

Process Cooling



Company Overview

Refrigeration Engineering provides process cooling, gas compression, natural gas processing, and tank cooling solutions for oil, gas and downstream industries. Since 1987 we have built a strong reputation in the oil and gas industry becoming globally recognised in our field.



BASS GAS Air Liquide – CO₂ Compression & Liquefaction

Refrigeration Engineering provides flexible supply options to meet varying customer requirements including:

- Complete skid mounted packages – these can be fabricated in Australia, or closer to your preferred location.
- Process design – featuring process simulation, detailed engineering, documentation and drawings along with process guarantee and major component supply, for integration into a larger system by the client.
- Consulting services – providing expert advice on improving your plant processes, capacity upgrades and more.
- Customer interface engineering – executing detailed engineering in a close working relationship with the customer and thus integrating with overall plant process equipment at an early stage.



BELIDA PLATFORM Conoco Phillips – Gas Dewpoint Control Module

We deliver world class innovative solutions by:

- Understanding our clients' requirements and tailoring solutions to meet unique specifications, operating conditions and purpose.
- Providing commissioning, training, maintenance and lifetime spare parts support globally.
- Adhering to a proven ISO9001 certified Quality Management System.
- Our commitment to Health and Safety.
- Product development for safe and simple operation.
- Implementing ways to reduce the environmental footprint of our products including the use of natural refrigerants.
- Investing in research and development.
- Staff competency and investing in our people with ongoing education and training.
- Supporting our people, their families and the communities we work in.

**We believe that our personal
service will deliver a solution
that is second to none.**

Project Examples



DOW CHEMICALS
Altona, Australia
Glycol Cooling Package



EXXON-MOBIL
Jurong, Singapore
Glycol Cooling Package

Process Cooling

Refrigeration Engineering's traditional core business is process cooling. In this field we apply our experience and leading edge technology to develop innovative solutions for our customers' requirements.

For example, by using 3D solid modelling and CFD analysis, our highly skilled experienced team of engineers and designers has been able to design ultra efficient separation systems. Another good example is our success in engineering a refrigeration system using the lowest temperature oil flooded screw compressor ever installed, operating down to -100°C .

We turn advanced concepts like this into reliable, practical solutions. Benefits to our customers include high system efficiency, high reliability, low power requirements, low maintenance, compact operator friendly packages, with safety as our highest priority.

Typical equipment applications of our process cooling technology include gas liquefaction, fertiliser plants, glycol cooling and thermal storage for flattening load peaks in batch processes.



JAM PETROCHEMICAL CO
Butadiene Storage & Rundown Cooling

Natural Gas Processing



HANG TUAH PLATFORM
Conoco Phillips
Dew Point Control Refrigeration Package



OIL COMPANY OF AUSTRALIA
Denison Trough Gas Field
Dew Point Control & Condensate
Stabilisation Package

Refrigeration Engineering has wide experience in natural gas processing and dewpoint control. We can provide all the equipment and expertise you need to:

- Control hydrocarbon and water dewpoints.
- Recover, separate and stabilise condensate.
- Remove and liquefy CO₂.

Our processing packages are custom engineered for onshore or offshore, sweet or sour gases, clean liquids or waxy, tarry condensates, glycol or methanol hydrate suppression, pressures to 10 MPag (1,500 psig, 100 bar) and higher. It does not matter what your requirements are, or the scale of your project, Refrigeration Engineering has the solution you need.

We provide either complete skid mounted packages or a range of services to enable our gas treatment system to be incorporated into a larger package.

We take pride in our ability to provide our customers with solutions that are engineered and designed to meet specific requirements.

Ammonia Fertiliser Plants



ASEAN BINTULU FERTILISERS
Bintulu, Malaysia
Ammonia Compression & Liquefaction



SOUTHERN CROSS FERTILISERS
Phosphate Hill, Australia
Ammonia Liquefaction & Boil Off Recovery

Refrigeration Engineering has years of expertise in providing technology for ammonia urea and ammonium phosphate fertiliser plants, including:

- Ammonia compression and liquefaction.
- Ammonia tank boil off recovery.
- Non-condensable purge chillers.
- Water wash columns.
- Large scale air cooling and dehumidification for drying processes.
- Control systems for very close control of process parameters.
- Ultra high efficiency oil separation systems for highest product quality.

Our extensive experience in commissioning and maintenance shutdowns has given us a wealth of knowledge that we can bring to bear on your operations. Whether you need assistance identifying system weaknesses, debottlenecking, process upgrades, or defining operating procedures and training needs, we have the expertise to help you.

Our strategic alliance partners and engineers provide global coverage, so no matter where you are, we will ensure your operation always runs smoothly.

Gas Compression



NEWFIELD AUSTRALIA
Challis Venture FPSO, Timor Sea
Lift Gas Booster Compression Package
Installed to increase capacity



TOTAL FINA ELF
Balal Platform, Offshore Iran
Fuel Gas Compression Package

At Refrigeration Engineering we take a flexible approach to designing gas compression packages specific to customer requirements. This involves a high level of interface engineering, taking into account associated equipment, difficult site conditions and unusual operating parameters.

Our experience and expertise is in total gas compression solutions, and includes:

- Fuel gas compression.
- Lift gas booster compressors to increase capacity in ageing fields.
- Wet, dirty and corrosive gases.
- Screw and reciprocating compressor systems.

Our gas compression packages include lube oil systems, scrubbers and separators, pre-coolers/pre-heaters and aftercoolers, as well as accumulators to dampen pulsation and allow uninterrupted flow during compressor changeover.

The materials in our compressors include stainless steel, normal and low temperature carbon steels, and cast iron. Piping and exchangers can include exotic materials such as cupro-nickel, special alloy steels and titanium.

Systems to handle food grade gases, such as CO₂ for beverages, are available.

Services

Factory Acceptance Testing

Factory acceptance testing (FAT) is a routine part of our production process. End users, EPC and client representatives are most welcome to visit our premises for FAT. Along with witnessed performance tests and provision of test reports, typical FAT involves documentation and certificates of conformity reviews.

Third Party Inspections

Third party inspections by internationally recognised inspection agencies can be arranged by Refrigeration Engineering, or appointed by our clients.

Training

Our qualified personnel can provide training on process, mechanical, electrical, PLC operation, maintenance and hazardous area safety requirements, either at our premises or at your site. Training can be combined with site commissioning visits or arranged on a stand alone basis.



WOODSIDE PETROLEUM – Enfield FPSO
Lift Gas Booster Compressor

Spare Parts

Lifetime spare parts support is an integral part of our customer service commitment. Components are based on industry standards such as IEC and DIN for standardisation. Should a component part for a Refrigeration Engineering unit become unavailable from the original supplier, we will provide an alternative and include a retrofit kit and installation instructions.

Consulting

Our staff can provide specialist advice to assist you to optimise new projects, plant expansions and process upgrades.



Certificates of Conformity

Refrigeration Engineering's Certificates of Conformity cover items such as Ex compressor assemblies, solenoid coils, stepper motors and refrigeration valves, under IEC Ex and ATEX schemes, as well as full certification of components such as motors and enclosures, purchased from outside suppliers.

Site Commissioning

Refrigeration Engineering equipment is designed by qualified engineers for simple site installation. Where required, site installation supervision and commissioning is provided by our process, mechanical, electrical and PLC engineers and technicians.

Shutdowns

We can provide teams of engineers and technicians for specialised support and compressor overhauls during tightly scheduled maintenance shutdowns.

Since establishment in 1987, Refrigeration Engineering Pty Limited has enjoyed outstanding success through business, customer and product growth.



Control Panel for Gas Dewpoint Control Package

Our regular customers are premium oil and gas producers and major international engineering firms.



Documentation

Project specified documentation can be readily produced, typically including:

- Installation and operation manual (IOM).
- General arrangement drawings.
- Electrical schematics.
- Control philosophy.
- Certificates of conformity.
- Component datasheets.
- Factory acceptance test (FAT) documentation and reports.
- Electrical load calculation.
- Piping and instrumentation diagram.
- Inspection and test plan (ITP)/quality control plan (QCP).
- Electrical block diagrams.
- Material specifications/test certificates/traceability.
- Other technical/engineering/quality management system documentation at customers' request.

Translations

Translation to various languages is available for all documents and drawings.

Technical Papers

Please see our web site www.refeng.com.au for details of technical papers.

Our Equipment Users



Our customers are the best testament to the quality of our equipment. The businesses that choose Refrigeration Engineering are blue chip companies in the oil, gas and downstream industries and include:

- Shell
- Exxon Mobil
- ConocoPhillips
- Total
- Oil Tanking
- Qenos
- BHP Petroleum
- Dow Chemical
- Air Liquide
- Fluor Amec
- Santos
- Woodside Petroleum
- Jam Petrochemicals
- PTT Polyethylene
- Toyo Thai
- BP
- Asean Bintulu Fertilisers
- BOC
- Linde
- Vopak
- Chiyoda



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