750-4 HC	6	152.20 / 182.60	4)	71.9	42.4	196 / 335	280	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/1750-4 S HC	6	152.20 / 182.60	4)	86.8	50.7	222 / 361	280	42 1 ⁵ / ₈	54 2 ¹ / ₈	4.4	25–60
HG66e/2070-4 HC	6	180.00 / 216.00	4)	85.1	50.7	196 / 335	276	42 1 ⁵ / ₈	64 2 ⁵ / ₈	4.4	25–60
HG66e/2070-4 S HC	6	180.00 / 216.00	4)	103.0	60.7	222 / 361	279	42 1 ⁵ / ₈	64 2 ⁵ / ₈	4.4	25–60
HG88e/2400-4 HC	8	209.10 / 250.90	4)	101.0	59.5	298 / 438	449	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60
HG88e/2400-4 S HC	8	209.10 / 250.90	4)	120.0	69.8	447 / 657	468	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60
HG88e/2735-4 HC	8	237.90 / 285.50	4)	116.0	67.1	386 / 567	462	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60
HG88e/2735 S HC	8	237.90 / 285.50	4)	136.0	80.0	447 / 657	471	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60
HG88e/3235-4 HC	8	281.30 / 337.60	4)	135.0	79.2	447 / 657	465	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60
HG88e/3235-4 S HC	8	281.30 / 337.60	4)	162.0	93.9	538 / 791	474	54 2 ¹ / ₈	76 3 ¹ / ₈	9.6	25–60

* PW = Part winding. motors for part winding start 1 = 1st part winding 2 = 2nd part winding

HC Compressors for Hydrocarbons

Technical data

Explanations

- 1) Tolerance ($\pm 10\%$) relates to the mean value of the voltage range. Other voltages and current types on request.
- 2) The specifications for max. power consumption apply for 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) 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 ratio: HG44e, HG56e, HG66e, HG88e = 50% / 50%
Designs for Y/ Δ on request.
- 5) For soldering connections.
- 6) The maximum permissible working current of the compressor ($I_{max\ com}$) must not be exceeded. Take account of the guidelines for use of frequency inverter in the compressor assembling instructions.

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

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

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

- HG44e...HC: 80 W
- HG56e...HC: 140 W
- HG66e...HC, HG88e...HC: 200 W
- Permanently set version, installation in immersion sleeve



COMPRESSOR SELECTION PROGRAM

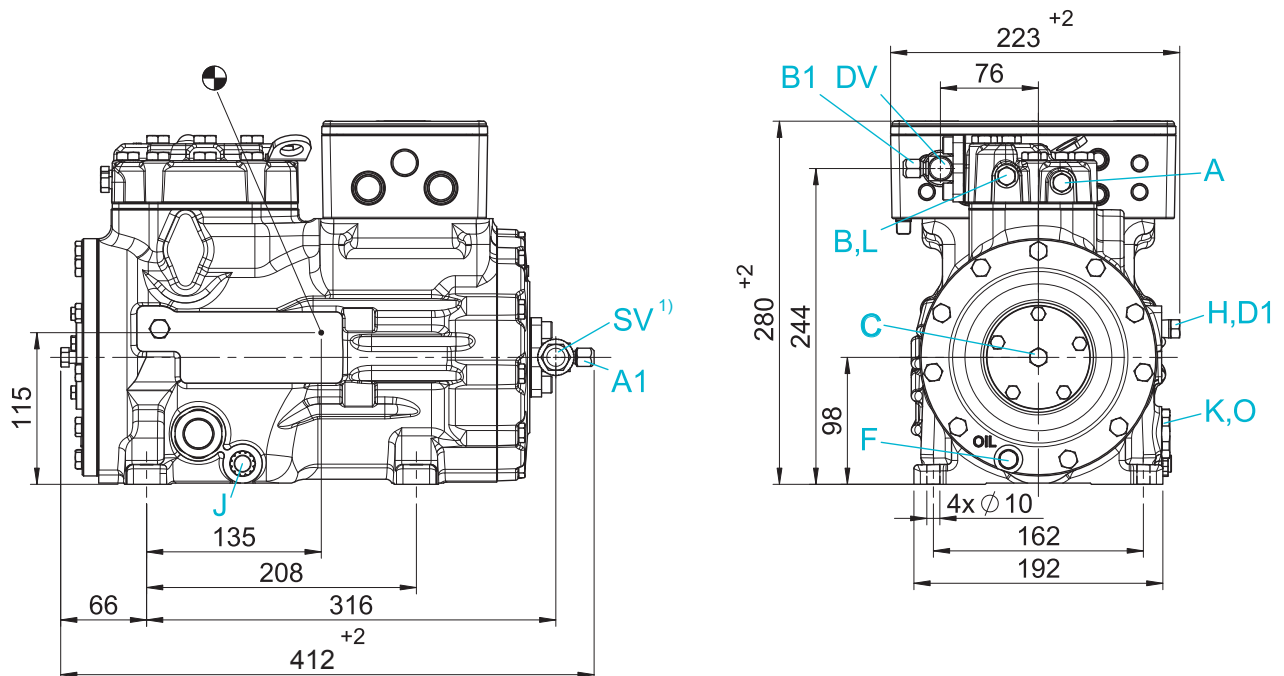
Current information on technical data, performance data, operating limits and much more can be done online via the BOCK compressor selection program (VAP): vap.bock.de

HC Compressors for Hydrocarbons

Dimensions and connections

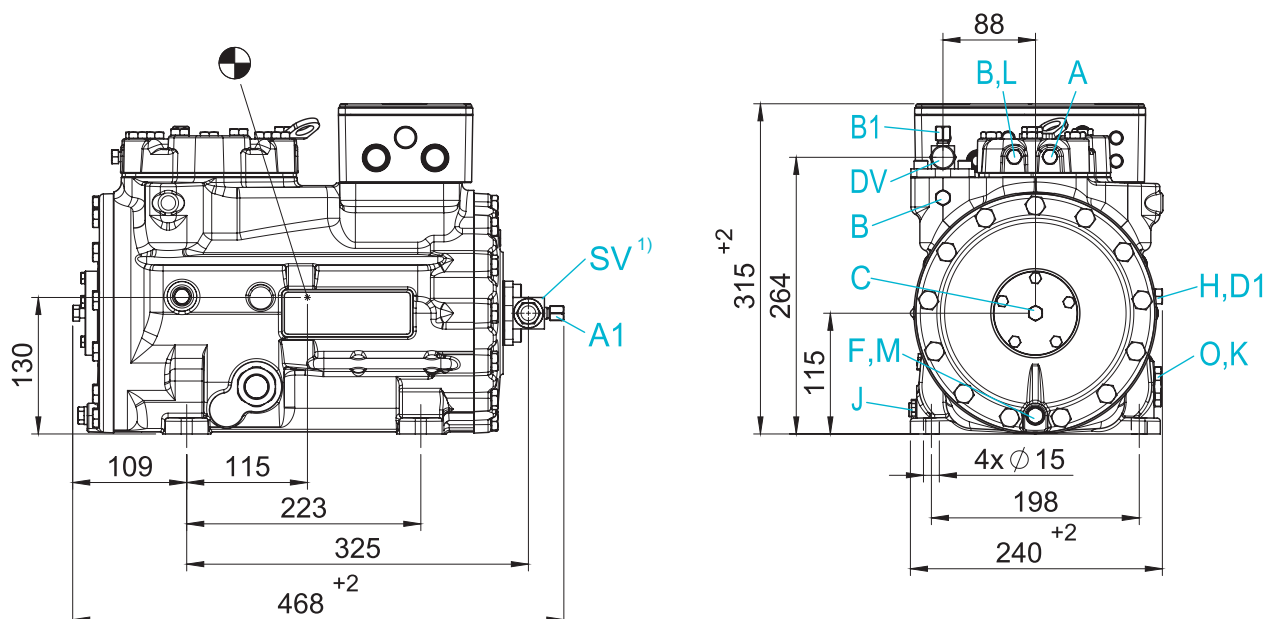
HG12P HC

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



HG22e HC

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



Dimensions in mm

⊙ Center of gravity

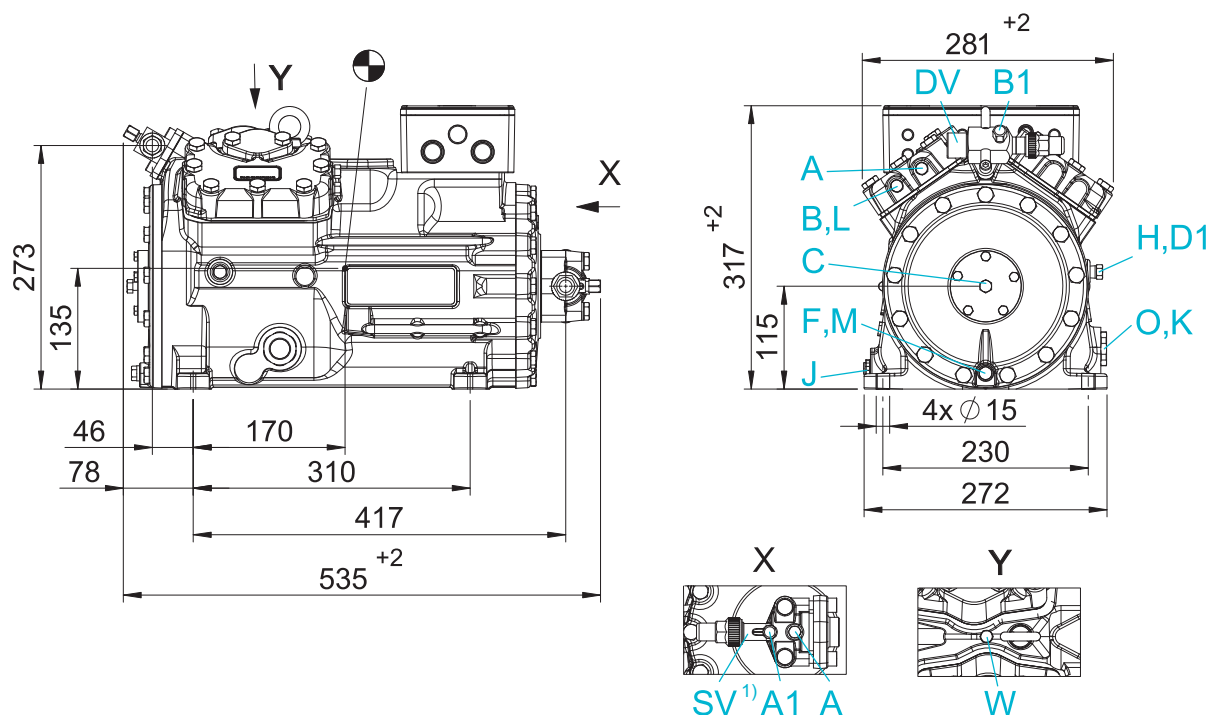
¹⁾ SV 90° rotatable

HC Compressors for Hydrocarbons

Dimensions and connections

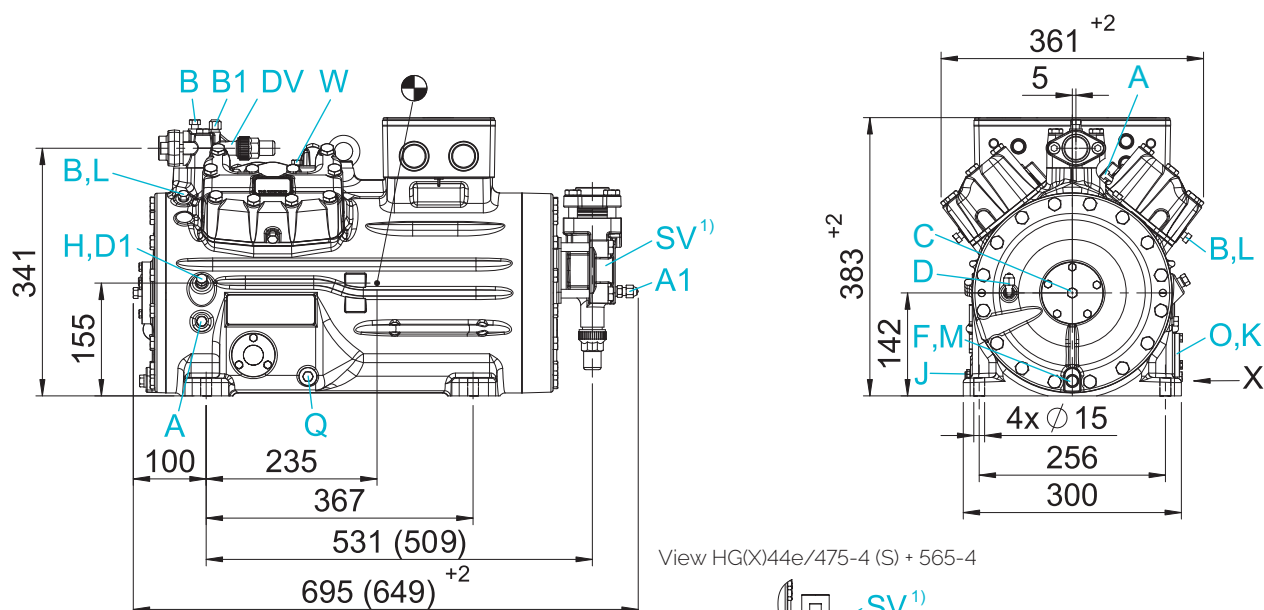
HG34e HC

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



HG44e HC

» HG44e/475-4 HC » HG44e/475-4 S HC » HG44e/565-4 HC » HG44e/565-4 S HC
» HG44e/665-4 HC » HG44e/665-4 HC » HG44e/770-4 HC » HG44e/770-4 S HC



Dimensions in () for HG44e/475-4 (S) HC and 565-4 HC

Dimensions in mm

☉ Center of gravity

¹⁾ SV 90° rotatable

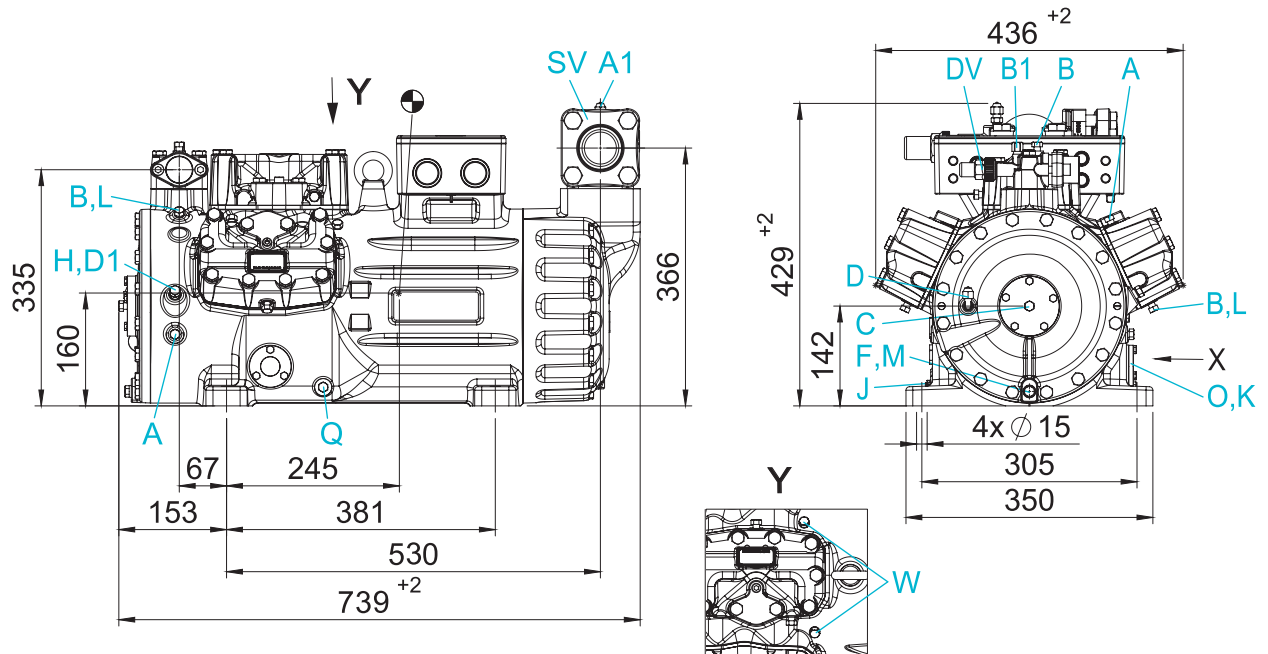
Dimensions for view X see page 18

HC Compressors for Hydrocarbons

Dimensions and connections

HG56e HC

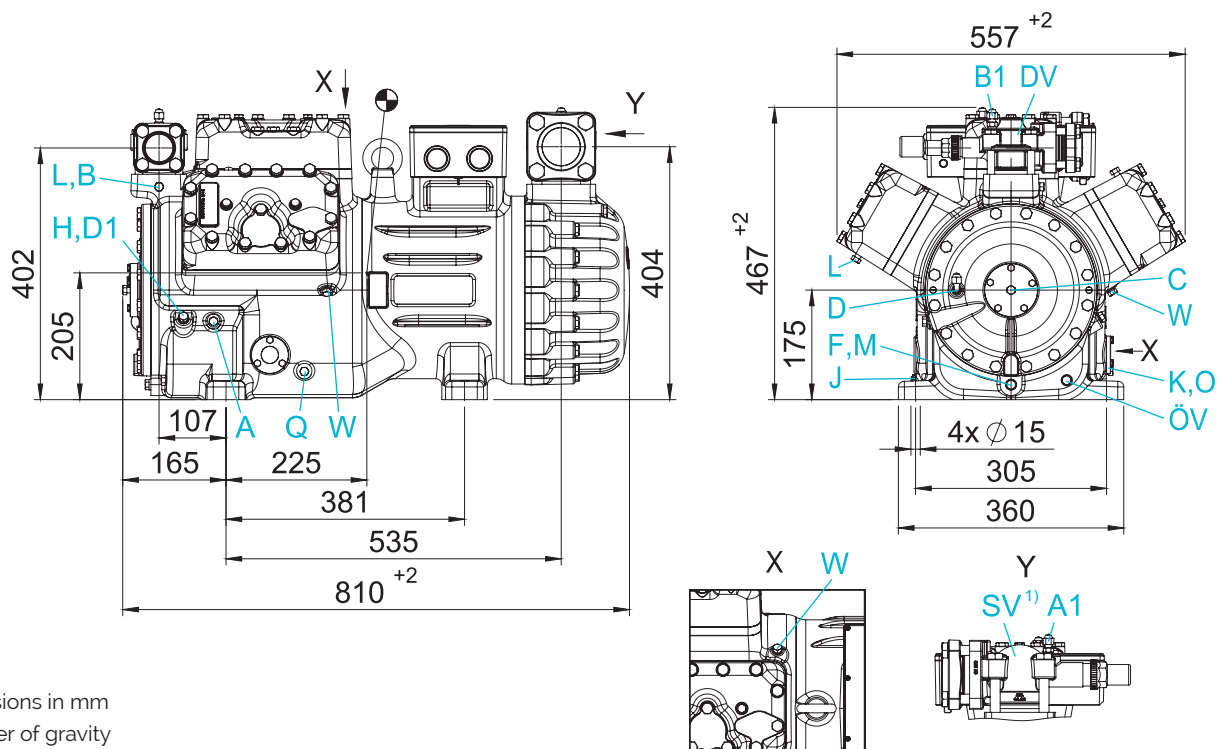
» HG56e/850-4 HC » HG56e/8504 S HC » HG56e/995-4 HC » HG56e/995-4 S HC
» HG56e/1155-4 HC » HG56e/1155-4 HC



Dimensions in () for HG56e/850-4 (S) HC and 995-4 (S) HC

HG66e HC

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



Dimensions in mm

☉ Center of gravity

¹⁾ SV 180° rotatable

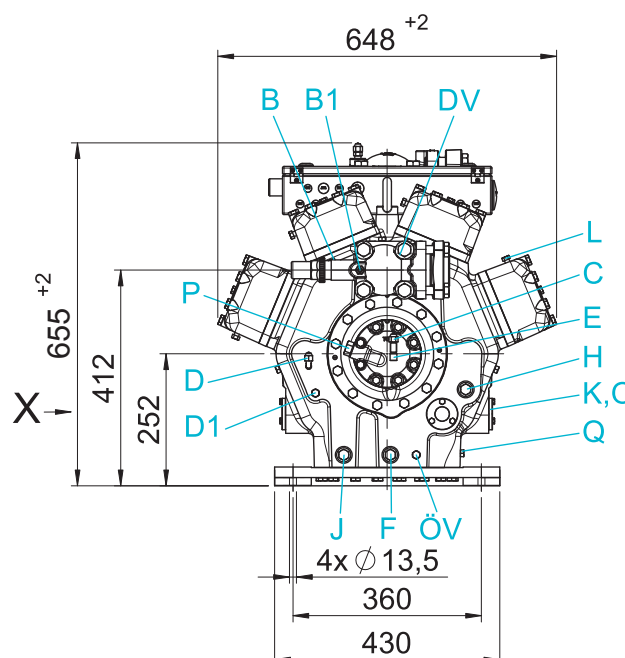
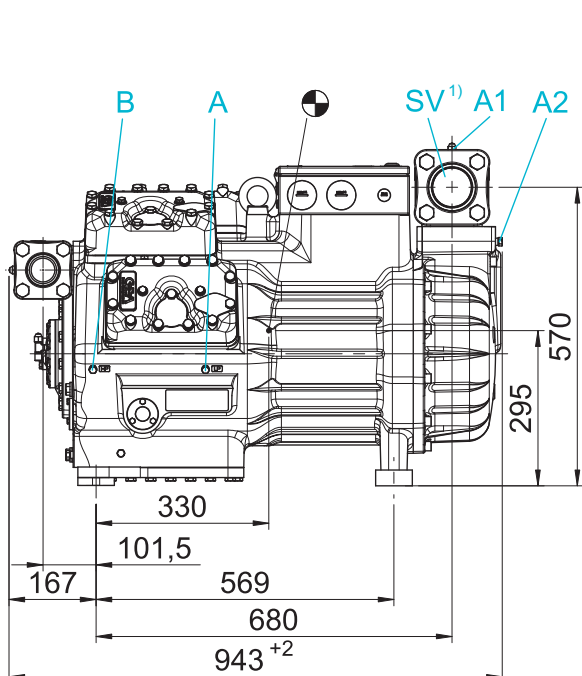
Dimensions for view X see page 18

HC Compressors for Hydrocarbons

Dimensions and connections

HG88e HC

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



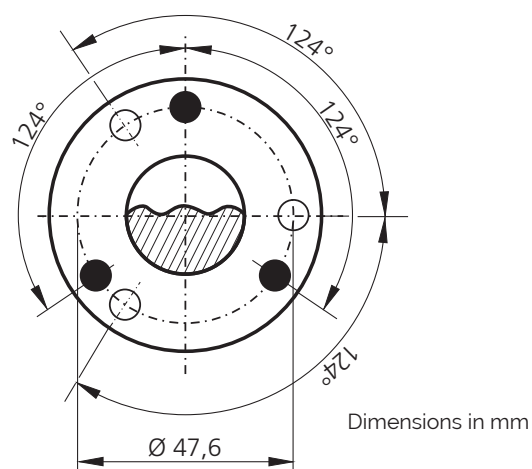
Dimensions in mm

● Center of gravity

¹ SV 180° rotatable

Dimensions for view X see below

View X



Dimensions in mm

Possibility to connect oil level regulator

HG44e...HC, HG56e...HC, HG66e...HC, HG88e...HC

● Three-hole connection for oil level regulator of brand ESK, AC+R, Carly (3 × M6, 10 deep)

○ Three-hole connection for oil level regulator of brand TraxOil (3 × M6 × 10 deep)

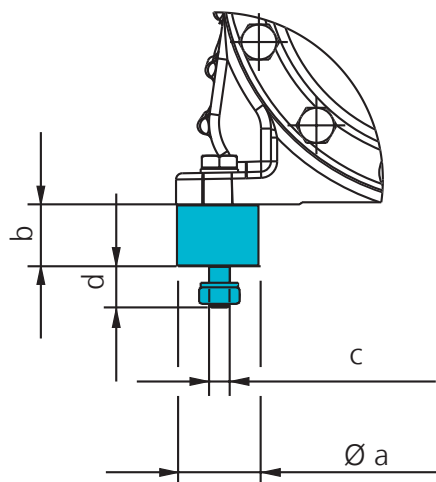
HC Compressors for Hydrocarbons

Dimensions and connections

Dimensions for anti-vibration pad

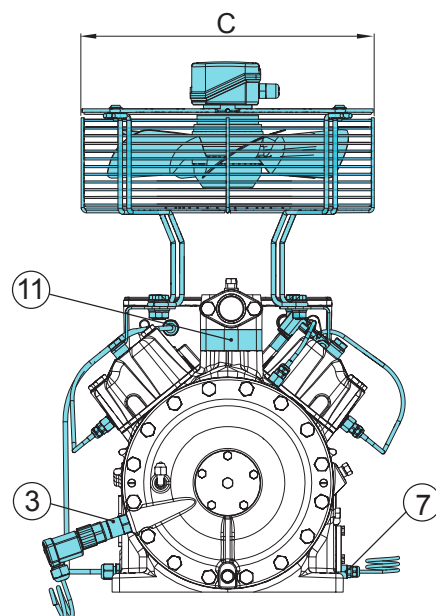
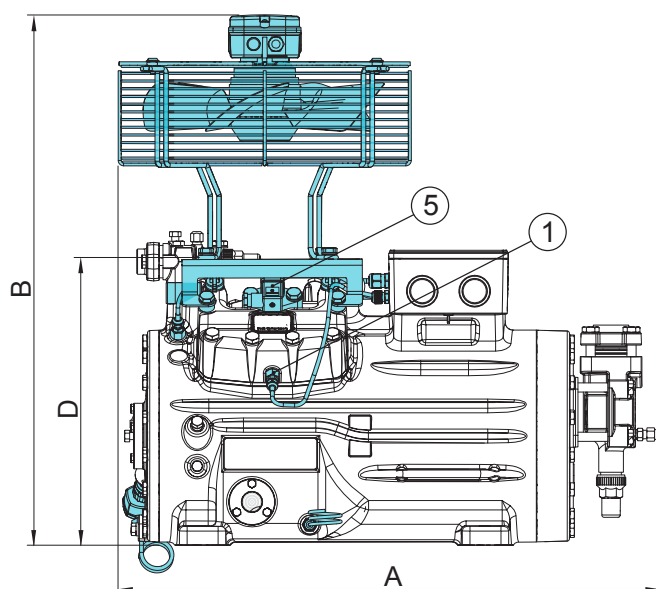
Type	Ø a	b	c	d
HG12P HC	30	30	M8	20
HG22e HC	40	30	M10	20
HG34e HC	40	30	M10	20
HG44e HC	50	30	M12	25
HG56e HC	50	30	M12	25
HG66e HC	50	30	M12	25
HG88e HC	70	45	M12	37

Dimensions in mm



HG12P HC HG22e HC HG34e HC HG44e HC HG56e HC

Dimensions with accessories



Type	A	B	C	D
HG12P HC	ca. 460	ca. 500	ca. 315	–
HG22e HC	ca. 524	ca. 610	ca. 380	–
HG34e HC	ca. 576	ca. 638	ca. 380	ca. 323
HG44e HC	ca. 700	ca. 688	ca. 380	ca. 383
HG56e HC	–	ca. 692	ca. 346	ca. 305

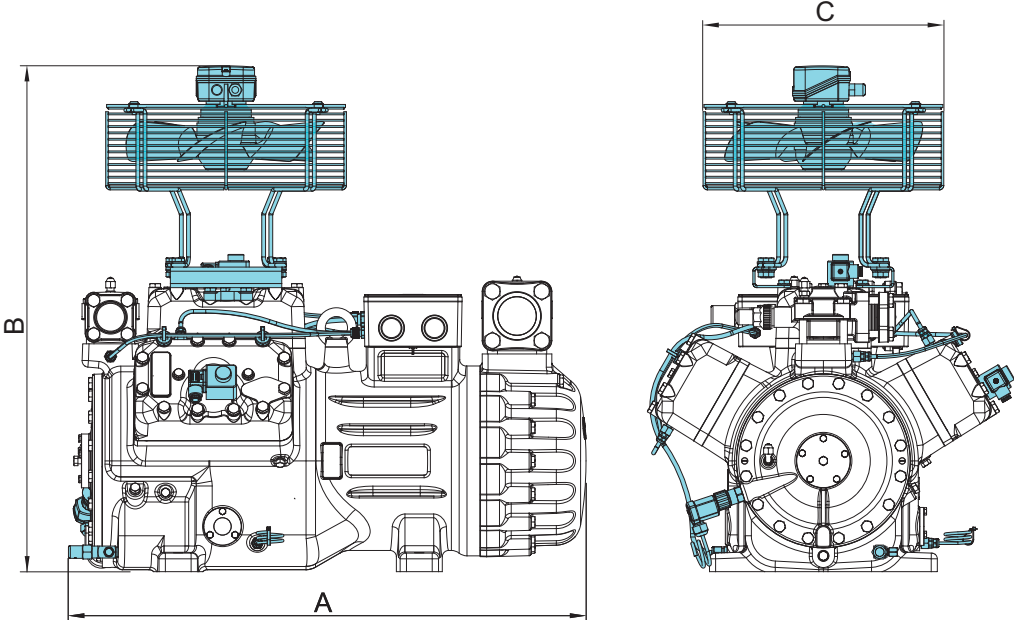
Dimensions in mm

HC Compressors for Hydrocarbons

Dimensions and connections

HG66e HC

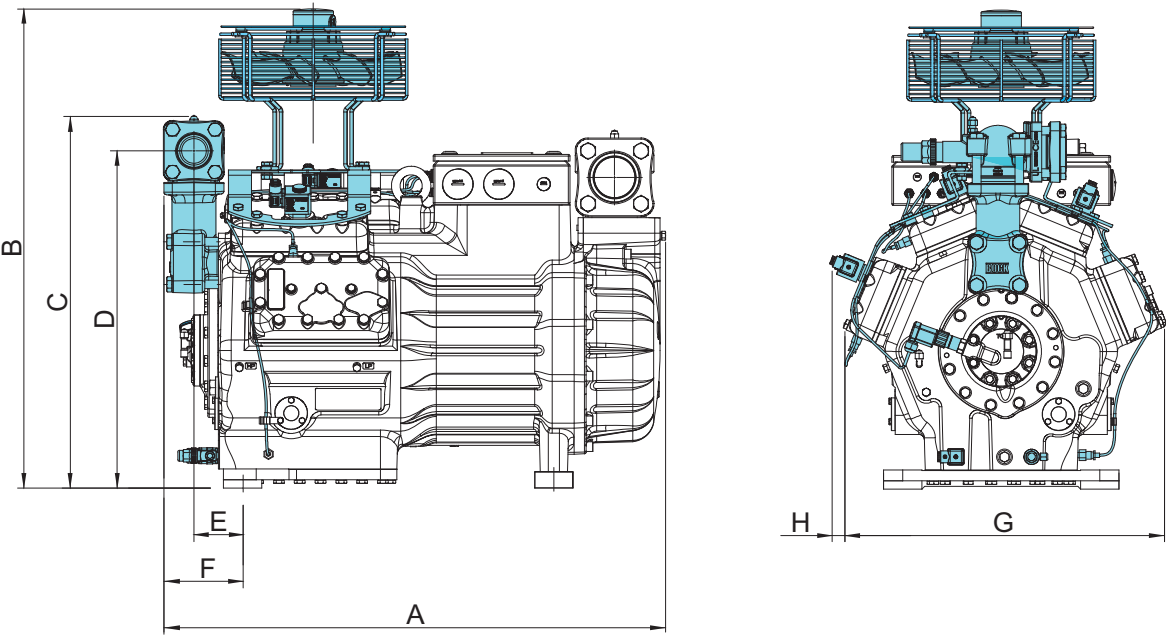
Dimensions with accessories



Type	A	B	C
HG66e	ca. 820	ca. 800	ca. 380
Dimensions in mm			

HG88e HC

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								

HC Compressors for Hydrocarbons

Dimensions and connections

Connections		HG 12P...HC	HG22e...HC	HG34e...HC	HG44e...HC	HG56e...HC	HG66e...HC	HG88e...HC
SV	Suction line	Please refer to technical data, page 12 and 13						
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 OIL	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
E	Connection oil pressure gauge	–	–	–	–	–	–	7/16" UNF
F	Oil drain	M 8	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	M 22 × 1,5
H	Oil charge plug	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	M 22 × 1,5
J	Oil sump heater (accessories)	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	M 22 × 1,5
K	Sight glass	1 1/8" – 18 UNEF	1 1/8" – 18 UNEF	1 1/8" – 18 UNEF	3 × M 6	3 × M 6	3 × M 6	3 × M 6
L	Thermal protection thermostat (accessories)	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
M	Oil strainer	–	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	M 12 × 1,5	–
O	Connection oil level regulator	1 1/8" – 18 UNEF	1 1/8" – 18 UNEF	1 1/8" – 18 UNEF	3 × M 6	3 × M 6	3 × M 6	3 × M 6
ÖV	Connection oil service valve	–	–	–	–	–	1/4" NPTF	1/4" NPTF
P	Connection oil differential pressure sensor	–	–	–	–	–	–	M 20 × 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 for view X see on page 18

* not recommended for HC

Please note

All electric or electronic components in the standard scope of supply, in the accessories or obtained otherwise have to be handled and mounted in such a way that the corresponding regulations for the use of hydrocarbons are fulfilled.

HC Compressors for Hydrocarbons

Scope of supply an accessories

Scope of supply & accessories		HG12P	HG22e	HG34e	HG44e	HG56e	HG66e	HG88e
Semi-hermetic two-cylinder reciprocating compressor with drive motor for direct start 220 – 240 V / 380 – 420 V Y - 3 - 50 Hz 265 – 290 V / 440 – 480 V Y - 3 - 60 Hz		●	●					
Semi-hermetic four-cylinder reciprocating compressor with drive motor for direct start 220 – 240 V / 380 – 420 V Y - 3 - 50 Hz 265 – 290 V / 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/Y - 3 - 50 Hz 440 – 480 V Y/Y - 3 - 60 Hz					●			
Semi-hermetic six-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380 – 420 V Y/Y - 3 - 50 Hz 440 – 480 V Y/Y - 3 - 60 Hz						●	●	
Semi-hermetic eight-cylinder reciprocating compressor with drive motor for part winding start (50/50) 380 – 420 V Y/Y - 3 - 50 Hz 440 – 480 V Y/Y - 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		● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
1	Thermal protection PTC	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾
Oil pump		●	●	●	●	●	●	●
Oil charge: FUCHS Reniso Synth 68		●	●	●	●	●	●	●
Compressor oil PAG		○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾
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) 5)}	○ ^{2) 5)}	○ ^{2) 5)}	–	–	–
		220 – 240 V - 1 - 50/60 Hz, 160 W	–	–	–	○ ^{2) 5)}	○ ^{2) 5)}	○ ^{2) 5)}
		220 – 240 V - 1 - 50/60 Hz, 200 W	–	–	–	–	–	○ ^{2) 5)}
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 service valve	–	–	–	–	–	○ ²⁾	○ ²⁾
5	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	–	–	–	–	–	–

● Scope of supply (standard)
○ Accessories
– Not available

¹⁾ Enclosed
²⁾ Mounted
³⁾ On request
⁵⁾ Necessary

HC Compressors for Hydrocarbons

Scope of supply an accessories

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

● Scope of supply (standard)
O Accessories
– Not available

¹⁾ Enclosed
²⁾ Mounted
³⁾ On request
⁴⁾ Only possible with additional adapter
⁵⁾ Necessary

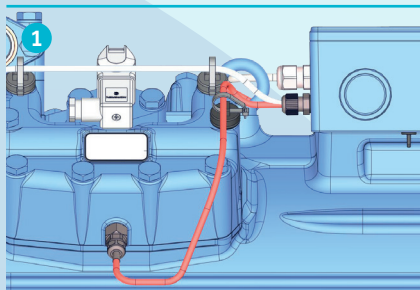
Please note

All electric or electronic components in the standard scope of supply, in the accessories or obtained otherwise have to be handled and mounted in such a way that the corresponding regulations for the use of hydrocarbons are fulfilled.

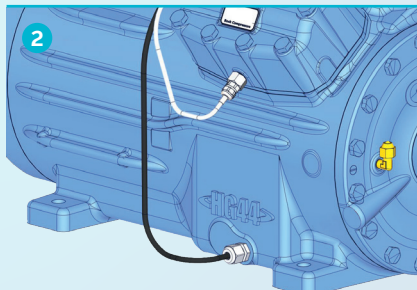
HC Compressors for Hydrocarbons

Accessories

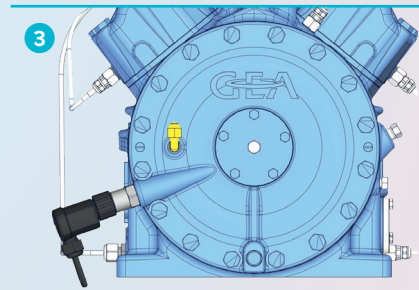
Thermal protection thermostat



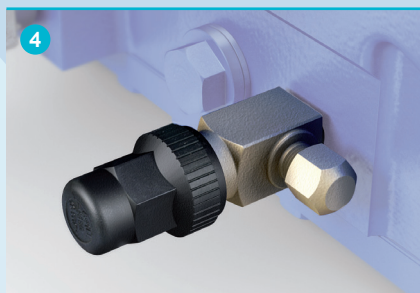
Oil sump heater



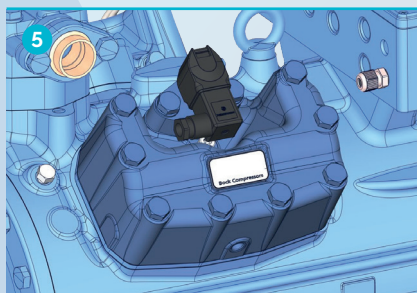
Oil differential pressure sensor



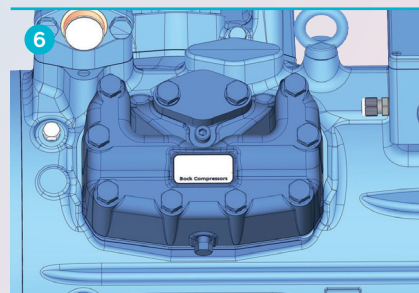
Oil service valve



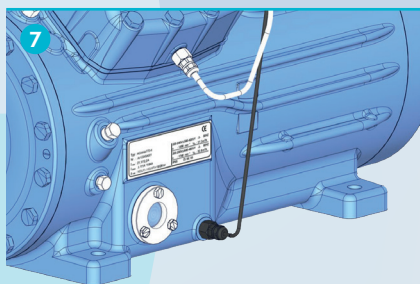
Capacity regulator



Prepared for capacity regulator



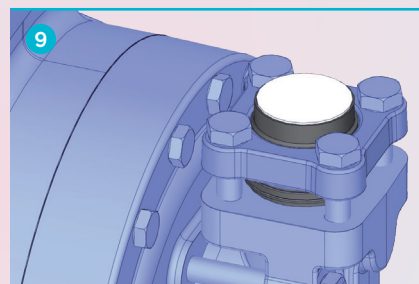
Oil temperature sensor



ESS Electronic Soft Start



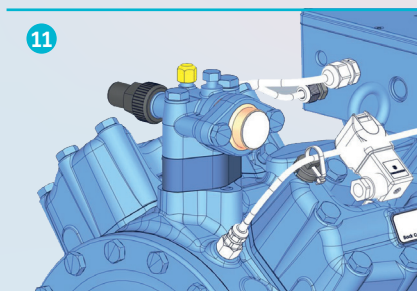
Connection piece
in welded construction



Additional fan



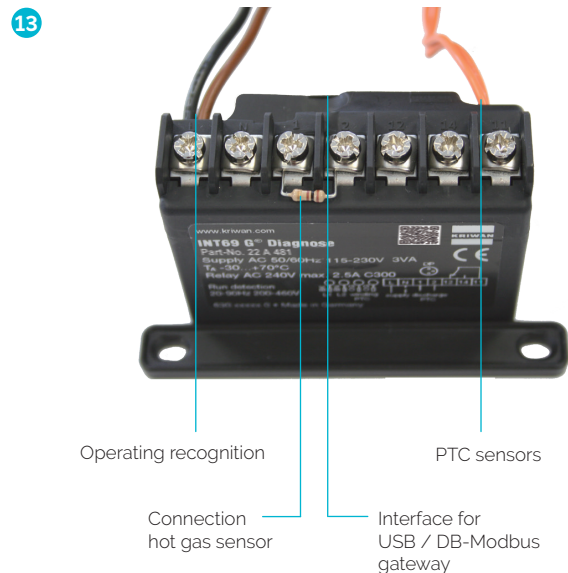
Intermediate flange
for discharge line valve



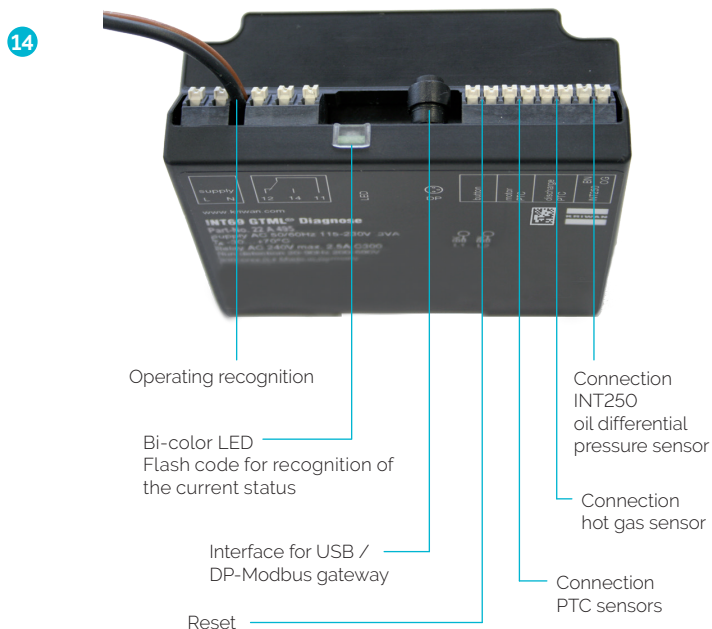
HC Compressors for Hydrocarbons

Scope of supply an 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
Unit designation	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
Connection voltage	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

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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.

» vap.bock.de

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.

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