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NEUMAN & ESSER GROUP
ELECTROLYZERS and COMPRESSORS Optimizing the Future H₂ ECONOMY

Energy transition with compressors

For 80+ years NEUMAN & ESSER have been serving processes in refineries, the petrochemical and chemical industries according to API 618. This is why NEA has a profound know-how in the compression of all process gases, especially of hydrogen and hydrogen mix gases. NEA GROUP has broadened its portfolio of applications by supporting the transformation from the fossil fuel based oil & gas sector to an H₂ Economy with green hydrogen from renewable energy. This is where the proven compressor technologies from NEA and HOFER come into play. The conversion of the energy system with Power to Gas needs energy-efficient piston and diaphragm compressors. They are the perfect match to ensure both the flexibility of demand and energy security with green gases.

ELECTROLYZER: The alkaline and PEM electrolyzer systems from HYTRON with a wide range of capacities producing high quality H₂ up to 99.9999% with pressures up to 40 barg and 5 MW power per container.

NEA COMPRESSOR: NEA piston compressors for H₂ pipelines and storage in caverns are available as 4-, 6-, and 8-crank designs with pressures exceeding 200 bar and 25,000 kW shaft power.

HYTRON ELECTROLYZER: The alkaline and PEM electrolyzer systems from HYTRON with a wide range of capacities producing high quality H₂ up to 99.9999% with pressures up to 40 barg and 5 MW power per container.

MKZ COMPRESSOR: Oil- and abrasion-free compression with MKZ diaphragm compressors from HOFER serve all power-to-X applications with pressures even beyond 1000 bar, suitable for H₂ bottle & trailer fillers, car, truck, bus and rail fuel stations.

TKH COMPRESSOR: Hydraulically driven TKH piston compressors from HOFER for 100% non-lube fueling of 700 bar hydrogen vehicle tanks.

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NEUMAN & ESSER: Agile. Solution. Experts. neuman-esser.com
The NEA GROUP Portfolio for the H₂ Value Chain

**Primary Energy**
- Biomass
- Wind, Solar, Hydro
- Surplus Power from Conventional Power Plant

**Conversion & Processing**
- Refinery & Processing and Liquefaction Plants
- Hydrocracking
- Desulphurization
- Synfuels
- H₂ Generation Electrolyzers, SMR+CCS, Pyrolysis, ...
- H₂ Pipeline Grid 200-2000 Nm³/h 1-30 to 70-80 bar

**Storage**
- H₂ Transportation, LH₂ Regasification, LOHC
- Natural Gas Grid
- Fuel Cell Power Plant
- Service & Commercial
- Industry, e.g. Steel, Glass, ...
- Residential

**Transport & Distribution**
- Salt Cavern H₂ Storage
- H₂ Turbine Power Plant
- H₂ Pipeline Grid 800-5000 Nm³/h 30-200 to 500-900 bar

**Final Energy Demand**
- Electrical Grid
- Fuel Cell Power Plant
- Service & Commercial
- Industry, e.g. Steel, Glass, ...
- Residential

- H₂ Turbine Power Plant
- H₂ Pipeline Grid 800-5000 Nm³/h 30-200 to 500-900 bar

- Natural Gas Grid
- H₂ feed in 100-200 kNm³/h 1-30 to 70-80 bar (10-20%)

- Refinery & Processing and Liquefaction Plants
- Hydrocracking
- Desulphurization
- Synfuels
- H₂ Generation Electrolyzers, SMR+CCS, Pyrolysis, ...

**Notes:****Primary Energy Conversion & Processing Storage Transport & Distribution Final Energy Demand**
NEUMAN & ESSER GROUP

- COMPRESSORS
- SERVICES
- SEALINGS
- PROCESS
- DIGITALS
- ENERGY

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