

GROWING INVESTMENTS IN EOR

NEA USA Extends its Range of “Screwcip” Packaging Solutions. The Key to Success: Customizing

Texas has become a major energy powerhouse accounting for nearly 40% of US crude oil output and over 30% of US natural gas. Integrally, the Permian Basin supplies 80% of CO₂ for EOR (Enhanced Oil Recovery) – making West Texas an increasingly important link to reduce emissions, boost oil production, and grow the economy. NEUMAN & ESSER USA has grasped this major opportunity in the upstream and midstream markets by introducing advanced methods of compression.

In 2011, NEA USA designed its first “Screwcip” high-speed compressor package for CO₂ for EOR for an international oil and gas exploration and production company. The application required handling a suction pressure of 5 psig (0.34 barg) to a final discharge of 2,000 psig (~138 barg). By combining a common driver for the rotary screw and reciprocating compressor, NEA USA reduced the number of stages, compressor throws and cylinders sizes of the reciprocating compressor. This successful installation allowed for a more efficient and cost-effective operation with minimal service work.

More recently in West Texas, this same packaging technique is being installed for one of the largest energy infrastructure companies in North America. Due to the remoteness of the unmanned facility, the customer required cost effective and reliable equipment. A cornerstone of NEA USA is to use its robust API 618 packaging design principles to build customized compressor packages that are

genuinely trouble-free. NEA USA worked with the customer to offer several iterations and options of equipment and package design during the initial proposal concept. Subsequently, NEA USA utilized its 3D modeling capability and its typical open-ended design review process with the client to ensure the final as-built total project concept was suitable to meet operational needs.

A dual shaft Caterpillar G3612 TALE engine is used to drive a screw compressor to boost near atmospheric pressure of CO₂ into NEA’s reciprocating compressor. In the final product, NEA’s reciprocating compressor utilizes three stages with four throws to produce a discharge pressure of 2,165 psig (150 barg) from a suction of 150 psig (~10 barg). The overall package consists of three separate skids that are integrally connected to supply a volume of 8.56 MMSCFD (9,800 Nm³/h) CO₂. The logistics comprised of shipment and delivery to the site and initial installation; allowing the customer to minimize on-site rental crane duration and labor.

NEA’s customized packaging solution reduced the amount of equipment required for the application, thus saving the customer time, money and long-term operating costs. Both NEA USA and NEAC Compressor Service USA offer a unique combined service as an OEM compressor package manufacturer and service provider for the upstream and midstream sectors of the oil and gas industry.

