Burckhardt Compression

Laby® compressors for LNG BOG management

Four-stroke engines on cruise ships

LNG as a marine fuel alternative

With regard to the efforts made to reduce the global carbon footprint, cruise ship passengers are increasingly requesting low-emission cruise voyages. In addition, IMO regulations now limit the sulfur content in marine diesel to 0.5%, prompting a shift toward cleaner alternatives. LNG has emerged as the preferred fuel for newly built cruise ships due to its lower emissions and regulatory compliance. To ensure the structural integrity of onboard gas tanks, naturally occurring boil-off gas (BOG) must be effectively managed.

Burckhardt Compression offers a variety of compressor solutions for BOG handling that have been specifically designed for marine applications. Our oil-free Laby® compressors can compress the BOG for injection into auxiliary gensets.

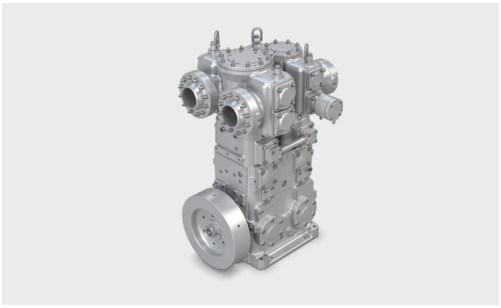
Customer benefits

- Gas-tight crankcase for greater safety and zero gas loss
- Cryogenic operation without BOG pre-warming
- Low power consumption leads to minimized operational costs (OPEX)
- Low maintenance costs due to labyrinth sealing technology
- Low system complexity for easy integration
- Vibration dampeners specifically designed to minimize compressor vibrations
- Ship's crew can perform onboard maintenance
- Simple parallel operation with pump vaporizer
- Full range of after-sales services available

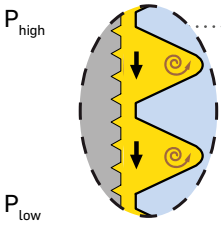
Oil-free marine Laby® compression

Design features

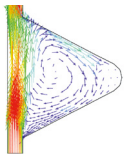
- Robust design compliant with marine standards
- Contactless oil-free gas compression
- Unique wear-free labyrinth piston sealing technology
- Directly driven by an electric motor
- Water-cooled cylinders and gas coolers
- Integrated crankshaft-driven lube oil system
- Compliant with IMO, IGF and IGC codes



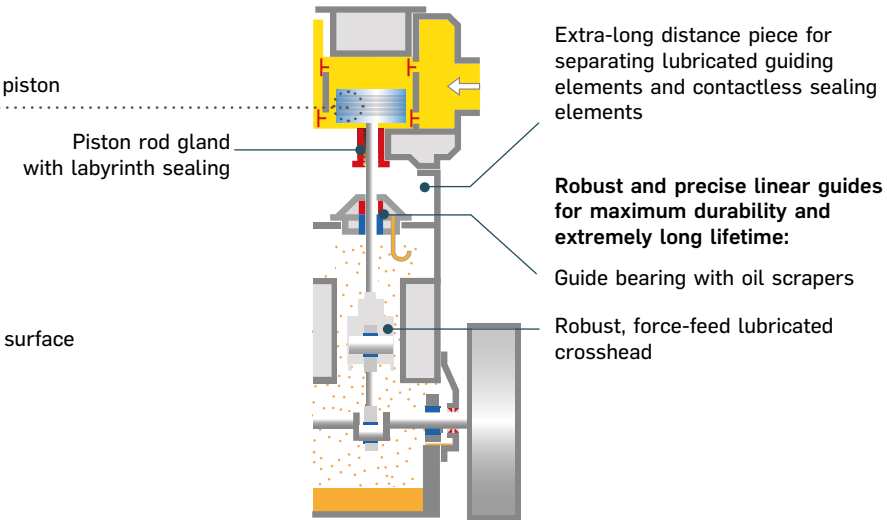
Contactless labyrinth sealings



Enlarged view of the labyrinth sealing surface



Computer simulated velocity distribution



Oil-free gas compression

Lubricated area

Technical data

Type	Max. speed rpm*	Rated power kW / hp	Max. volume flow m³/h** / scfm**	Min. gas temperature °C / °F
2KL90	880	101 / 135	400 / 20	–140 / –220
2KL140	580	242 / 325	1'200 / 60	–140 / –220

*60 Hz supply frequency
**Depending on gas composition, gas temperature and compressor suction pressure

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