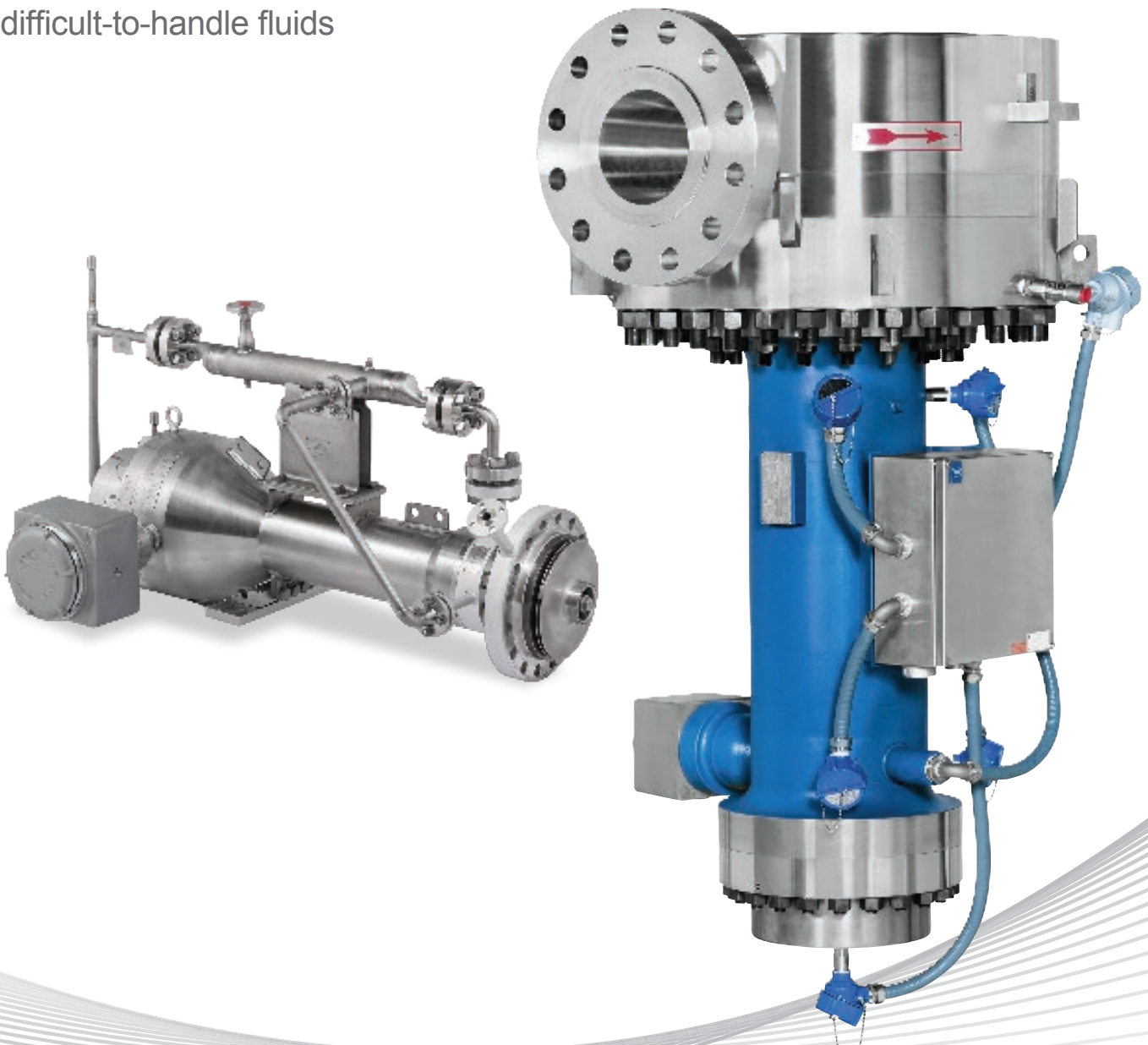


Canned Motor Pumps and Retrofits

For performance-critical applications requiring robust and reliable pumping of high-pressure, high-temperature, difficult-to-handle fluids



CANNED MOTOR PUMPS

Sealless. Leak-proof. Reliable. Low maintenance.

Reliability and safety are the core components that drive successful operations. At Hayward Tyler we are driven by these principals to deliver engineered solutions that meet your operational demands.

Our high-performing, low-maintenance Canned Motor Pumps (CMP) are recognized worldwide as the most reliable and robust available today.

Engineering excellence

Hayward Tyler designs and manufactures for critical applications with high-pressure, high-temperature fluids, as well as toxic or hazardous fluids.

With over 60 years' experience, we provide you with reliable solutions for a wide range of high-integrity applications. We have sold many thousands of Canned Motor Pumps worldwide across many applications including power generation, oil & gas, chemical, nuclear, and defense.

Our pumps have a design lifetime of 25+ years and are engineered for high-efficiency operation, for improved productivity and performance, and reduced total life cycle costs. Featuring double-pressure containment, these sealless pumps eliminate the need for a dynamic mechanical seal, so that no leakage control is required.

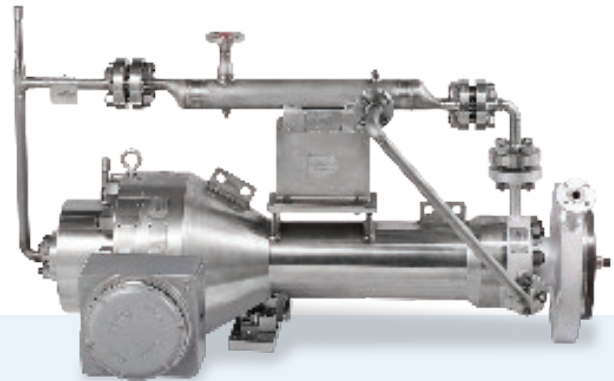
CASE STUDY:

High Pressure Canned Motor Pumps for BDO Service

Butanediol (BDO) is a chemical used in the manufacturing process of a wide range of plastics, elastic fibers, polyurethanes, and printing inks. It is processed in a high-pressure environment.

Hayward Tyler successfully installed multiple pumps at a BDO processing plant in LaPorte, Texas to address a troublesome system. Our design and application team worked directly with site engineers to understand the problem and custom design a solution that met their requirements. These pumps have been operational since 1996.

This project served as a benchmark installation for BDO projects worldwide, including a multiple canned motor pump installation in China in 2014.



KEY TECHNICAL FEATURES:

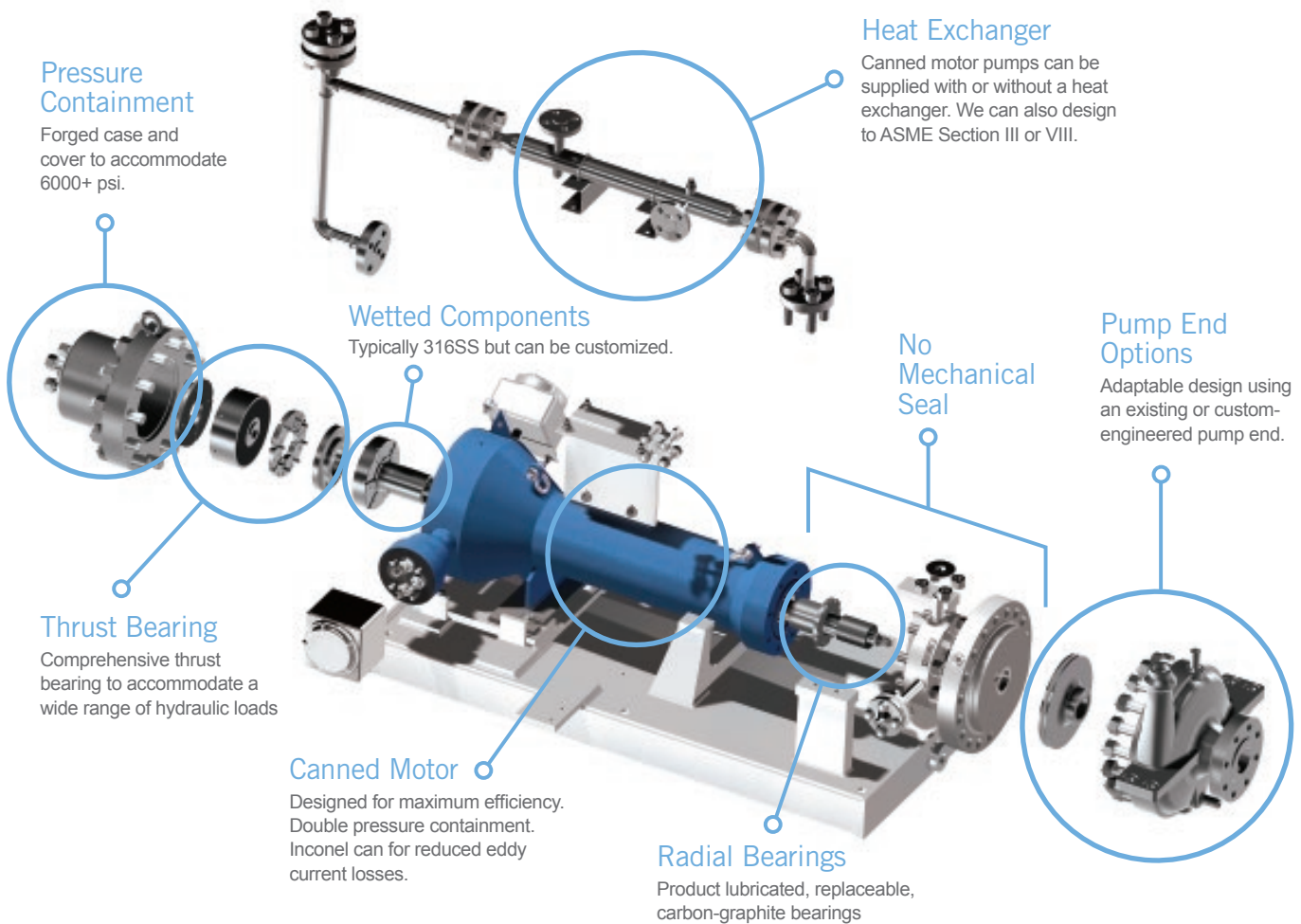
Design Codes	Pump End
ASME Section VIII and III including stamp (N, NS, NA, NPT, U)	Existing or Custom
10CFR21 and 10CFR50	Single or Two-Stage
CRN TSSA	Thrust Bearing or Balanced Hydraulic
Other National Standards as required	

Primary & Secondary Containment

Our sealless pump provides a reliable form of double-pressure containment. The close-coupled design eliminates the need for a dynamic mechanical seal, resulting in a leak-proof pumping solution.

Power (hp)	Pressure (psi)	Temperature (°F)	Voltage (V)	Poles	Frequency (Hz)	VSD Compatible
1 – 400+	0 – 6000+	32 – 750	Up to 4160	2 or 4	50 or 60	Yes

Our Canned Motor Pumps and Retrofits have a 25+ year design lifetime, providing high-efficiency operation and low maintenance for improved productivity and profitability.



Features

- No mechanical seals
- Self lubricating bearings
- Small number of parts
- Compact design
- Casing is the pressure vessel
- Double acting thrust bearings absorb thrust in both directions
- Stainless steel internals
- Encapsulated windings for heat transfer
- Flexibility of components
- Baseplate mount
- Range of circulation systems, simple to complex

Benefits

- No alignment required
- Double containment
- No leakage is safer for operators and the environment
- Proven reliability
- Easy to install for lower installation cost
- Ease of strip and rebuild for reduced downtime



Each pump is manufactured by adhering to strict quality control inspection methods, and is performance- and pressure-tested before shipment.

CANNED MOTOR RETROFITS

The ultimate solution for your existing pump.

Stop the leaks in your existing pump with Hayward Tyler's Canned Motor Retrofit (CMR), the world's first canned motor that is easily adapted to any existing pump design to provide superior performance, reliability, and zero leakage.

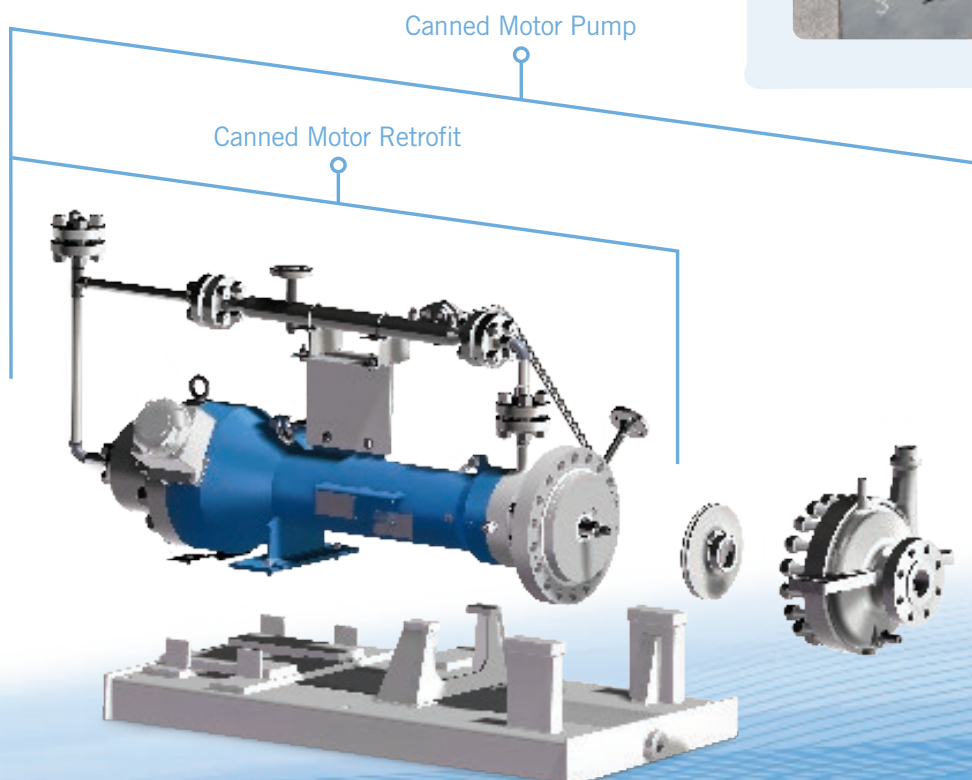
Choosing a Canned Motor Retrofit allows you to maintain the pump OEM design of choice while gaining additional engineered capabilities in pressure, temperature, and material hazard levels. Our CMR sets the standard for reliability, ease of maintenance, and zero leakage, to take your performance to the next level.

We offer a variety of customizable systems to accommodate a wide range of performance-critical applications, and our vast experience in sealless technology ensures a successful retrofit of your existing installed pump to the Hayward Tyler canned motor. We scrutinize and verify each application, whether with an existing or new pump end, with every fluid in every service.

NUCLEAR:

Retrofits of Reactor Water Clean Up Units

- Horizontal or vertical replacement options
- Extensive experience including:
Exelon LaSalle, Exelon Limerick, PSEG Hope Creek, Duke Energy Brunswick and FirstEnergy Perry
- Eliminate seal failures by eliminating the rotating seal
- Reduced exposure for maintenance
- Installation exposure is minimal
- No large bore piping or major 'in room' civil work
- Uses existing baseplate





HIGH RELIABILITY
(25+ YEARS DESIGN
LIFETIME)



750° F
(400°C)
MAXIMUM SYSTEM
TEMPERATURE



6000+ PSI
(415 bar)
MAXIMUM SYSTEM
PRESSURE



LOWER TOTAL COST
OF OWNERSHIP

COMPARISON:

Canned Motor Pumps vs. Canned Motor Retrofits

	Canned Motor Pumps	Canned Motor Retrofits
Engineering	<ul style="list-style-type: none"> High pressure design Custom engineered Designed as a complete unit, motor + pump 	<ul style="list-style-type: none"> Uses existing pump case, impeller and baseplate Nearly always custom engineered No civil or large bore piping mods Easy installation
Applications	<ul style="list-style-type: none"> Ideal for new installations For performance-critical applications providing a zero-leak solution 	<ul style="list-style-type: none"> Ideal for aftermarket situations Allows existing hydraulics to be used with a sealless motor Thrust bearing can accommodate wide range of hydraulic loading
Performance	<ul style="list-style-type: none"> Optimized CMP design and construction provides increased efficiency 	<ul style="list-style-type: none"> Negligible performance change

Typical fluids pumped through motor

Anhydrous Ammonia	<i>High volatility</i>
Benzene	<i>Volatile, Carcinogen</i>
Caustics	<i>Corrosive</i>
Epichlorohydrin	<i>Lethal</i>
Formaldehyde	<i>Carcinogen</i>
Hot Oil	<i>High temperature</i>
Liquid Gas	<i>Low temperature</i>
Phosgene	<i>High volatility</i>
Rad Waste	<i>Radioactive</i>
Styrene	<i>Polymerizing</i>
Reactor Water	<i>Radioactive</i>

Typical uses within plant applications

- Condensate Circulation
- Debottlenecking
- Heat Transfer
- Fuel Pool Purification
- Rad Waste
- Reactor Circulation
- Safety Upgrading
- Spray Wash
- Stripper Feed
- Tank Unloading

Worldwide engineering excellence

Our Canned Motor Pumps and Retrofits are trusted for their performance and reliability, and are used in many industries worldwide:

- Power Generation
- Oil & Gas
- Chemical & Process
- Nuclear
- Naval / Defense



Our motors are used by industry leading companies including Eastman Chemical, Exxon Mobil, Invista, Westinghouse Nuclear, Korea Hydro Nuclear Power, and Shenyang Blower Works.

After-sale support and service

Our status as an industry-leading OEM supplier is reflected in our commitment to world-class service, support, and engineering expertise.

We have dedicated facilities in the UK, USA, India, and China, with our specialist field personnel delivering the full range of service and repair options for all planned and predictive maintenance cycles, as well as comprehensive electrical and mechanical inspection capability.

Our after-sales support can be delivered on a supervised or turnkey basis, with turnkey now growing in popularity as an effective means of reducing staffing overheads.

A full recommended spare parts list is available for each pump. For our Canned Motor Pump range, Hayward Tyler offers solutions for specific applications such as heat transfer pumps and process pumps. In addition, our sales team can provide a comprehensive range of options to ensure that your business processes are uninterrupted and running at optimum levels at all times.



Global service capabilities:

- In-house shop service
- Field service
- 24/7/365 technical support
- Engineering design
- Analysis, troubleshooting & performance testing
- Condition Monitoring
- Replacement parts
- Replacement & retrofit units



For further information on Hayward Tyler's Canned Motor Pumps and Retrofits, please contact us at a location below or visit:

www.haywardtyler.com/products/canned-motor-pump



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