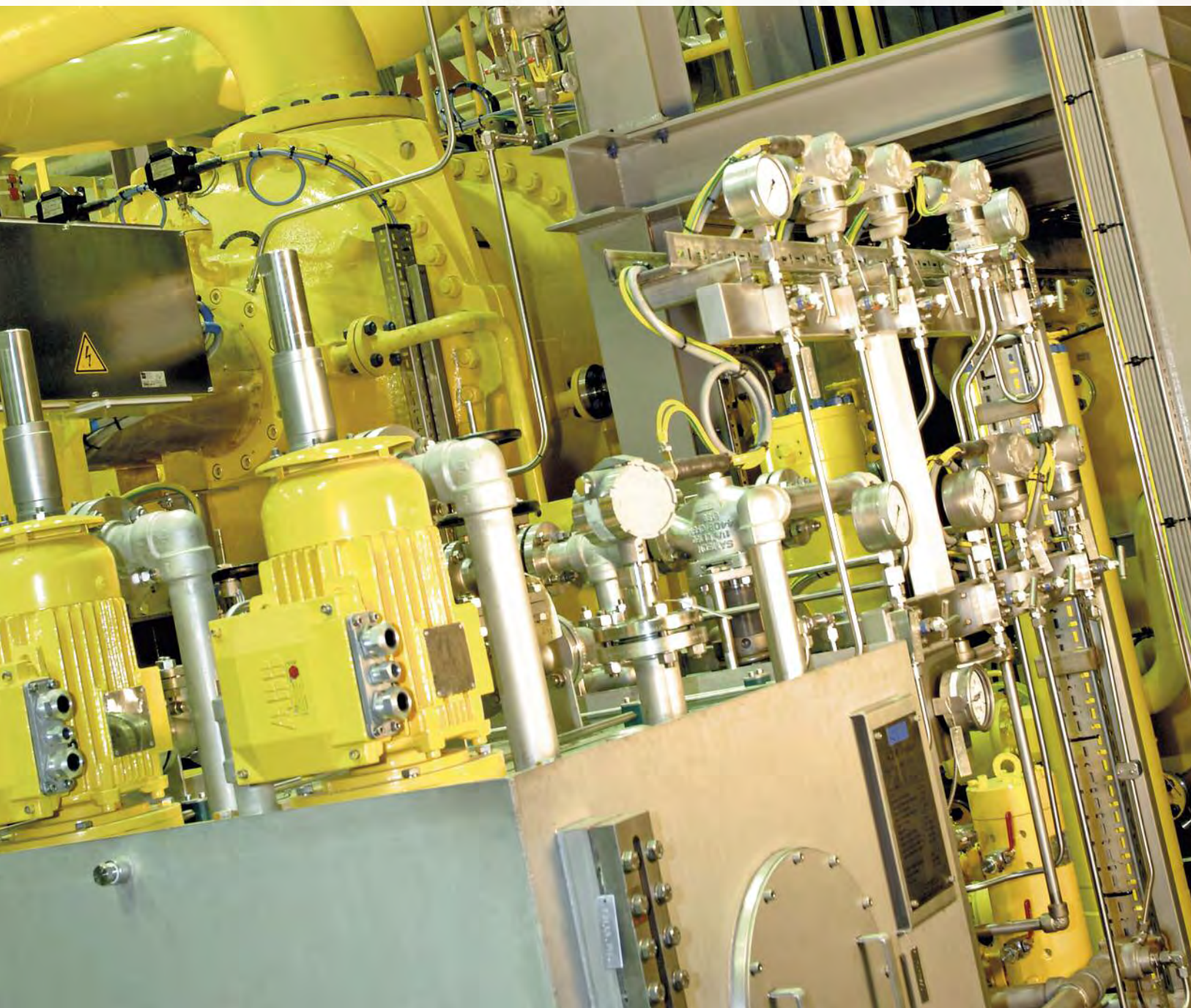




# AustCold

INDUSTRIAL REFRIGERATION AND GAS COMPRESSION PLANT





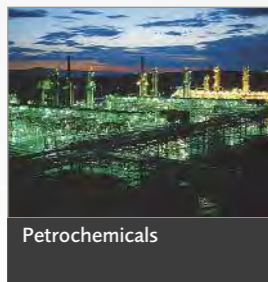
FOR OVER THREE DECADES, AUSTCOLD HAVE BEEN A MAJOR SUPPLIER OF LARGE INDUSTRIAL SKID-MOUNTED SCREW COMPRESSOR PACKAGES FOR REFRIGERATION AND GAS COMPRESSION.

**AUSTCOLD MARKETS**

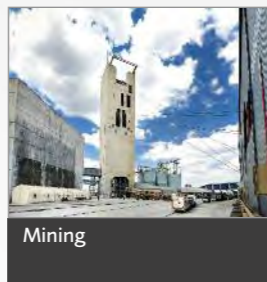
Our equipment is installed in key situations throughout the world, serving industries such as oil and gas, petrochemicals, mining, chemicals and power. AustCold products are designed to cope with the most challenging conditions, from high temperatures to sub zero conditions. We have designed and supplied refrigeration packages for offshore drilling rigs and floating production, storage and offloading vessels. We are the preferred supplier in sectors where reliability and efficiency have to be beyond doubt.



Oil and Gas



Petrochemicals



Mining



Chemicals



Power Generation



## THE DRIVING FORCE BEHIND OUR TECHNOLOGY



THE MAJOR SUPPLIER OF THE SCREW COMPRESSORS AT THE HEART OF OUR COOLING PACKAGES HAS, FOR MOST OF OUR HISTORY, BEEN HOWDEN, A GLOBAL COMPANY WITH A PRESENCE ON EVERY CONTINENT AND A REPUTATION FOR THE HIGHEST QUALITY OF ENGINEERING.



Above images show Howden rotary twin screw compressors designed and manufactured at Howden Compressors' global centre of excellence facility in Glasgow, Scotland, UK.

The increasingly strong relationship between the two companies reached a natural conclusion in 2010 when AustCold became part of the Howden Global organisation.

Howden are a major world force in compressor technology. They designed the world's first diaphragm compressor, a major advance in providing contamination-free processing, and were the first to commercialise screw compressor technology. The combination of high efficiency with low maintenance costs makes Howden screw compressors an extremely economical choice over the life of the plant, and the uniform output pressure eliminates vibration and offers problem-free running with even the most difficult gases.

Howden's leading position in this field is maintained by Howden Compressors' dedicated Research and Development team, based in Glasgow, Scotland,

supported by the company's comprehensive test facilities. Today, the combination of AustCold's application experience in the gas and liquefied gas sectors and Howden's worldwide and world-class engineering expertise consolidates our position at the forefront of gas compression and industrial refrigeration technology.

By supplying the compressor and ancillary equipment as a single and fully tested unit, AustCold lifts the burden of potential mismatches between system components and the worry of assigning responsibility where a number of suppliers are involved in a complex engineering project. We deliver a fully assembled unit, and guarantee that it will meet specification and offer problem-free running from the day it is commissioned. The advantages of buying from a single supplier have never been stronger.

# A FULLY PACKAGED PRODUCT, A FULLY PACKAGED SERVICE

OUR CUSTOM DESIGNED PACKAGES ARE SUPPLIED READY FOR INSTALLATION IN A WIDE RANGE OF SITUATIONS INCLUDING PROCESS GAS CHILLING, MINE AIR COOLING USING EITHER UNDERGROUND OR SURFACE UNITS, LIQUEFIED GAS STORAGE RECONDENSERS FOR AMMONIA, ETHYLENE AND BUTANE, CARBON DIOXIDE COMPRESSION, DEW POINT CONTROL IN NATURAL GAS PROCESSING, LPG PRODUCTION, GLYCOL OR WATER CHILLING.

Thirty years of specialised design and manufacture focused on the precise needs of process critical industries has given us considerable insight into, and experience of, application engineering. This understanding informs every aspect of our services, and enables us to focus considerable expertise on the design and assembly of skid-mounted packages precisely tailored to the requirements of each customer and each application. We can offer a complete turnkey service that covers the entire procedure from initial consultation right through to commissioning, and extends into full aftermarket care.



### CUSTOM DESIGNED PACKAGES

Process gas chilling	Mine air cooling (surface or underground)	Liquefied gas storage recondensers for ammonia, ethylene and butane	Carbon dioxide compression	Dew point control in natural gas processing, LPG production, glycol or water chilling

### HOWDEN COMPRESSORS: UNMATCHED SCREW TECHNOLOGY EXPERIENCE



Screw compressor rotor manufacture at Howden Compressors factory in Glasgow, Scotland, UK.

Howden's experience of modern screw compressor technology is unmatched. They were the first company to commercialise the process, working with its developer Alf Lysholm in the 1930s and providing the high quality, low tolerance engineering skill required for the precision manufacturing of the helical screws. Ever since, they have been in the vanguard of screw compressor evolution. In 1961, they developed the world's first oil injected controlled capacity compressors, and it is these devices that form the core of most of the packages AustCold build.

# MORE THAN THE SUM OF THE PARTS

THE PACKAGES WE SUPPLY ARE DESIGNED TO INCLUDE ALL OF THE REQUIRED COMPONENTS AND SYSTEMS READY FOR CONNECTING TO THE PLANT ON SITE.

The package is usually built as a single skid-mounted assembly on a heavy-duty galvanised steel base, but multiple skids or skids plus ancillary equipment are all within our experience.

The package is always optimised for its final destination and ready to be linked into the customer's existing interfaces, and whatever the configuration we ensure that easy access is available for future servicing and maintenance needs.

Refrigeration packages are designed and supplied with all the components necessary to enable complete operation and typically includes compressor, compressor driver, oil separator, condenser and evaporator.

Plant configurations allow for many variations in design including single or multiple compressors, electric motor or gas engine drivers, air or water cooled condensers and plate, kettle, shell and tube, or shell and plate evaporators. The process chosen for the refrigeration will optimize the capital and power cost within the design parameters

MCB TOWER, KARACHI



The 116m tall MCB Tower in Karachi, headquarters of the MCB Bank, is the tallest building in Pakistan and a flagship project in its level of energy conservation. It has its own gas turbine to generate power, and we supplied the fuel gas compressor for the turbine. The package included an electric motor, a three-stage oil separator, cooler, filters and pump, with all appropriate wiring, instrumentation and control panels. Because of the situation, noise was an important parameter. The sound produced by our unit was just 85dB(A) at one metre. Where noise is an issue, we can also fit acoustic hoods over the compressors.

GOLD MINE, CANADA



We supplied cooling units designed to deliver chilled water for circulation in underground bulk air cooling systems in a Canadian gold mine. In addition to the skid-mounted components which included an oil separator, pump, filters and oil cooling system, an evaporator and condenser, an accumulator and all necessary piping and wiring, we added non-corrosive bulk air coolers, a cooling tower and a separate motor control system. The entire package was pressure-tested at our factory, quality assured to AS2990, and commissioned on site by our engineers.

TANK FARM, SHANGHAI



For a cryogenic tank farm in Shanghai storing ethylene and ammonia, we supplied three fully equipped skid-mounted compressor packages for ammonia, two for propylene, one skid-mounted ammonia heat exchanger with purger, condenser, liquid receiver and glycol chiller, and one skid-mounted ethylene/ propylene heat exchanger with condensers, an ethylene depressuriser and a liquid receiver. In a second project in Shanghai, we mounted three compressors with motors and ancillary equipment on a single skid. We also delivered, as a separate package, an air cooled heat exchanger large enough to handle two compressors in parallel.

Linked into the customer's existing interfaces

Oil separator

Compressor motor

Instrumentation and controls

Single skid-mounted assembly on a heavy-duty galvanised steel or two-part epoxy painted base

Easy access for future servicing and maintenance

Oil-injected Howden compressor



**AUSTCOLD IS DEDICATED TO THE HIGHEST STANDARDS OF ENVIRONMENTAL RESPONSIBILITY AND HEALTH & SAFETY, BOTH WITHIN OUR FACTORY AND ON EVERY EXTERNAL SITE WHERE WE OPERATE.**

## GLOBAL BENEFITS

AUSTCOLD ENGINEERS HAVE MORE THAN A GENERATION OF EXPERIENCE AND EXPERTISE IN THE SCIENCE, ENGINEERING AND APPLICATION OF REFRIGERATION AND GAS COMPRESSION. SINCE BECOMING PART OF THE HOWDEN GLOBAL ORGANISATION, THEY ALSO HAVE ACCESS TO AN UNPRECEDENTED WORLDWIDE SOURCE OF EXPERIENCE.

Howden has been a leader in air and gas handling technology for over 150 years, and today incorporates companies in 16 countries. Their organisational structure covers every continent. This means that AustCold and their customers have the advantage fast access to local engineering support whenever required.

The global reach and local knowledge of Howden also brings great benefits in supply chain management, allowing us to avoid production bottlenecks and source the most economical and environmentally responsible sources for raw materials and external suppliers.

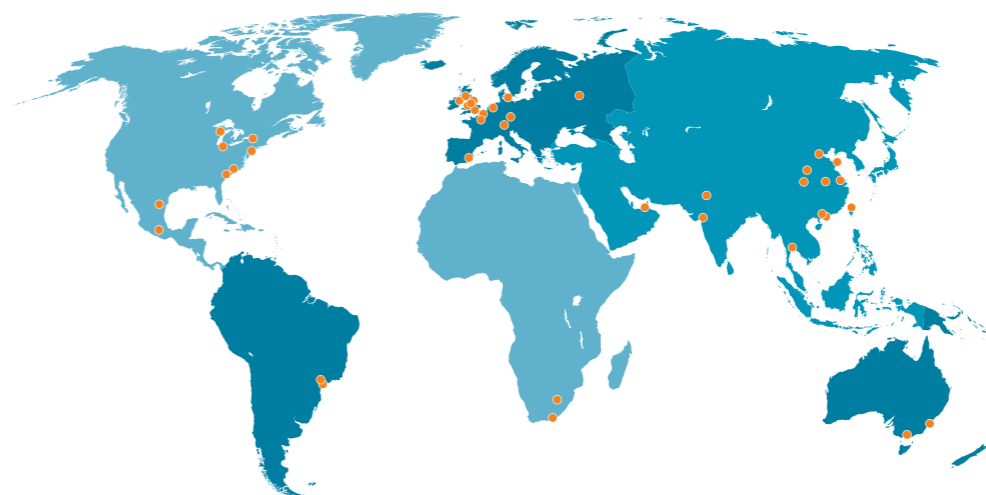
### SETTING BENCHMARKS IN HEALTH, SAFETY AND ENVIRONMENTAL RESPONSIBILITY

AustCold is dedicated to the highest standards of environmental responsibility and health & safety, both within our factory and on every external site where we operate. The entire Howden global organisation vigorously pursues a programme of constant improvement in health & safety through a formal structure that involves everyone from the shop floor to the boardroom.

Our products are designed to improve environmental performance by offering higher efficiency and lower energy costs to their end user. The pursuit of environmental best practice also runs through the manufacturing process from supply chain management to engineering logistics.

Howden's commitment to the future is reflected in their creation of Howden Academy, a groundbreaking training opportunity offered to new Howden employees from throughout the world. The success of the venture has led to its course materials increasingly being offered on-line to a wider cross-section of the international workforce. One of the effects of the Academy is to consolidate Howden's strength as a global repository of exceptional application knowledge and product information in which any engineer, working on-site anywhere in the world, has access to an immense body of advice and experience.

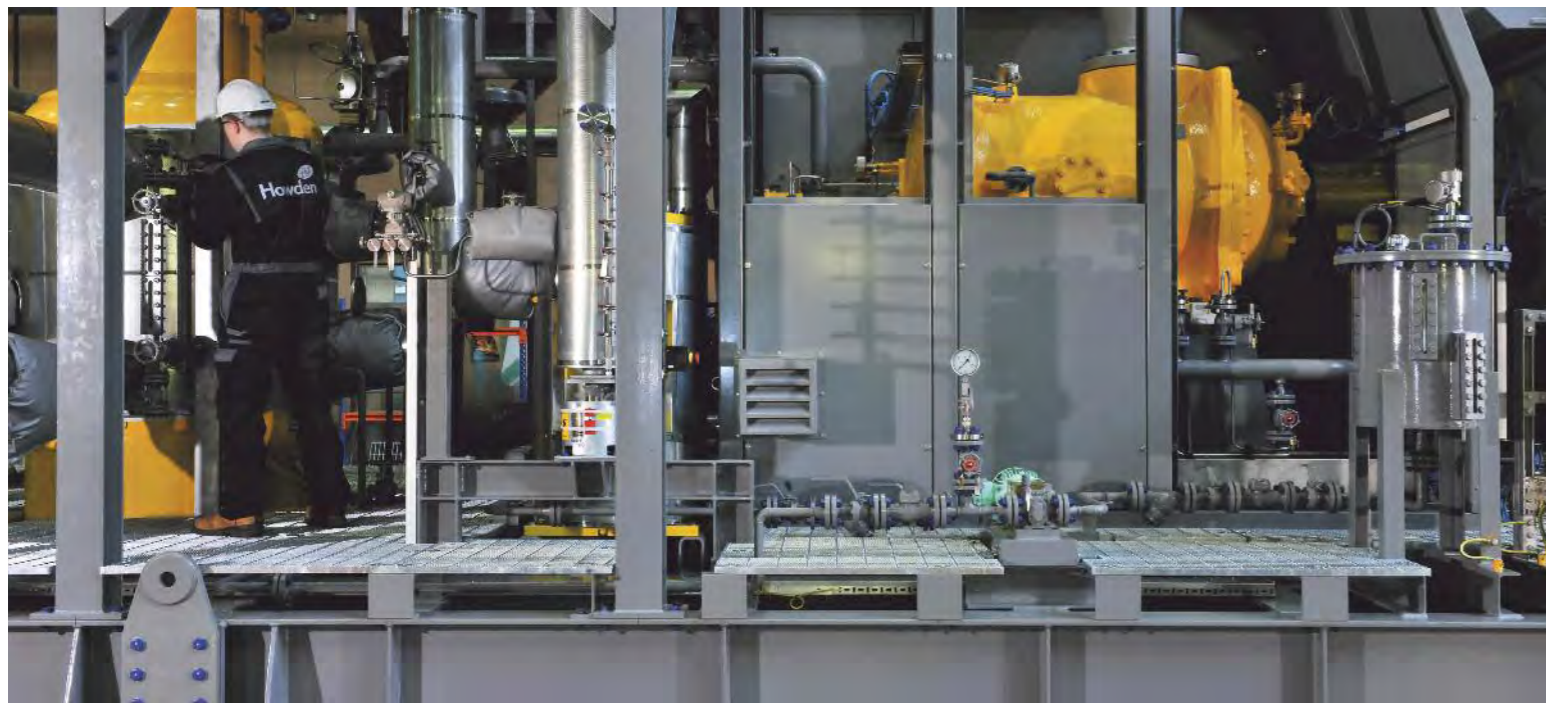
### HOWDEN GLOBAL LOCATIONS



**ALL AUSTCOLD PRODUCTS ARE QUALITY ASSURED TO ISO9001 STANDARDS, AND OUR HEALTH & SAFETY AND ENVIRONMENTAL PRACTICES MEET OHSAS18001 AND ISO14001 RESPECTIVELY.**

# AFTERMARKET SUPPORT

WE PROVIDE A FULL LIFETIME SPARES PARTS AND AFTERCARE SERVICE FOR EVERY UNIT WE SUPPLY. THE PARTS WE SUPPLY ARE ALWAYS FROM THE ORIGINAL EQUIPMENT MANUFACTURER, AND ARE GENERALLY DELIVERED IN A PRE-PACKAGED KIT WITH A CERTIFICATE OF AUTHENTICITY.



Because we retain all details of each installation, we can not only ensure that any parts we supply are appropriate, we can advise about any upgrades or enhancements that will improve the efficiency or performance of your refrigeration and gas compression package.

Our experienced service engineers can ensure that parts are fitted or upgraded, and all necessary checks carried out, with the minimum of downtime.

**WHERE A COMPRESSOR HAS BEEN RUNNING FOR A NUMBER OF YEARS, WE CAN INSPECT IT AND, IF APPROPRIATE, RECOMMEND A FULL SERVICE RE-BUILD OF THE EQUIPMENT.**

This is a major overhaul that will bring the compressor back to as-new or, where upgrades are available, to better than new operation.



AustCold supply only original Howden spare parts for compression systems based on Howden screw compressors.

FOR MORE INFORMATION CONTACT AUSTCOLD ON 61 2 8844 9100 OR VISIT [WWW.HOWDEN.COM/AUSTCOLD](http://WWW.HOWDEN.COM/AUSTCOLD)



## AustCold

The combination of our product knowledge with our extensive applications experience, gained by our engineers on sites throughout the world, allows us to provide our customers with support from the initial project inception right through to the end of the plant life.

For more information about AustCold products and services, please contact:



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AustCold is a **Howden Australia** company

### HOWDEN AUSTRALIA

Howden's engineering and project management activities in Australia are headquartered in Sydney, and we manufacture replacement elements for rotary heat exchangers in Melbourne. Howden Australia designs and supplies a comprehensive range of fans, blowers, heat exchangers, and is the central point for Howden's Asia Pacific operations incorporating sales, engineering, contract management and service support functions for all Howden products and services, including Howden's range of compressors.



Howden, founded in 1854, is the world's leading supplier of fans, compressors and rotary regenerative heat exchangers for a large range of industrial applications. Whether pre-engineered or custom built for a specific application, our products are known throughout the world for their high levels of performance, reliability and innovation.