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NEUMAN & ESSER SEISMIC AIR POWER SYSTEMS

SAP



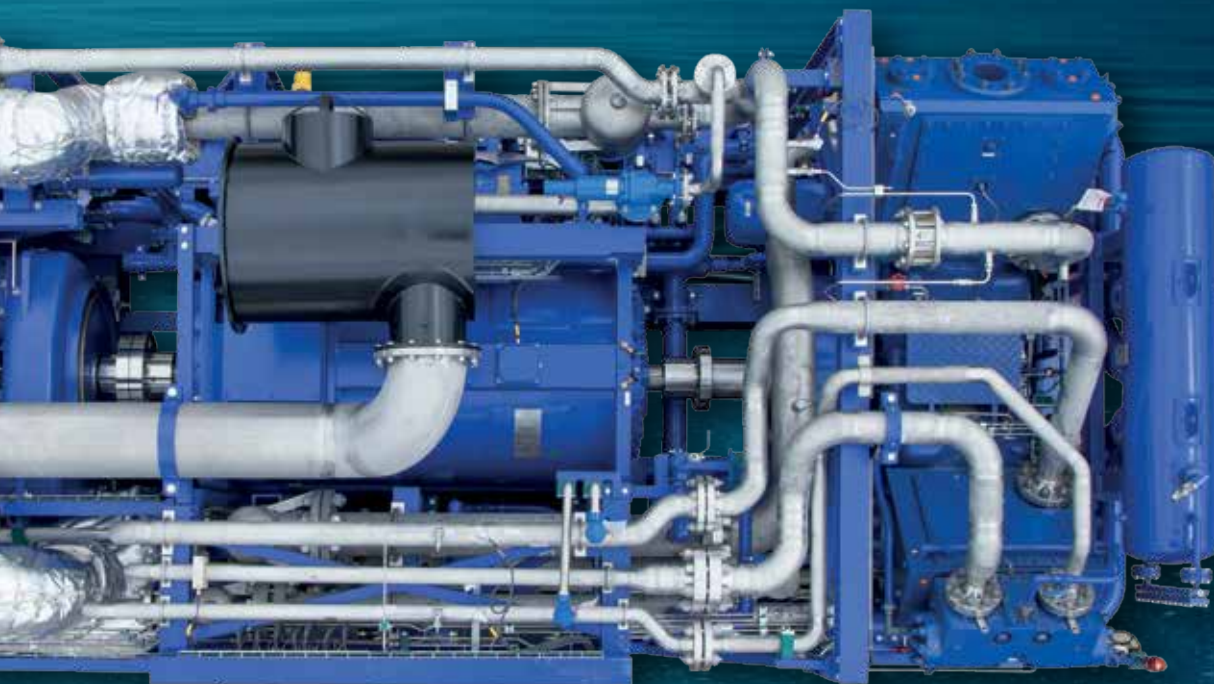
COMPANY

Profile ■■■■

NEUMAN & ESSER GROUP (NEA) was founded in 1830 and is headquartered in Übach-Palenberg, Germany. The manufacturer of reciprocating compressors for onshore and offshore applications supplies several industries, including oil and gas, chemical and petrochemical.

With 22 operating companies and more than 900 employees at the German production facilities and the international sales and application centers NEA offers a sophisticated and reliable product range. The oil-free and lubricated reciprocating compressors range up to 100,000 Nm³/h suction volume, 30,000 kW driving power and compress air and technical gases up to 1,000 bar final pressure.

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NEA Seismic Air Power Systems

NEUMAN & ESSER provides a comprehensive assortment of high-pressure compressors as energy source for air gun systems in the seismic industry: from the first planning stage, construction and commissioning up to widespread service.

The NEA Seismic Air Power System (NEA SAPS) consists of a screw compressor and a V-type, three-stage, two-cylinder reciprocating compressor. The screw compressor compresses the air from atmospheric pressure to approx. 15 bar g; the reciprocating compressor compresses the air to the desired delivery pressure.

Compared to a solution with only one reciprocating compressor, the NEA SAPS

unit is considerably smaller and lighter and does not transfer any vibrations to the vessel. Moreover, this system requires fewer wear parts such as suction and discharge valves or piston and guide rings. This reduces servicing work to a minimum.

NEA SAPS can either be equipped with electrical or diesel drives. They are water-cooled with a closed water cycle and a heat exchanger. The system is designed for continuous operation and surrounding conditions such as sea water inlet temperatures of up to 37°C (98°F) and suction air temperatures of up to 45°C (113°F).

SAPS TYPES



Since 2006 NEUMAN & ESSER offers NEA SAPS units for the seismic industry. NEA continued the improvement process until then and provides a robust, state-of-the-art solution.

NEA SAPS is a well proven technology supporting customers in meeting current as well as future challenges.

NEA offers three different types of Seismic Air Power Systems:

Standard SAPS

The NEA SAPS range incorporates eight construction sizes in the electrical version and six construction sizes with diesel drive. The smallest system supplies 20 m³/min (700 cfm) and the largest capacity is 78 m³/min (2,750 cfm).

The higher volume enables shorter intervals when shooting with the air guns, making it possible for the systems to provide more precise data and above all to save time. The pressures for the different recipes for seismic applications are identical at a maximum of 207 bar (3,000 psi).





Containerized SAPS

The container version of NEA SAPS is weatherproof protected and appropriate for installation both above and below the deck. The particularly compact construction is applicable as stationary or portable version, i.e. on a truck.



BLUESAPS®

The oil-free version **BLUESAPS®**, is a further development. This SAPS version saves a considerable amount of oil and, perhaps even more importantly, a great quantity of oil-contaminated condensate which would be costly to dispose of. NEA **BLUESAPS®** systems supply pure air with a 2-stage oil-free screw compressor and a 3-stage oil-free recip.



Standards

The NEA SAPS units are designed, manufactured, packaged and tested in consideration of standards such as OHSAS, DIN, VDE, IEC, ISO and DNV GL (other standards available on request). After a successful test run, inspection and document control the compressor obtains a product certificate which confirms the DNV GL accordance - the Rules for Classification of Ships.



Power Supply

In order to supply the compressed air following, the requirements of capacity and time, it is necessary to adjust the energy accordingly. The SAPS control system meets this by stepless speed regulation between 50 - 100%. The adjustment of energy supply to the air guns also leads to a remarkable reduction of general energy consumption of the ship.



Sealing Technology

Piston rings and packings are designed in NEA's own research and production facilities focusing on long life operation with optimum efficiency. The comprehensive range of sealing elements provide customers with application orientated ring and packing designs made from best available, highly wear-resistant materials.



Service Spare Parts Training

NEA GROUP offers a dedicated crew of service supervisors from NEAC Compressor Service especially for NEA SAPS units. The NEAC team is perfectly prepared for offshore servicing; for the entire NEA SAPS life cycle.

Besides long time experience with the special requirements, they attended offshore emergency trainings and courses like the Helicopter Underwater Escape Training (HUET) in accordance to NOGEP, OLF and OPITO. Customers are provided with competent service for their systems directly upon request and spare parts are supplied conforming to a service agreement within 24 hours.

Customers receive individual training as desired before or after commissioning; either on the vessel or at the packager. A further option is also possible: at the NEAC Training Center in Übach-Palenberg, Germany. The participants here gain deep theoretical and practical knowledge by implementing what they have learnt directly on the bare compressor.





■ Holdings

NEUMAN & ESSER Verwaltungs- und Beteiligungsgesellschaft mbH
Übach-Palenberg, Germany
NEUMAN & ESSER Investments, Inc.
Wilmington, Delaware, USA
NEUMAN & ESSER Investments Asia Ltd.
Hong Kong, China

■ Sales and Application Centers

NEUMAN & ESSER América do Sul Ltda
Belo Horizonte, Brazil
NEUMAN & ESSER (Beijing) Co., Ltd.
Beijing, China
NEUMAN & ESSER Compressor Application Centre Pvt. Ltd.
Pune, India
NEUMAN & ESSER Deutschland GmbH & Co. KG
Übach-Palenberg, Germany
NEUMAN & ESSER Eng. (India) Pvt. Ltd.
Pune, India
NEUMAN & ESSER Egypt Ltd.
Cairo, Egypt
NEUMAN & ESSER Gulf FZE
Dubai, UAE
NEUMAN & ESSER Italia S.r.l.
Milan, Italy
NEUMAN & ESSER GmbH Mahl- und Sichtsysteme
Übach-Palenberg, Germany
NEUMAN & ESSER Rus Ltd.
Moscow, Russia
NEUMAN & ESSER Sistemas de Moagem e Classificação Ltda
Belo Horizonte, Brazil
NEUMAN & ESSER South East Asia Ltd.
Rayong, Thailand
NEUMAN & ESSER USA, Inc.
Katy, Texas, USA
NEUMAN & ESSER Grinding and Classifying USA, Inc.
Katy, Texas, USA

■ Production Sites

NEUMAN & ESSER GmbH & Co. KG Maschinenfabrik
Übach-Palenberg, Germany
NEUMAN & ESSER Maschinenfabrik Wurzen GmbH
Wurzen, Germany
STASSKOL GmbH
Stassfurt, Germany

■ Service Centers

NEAC Compressor Service GmbH & Co. KG
Übach-Palenberg, Germany
NEAC Compressor Service S.r.l.
Milan, Italy
NEAC Compressor Service USA, Inc.
Katy, Texas, USA
NEAC Compressor Service Ltda
Belo Horizonte, Brazil
NEAC Compressor Service Ltd.
Rayong, Thailand

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