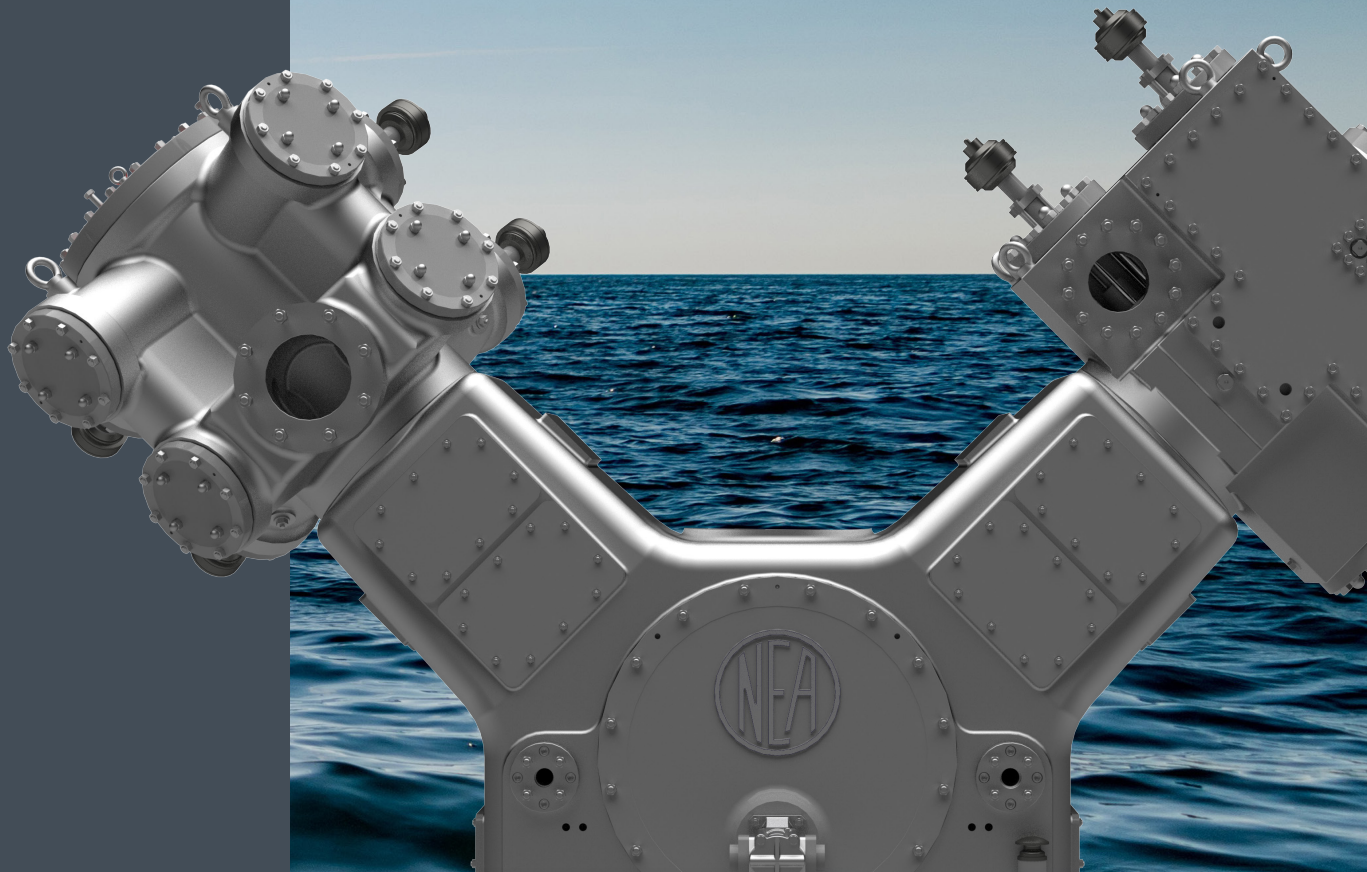




NEUMAN & ESSER

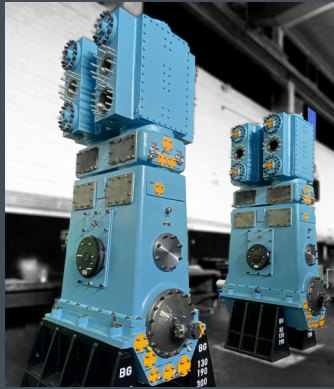


COMPRESSORS

FOR MARINE LNG SYSTEMS

NEUMAN & ESSER (NEA GROUP)

is offering a comprehensive portfolio of vertical and V-type compressors in line with the requirements of marine LNG systems for commercial vessels, bunkering vessels as well as for small and medium size LNG carriers. NEA solutions are available for all LNG tank types and sizes and for all common engine types.



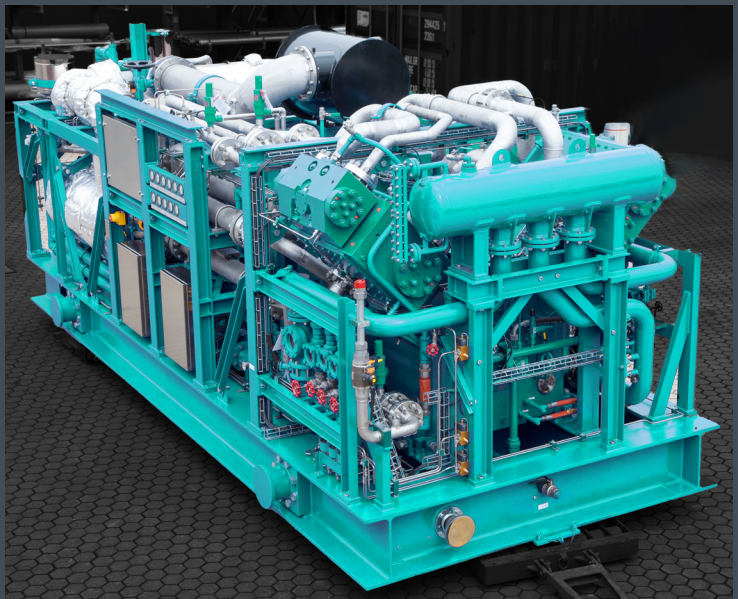
NEA Vertical Compressor



NEA V-Type Compressor

Features of the NEA GROUP Compressors for Marine LNG Systems

- Contact ring sealing systems for unparalleled process efficiency and highest TBO (time between overhaul)
- Oil free compression
- Gastight (16bar) compressor design for zero emission
- Cryogenic design
- Suction temperature ranges from -150°C to $+40^{\circ}\text{C}$
- Discharge pressure range for low pressure applications from 8 to 18bar (DF-DE, X-DF, ME-GA), for high pressure applications above 300 to 400bar (ME-GI, ME-GIE)
- Capacity control options (depending on system set-up): VFD, valve unloaders, clearance pockets, bypass control
- Class Approval from all common ship classification societies

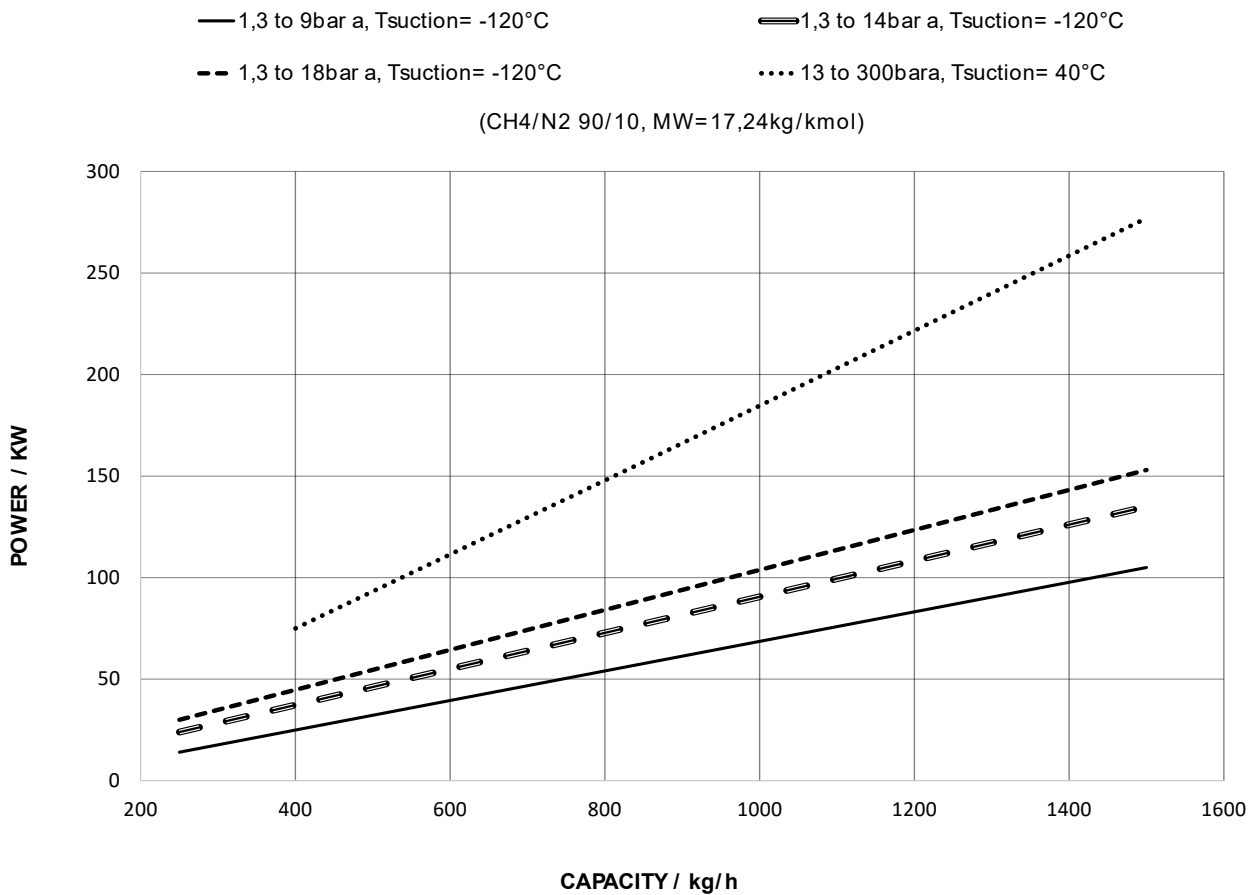


Packaged high pressure compressor unit TEV63 for operation on seismic research vessel

NEUMAN & ESSER Scope of Supply

- Bare frame compressors
- Skid mounted compressor packages
- Control and monitoring systems
- Mechanical test runs
- Skid Package FATs
- Cryogenic Performance Test
- Compressor installations
- Gas trials
- Global compressor service and spare parts supply
- Compressor revamps, upgrades, consulting
- Data solutions for compressor and process technology

Performance Range of NEA GROUP Compressors for Marine LNG Systems



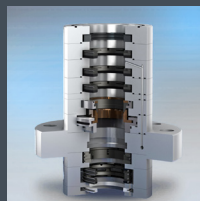
4th GENERATION
FAMILY BUSINESS



COMPRESSOR
PACKAGES



PATENTED
SEALING SOLUTIONS



DIGITAL
SOLUTIONS



GLOBAL
SERVICE



SPARE
PARTS



Solution Provider for Marine Applications

NEUMAN & ESSER is a 4th generation family business, with 120+ years of experience in compressor solutions, for both onshore and marine installations. Full-service solutions for marine applications range from bare frame compressors to complete compressor plants. All solutions are designed inhouse by experienced design teams using cutting edge engineering tools. In addition, NEUMAN & ESSER provides patented Sealing Solutions for marine LNG applications, available for cryogenic operation at around -150°C suction temperature as well as for high pressure operations at above 300bar discharge pressures, dry running. The Compressor Service Team provides global Service Solutions for marine compressor systems. The crew has long term experience with the special marine service requirements. For customers from the marine industry NEUMAN & ESSER offers service agreements with spare parts on stock for immediate on demand global delivery. Digital machine performance monitoring solutions are available allowing for the closest possible supervision of the system in operation, also from remote.



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