

Canned Motor Pumps

For zero-leakage operation in applications that demand robust and reliable performance.



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 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.

Features

- High Level of Performance
- Low NPSHr
- Modular Construction and Compact Design
- Interchangeability of Back Pull-out Assemblies
- API685 Design Available
- Global Service Network
- ATEX, CSA GB Certifications

Benefits

- No Leakage
- No External Lubrication
- Low Noise and Vibration
- Low Power Consumption
- Low Installation Costs
- Increased Lifetime and Longer Maintenance Intervals
- High Level of Availability and Short Supply Times

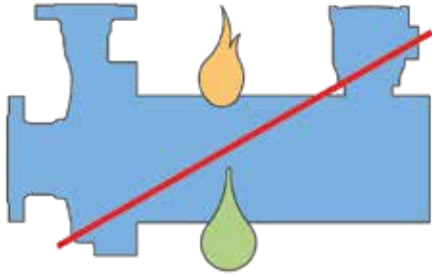
Industries

Typical industries for our Canned Motor Pumps include:

- Chemical
- Petrochemical
- Hydrogen Production
- Nuclear
- Offshore Oil & Gas
- Aerospace
- HVAC
- Locomotive Cooling System
- Refrigeration
- Pharmaceuticals

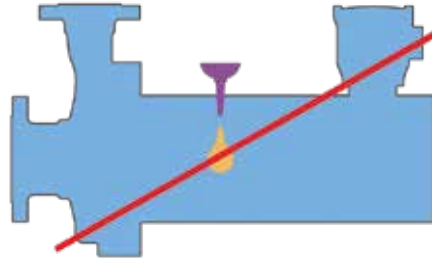


Key Benefits



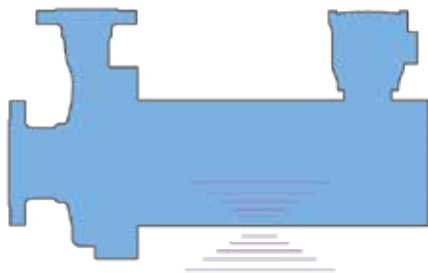
No Leakage

Suitable for handling flammable, explosive, toxic, corrosive and dangerous fluids.



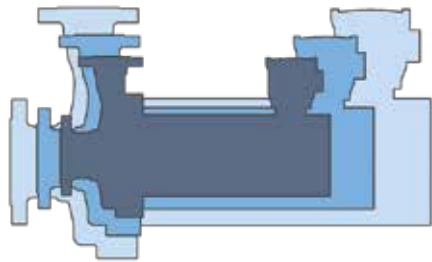
No External Lubrication

Self lubricated bearings eliminate the need for external fluid supply and reduce maintenance.



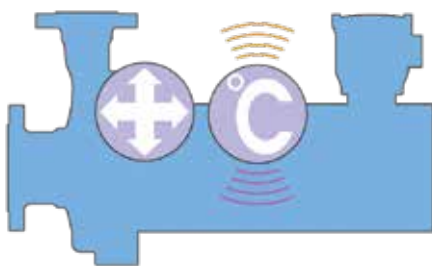
Airtight

Hermetically sealed and suitable for handling pressures from vacuum to high pressure conditions.



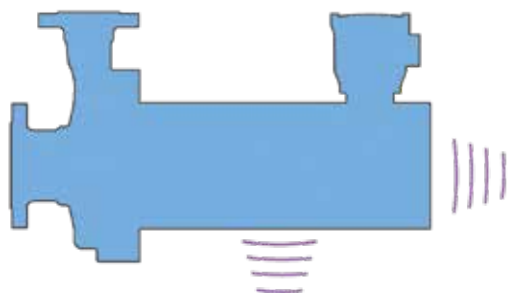
Compact Design

Small footprint and compact design reduces installation costs and requires minimal foundation requirements.



No Shaft Seal

Suitable for pumping in high pressure systems, high or low temperature fluids and high melting point fluids.

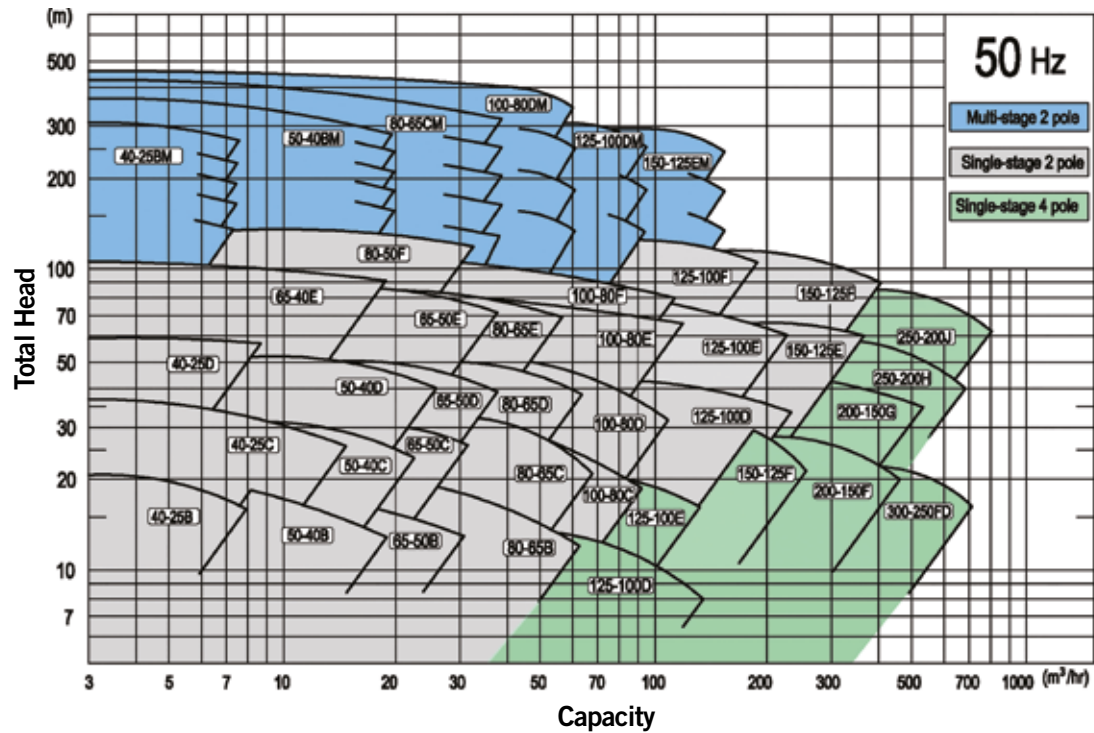


Low Noise and Vibration

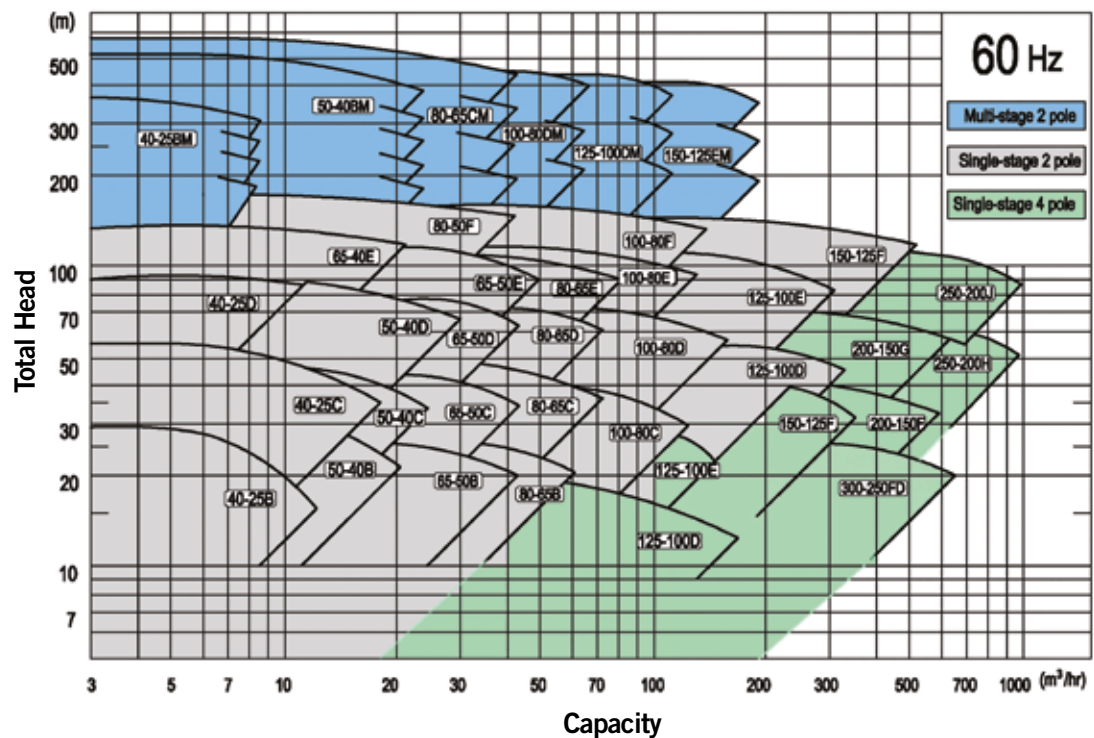
Totally enclosed with neither motor fans nor exposed bearings.

Performance Curves

2900/1450 rpm

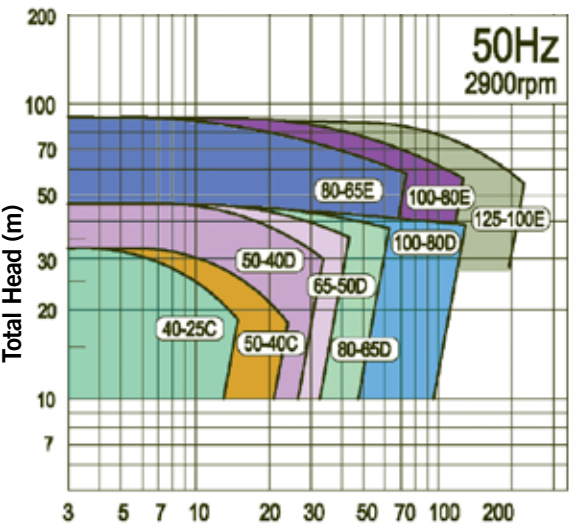


3480/1740 rpm

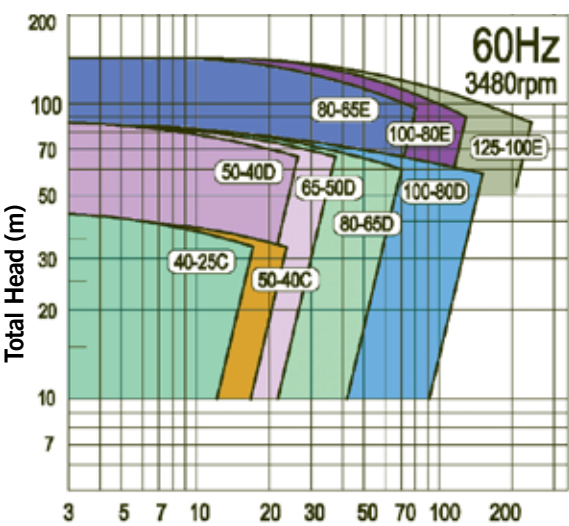


GAS SEAL SLURRY PUMP

2900 – 3480 rpm



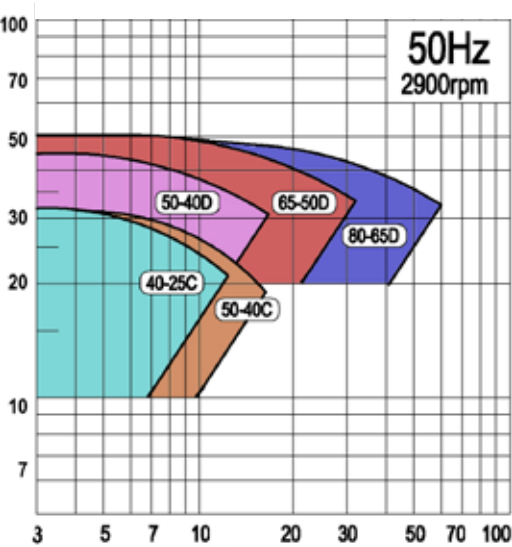
Capacity (m³/hr)



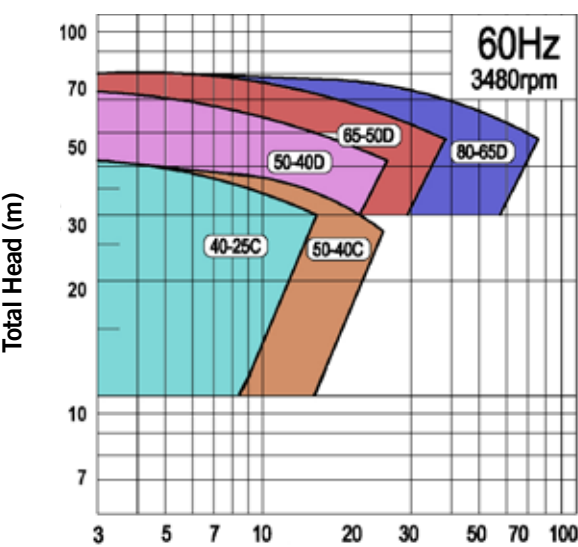
Capacity (m³/hr)

SELF-PRIMING PUMP

2900 – 3480 rpm



Capacity (m³/hr)



Capacity (m³/hr)

SECTIONAL DIAGRAM

Canned Motor Pump Structure

We offer a variety of standard motor frame and pump hydraulic combinations to match your system need. This allows for cost optimization and industry leading delivery times.

Overheating Protection

Embedded thermal cutout or RTD's in the hottest area of the motor provide protection against overheating

Flanges

Flange Standards:
ANSI, ASME, HG, DIN, JIS, GB, SH
Designed for 2x API nozzle loads

Thrust Balanced Impeller

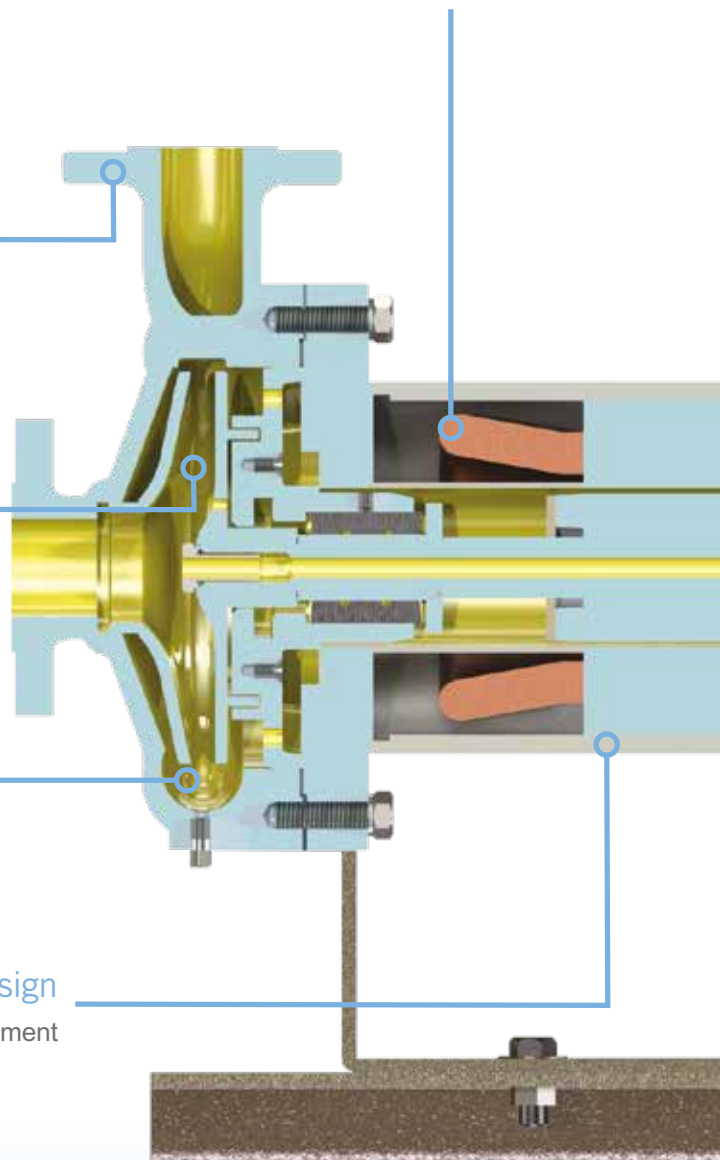
Automatic axial thrust balancing removes the need for a large thrust bearing

Impeller

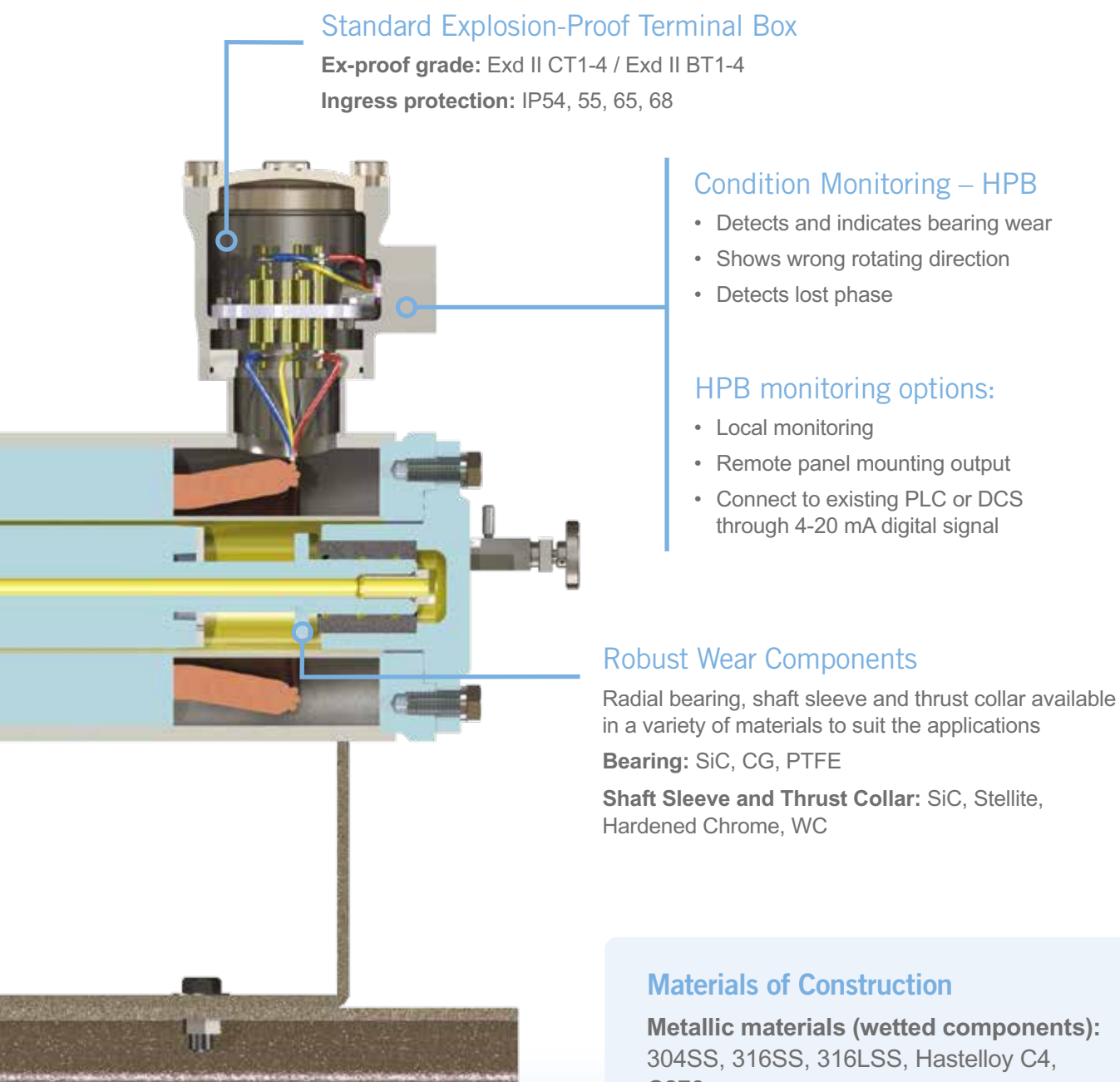
Designed for high efficiency and low NPSHr. Available with an inducer for low NPSHa applications

API 685 Design

Secondary containment



Canned motor designs with key features for your specific application.



Materials of Construction

Metallic materials (wetted components):

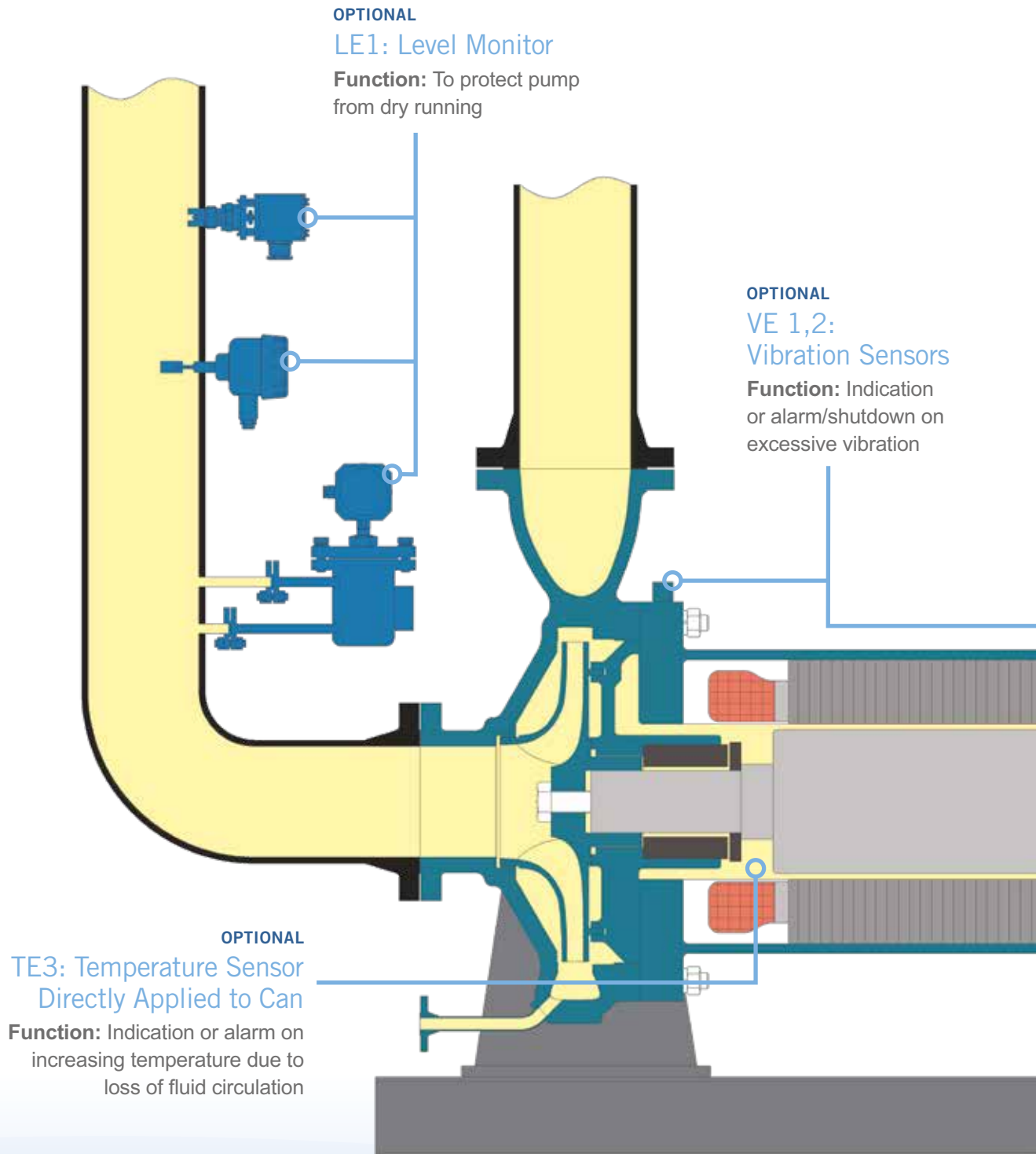
304SS, 316SS, 316LSS, Hastelloy C4, C276

Insulation materials: H, C, Super-C

Gasket: PTFE, metal spiral wound

SECTIONAL DIAGRAM

Instrumentation Options



OPTIONAL

JE: Power Monitor

Function: Indication or alarm/shutdown on abnormal power due to running, excess load, or single phasing

STANDARD

RE: Rotation Monitor

Function: Indication on motor rotation direction

STANDARD

ZE1: Bearing Radial Wear Monitor

Function: Indication or alarm/shutdown on bearings radial wear

STANDARD

PE: Pressure Monitor

Function: Shutdown on rising pressure due to containment shell leakage

STANDARD

TE1: Motor Thermal Protection

Function: Alarm shutdown on excessive temperature in windings due to loss of circulation fluid or over load

OPTIONAL

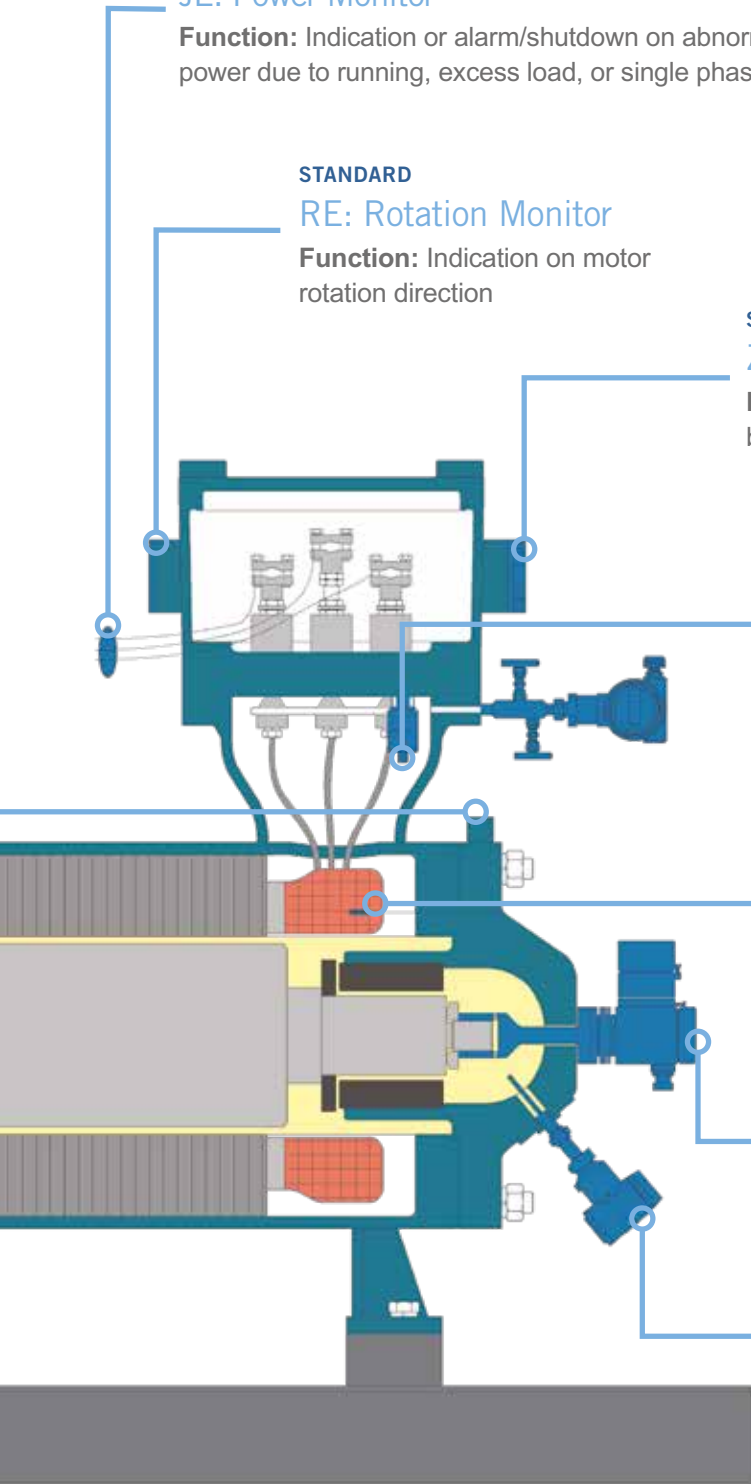
ZE2: Axial Shaft Position Monitor

Function: Indication or alarm/shutdown on excessive change in axial shaft position

STANDARD

TE2: Temperature Monitor

Function: Indication or alarm/shutdown on increasing temperature on circulation flow path



PRODUCTS

HV

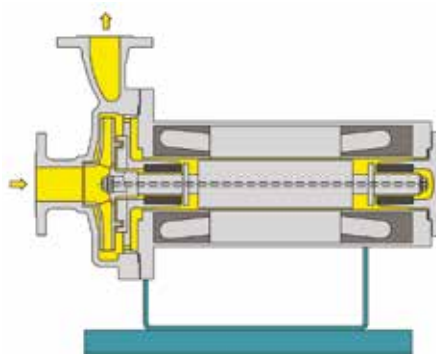
Hollow Shaft

Operation Parameters

	SI	US
Capacity	Max: 600 m ³ /h	2650 USgpm
Total Head	Max: 160 m	525 ft
Output	Max: 132 kW	177 hp

Features / Use

Basic design using a hollow shaft for inner circulation.



HP

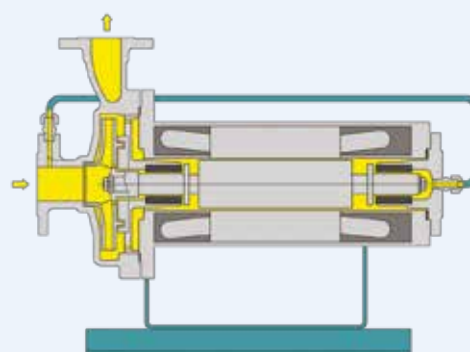
Standard

Operation Parameters

	SI	US
Capacity	Max: 750 m ³ /h	3300 USgpm
Total Head	Max: 160 m	525 ft
Output	Max: 315 kW	420 hp

Features / Use

Solid shaft construction with an external recirculation line for cooling.



HN

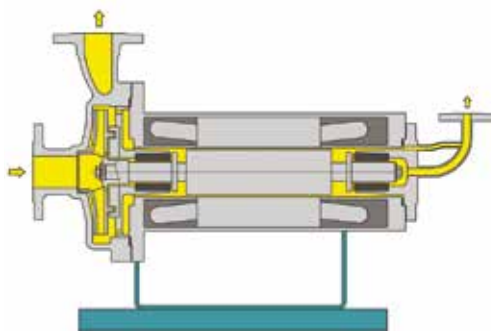
Reverse Circulation

Operation Parameters

	SI	US
Capacity	Max: 600 m ³ /h	2650 USgpm
Total Head	Max: 160 m	525 ft
Output	Max: 315 kW	420 hp

Features / Use

Uses a reverse circulation flow path and is self-venting. Suitable for fluids with a low vapor pressure.



HW

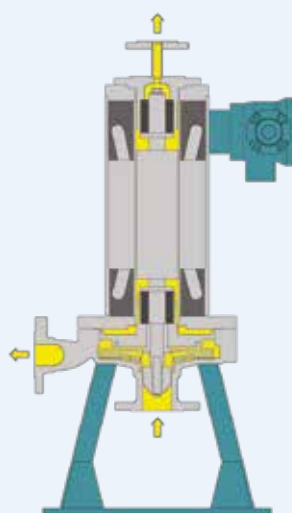
Vertical Reverse Circulation

Operation Parameters

	SI	US
Capacity	Max: 750 m ³ /h	2650 USgpm
Total Head	Max: 160 m	525 ft
Output	Max: 315 kW	420 hp

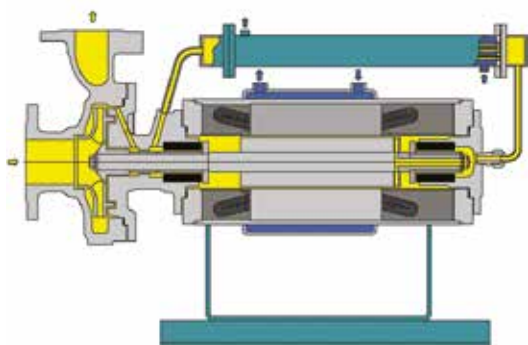
Features / Use

Vertical orientation Reverse Circulation. Typical applications include liquefied gases (LPG, LNG etc.) and refrigerants (Ammonia, etc.).



HT

High Temperature



Operation Parameters

	SI	US
Capacity	Max: 800 m³/h	3520 USgpm
Total Head	Max: 160 m	525 ft
Temperature	Max: 450° C	840° F
Output	Max: 315 kW	420 hp



Features / Use

This model uses a thermal barrier between the pump case and motor to thermally isolate the motor.

Suitable for high temperature applications including hot oils and hot water. This model has an external heat exchanger to keep the motor temperature regulated.



HZ

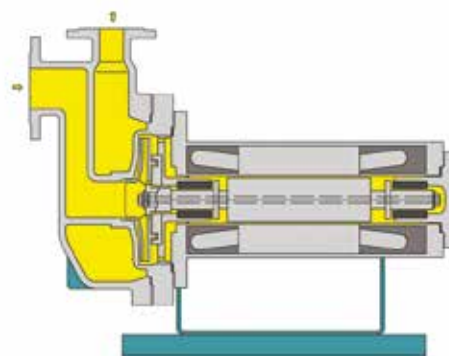
Self-Priming

Operation Parameters

	SI	US
Capacity	Max: 50 m ³ /h	220 USgpm
Total Head	Max: 50 m	164 ft
Output	Max: 45 kW	60 hp

Features / Use

Has a chamber that allows for self priming.
Particularly suitable for pumping from underground tanks and applications with entrained gases.



HS

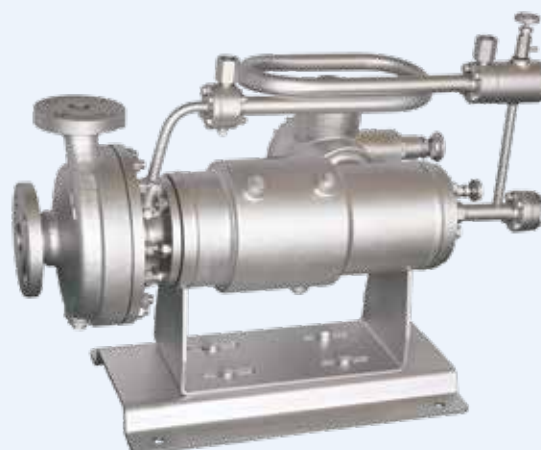
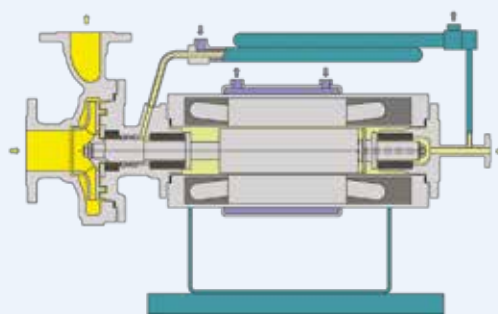
Slurry Handling

Operation Parameters

	SI	US
Capacity	Max: 750 m ³ /h	3300 USgpm
Total Head	Max: 130 m	427 ft
Output	Max: 220 kW	295 hp

Features / Use

An internal mechanical seal allows the handling of fluids with a small amount of fine particles.



HR

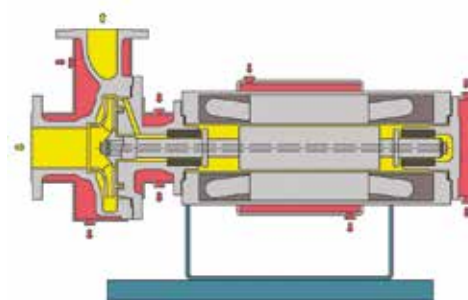
High Melting Point

Operation Parameters

	SI	US
Capacity	Max: 300 m³/h	1320 USgpm
Total Head	Max: 90 m	295 ft
Output	Max: 135 kW	180 hp

Features / Use

Uses a series of heating jackets to maintain an increased temperature around the motor. Ideal for handling liquids with high melting points.



HR-Y

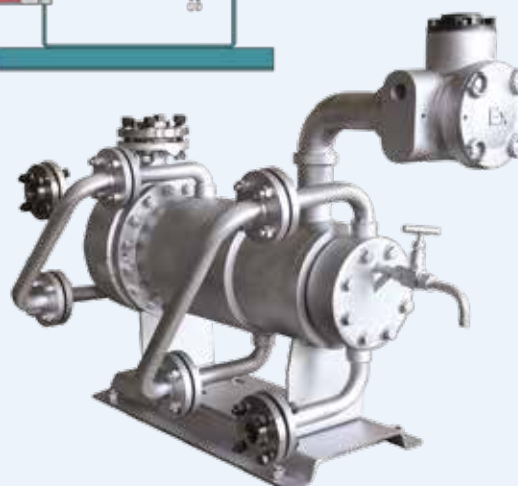
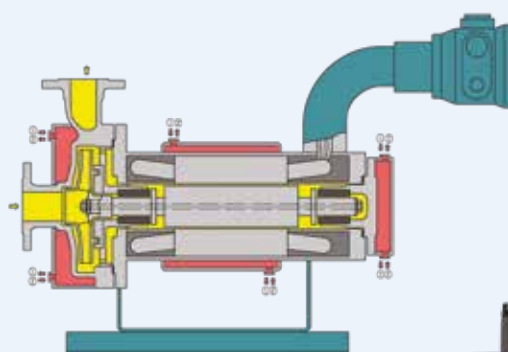
High Temperature, High Melting Point

Operation Parameters

	SI	US
Capacity	Max: 300 m³/h	1320 USgpm
Total Head	Max: 120 m	395 ft
Temperature	Max: 300° C	572° F
Output	Max: 110 kW	150 hp

Features / Use

Similar to model HR, however can handle higher motor temperatures.



HV-X

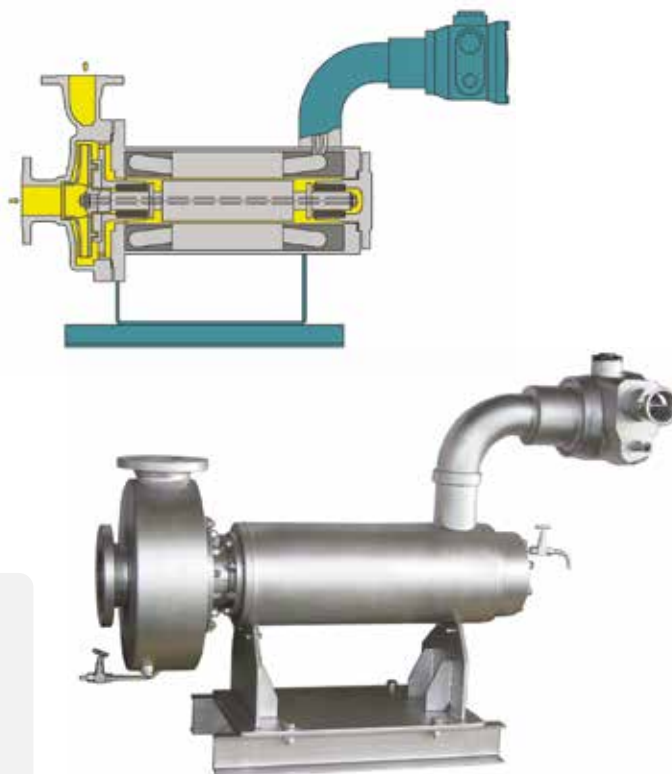
High Temperature

Operation Parameters

	SI	US
Capacity	Max: 350 m³/h	1540 USgpm
Total Head	Max: 160 m	525 ft
Temperature	Max: 400° C	750° F
Output	Max: 110 kW	150 hp

Features / Use

Excellent for high temperature applications where no cooling water is available. This model uses non-organic insulation materials allowing for higher motor operating temperatures.



HJ HG

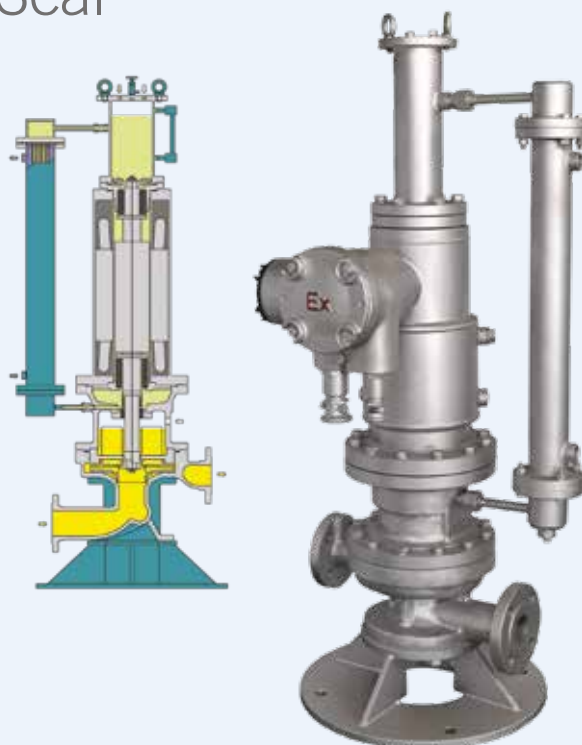
Slurry Handling with Gas Seal

Operation Parameters

	SI	US
Capacity	Max: 300 m³/h	1320 USgpm
Total Head	Max: 160 m	525 ft
Temperature	Max: 400° C	750° F
Output	Max: 110 kW	150 hp

Features / Use

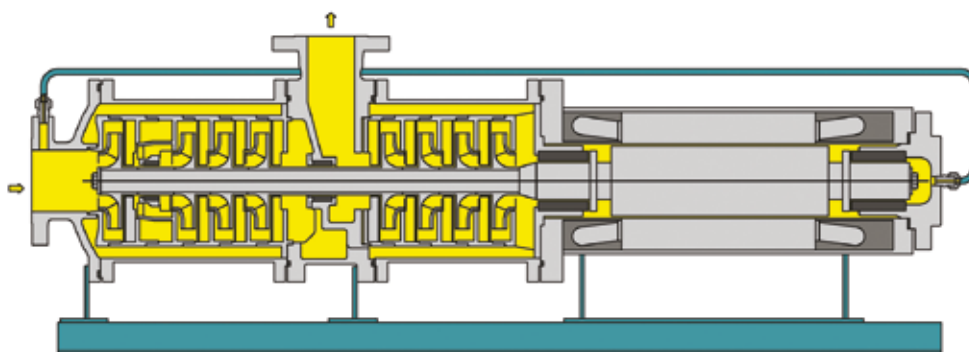
Vertical design with the ability to handle solid content up to 30%wt. The design uses an internal mechanical seal and a gas chamber between the pump and motor for isolation.



PRODUCTS

HP-M / HN-M / HT-M / HW-M

Multi-Stage



Features / Use

Standard, Reverse Circulation and High Temperature designs are available in multi-stage configuration for high head applications.

Operation Parameters

	SI	US
Capacity	Max: 280 m ³ /h	1230 USgpm
Total Head	Max: 800 m	2625 ft
Temperature	Min: -165° C Max: 400° C	Min: -265° F Max: 750° F
Output	Max: 315 kW	425 hp



HTM

High Pressure, High Temperature

Operation Parameters

	SI	US
Capacity	Max: 600 m ³ /h	2640 USgpm
Total Head	Max: 160 m	525 ft
Temperature	Max: 400° C	Max: 750° F
Pressure	Max: 40 MPa	6000 psig
Output	Max: 315 kW	Max: 425 hp



Features / Use

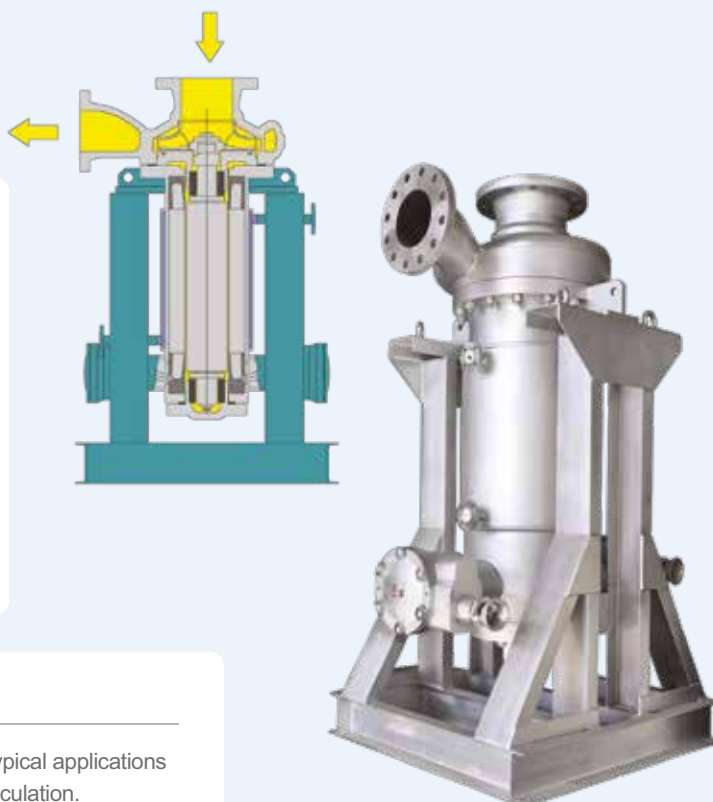
High temperature and high pressure design. Suitable for applications with a high system pressure such as chemical reactors, test loops and boiler circulation.

HP / HT / HN

High Capacity

Operation Parameters

	SI	US
Capacity	Max: 1200 m ³ /h	5285 USgpm
Total Head	Max: 200 m	656 ft
Temperature	Max: 400° C	Max: 750° F
Pressure	Max: 25 MPa	3600 psig
Output	Max: 315 kW	Max: 425 hp



Features / Use

High flow capacity at high pressure and temperature. Typical applications include boiler circulation, syngas cooling and nuclear circulation.

Common Applications and Fluids

Hayward Tyler Canned Motor Pumps are installed across multiple industries and applications with a proven track record of successful operation.

We have experience working with over 600 fluids in the most difficult applications that demand a zero-leakage solution. Hayward Tyler Canned Motor Pumps are ideal solutions when zero-leakage along with compactness, low noise and ease of maintenance are essential to your operation.

Our Canned Motor Pumps can be installed to replace existing API610 pumps, offering improved reliability and reduced maintenance.

Designed for Demanding Conditions

Hayward Tyler Canned Motor Pumps are ideal for applications that:

- Pose a pollution hazard to the surrounding environment
- Have a fire or explosion risk
- Can cause a public hazard due to toxicity or related properties
- Use fluids that react with air to form dangerous fluids, or air interferes with the system process
- Use fluids that solidify easily, are at high-temperature or cryogenic
- Use fluids that contain solid particles
- Utilize high system pressure or severe conditions



TYPICAL FLUIDS HANDLED BY HAYWARD TYLER CANNED MOTOR PUMPS

Acids	Sulphuric acid, Hydraulic acid, Nitric acid, Mixed acids, Phosphoric acid, Hydrofluoric acid, Hydrocyanic acid, Acetic acid, Chromic acid, Formic acid, Oxalic acid, Lactic acid, Methacrylic acid, Chlorosulfonic acid, Fatty acid, Propionic acid, Boric acid, Sulfurous acid, Stearic acid, Maleic acid, Oleic acid
Alkalis	Caustic soda, Caustic potash, Potassium hydroxide, Sodium hydroxide, Calcium hydroxide, Ammonia water
Salts	Calcium chloride, Sodium chloride, Sodium carbonate, Ammonium sulfate, Sodium Cyanide, Potassium bichromate, Lithium chloride, Ammonium sulphite, Sodium hypochlorite, Sodium chlorate, Lithium bromide, Aluminum sulfate, Sodium silicate, Sodium sulfide, Ammonium sulfide, Ammonium copper acetate
Esters	Methyl acetate, Ethyl acetate, Amyl acetate, Methyl acrylate, Methyl methacrylate
Aromatic Compounds	Benzene, Toluene, Xylene, Phenol, Naphthalene, Dichlorobenzene, Cresol, TDI, Methyl naphthalene, TPA slurry, Alkylbenzenes
Hydrocarbons (other than aromatics)	Butane, Nonane, Cyclohexane, Cyclohexanol, Hexane, Anol
Monomers and Polymers	PVC, PVA, Styrene, Caprolactam, Chloroprene, Butadiene, Vinyl ether, Acrylonitrile, Acetonitrile
Alcohols	Methanol, Ethanol, Butanol, Hexanol, Isopropyl alcohol, Octyl alcohol, Glycerine, Ethylene glycol, Propylene glycol
Oxo-Compounds and Ethers	Formaldehyde, Acetaldehyde, Benzaldehyde, Methyl ethers, Ethyl ethers, Methyl ether ketone, Acetone, Ethylene oxide, Propylene oxide, Acrolein, Crotonaldehyde, Allyl acetone, Acetic anhydride, Hexanone, Furfural
Halogenides	Carbon tetrachloride, Trichloroethylene, Allyl chloride, Phosgene, Liquid chlorine, Anhydrous hydrogen chloride, Anhydrous hydrogen fluoride, Methylene chloride, Methyl chloride, Titanium tetrachloride, Silicon tetrachloride, Phosphorus oxychloride, Phosphorus trichloride, Ethylene dichloride (EDC), Propylene dichloride, Tetrachloroethylene, Chloroform, Silicochloroform, Diethyl aluminum chloride, PAC
Nitrogen and Sulfur Compounds	Carbon disulfide, Anhydrous sulfur dioxide, Anhydrous ammonia, Pyridine, Hydrazine, Methyl hydrazine, Aniline, Amidol, Lactonitrile, Acetone cyanohydrin, Acrylamide, Dimethyl formamide, Ethanol amine and other amines, Methyl sulfoxide
Cryogenic Liquids	Freon, Liquid carbon dioxide, Liquid methane, Liquid ethylene, LPG, Liquid propane, Liquid propylene, Liquid ammonia
Oils	Petroleum (Naphtha, Crude oil, Gasoline), Transformer oil, Cooking oil, Lubricants
Heat Transfer Mediums	Dowtherm, Mobiltherm and other heat transfer media, KC, SK oil
Water	Sea water, Demineralized water, Boiler feed water, Waste water and other types of treated water
Coolants	Freon, Liquified ammonia, Lithium bromide, Methyl chloride and other coolants
Others	Mercury, Tetraethyl lead, Triethyl aluminum silane, Methyl silane, Hydrogen peroxide, Plasticizers, Developers, Gelatine, Detergents, Syrups, Paints, Various solvents, Various polymer slurry, Various catalyst slurry, Silane, Fermentation solution



Our global facilities

We have manufacturing facilities across the globe to provide reliable and timely support to our customers.

Each location offers repair services and field service support capable of providing technical expertise to you, no matter where your location. Additionally, we have a network of partners across the globe to allow us to provide the most convenient options for your aftermarket support. We offer a wide range of repair options for all planned and predictive maintenance cycles, as well as comprehensive electrical and mechanical inspection capabilities.

Our field service support teams can be used on a supervisory or turnkey basis. With turnkey growing in popularity as an effective means of reducing staff overhead, Hayward Tyler is there to meet industry needs.



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



Engineered solutions for the global energy sector

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