

Single-stage semi-hermetic Bock compressors

At a glance	18
Special features	19
Operating limits and performance data	20
Technical data	42
Dimensions and connections	44
Scope of supply and accessories	55

The Bock semi-hermetic compressor program provides a full performance range of innovative and modern compressor designs in 2, 4, 6 and 8 cylinder constructions. The ideal solution for any kind of application.

HG (Hermetic Gas-cooled)

Conventional suction gas-cooled compressor design

HA (Hermetic Air-cooled)

Special Bock design for deep-freezing (R22/R404A) with an air-cooled motor and direct suction at the cylinder.

All the compressors display the same particularly remarkable features:

- Outstanding running comfort
- High efficiency and reliability to the highest quality standard
- Easy maintenance, e.g. interchangeable motors
- Oil pump lubrication
- Bock MP10 electronic motor protection, especially easy to operate with LED status indicators
- Suitable for conventional and chlorine-free HFC refrigerants

Available versions:

The Bock semi-hermetic program provides the following product variants:

- Single-stage HG (HA) compressors
- Two-stage HGZ compressors
- Duplex DHG (DHA) compressors
- SHG (SHA) compressor units with receiver
- SHG (SHA) condenser units air-cooled

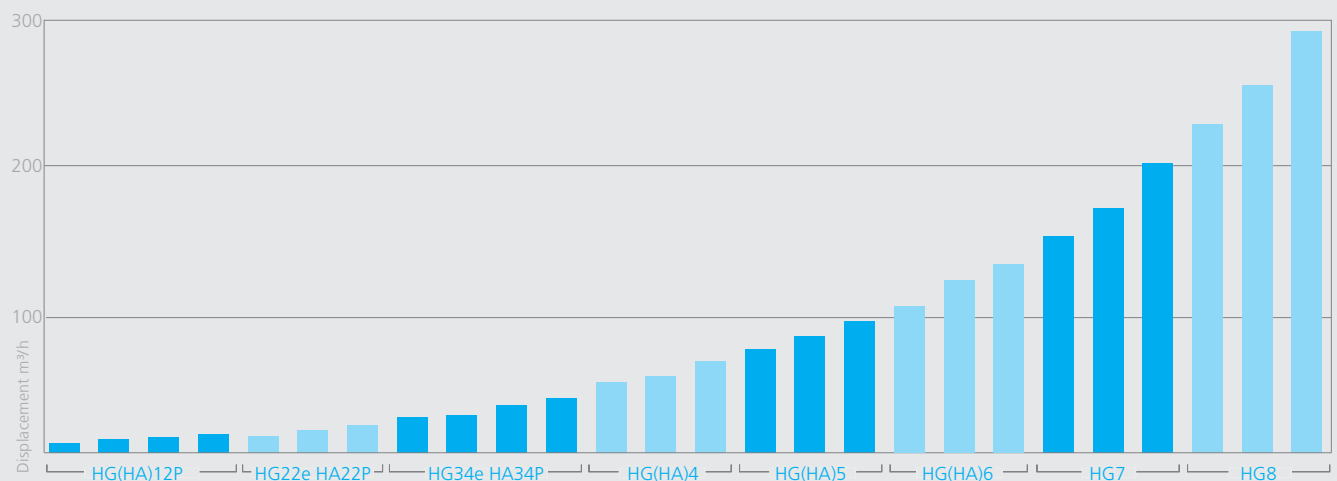
Forward looking compressor models

Bock offers a choice of interesting compressor versions in the established semi-hermetic range for current market trends such as alternative refrigerants, deep-freezing or EX protection.

- **HA (Hermetic Air-cooled)**, air-cooled compressors for deep-freezing applications
- **CO₂ Compressors (subcritical)**, for subcritical cascade systems
- **CO₂ Compressors (transcritical)**, for transcritical CO₂ applications
- **R410A Compressors**, for the refrigerant R410A
- **ATEX (ATmospheres EXplosibles)**, for explosion-risk environments

The current program

...8 model sizes with 26 capacity stages from 5,4 to 279,8 m³/h (50 Hz)

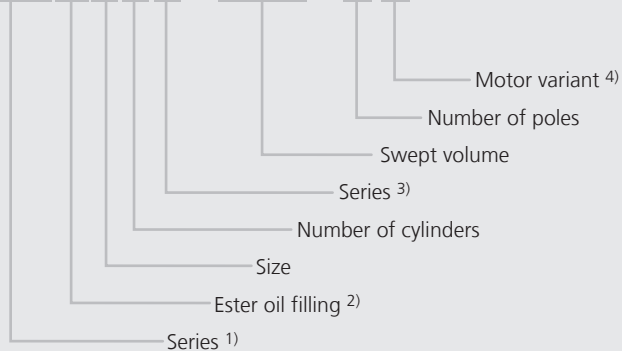




- 1
- 2
- 3
- 4

Type key

HGX34e / 215 - 4S

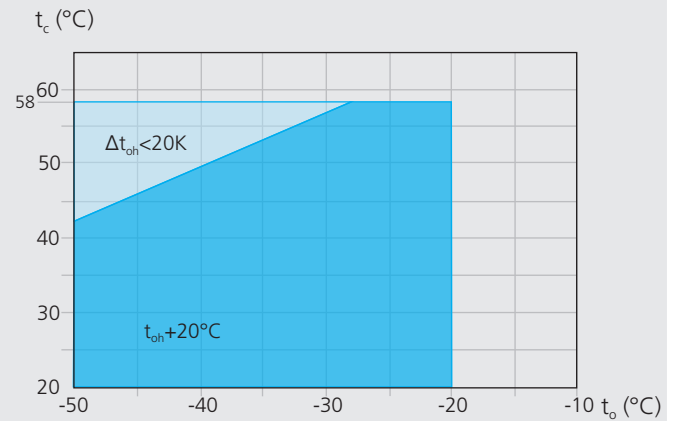
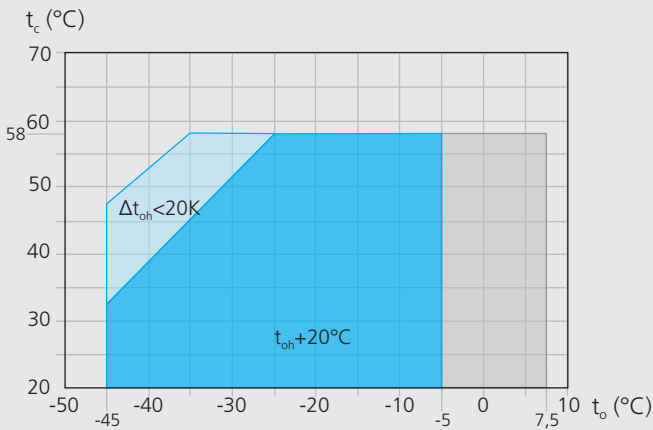


- 1) HG = Hermetic Gas-Cooled (suction gas-cooled)
HA = Hermetic Air-Cooled (for deep-freezing)
- 2) X = Ester oil filling
(HFC refrigerants e.g. R134a, R404A, R507, R407C)
- 3) e = Additional declaration for e-series compressors
P = Additional declaration for Pluscom compressors
- 4) S = More powerful motor e.g. air-conditioning applications

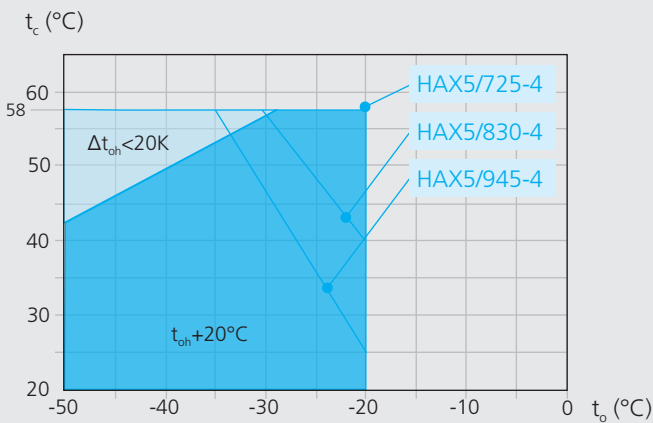
R404A/R507 Operating limits

HGX12P / HGX22e / HGX34e /
HGX4 / HGX5 / HGX6^① / HGX7 / HGX8^②

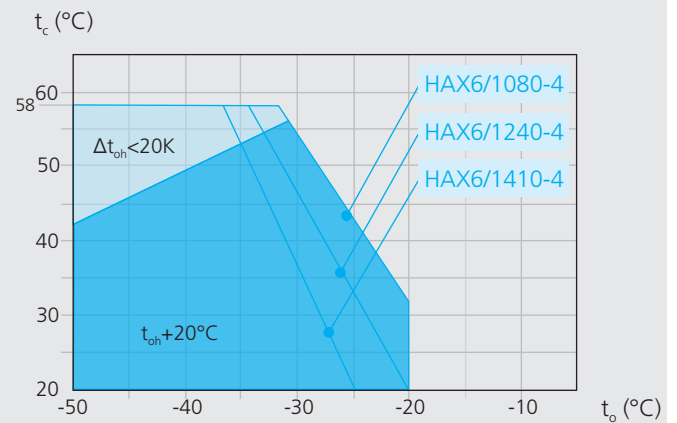
HAX12P / HAX22P / HAX34P / HAX4



HAX5



HAX6



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

¹⁾ LP = low pressure HP = high pressure

- ① **HGX6/1410-4S**
Max. evaporating temperature
 $t_o = 2\text{ °C}$
HGX6/1410-4
Max. evaporating temperature
 $t_o = -7\text{ °C}$
- ② **HGX8/2830-4**
Max. evaporating temperature
 $t_o = 0\text{ °C}$

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

R404A/R507 Notes

Operating limits

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

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

Further explanation see separate brochure "Bock semi-hermetic compressors - Electronic Controls".

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 sub-cooling.**

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

Performance data were compiled for R404A and R507.

The base values are the data for R404A.

Conversion factor for 60 Hz = 1,2

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

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.

R404A/R507		Performance data												50 Hz								
Type	Cond. temp. °C	Q	Cooling capacity \dot{Q}_o [W]										Power consumption P_e [kW]									
			Evaporating temperature °C																			
			7,5	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45								
HGX4/555-4 ¹⁾	30	Q	59014	54222	45450	37853	31129	25259	20184	15848	12194	9164	6702	4751								
		P	11,52	11,34	10,89	10,34	9,72	8,99	8,19	7,34	6,47	5,59	4,73	3,93								
HGX4/555-4 S ¹⁾	40	Q	50452	46260	38616	32112	26279	21212	16857	13155	10050	7484	5401	3743								
		P	13,64	13,29	12,51	11,84	10,88	9,86	8,81	7,74	6,69	5,67	4,72	3,85								
	50	Q	41937	38348	31838	26484	21544	17286	13653	10589	8036	5938	4236									
		P	15,53	15,01	13,93	13,14	11,87	10,58	9,30	8,04	6,83	5,70	4,66									
HAX4/555-4	30	Q											21842	17569	13875	10713	8037	5799				
		P											8,84	7,84	6,87	5,93	5,01	4,12				
	40	Q											18374	14675	11488	8766	6461	4528				
		P											9,46	8,27	7,14	6,04	4,99	3,98				
	50	Q											15013	11894	9220	6944	5018	3396				
		P											9,95	8,60	7,31	6,08	4,90	3,78				
HGX4/650-4 ¹⁾	30	Q	70903	65224	54821	44444	36811	30119	24302	19297	15039	11465	8510	6110								
		P	14,57	14,19	13,41	12,51	11,70	10,80	9,84	8,84	7,82	6,80	5,80	4,85								
HGX4/650-4 S ¹⁾	40	Q	60855	55879	46795	37928	31232	25384	20322	15982	12298	9208	6647	4550								
		P	16,80	16,29	15,22	14,30	13,15	11,94	10,70	9,45	8,21	7,01	5,86	4,79								
	50	Q	50791	46523	38768	31303	25565	20586	16302	12650	9564	6980	4835									
		P	19,05	18,38	17,02	15,79	14,31	12,81	11,31	9,83	8,39	7,02	5,73									
HAX4/650-4	30	Q											24978	20136	15945	12352	9304	6747				
		P											9,71	8,62	7,57	6,54	5,55	4,57				
	40	Q											21012	16819	13202	10107	7480	5268				
		P											10,39	9,10	7,86	6,67	5,53	4,42				
	50	Q											17167	13632	10596	8006	5809	3951				
		P											10,93	9,46	8,05	6,71	5,43	4,20				
HGX5/725-4 ¹⁾	30	Q	76254	70105	58815	48024	39230	31558	24934	19288	14546	10636	7486	5024								
		P	13,31	13,28	13,03	12,99	12,20	11,23	10,13	8,94	7,70	6,47	5,28	4,19								
HGX5/725-4 S ¹⁾	40	Q	64689	59328	49517	40164	32541	25933	20266	15468	11467	8191	5568	3525								
		P	16,28	16,01	15,29	14,87	13,61	12,22	10,76	9,25	7,76	6,32	4,98	3,78								
	50	Q	53354	48782	40450	32498	26053	20515	15811	11869	8617	5982	3892									
		P	19,02	18,49	17,29	16,31	14,61	12,84	11,04	9,26	7,55	5,94	4,48									
HAX5/725-4	30	Q											26886	21437	16746	12756	9409	6644				
		P											10,67	9,42	8,19	7,01	5,86	4,75				
	40	Q											22619	17905	13864	10437	7565	5189				
		P											11,41	9,93	8,51	7,15	5,84	4,60				
	50	Q											18487	14513	11125	8265	5874	3892				
		P											12,01	10,33	8,72	7,19	5,74	4,37				
HGX5/830-4 ¹⁾	30	Q	86623	79925	67508	54430	44830	36400	29056	22717	17300	12722	8900	5752								
		P	15,69	15,61	15,23	14,69	13,90	12,93	11,80	10,55	9,21	7,82	6,41	5,01								
HGX5/830-4 S ¹⁾	40	Q	74069	68151	57216	45580	37311	30078	23798	18389	13769	9854	6561	3809								
		P	19,30	18,89	17,91	16,93	15,69	14,28	12,75	11,13	9,45	7,74	6,04	4,38								
	50	Q	61445	56332	46927	37034	30091	24051	18831	14348	10520	7263	4496									
		P	22,39	21,68	20,13	18,88	17,17	15,33	13,38	11,38	9,34	7,30	5,29									
HAX5/830-4	30	Q											30392	24266	19003	14530	10772	7655				
		P											12,06	10,65	9,29	7,96	6,67	5,43				
	40	Q											25602	20281	15733	11882	8654	5976				
		P											12,90	11,24	9,65	8,12	6,65	5,25				
	50	Q														12641	9414	6718	4480			
		P														9,88	8,16	6,53	4,99			
HGX5/945-4 ¹⁾	30	Q	99975	91955	77277	63293	52168	42473	34090	26900	20783	15620	11291	7678								
		P	18,52	18,31	17,73	17,40	16,27	15,04	13,74	12,35	10,90	9,38	7,80	6,18								
HGX5/945-4 S ¹⁾	40	Q	84751	77834	65213	52881	43552	35430	28395	22327	17107	12617	8737	5347								
		P	22,17	21,71	20,66	19,84	18,30	16,69	14,99	13,23	11,40	9,52	7,59	5,61								
	50	Q	69440	63623	53056	42757	35145	28515	22748	17723	13321	9424	5912									
		P	25,81	25,08	23,50	22,12	20,15	18,09	15,97	13,78	11,54	9,25	6,91									
HAX5/945-4	30	Q											27994	21989	16866	12548	8959					
		P											12,27	10,72	9,21	7,74	6,32					
	40	Q														18205	13799	10088	6997			
		P														11,13	9,39	7,71	6,11			
	50	Q														10929	7834	5248				
		P														9,44	7,57	5,81				
HGX5/1080-4 ¹⁾	30	Q	113675	104548	87811	72501	59869	48801	39180	30889	23810	17826	12819	8672								
		P	22,05	21,89	21,27	20,82	19,21	17,56	15,88	14,16	12,40	10,60	8,76	6,86								
HGX5/1080-4 S ¹⁾	40	Q	96893	88944	74420	61734	50695	41062	32716	25541	19419	14233	9866	6200								
		P	26,74	26,17	24,80	23,74	21,61	19,46	17,30	15,13	12,94	10,72	8,49	6,22								
	50	Q	80355	73583	61270	51086	41654	33468	26411	20366	15214	10840	7125									
		P	30,79	29,85	27,79	26,12	23,48	20,85	18,23	15,62	13,01	10,40	7,78									
HAX5/1080-4	30	Q											41973	33574	26360	20224	15061	10763				
		P											16,66	14,73	12,86	11,05	9,29	7,58				
		Q											28072	21828	16539	12098	8401					
	40	P											15,55	13,36	11,27	9,26	7,33					
		Q														17547	13107	9392	6297			
		P														13,68	11,32	9,09	6,97			

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

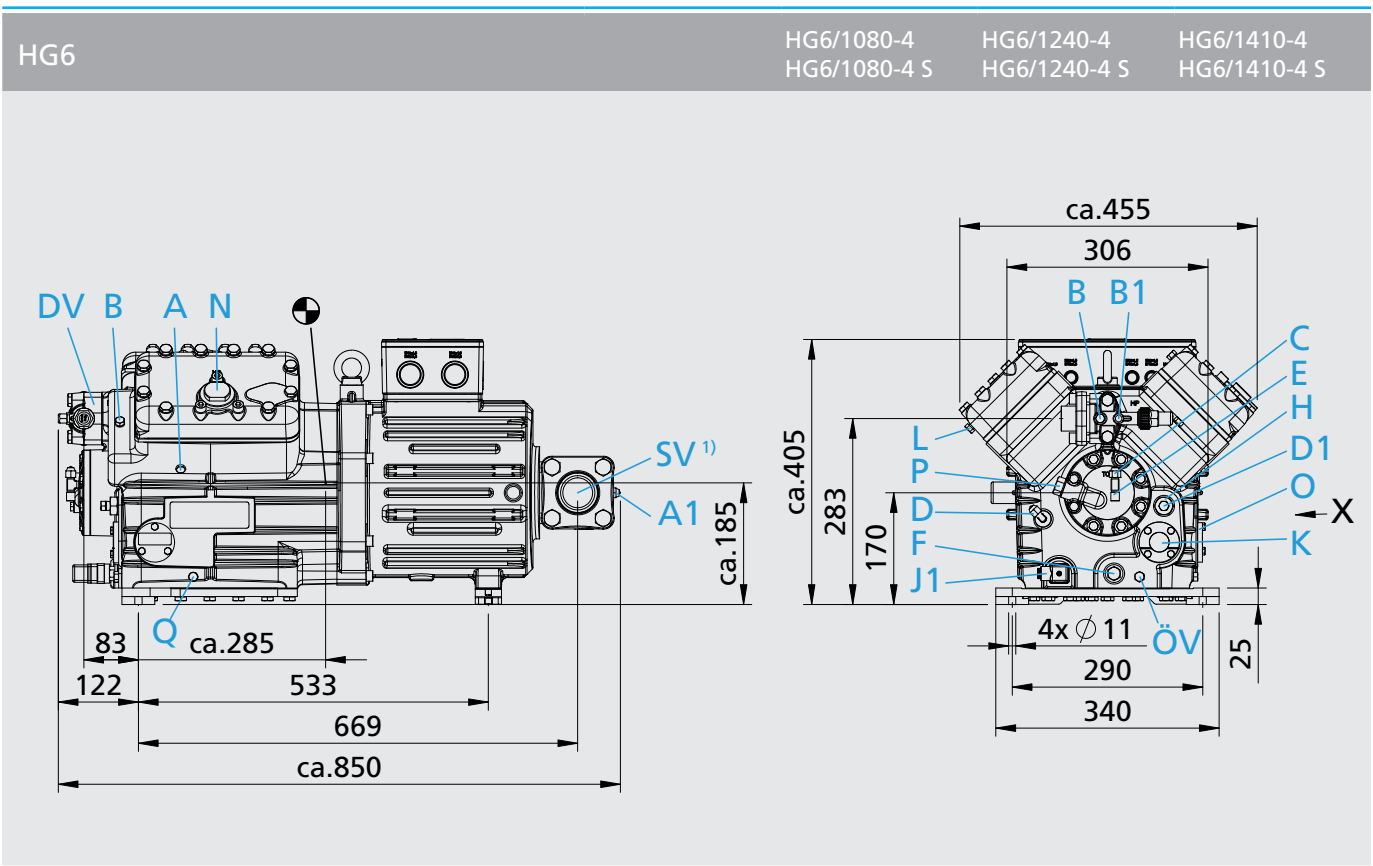
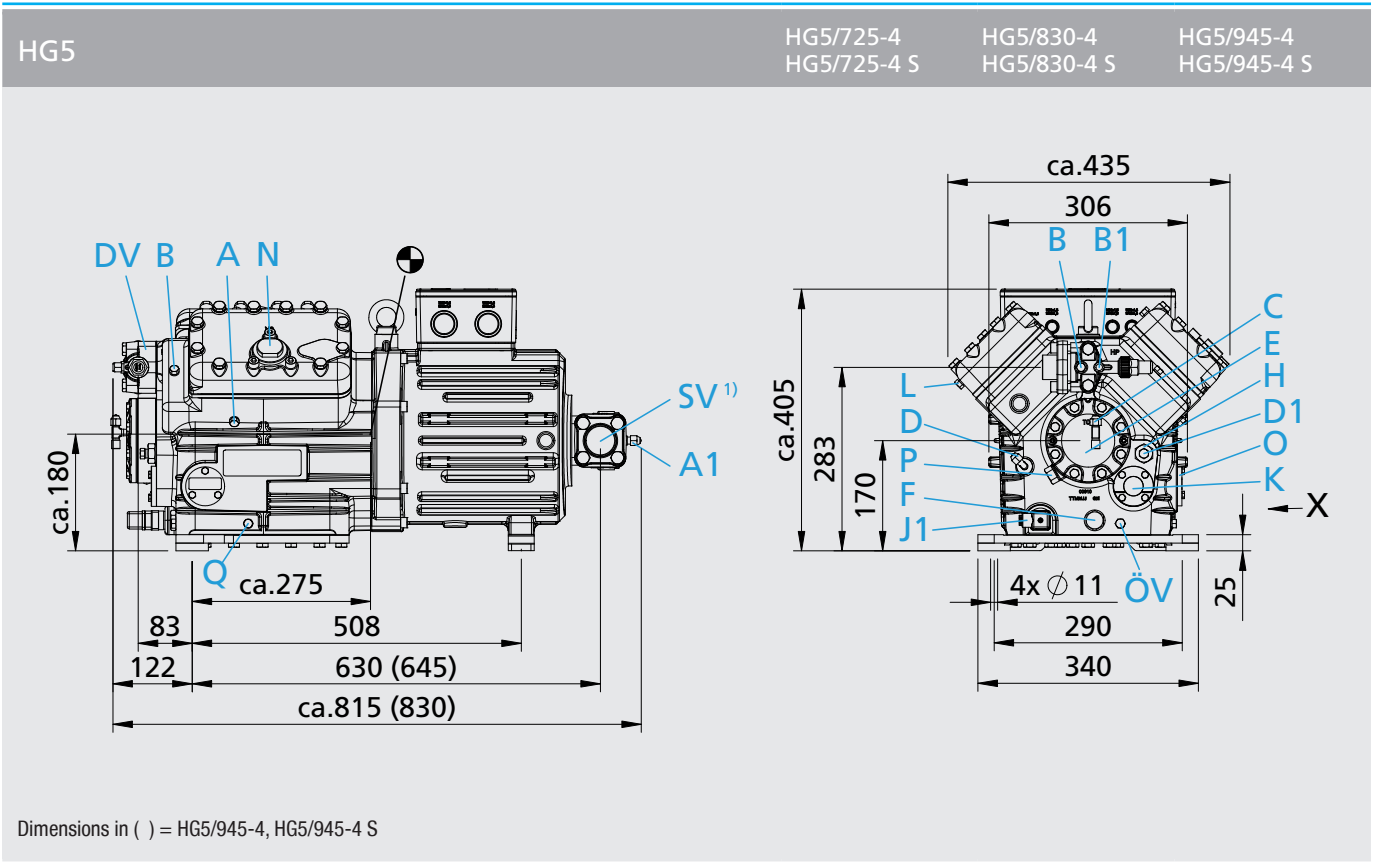
¹⁾ Compressors (R404A) are ASERCOM certified



Motor version -S- (more powerful motor)

Supplementary cooling or reduced suction gas temp.

HG	Number of cylinders	Displacement 50 / 60 Hz (1450/1740 rpm)	Electrical data				Weight	Connections ⑥		Oil charge
			Voltage	Max. working current	Max. power consumption	Starting current (rotor locked)		Discharge line DV	Suction line SV	
Type		m³/h		A	kW	A	kg	mm l inch	mm l inch	Ltr.
HG12P/60-4 S	2	5,40 / 6,40	③	6,8 / 3,9	2,2	40 / 23	48,0	12 1/2	16 5/8	0,8
HG12P/75-4	2	6,70 / 8,10	③	7,1 / 4,1	2,3	40 / 23	48,0	12 1/2	16 5/8	0,8
HG12P/75-4 S	2	6,70 / 8,10	③	8,0 / 4,6	2,6	43 / 25	49,0	12 1/2	16 5/8	0,8
HG12P/90-4	2	8,00 / 9,60	③	8,5 / 4,9	2,8	43 / 25	49,0	12 1/2	16 5/8	0,8
HG12P/90-4 S	2	8,00 / 9,60	③	8,8 / 5,1	2,9	45 / 26	49,0	12 1/2	16 5/8	0,8
HG12P/110-4	2	9,40 / 11,30	③	9,2 / 5,3	3,1	43 / 25	49,0	12 1/2	16 5/8	0,8
HG12P/110-4 S	2	9,40 / 11,30	③	10,6 / 6,1	3,6	45 / 26	49,0	12 1/2	16 5/8	0,8
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
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
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
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
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
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
HG34e/215-4	4	18,80 / 22,60	③	14,0 / 8,1	4,8	87 / 50	92,0	22 7/8	28 1 1/8	1,3
HG34e/215-4 S	4	18,80 / 22,60	③	18,3 / 10,5	6,0	132 / 76	97,0	22 7/8	28 1 1/8	1,3
HG34e/255-4	4	22,10 / 26,60	③	17,0 / 9,8	6,0	87 / 50	91,0	22 7/8	28 1 1/8	1,3
HG34e/255-4 S	4	22,10 / 26,60	③	21,1 / 12,2	7,2	132 / 76	96,0	22 7/8	28 1 1/8	1,3
HG34e/315-4	4	27,30 / 32,80	③	21,1 / 12,2	7,4	111 / 64	94,0	22 7/8	28 1 1/8	1,3
HG34e/315-4 S	4	27,30 / 32,80	③	25,5 / 14,7	8,9	132 / 76	97,0	22 7/8	28 1 1/8	1,3
HG34e/380-4	4	33,10 / 39,70	③	26,1 / 15,1	9,3	111 / 64	93,0	22 7/8	28 1 1/8	1,3
HG34e/380-4 S	4	33,10 / 39,70	③	31,2 / 18,0	11,1	132 / 76	96,0	22 7/8	28 1 1/8	1,3
				*PW 1+2		*PW1 / PW 1+2				
HG4/465-4	4	40,50 / 48,60	④	18	11,0	57 / 75	148	28 / 1 1/8	35 / 1 3/8	2,7
HG4/465-4 S	4	40,50 / 48,60	④	27	13,0	82 / 107	151	28 / 1 1/8	35 / 1 3/8	2,7
HG4/555-4	4	48,20 / 57,80	④	27	12,9	82 / 107	150	28 / 1 1/8	35 / 1 3/8	2,7
HG4/555-4 S	4	48,20 / 57,80	④	34	15,2	107 / 140	153	28 / 1 1/8	35 / 1 3/8	2,7
HG4/650-4	4	56,60 / 67,90	④	27	15,7	82 / 107	152	28 / 1 1/8	42 / 1 5/8	2,7
HG4/650-4 S	4	56,60 / 67,90	④	34	18,4	107 / 140	155	28 / 1 1/8	42 / 1 5/8	2,7
HG5/725-4	4	62,90 / 75,50	④	33	16,5	82 / 107	198	28 / 1 1/8	42 / 1 5/8	3,6
HG5/725-4 S	4	62,90 / 75,50	④	37	19,4	107 / 140	201	28 / 1 1/8	42 / 1 5/8	3,6
HG5/830-4	4	72,20 / 86,70	④	33	18,9	82 / 107	197	28 / 1 1/8	42 / 1 5/8	3,6
HG5/830-4 S	4	72,20 / 86,70	④	49	22,3	126 / 160	203	28 / 1 1/8	42 / 1 5/8	3,6
HG5/945-4	4	82,20 / 98,60	④	37	22,6	107 / 140	201	35 / 1 3/8	54 / 2 1/8	3,6
HG5/945-4 S	4	82,20 / 98,60	④	49	28,6	126 / 160	205	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1080-4	4	93,70 / 112,40	④	47	26,3	149 / 189	218	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1080-4 S	4	93,70 / 112,40	④	57	31,0	172 / 212	223	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1240-4	4	107,60 / 129,10	④	57	30,5	172 / 212	222	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1240-4 S	4	107,60 / 129,10	④	71	36,0	204 / 250	224	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1410-4	4	122,40 / 146,90	④	57	35,6	172 / 212	219	35 / 1 3/8	54 / 2 1/8	3,6
HG6/1410-4 S	4	122,40 / 146,90	④	71	42,6	204 / 250	222	35 / 1 3/8	54 / 2 1/8	3,6
HG7/1620-4	6	140,60 / 168,80	⑤	76	38,7	223 / 340	278	42 / 1 5/8	54 / 2 1/8	4,5
HG7/1620-4 S	6	140,60 / 168,80	⑤	83	46,3	268 / 373	299	42 / 1 5/8	54 / 2 1/8	4,5
HG7/1860-4	6	161,40 / 193,70	⑤	83	44,6	268 / 373	296	42 / 1 5/8	54 / 2 1/8	4,5
HG7/1860-4 S	6	161,40 / 193,70	⑤	98	53,3	343 / 494	292	42 / 1 5/8	54 / 2 1/8	4,5
HG7/2110-4	6	183,60 / 220,30	⑤	98	51,2	343 / 494	289	42 / 1 5/8	64 / 2 5/8	4,5
HG7/2110-4 S	6	183,60 / 220,30	⑤	115	60,5	344 / 500	297	42 / 1 5/8	64 / 2 5/8	4,5
HG8/2470-4	8	214,30 / 257,10	⑤	102	60,0	274 / 301	432	54 / 2 1/8	76 / 3 1/8	9,0
HG8/2470-4 S	8	214,30 / 257,10	⑤	155	72,5	475 / 551	432	54 / 2 1/8	76 / 3 1/8	9,0
HG8/2830-4	8	245,90 / 295,10	⑤	155	77,5	475 / 551	429	54 / 2 1/8	76 / 3 1/8	9,0
HG8/2830-4 S	8	245,90 / 295,10	⑤	170	84,5	520 / 605	449	54 / 2 1/8	76 / 3 1/8	9,0
HG8/3220-4	8	279,80 / 335,80	⑤	155	78,3	475 / 551	423	54 / 2 1/8	76 / 3 1/8	9,0
HG8/3220-4 S	8	279,80 / 335,80	⑤	170	94,2	520 / 605	443	54 / 2 1/8	76 / 3 1/8	9,0



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

- Connections see page 54
 - Dimensions for anti-vibration pad see page 51
 - Dimensions for view X see page 51