



BOCK UL compressor range



Bock semi-hermetic compressors
UL recognized

colour the world
of tomorrow

Bock UL compressor range

UL extension for BOCK HG compressors: Approved for US and Canadian safety standards.

The new UL-HGe series is a stand-alone series that combines all the advantages of the standard semi-hermetic HGe series with the specific UL requirements. UL stands for the U.S. company "Underwriters Laboratories (UL)". It tests and certifies products about their safety.

UL standards encompass UL's safety research and scientific expertise. In addition to the UL certification, the new BOCK compressor series is very energy-efficient (e-marking in the type code), robust and compact.

The BOCK UL-HGe compressors are suitable for a wide range of applications using chlorine-free HFC refrigerants. The usual running comfort, easy maintenance, reliability, and the typical Bock quality standards also characterize this compressor series.

The BOCK configuration tool VAP offers you the possibility to find the right compressor and cooling solution according to your project

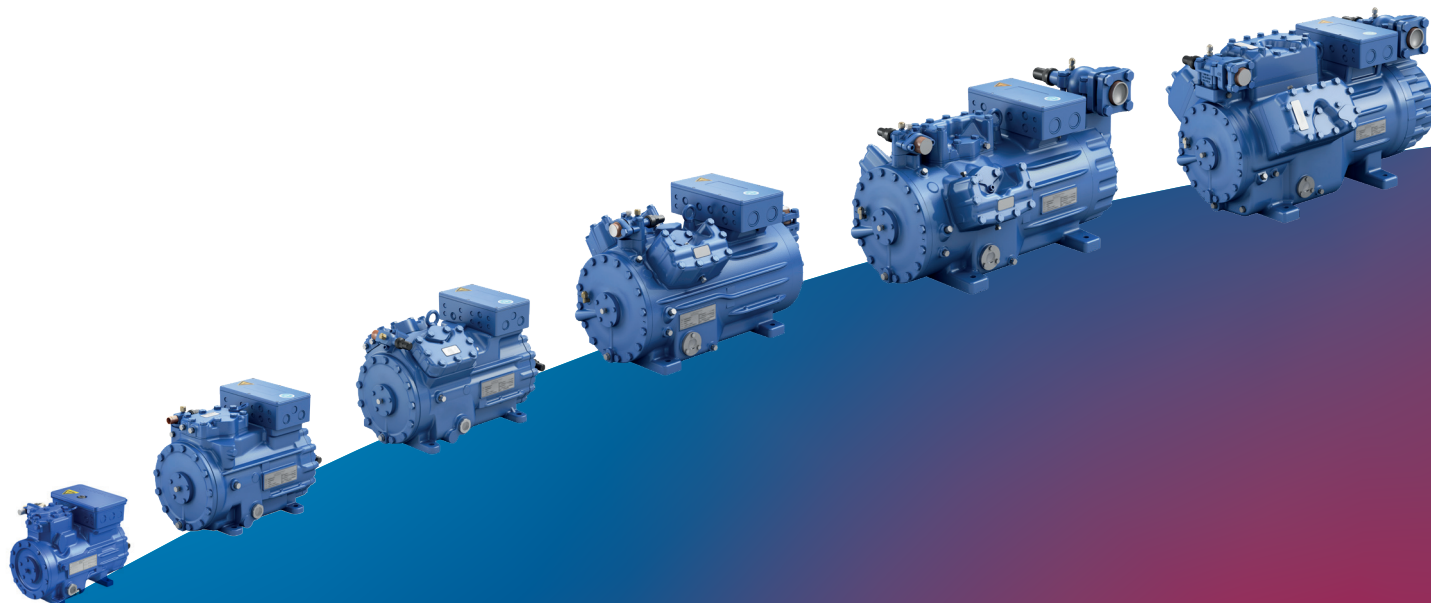


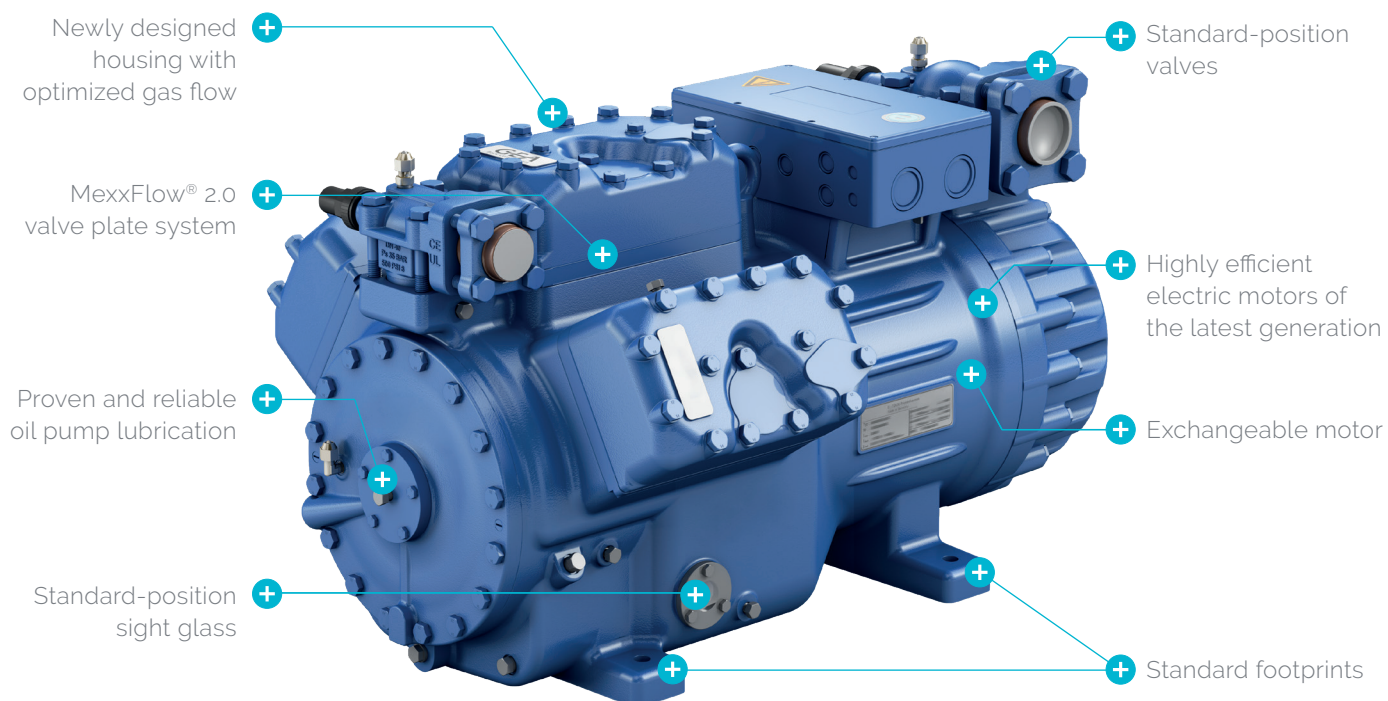
BOCK VAP

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

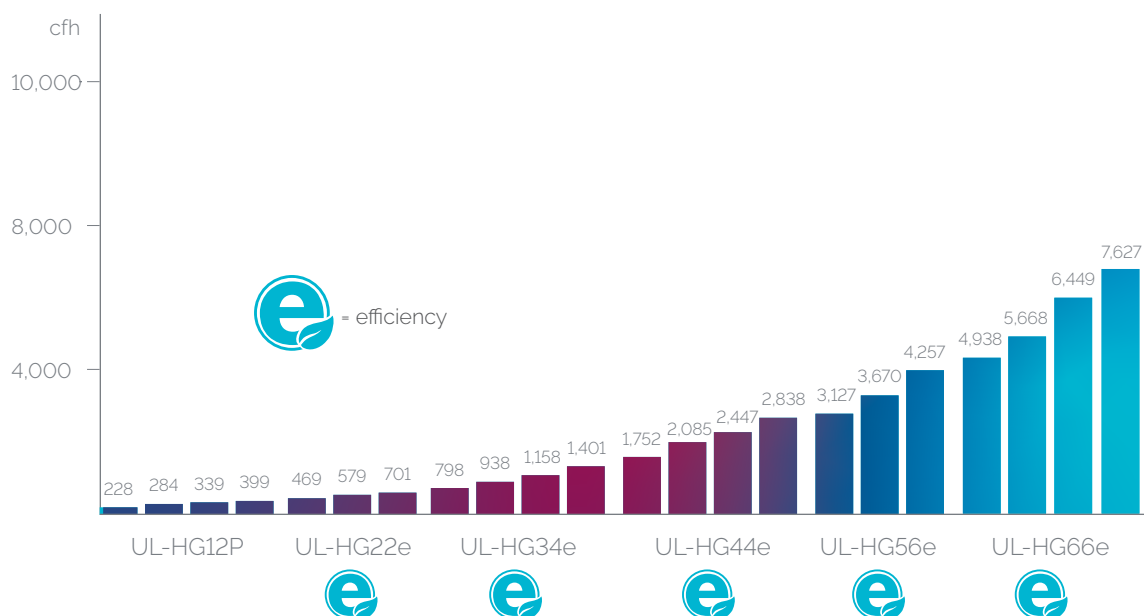




Bock UL compressor range

At a glance

6 model sizes with 22 capacity stages from 228 to 7,627 cfh (1,740 rpm)

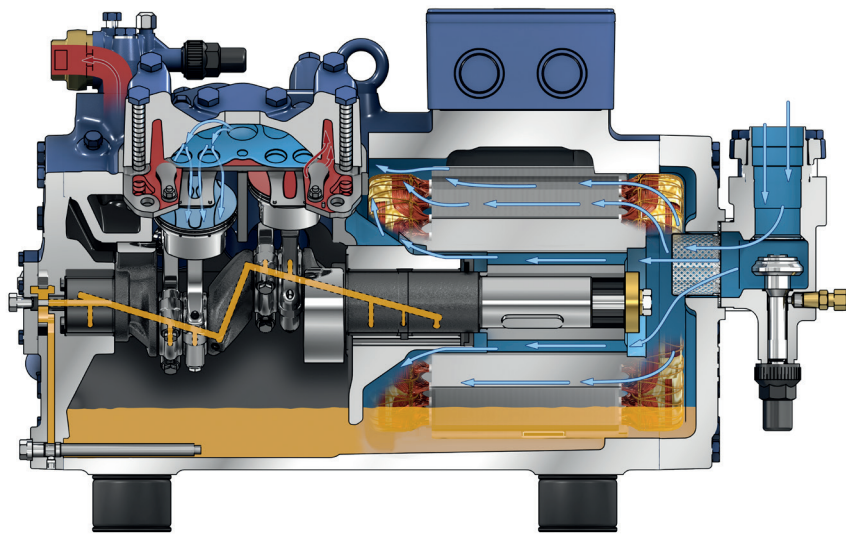


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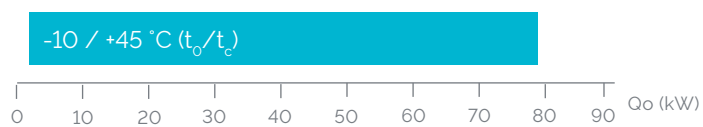


Type key

UL-HGX66e / 2070 - ML 50

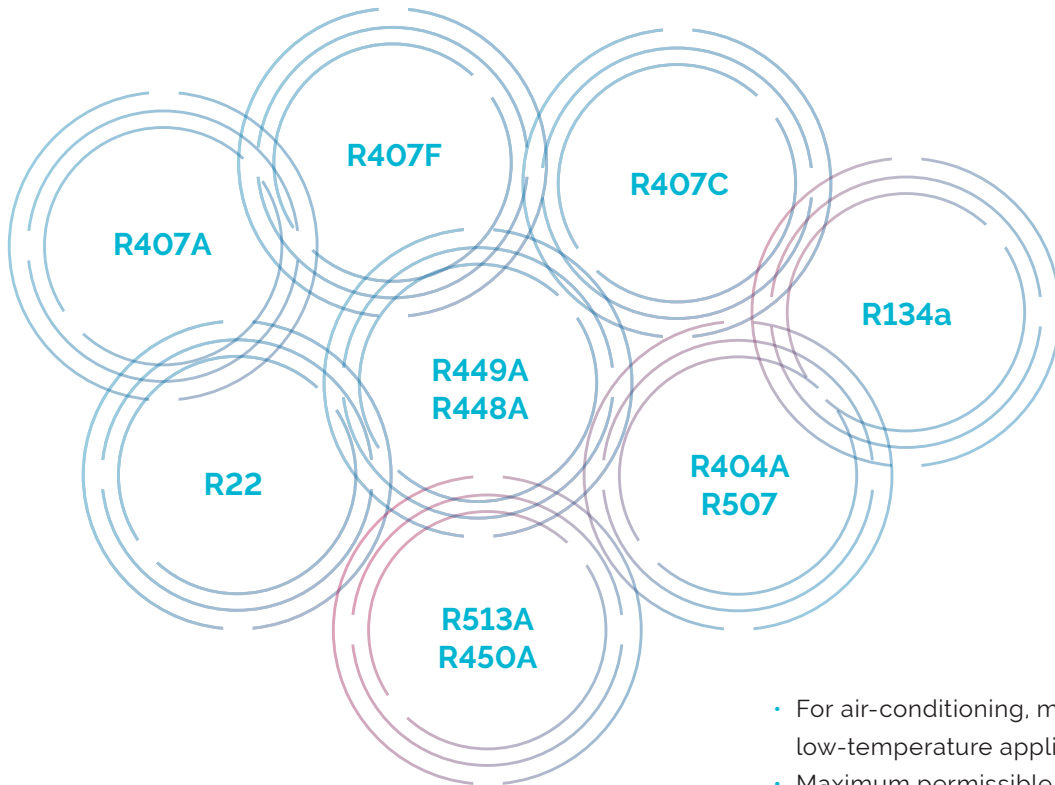
- Identification UL compressor
- Hermetic gas-cooled
- Ester oil filling
- Size
- Number of cylinders
- e-series
- Swept volume
- Motor application: S – strong motor e.g. AC; ML – motor for MT and LT
- HP code for motor size

Cooling capacity R448A / R449A



Features and advantages

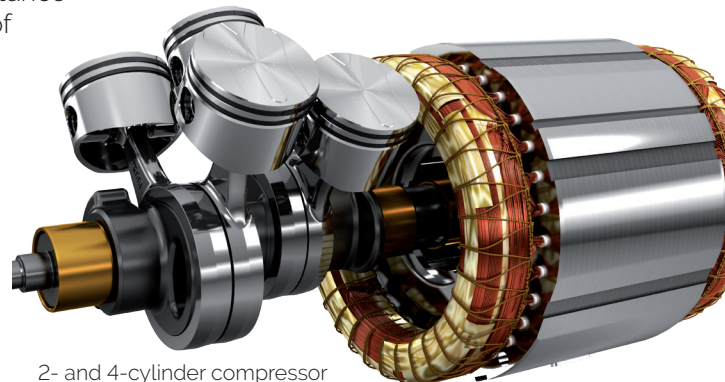
One compressor design for all standard refrigerants



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

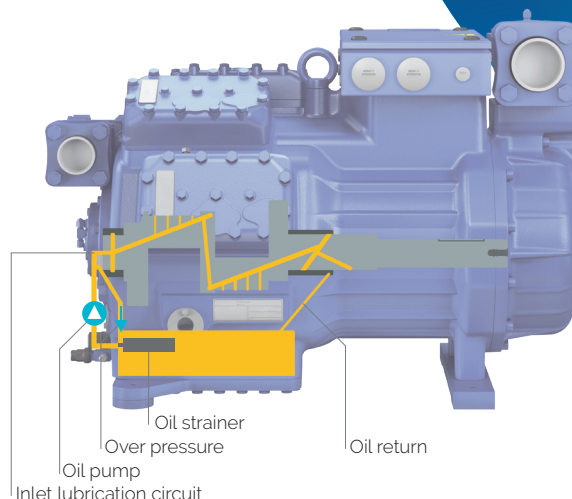
Optimized drive gear

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



2- and 4-cylinder compressor
HG12P to HG34e

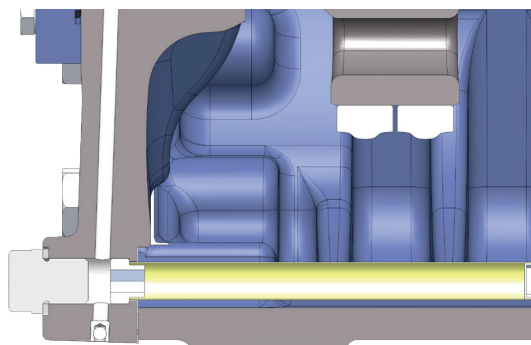
Safe, reliable oil supply



- 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

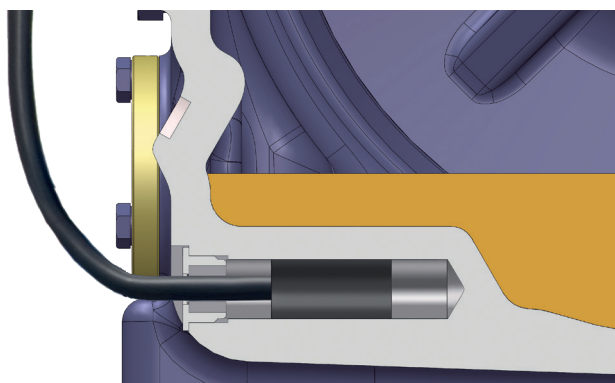
- Oil pump lubrication independent of direction of rotation
- Connection possibility for oil pressure monitoring
- Large-volume oil sump
- Coupling option for oil level regulator included as standard

Easy-to-maintain oil strainer



- Easy-to-remove oil strainer for easier maintenance and increased availability

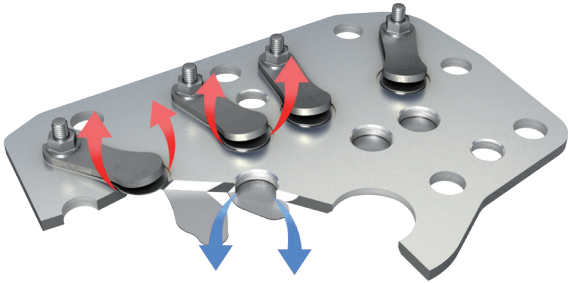
Oil sump heater



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

Features and advantages

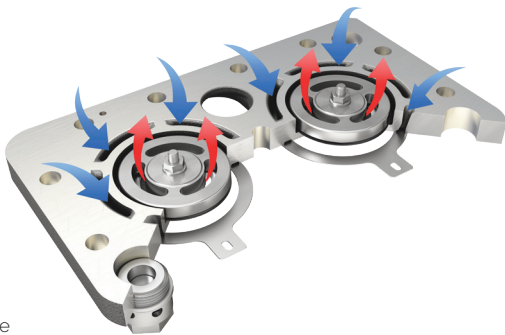
Standard valve plate design



HG12P-56e

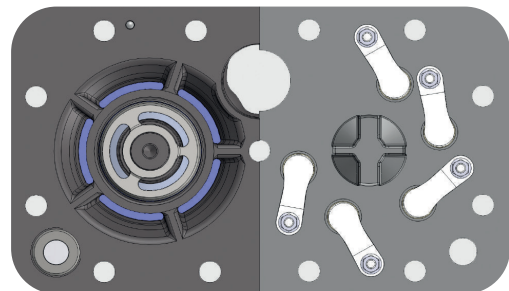
- Valves made of high-quality, impact-resistant spring steel
- Universally proven valve design with suction and discharge finger reed valves

Valve plate innovation: mexxFlow®, only from BOCK

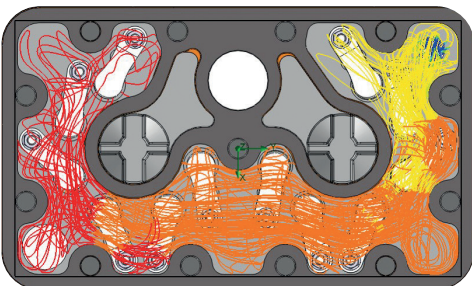


HG66e

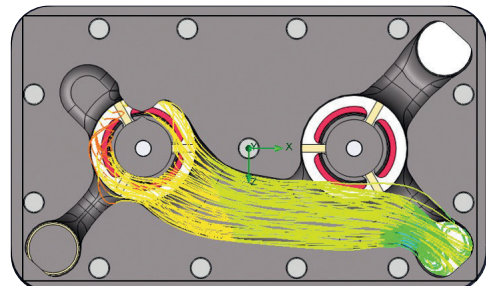
mexxFlow
benchmark for efficiency



mexxFlow® vs. previous design



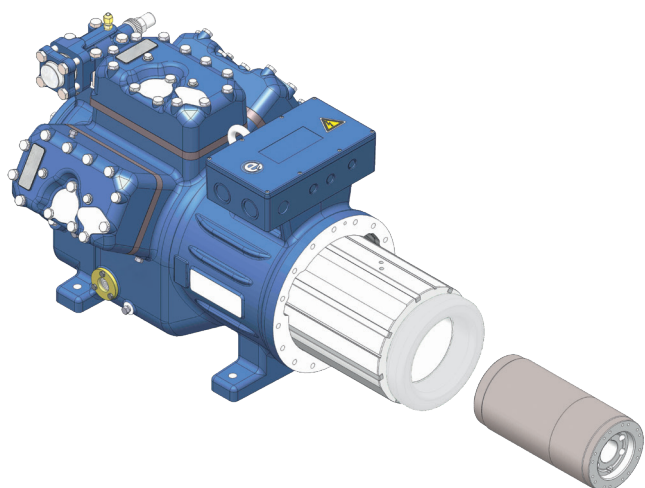
Previous cylinder cover – high pressure drops and turbulences



mexxFlow® – reduced pressure drops and improved gas flow

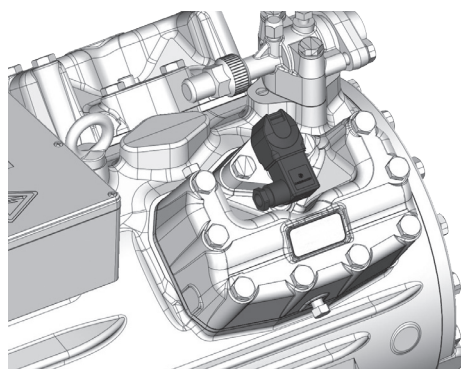
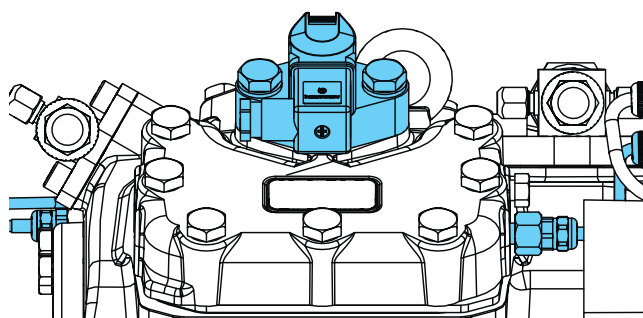
- With the mexxFlow® system pressure losses can be minimized thanks to a flow-optimized double ring fin construction of the valve plate, in combination with a cylinder head that is specially adapted to the valve plate. Thus, the efficiency of the compressor is increased significantly

Service-friendly design



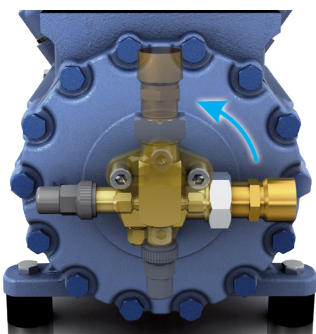
- Built-in motor, easy to replace due to slide fit (not press fit)

Digital Capacity Regulator DCR14 (HG34e / HG44e / HG56e)



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

Variable suction line valve position HG



4-cylinder

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

Features and advantages

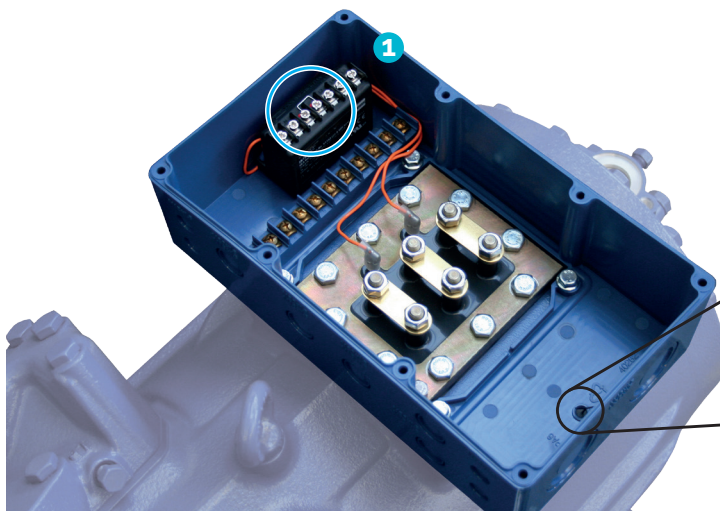
Electronic motor protection INT69 G



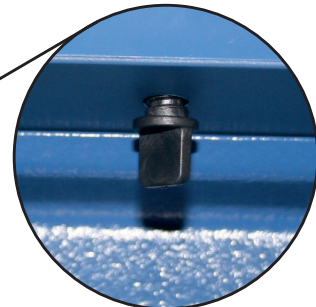
Temperature safety drive for the drive motor

- 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



Bottom side of 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)

Scope of supply and accessories

	HG12P	HG22e	HG34e	HG44e	HG56e	HG66e
Semi-hermetic two-cylinder reciprocating compressor with drive motor for direct start 265 – 290 V Δ / 440 – 480 V Y - 3 - 60 Hz	●	●	–	–	–	–
Semi-hermetic four-cylinder reciprocating compressor with drive motor for direct start 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) 440 – 480 V Y/YY - 3 - 60 Hz	–	–	–	●	–	–
Semi-hermetic six-cylinder reciprocating compressor with drive motor for part winding start (50/50) 440 – 480 V Y/YY - 3 - 60 Hz	–	–	–	–	●	●
Special voltage and/or frequency	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾
Winding protection with PTC resistor sensors with electronic triggering unit INT69 G (230 V)	●	●	●	●	●	●
Thermal protection PTC	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾
Oil pump	●	●	●	●	●	●
Oil charge; BOCKlub E55	●	●	●	●	●	●
Inert gas charge	●	●	●	●	●	●
4 anti-vibration pads	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
Internal safety valve	–	–	–	●	●	●
Suction and discharge line valve	●	●	●	●	●	●
Sight glass	●	●	●	●	●	●
Injection nozzle for liquid injection			○	○	○	○
Oil sump heater	115 V AC - 1 - 60 Hz PTC heater, self-regulating	○ ²⁾	○ ²⁾	○ ²⁾	–	–
	115 V AC - 1 - 60 Hz	–	–	–	○ ²⁾	○ ²⁾
Oil pressure safety switch	120/240 V AC/DC - 1 - 60 Hz, IP20 MP54	–	–	–	○ ¹⁾	○ ¹⁾
	120/240 V AC/DC - 1 - 60 Hz, IP20 MP55	○ ¹⁾	○ ¹⁾	○ ¹⁾	–	–
Oil service valve	–	–	–	–	–	○ ²⁾
Oil temperature sensor	–	–	–	○ ²⁾	○ ²⁾	○ ²⁾
Connection piece suction and discharge valve in welded construction	–	–	–	○ ³⁾	○ ³⁾	○ ³⁾
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⁾

¹⁾ Enclosed ²⁾ Mounted ³⁾ On request

⁴⁾ Only possible with additional adapter

● Scope of supply (standard)

○ Available accessories

vap.bock.de



Technical data

Type	Number of cylinders	Dis- place- ment	Electrical data						Weight	Connections ⁵⁾				Oil charge	Fre- quency range	
			Voltage ¹⁾	Max. Working current ²⁾		Max. Power consump- tion ²⁾	Starting current (rotor locked)			Discharge line DV	Suction line SV					
				A	Y		A	Y			mm	inch	mm			inch
		60 Hz 1,740 rpm		Δ	Y		Δ	Y	lb		mm	inch	mm	inch	fLoz	Hz
UL-HGX12P/60 S 0,7	2	228	³⁾	6.8	3.9	3.0	40	23	108	12	1½	16	5⅝	28	30-70	
UL-HGX12P/75 ML 1	2	284	³⁾	7.1	4.1	3.1	40	23	103	12	1½	16	5⅝	28	30-70	
UL-HGX12P/75 S 2	2	284	³⁾	8.0	4.6	3.5	43	25	105	12	1½	16	5⅝	28	30-70	
UL-HGX12P/90 ML 2	2	339	³⁾	8.5	4.9	3.8	43	25	105	12	1½	16	5⅝	28	30-70	
UL-HGX12P/90 S 2	2	339	³⁾	9.1	5.3	4.1	45	26	105	12	1½	16	5⅝	28	30-70	
UL-HGX12P/110 ML 2	2	399	³⁾	9.2	5.3	4.2	43	25	104	12	1½	16	5⅝	28	30-70	
UL-HGX12P/110 S 3	2	399	³⁾	10.6	6.1	4.9	45	26	104	12	1½	16	5⅝	28	30-70	
UL-HGX22e/125 ML 2	2	469	³⁾	9.3	5.4	4.1	69	40	161	16	5⅝	22	7⅝	39	30-70	
UL-HGX22e/125 S 3	2	469	³⁾	10.8	6.2	4.9	69	40	161	16	5⅝	22	7⅝	39	30-70	
UL-HGX22e/160 ML 2	2	579	³⁾	11.1	6.4	5.0	69	40	161	16	5⅝	22	7⅝	39	30-70	
UL-HGX22e/160 S 3	2	579	³⁾	13.1	7.6	6.0	87	50	164	16	5⅝	22	7⅝	39	30-70	
UL-HGX22e/190 ML 3	2	701	³⁾	13.8	8.0	6.5	69	40	161	16	5⅝	22	7⅝	39	30-70	
UL-HGX22e/190 S 4	2	701	³⁾	16.2	9.4	7.6	87	50	164	16	5⅝	22	7⅝	39	30-70	
UL-HGX34e/215 ML 3	4	798	³⁾	14.0	8.1	6.5	87	50	201	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/215 S 5	4	798	³⁾	18.3	10.5	8.2	132	76	215	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/255 ML 4	4	938	³⁾	17.0	9.8	8.2	87	50	200	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/255 S 6	4	938	³⁾	21.1	12.2	9.8	132	76	214	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/315 ML 5	4	1158	³⁾	21.1	12.2	10.1	111	64	206	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/315 S 7	4	1158	³⁾	25.5	14.7	12.1	132	76	213	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/380 ML 6	4	1401	³⁾	26.1	15.1	12.6	111	64	205	22	7⅝	28	1⅞	46	25-70	
UL-HGX34e/380 S 9	4	1401	³⁾	31.2	18.0	15.1	132	76	212	22	7⅝	28	1⅞	46	25-70	
				PW 1+2'			PW1/PW1+2'									
UL-HGX44e/475 ML 9	4	1752	⁴⁾	19.0		15.0	65	109	361	28	1⅞	35	1⅞	95	25-70	
UL-HGX44e/475 S 12	4	1752	⁴⁾	23.0		17.8	87	149	372	28	1⅞	35	1⅞	95	25-70	
UL-HGX44e/565 ML 12	4	2085	⁴⁾	22.0		17.9	65	109	359	28	1⅞	35	1⅞	95	25-70	
UL-HGX44e/565 S 15	4	2085	⁴⁾	26.0		21.2	101	174	388	28	1⅞	42	1⅞	95	25-70	
UL-HGX44e/665 ML 14	4	2447	⁴⁾	26.0		20.9	87	149	380	28	1⅞	42	1⅞	95	25-70	
UL-HGX44e/665 S 20	4	2447	⁴⁾	30.0		24.9	101	174	387	28	1⅞	42	1⅞	95	25-70	
UL-HGX44e/770 ML 15	4	2838	⁴⁾	30.0		24.2	101	174	385	28	1⅞	42	1⅞	95	25-70	
UL-HGX44e/770 S 22	4	2838	⁴⁾	35.0		29.1	101	174	385	28	1⅞	42	1⅞	95	25-70	
UL-HGX56e/850 ML 18	6	3127	⁴⁾	32.6		26.8	101	174	453	35	1⅞	54	2⅞	113	25-70	
UL-HGX56e/850 S 25	6	3127	⁴⁾	39.4		32.0	125	209	469	35	1⅞	54	2⅞	113	25-70	
UL-HGX56e/995 ML 23	6	3670	⁴⁾	38.9		31.5	125	209	466	35	1⅞	54	2⅞	113	25-70	
UL-HGX56e/995 S 30	6	3670	⁴⁾	46.4		37.7	149	246	473	35	1⅞	54	2⅞	113	25-70	
UL-HGX56e/1155 ML 28	6	4257	⁴⁾	46.9		38.1	149	246	470	35	1⅞	54	2⅞	113	25-70	
UL-HGX56e/1155 S 35	6	4257	⁴⁾	58.3		45.3	196	335	485	35	1⅞	54	2⅞	113	25-70	

*PW = Part Winding, motors for part winding start

1 = first part winding

2 = second part winding

Technical data

Type	Number of cylinders	Dis- place- ment	Electrical data					Weight	Connections ⁵⁾				Oil charge	Fre- quency range
			Volta- ge ¹⁾	Max. Working current ²⁾	Max. Power con- sump- tion ²⁾	Starting current (rotor locked)			Discharge line DV		Suction line SV			
			cfh	A	HP	A	lb		mm	inch	mm	inch		
		60 Hz 1740 rpm		PW 1+2*		PW1	PW1+2*		mm	inch	mm	inch	fLoz	Hz
UL-HGX66e/1340 ML 31	6	4938	⁴⁾	53.7	43.4	170	275	671	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/1340 S 37	6	4938	⁴⁾	65.3	51.8	196	335	678	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/1540 ML 36	6	5668	⁴⁾	62.1	50.6	170	275	666	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/1540 S 42	6	5668	⁴⁾	75.0	60.4	196	335	673	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/1750 ML 44	6	6449	⁴⁾	71.9	57.6	196	335	665	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/1750 S 50	6	6449	⁴⁾	86.8	68.9	222	361	677	42	1 5⁄8	54	2 1⁄8	155	25-60
UL-HGX66e/2070 ML 50	6	7627	⁴⁾	85.1	68.9	196	335	680	42	1 5⁄8	64	2 1⁄8	155	25-60
UL-HGX66e/2070 S 60	6	7627	⁴⁾	103.0	82.5	222	361	691	42	1 5⁄8	64	2 1⁄8	155	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 60 Hz operation.
- Take account of the max. operating current / max. power consumption when designing contactors, leads and fuses.
- Switches: Service category AC3

- 3) 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: 50 % / 50 %
 - 440-480 V Y/YY - 3 - 60 Hz
 - Designs for Y/Δ on request
- 5) For soldering connections

Oil sump heater 115 V AC - 1 - 60 Hz

- HG12P, HG22e, HG34e: 65 - 135 W
- PTC heater, self regulating

Oil sump heater 115 V AC - 1 - 60 Hz

- HG44e, HG56e, HG66e: 160 W

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



°Clever + Cool Experts^{live}

BOCKshop | 

BOCK CO₂Tool | 

BOCK VAP | 



From experts for experts – our new online formats can be used from any computer, regardless of location: Office, workshop or even at home.

To ensure that you can make the best possible use of the advantages of BOCK compressors, we support you online and personal with four service and support modules. There you will find valuable information: from plant planning and design to implementation and operation to retrofitting or upgrading existing systems.

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.

» 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.

BOCK

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