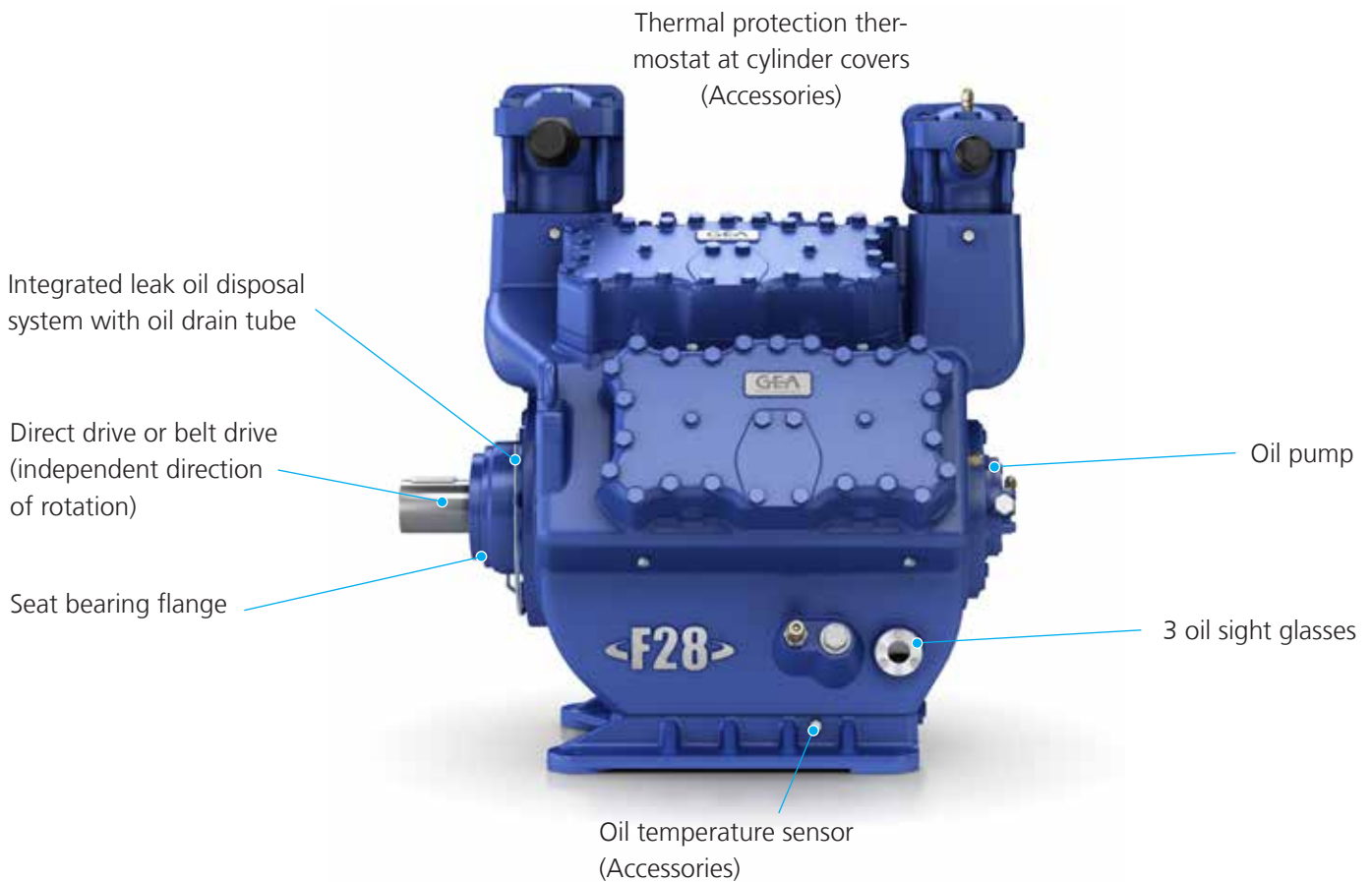




GEA Bock open type compressors F28

Extended F Series



The new 8 cylinder compressor F28

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

In maritime applications on the open sea, a great deal of quality and reliability is demanded from machines and systems.

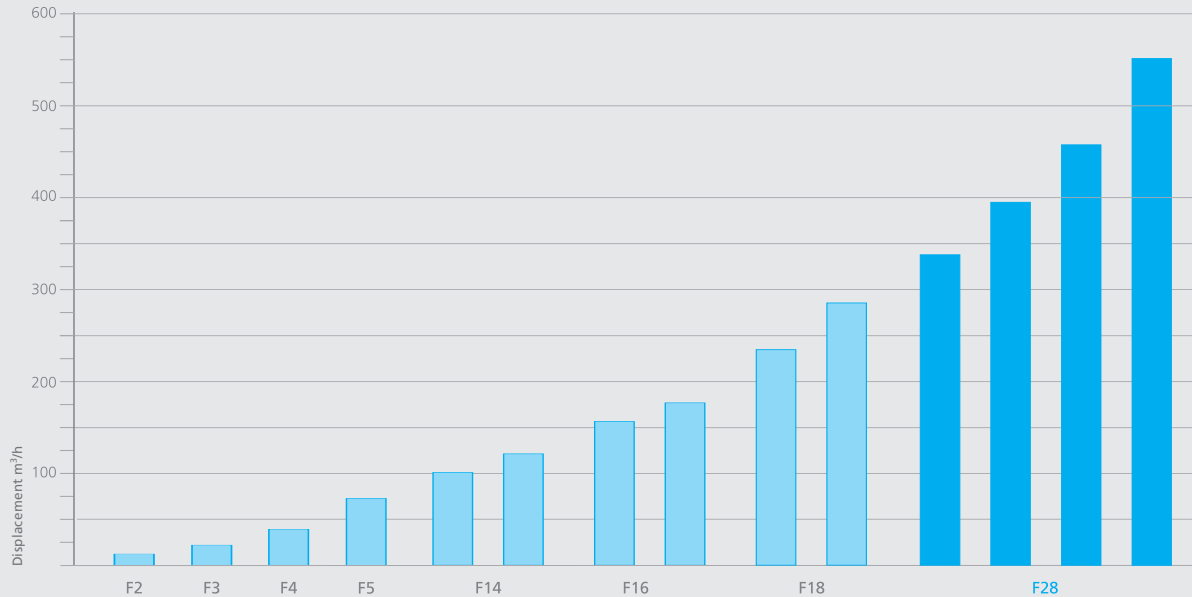
This is why GEA Bock focuses on uncompromising quality when it comes to its new 8 cylinder compressors of the type F28. Whether its the construction of a compressor, the selection of the right material or the assembly of the compressors - GEA Bock does not leave anything to chance.

A plasma-nitrocarburized crankshaft for example ensures highest stability of the drive, even under toughest conditions. At the same time, numerous constructive measures provide maximum efficiency along with minimum space requirements. All parts of the compressor were designed for an optimized refrigerant flow. Together with the new valve plate design in double ring fin version and an ideal bore/stroke ratio, the F28 therefore offers a high degree of efficiency.

When it comes to size and weight, the F28 also sets new benchmark standards. Compared to the currently available piston compressors with a comparable swept volume up to 600 m³/h, the F28 has much smaller dimensions and a correspondingly lower weight. This makes the compressor much easier to handle, for instance when taking into a machine room.

The current program

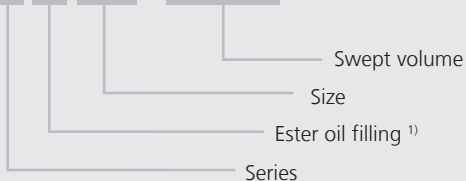
...8 model sizes with 14 capacity stages from 10.5 to 553 m³/h (1450 rpm)



Available models	Displacement 1450 rpm
F2	10,5 m ³ /h
F3	20,3 m ³ /h
F4	40,5 m ³ /h
F5	73,7 m ³ /h
F14/1166	101,4 m ³ /h
F14/1366	119,0 m ³ /h
F16/1751	152,2 m ³ /h
F16/2051	178,4 m ³ /h
F18/2735	238,0 m ³ /h
F18/3235	281,0 m ³ /h
F28/3855	335,0 m ³ /h
F28/4535	394,0 m ³ /h
F28/5360	466,0 m ³ /h
F28/6360	553,0 m ³ /h

Type key

F X 28 / 4535



¹⁾ Ester oil filling (HFC refrigerant, e.g. R134a, R407C)

The open 8 cylinder compressor

- Compact construction
- Robust and easy to handle
- Suitable for v-belt or coupling drive
- Large number of applications with a wide r.p.m. range
- Naturally with oil pump lubrication

Quiet with low vibrations

- Large-dimensioned crankshaft area
- Dynamic mass balance
- High volume pressure area to dampen pulsations

Universal

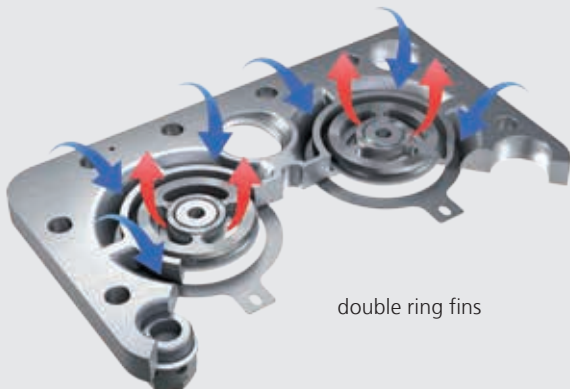
- e.g. R134a, R404A, R507, R407C, R22
- One compressor design for all conventional refrigerants, for air conditioning applications, normal or deep-freezing. Maximum permissible operating pressure: 28 bar

Reliable and safe oil supply



- Classic lubricating oil circuit with oil pump independent of rotating direction
- High-volume oil sump
- Connection facility for oil pressure monitoring via Δp oil differential pressure sensor
- Practical oil service valve for clean oil changes without intervening in the refrigeration cycle (accessories)
- Maximum slant of 30° short-term possible in both axes (e.g. marine applications)

Valve plate construction for safe operation



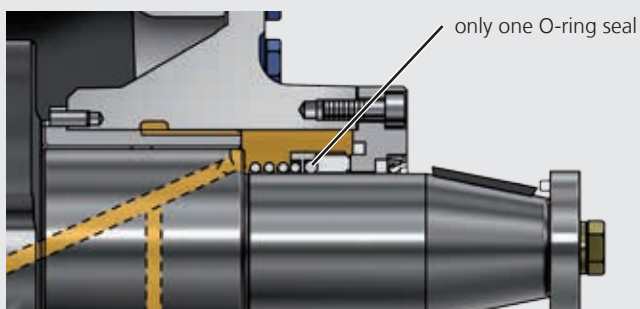
- Valve plate with highly efficient double ring fins
- Valves made out of high-quality, impact-resistant spring steel

Low-wearing long-lived mechanism



- Solid construction and design
- Classic crankshaft construction with carbonated plasma-nitrite surface
- Low-friction, wear-resistant plain bearings
- Three-ring assembly, compression ring chromehardened
- Aluminium con-rod in divided, screwed design, with high-strength small end bearings

Simply constructed floating ring seals



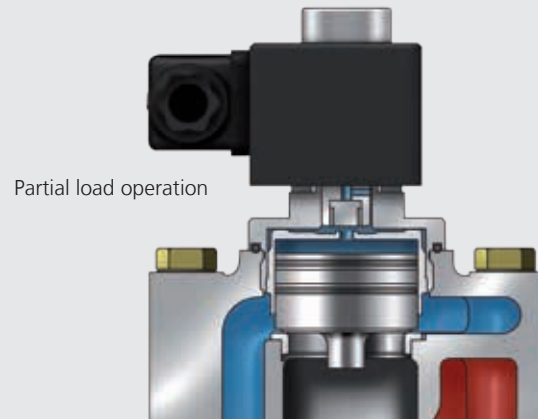
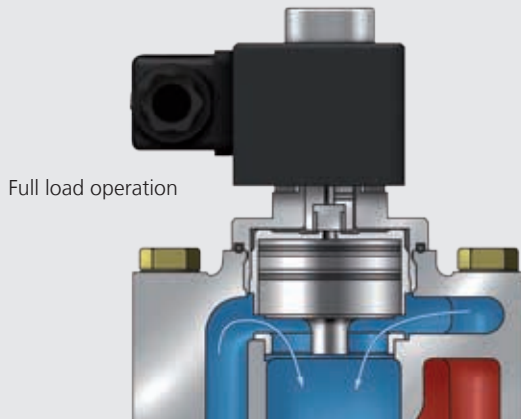
example: assembly shaft seal

- Tried and tested construction for decades
- Only one o-ring seal, counter ring designed as the screw-on cover
- With oil washing for cooling and lubricating the whole unit
- So easy to change the shaft seal for maintenance purposes
- With practical piece of tube for controlled oil collection



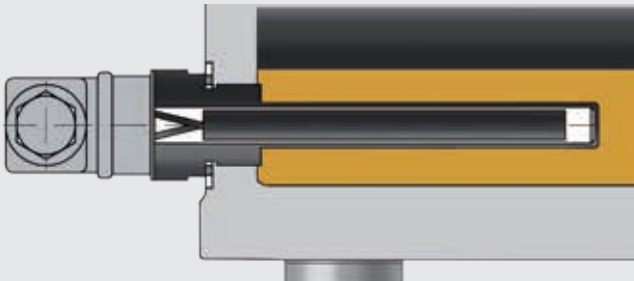
practical drain-option via freely accessible piece of tube

Economic performance regulation (accessories)



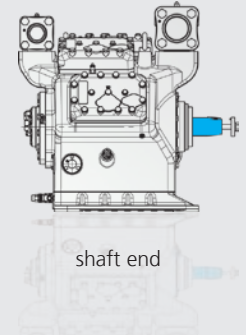
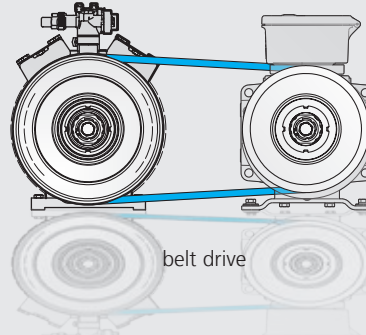
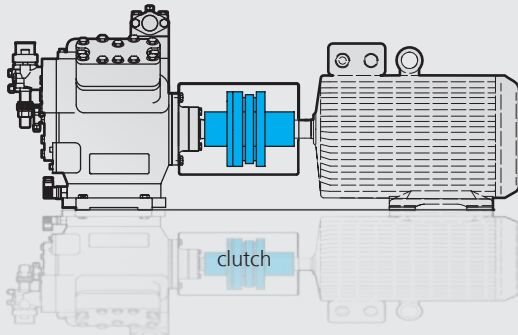
- Blocking of the intake of a cylinder bank with an electromagnetic pilot valve
- Possible regulating steps: 25 % / 50 % / 75 %
- Infinite speed regulation (up to 60 Hz) via external frequency converter possible

Oil sump heater (accessories)



- Design with immersion sleeve
- Changes possible without intervening in the refrigeration cycle

Various drive options



- Cylindrical shaft end for safe force transmission and exact installation of the drive elements
- Drive via v-belt or coupling, with all the conventional drive sources (electric motors, combustible motors, hydraulic motors, etc.)

Acceptance by classification societies



Further classification societies on request

F Type	Number of cylinders	Displacement (1.450 rpm)	Weight ②	Connections ①		Oil charge	Speed range
				Discharge line DV	Suction line SV		
				mm inch	mm inch		
F28/3855	8	335	580	76 3 1/8	108 4 1/8	14,0	700 - 1800
F28/4535	8	394	580	76 3 1/8	108 4 1/8	14,0	700 - 1800
F28/5360	8	466	580	76 3 1/8	108 4 1/8	14,0	700 - 1800
F28/6360	8	553	580	76 3 1/8	108 4 1/8	14,0	700 - 1800

① for soldering connections

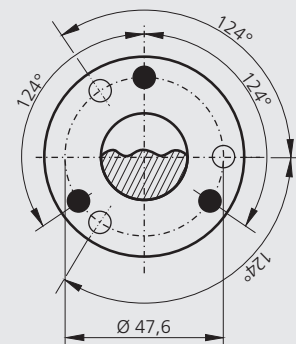
② as standard

Connections	
SV	Suction line
DV	Discharge line
please refer to technical data above	
A	Connection suction side, not lockable
A1	Connection suction side, lockable
B	Connection discharge side, not lockable
B1	Connection discharge side, lockable
B2	Connection discharge side, not lockable
C	Connection oil pressure safety switch OIL
D	Connection oil pressure safety switch LP
D1	Connection oil return from oil separator
E	Connection oil pressure gauge
F	Oil drain plug
H	Oil charge plug
J	Connection Oil sump heater
K	Sight glass
L	Connection thermal protection thermostat
ÖV	Connection oil service valve
P	Connection oil pressure differential sensor
Q	Connection oil temperature sensor

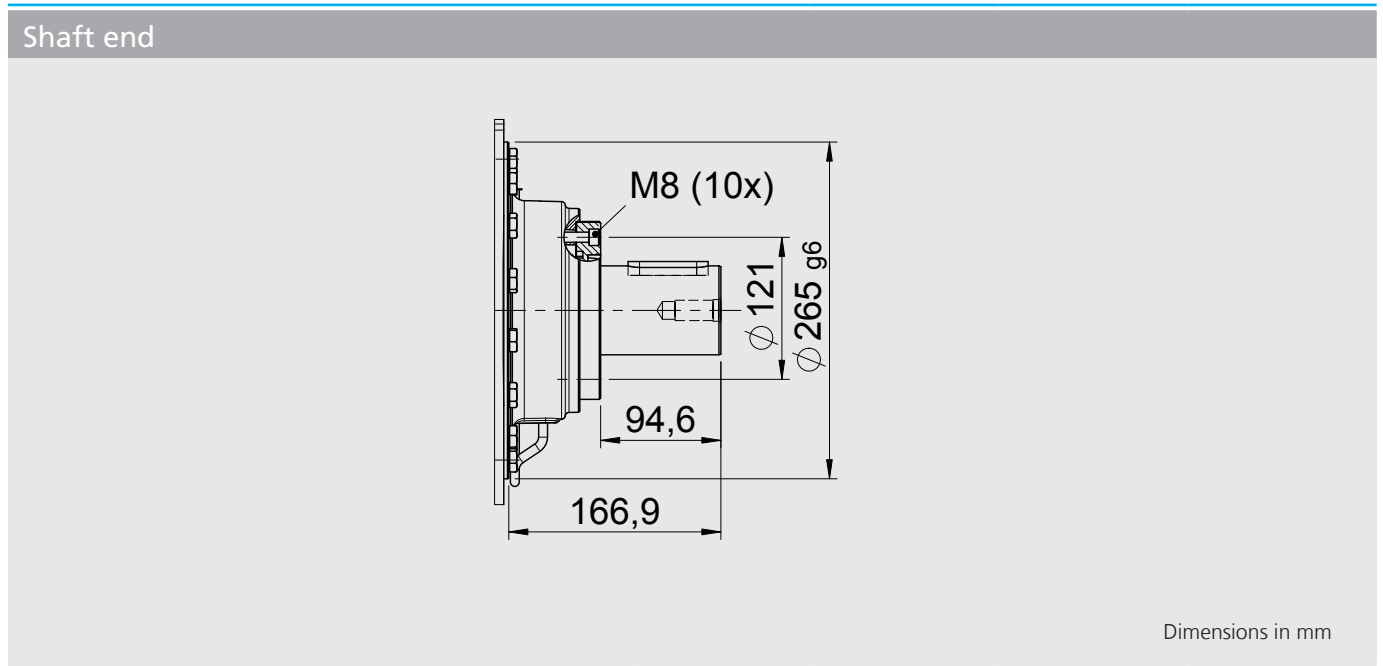
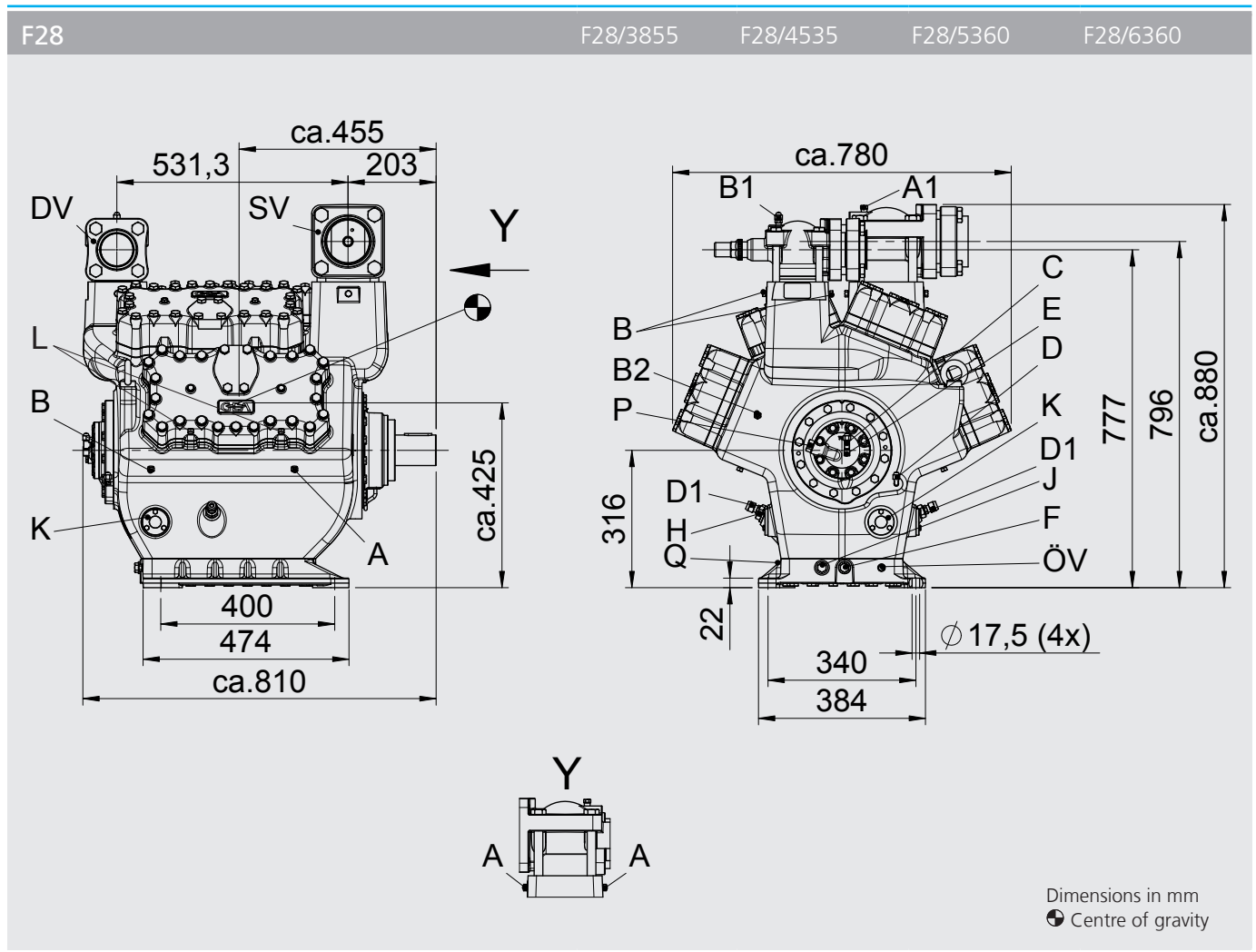
View X

Possibility to connect to oil level regulator

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



Dimensions in mm





Air-conditioning

The sometimes extreme temperature fluctuations make the air-conditioning of passenger and crew cabins on modern ships necessary.

Process cooling

Different other processes on a ship require the use of refrigeration technology.



Compressor solutions for the entire ship

Cooled provisions

To keep the provision for passengers and crew fresh, a reliable cooling system is needed.

Compressor solutions for the entire ship

GEA Bock compressors by GEA Refrigeration Technologies fulfill the high mari-time demands already for many years. They help to provide a comfortable climate in cabins, keep provisions cooled and are additionally used in many other applications.

GEA Bock compressors also work reliably on container ships, passenger ships or fishing boats.

With a broad product range of open type and semi-hermetic compressors, the GEA Bock program has the right compressor for nearly all refrigeration and maritime applications.

Together with the program of industrial Grasso piston and screw compressors, GEA offers the broadest compressor program for maritime applications.



We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

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

GEA Refrigeration Technologies

GEA Bock GmbH

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