



AMERICAN-MARSH PUMPS

“DURABILITY BY DESIGN SINCE 1873”

380 Series Multi-Stage Centrifugal Pumps

Flows to: 2,500 GPM
Heads to: 2100 Feet
Temperatures to: 500+° F

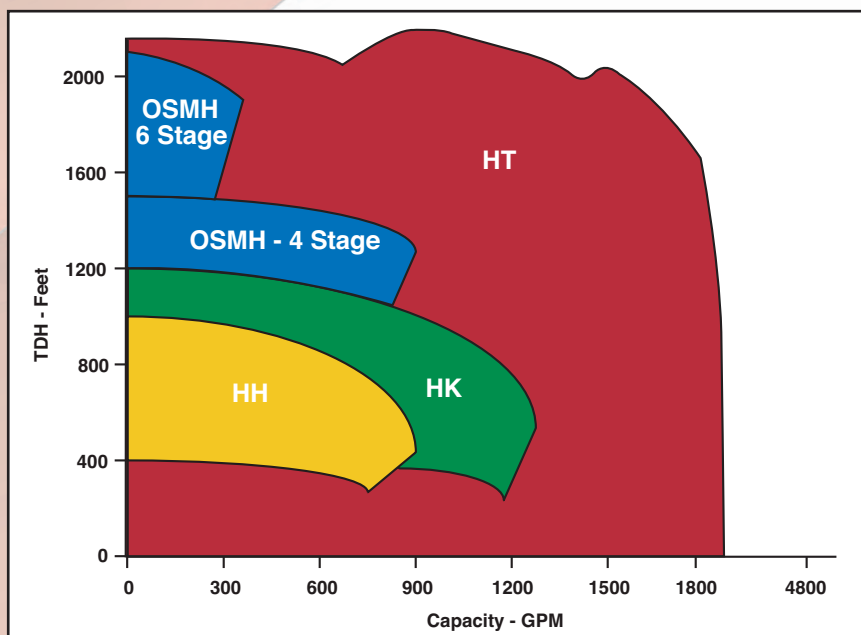
140 Years of Pump Manufacturing

American-Marsh Pumps, one of the oldest pump lines in America, are pump products steeped in heritage. Since 1873, the American-Marsh line of pumps has withstood the test of time. During the last 140 years, over 100 varieties of pumps have been designed and built. From steam pumps to centrifugal pumps, American-Marsh pumps have been built to meet the ever changing requirements of society. Over the last century through continuous product development, more American-Marsh models have been retired than most other pump manufacturers have ever produced. Hundreds of thousands of pumps have been made, all designed for longevity, allowing many of them to continue servicing customers over 50 years.

All of our pumps have three superior characteristics; Design, Performance, and Durability. Our engineering department, which includes an in-house pattern shop, designs each pump so that installation and maintenance is easy. Our performances are engineered to meet or beat the competition in each category. For 140

years, American-Marsh Pumps products have provided cost effective solutions by building pumps to last. Durability by design is always the most cost effective solution. From engineering and design to final assembly, experienced people control each step of the manufacturing process with quality control inspections performed at each step. All pumps shafts are heat straightened. All impellers are computer balanced. Pump testing is done in our new state of the art test facility. All of these factors ensure you receive consistent quality product every time.

American-Marsh Pumps has provided quality pump products for over 140 years. At American-Marsh Pumps, we know that long life and superior performance are the keys to satisfied customers. By understanding your needs, we can design products that meet those needs. Our product family reflects years of customer input, product upgrades, redesign and new product development, all focused on meeting and exceeding your expectations.





AMERICAN-MARSH PUMPS

Specifications

HH, HK, OSMH & HT Series

Casing: The casing is of high tensile cast iron or other specified material. It is of the volute type, split on the horizontal center line with the suction and discharge flanges as well as the bearing brackets (HH) cast integral with the lower half. Removal of the upper half of the casing gives complete access to the interior of the pump without disturbing the piping connections or pump alignment. Ample wall thickness provides a generous allowance for corrosion. HT models have water passages lined with porcelain enamel, shall be free of blow holes, sand holes and other detrimental defects, and shall be accurately machined and fitted.

Stage Arrangement: HK & OSMH models have stage arrangements such that each stuffing box is only under first stage pressure. Furthermore, the maximum pressure difference across any of the stage pieces, separating the impeller chambers, is reduced to that of the first stage. Impellers are opposed or back-to-back to eliminate end thrust and volutes are staggered to balance radial thrust. This hydraulic balancing of all radial and end thrust is obtained without the use of troublesome balancing disks or other devices that reduce efficiency. Thus the efficiency is inherently high and sustained over long periods of time. HT models feature high efficiency, diffuser bowls that transition flow from one stage to the next. Impellers are stacked in the same direction and can achieve very high heads while maintaining high efficiency.

Impellers: The impellers are of the single suction, enclosed, non-overloading type. They are placed back to back to balance the end thrust without the use of extra seal rings or other balancing devices. Impellers are made of investment casted 304 stainless steel, cast iron, or other specified material, machined and polished all over, and dynamically and hydraulically balanced. They are keyed to the shaft and secured by lock nuts.

Casing and Impeller Wear Rings: The casing wear rings are of investment casted 304 stainless steel and impeller wear rings are of bronze, cast iron or other specified material. Both rings have large wearing surfaces to reduce leakage losses. HH casing wear rings are of the labyrinth type with the diameter at wearing surface reduced to a minimum, and are firmly secured in the casing by dowel pins. HK & OSMH casing wear rings are held rigidly in the casing by a tongue and groove fit with offset on the horizontal centerline – thus preventing rotation without using holding pins or screws.

Shaft: The shaft is of 420 stainless steel, ground to accurate dimensions and polished to a smooth surface. It is designed for extra stiffness to avoid all critical speeds in operation, and is threaded for bearing and lock nuts. On pumps with more than two impellers, impeller keys are staggered to prevent uneven stresses and unbalance.

Shaft Sleeves: The shaft sleeves are of bronze, or other

specified material, extending from the impeller hub through the stuffing boxes and secured to the shaft by twin positive locknuts. Stuffing boxes prevent leakage along the shaft while allowing freedom for the sleeve to expand independently of the shaft expansion.

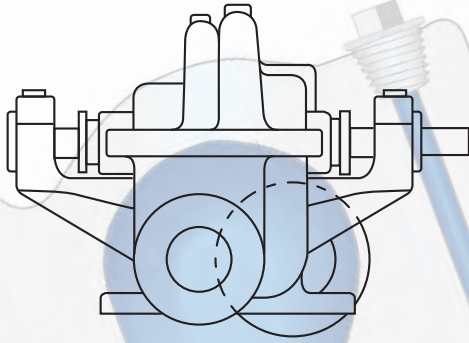
Stuffing Boxes: The stuffing boxes are extra deep, designed for six rings of packing in addition to the lantern ring. Under each stuffing box is a drip pocket with tapped drain outlet. HK and OSMH models are arranged for water cooling and are extra deep. Throat bushings protect main casing from wear. Lantern rings are provided with in-and-out connections provided for both boxes to permit the circulation of sealing water or a lubricating medium when required by special service conditions. A wide variety of mechanical seals are available upon request.

Glands: The glands are of the hinge bolt type, split for easy removal and fastened together with capscrews.

Bearings: On HH models both the inboard and outboard ball bearings are of the single row, deep groove type, precision grade, with cartridge mounting, permitting the removal of the shaft without exposing or disturbing the bearing assembly. They are of extra large capacity for both radial and thrust loads, and are locked to the shaft with nut and positive nut lock. The outboard bearing is confined rigidly in the bearing housing to take the end thrust, while the inboard bearing is set with sufficient clearance to allow for shaft expansion. Each bearing is designed for grease lubrication and is provided with a water slinger to prevent leakage from the stuffing box into the bearing. A grease zerk fitting is furnished for each bearing. HT, HK & OSMH bearings are of the double row type with positive ring oiling. The inboard bearing carries the radial load and is free to move in either direction. The outboard bearing is of the angular contact, duplex type to carry either radial or unbalanced thrust loads and maintain impellers in their proper positions.

Bearing Housings: HH models are of the cartridge type and designed to be removed from the pump with the rotating assembly. HT, HK & OSMH bearings are split on the horizontal centerline, similar to the pump casing, so that the housings need not be detached from the lower part of the casing when removing the rotating element. The cooling water jacket extends around the entire circumference of the bearing housing so that cooling is uniform and no damaging stresses are set up as might be the case when the cooling jacket is only around one-half the circumference as used in older designs. No gaskets are required, so cooling water cannot leak into oil reservoirs and bearing replacements will always fit.

Model HH Pump



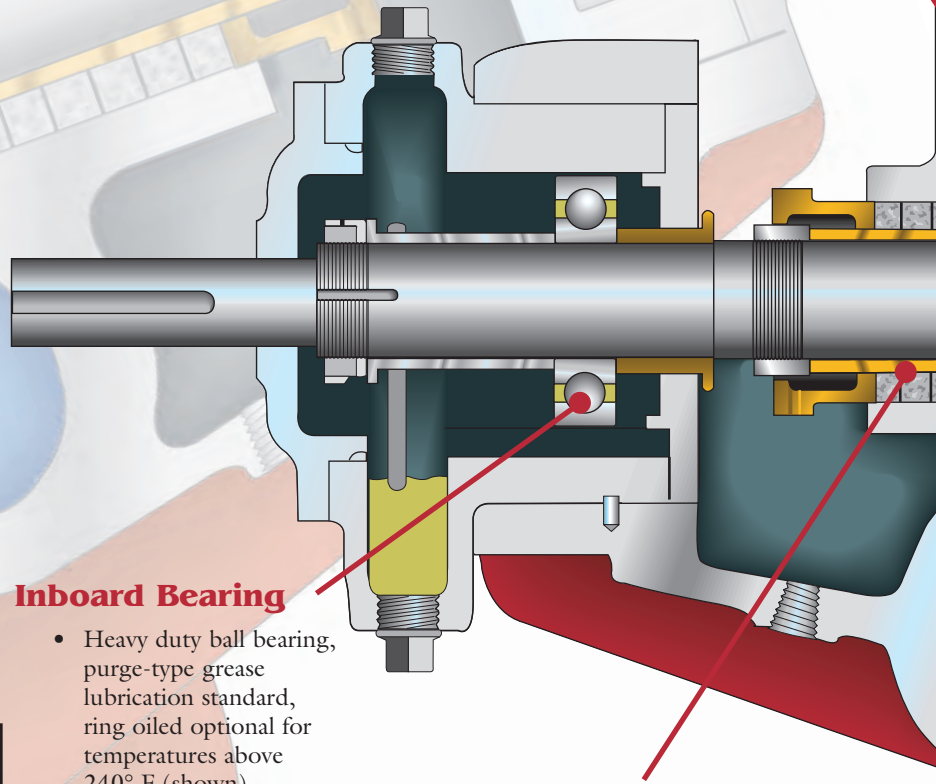
Sizes: 1-1/2" to 4"
Flows: 900 GPM
Heads: 950 Feet
Temp: 350° F

Services:

-  Aerospace
-  Building Trades
-  Chemical
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical

Casing

- Standard ASTM A48 Class 30 cast iron
- Horizontally split for easy access
- Heavy wall thickness to provide generous corrosion allowance
- Extra large water passage between stages to reduce friction loss
- Labyrinth type casing rings provide liberal clearance with minimum leakage
- Standard 250 lb discharge and 125 lb suction flanges

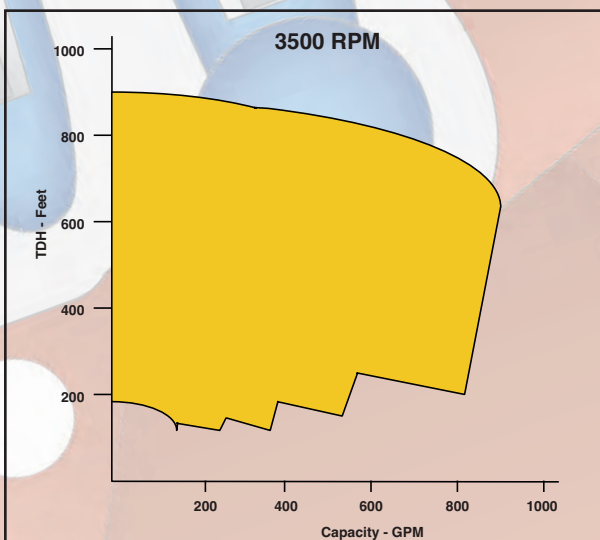


Inboard Bearing

- Heavy duty ball bearing, purge-type grease lubrication standard, ring oiled optional for temperatures above 240° F (shown)
- Carries radial load; free to move axially

Shaft Sleeves

- Replaceable bronze sleeves protect shaft from wear and corrosion



Impellers

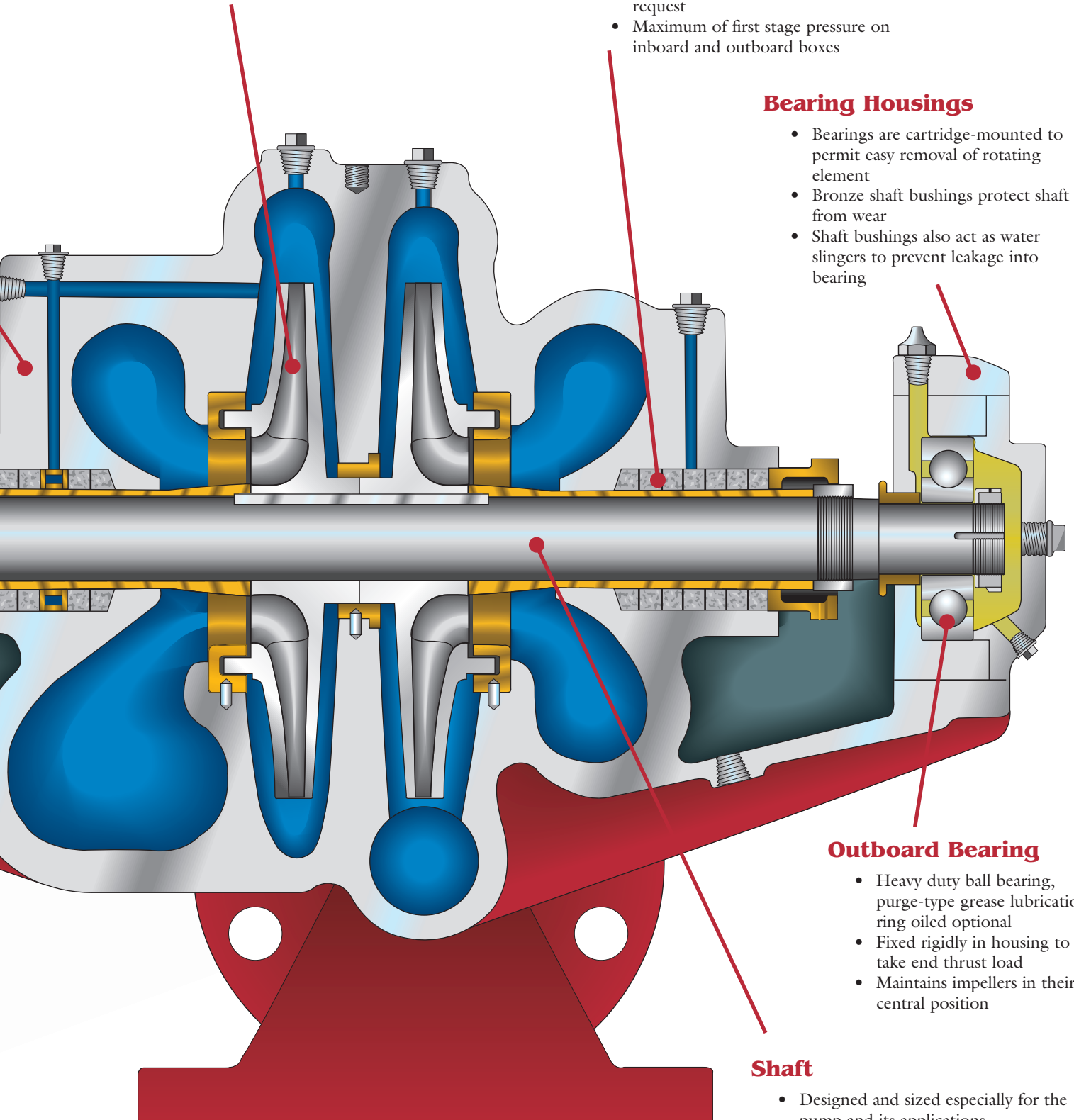
- One piece investment casted 304 stainless steel or other alloy
- Expertly machined to customer specifications
- Opposed, to balance axial thrust hydraulically
- Fully balanced before assembly

Stuffing Boxes

- Extra deep, with split glands
- Lantern rings standard in inboard box; can be furnished in outboard box
- Optional mechanical seals available on request
- Maximum of first stage pressure on inboard and outboard boxes

Bearing Housings

- Bearings are cartridge-mounted to permit easy removal of rotating element
- Bronze shaft bushings protect shaft from wear
- Shaft bushings also act as water slingers to prevent leakage into bearing



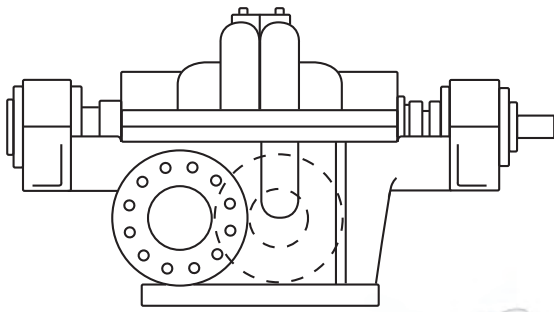
Outboard Bearing

- Heavy duty ball bearing, purge-type grease lubrication, ring oiled optional
- Fixed rigidly in housing to take end thrust load
- Maintains impellers in their central position

Shaft

- Designed and sized especially for the pump and its applications
- 420 stainless steel shaft standard

Model HK Pump



Enclosed Impeller

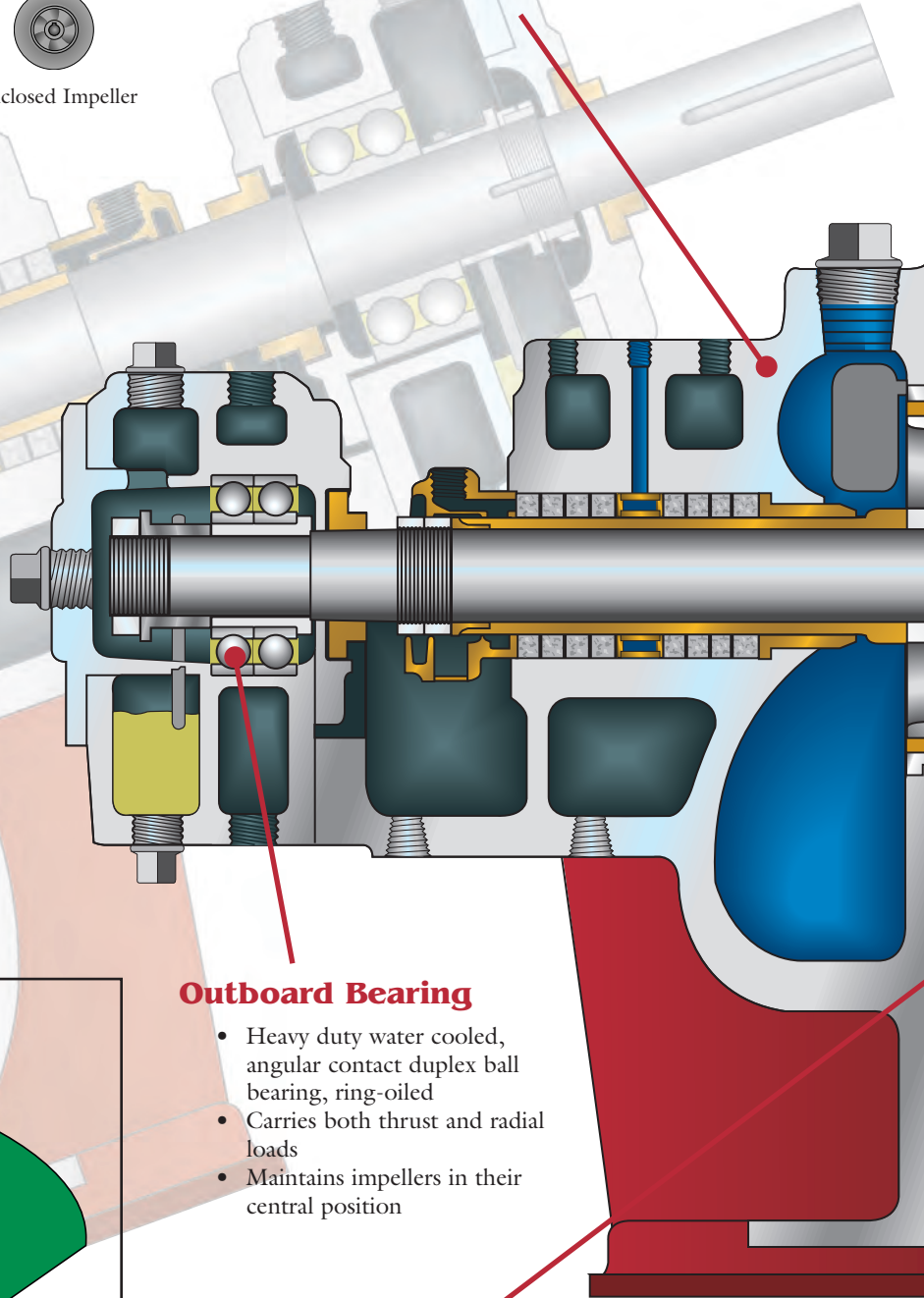
Sizes: 5"
Flows: 1400 GPM
Heads: 1250 Feet
Temp: 400° F

Services:

-  Aerospace
-  Building Trades
-  Chemical
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical

Casing

- Standard ASTM A48 cast iron
- Horizontally split for easy access
- Heavy wall thickness to provide generous corrosion allowance
- Extra large, streamlined passage area between stages, for smooth flow and high efficiency
- Tongue and groove casing fits, with offset, to prevent rotation of rings and bushings
- Standard 400 lb discharge and 250 lb suction flanges

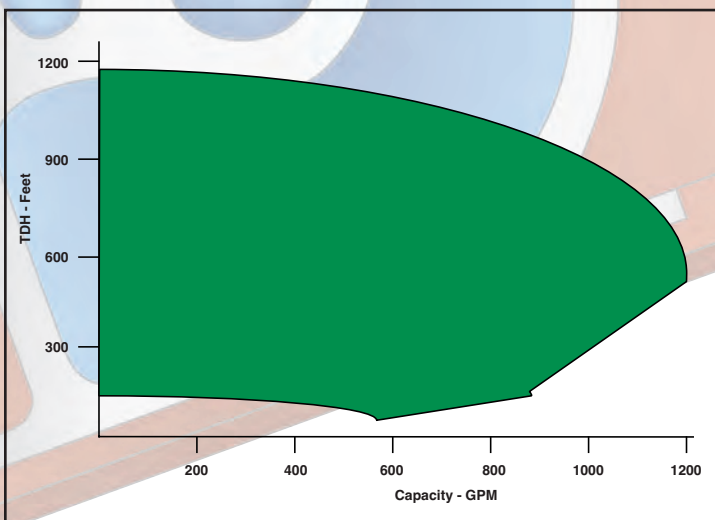


Outboard Bearing

- Heavy duty water cooled, angular contact duplex ball bearing, ring-oiled
- Carries both thrust and radial loads
- Maintains impellers in their central position

Volutes

- Staggered, to balance radial thrust hydraulically



Impellers

- One piece investment casted 304 stainless steel or other alloy
- Expertly machined to customer specifications
- Opposed, to balance axial thrust hydraulically
- Fully balanced before assembly

Wear Rings

- Standard investment casted 304 stainless steel case and bronze impeller wear rings
- Case wear rings designed for tongue and groove fit to prevent rotation
- Machined to close tolerance
- Oversized large wearing surfaces

Inboard Bearing

- Heavy duty water cooled double row ball bearing, ring-oiled
- Carries radial load; free to move axially

Bearing Housings

- Split on the horizontal center line for easy access; cartridge-mounted to permit easy removal of rotating element, with bronze shaft bushings which also act as water slingers to prevent leakage into the bearing
- For uniform cooling, water jacket extends around entire circumference of each housing

Stuffing Boxes

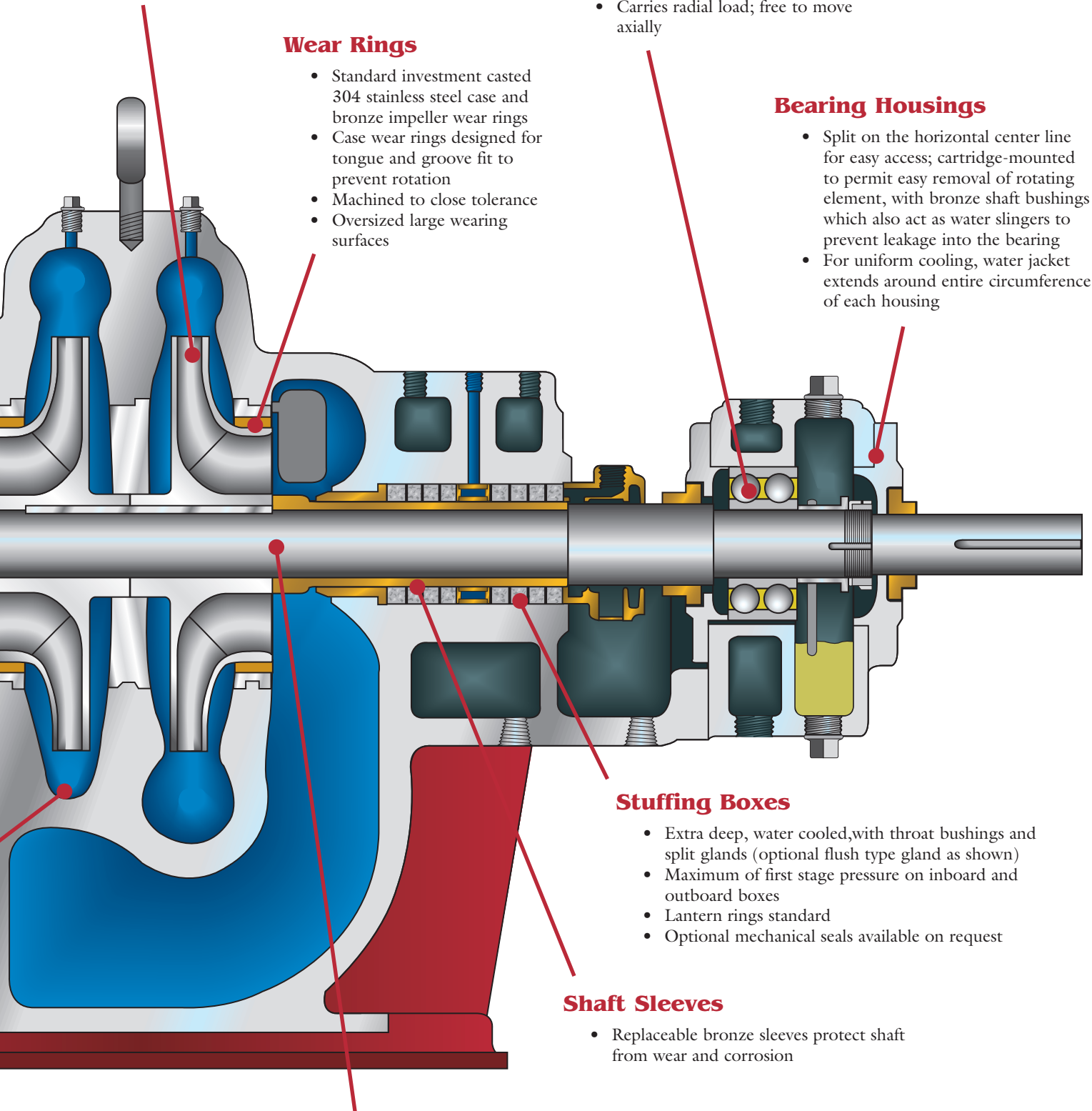
- Extra deep, water cooled, with throat bushings and split glands (optional flush type gland as shown)
- Maximum of first stage pressure on inboard and outboard boxes
- Lantern rings standard
- Optional mechanical seals available on request

Shaft Sleeves

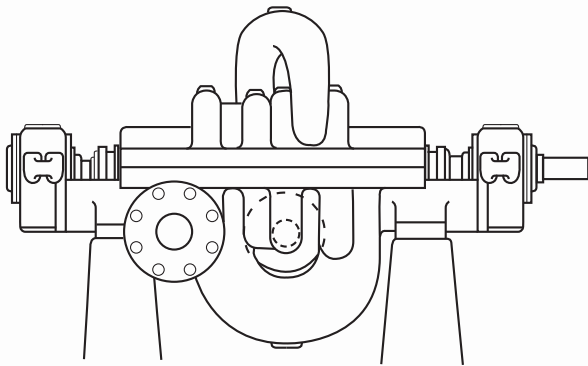
- Replaceable bronze sleeves protect shaft from wear and corrosion

Shaft

- Designed and sized especially for the pump and its applications
- 420 stainless steel shaft standard



Model OSMH Pump



Enclosed Impeller

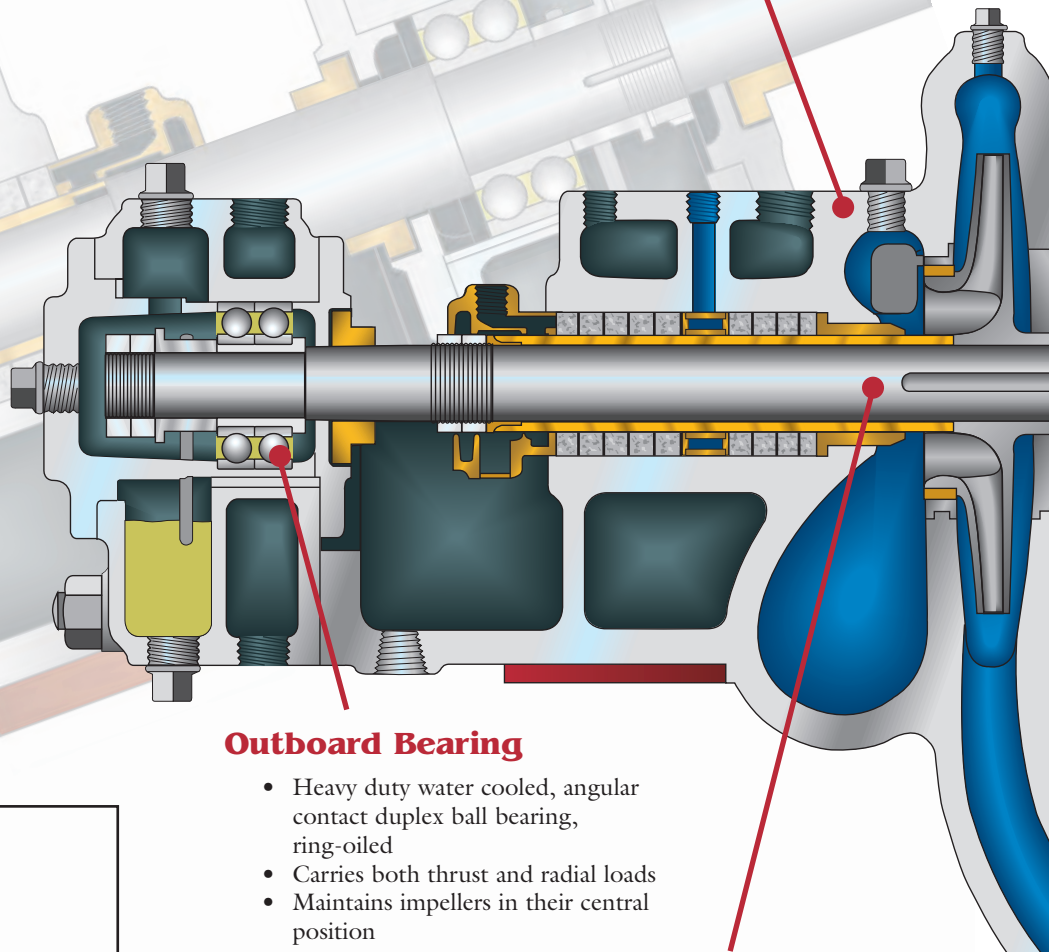
Casing

- Standard ASTM A48 Class 30 cast iron
- Horizontally split for easy access
- Heavy wall thickness to provide generous corrosion allowance
- Extra large, streamlined passage area between stages, for smooth flow and high efficiency
- Tongue and groove casing fits, with offset, to prevent rotation of rings and bushings
- Standard 600 lb suction and discharge flanges

Sizes: 1-1/2" to 4"
Flows: 800 GPM
Heads: 2100 Feet
Temp: 600° F

Services:

-  Aerospace
-  Building Trades
-  Chemical
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical

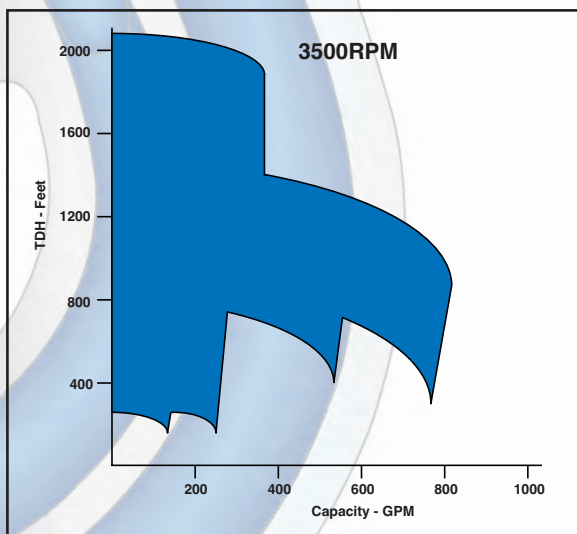


Outboard Bearing

- Heavy duty water cooled, angular contact duplex ball bearing, ring-oiled
- Carries both thrust and radial loads
- Maintains impellers in their central position

Shaft

- Designed and sized especially for the pump and its applications
- 420 Stainless steel shaft standard



Impellers

- One piece 304 invested casted stainless steel or other alloy
- Expertly machined to customer specifications
- Opposed, to balance axial thrust hydraulically
- Fully balanced before assembly

Bearing Housings

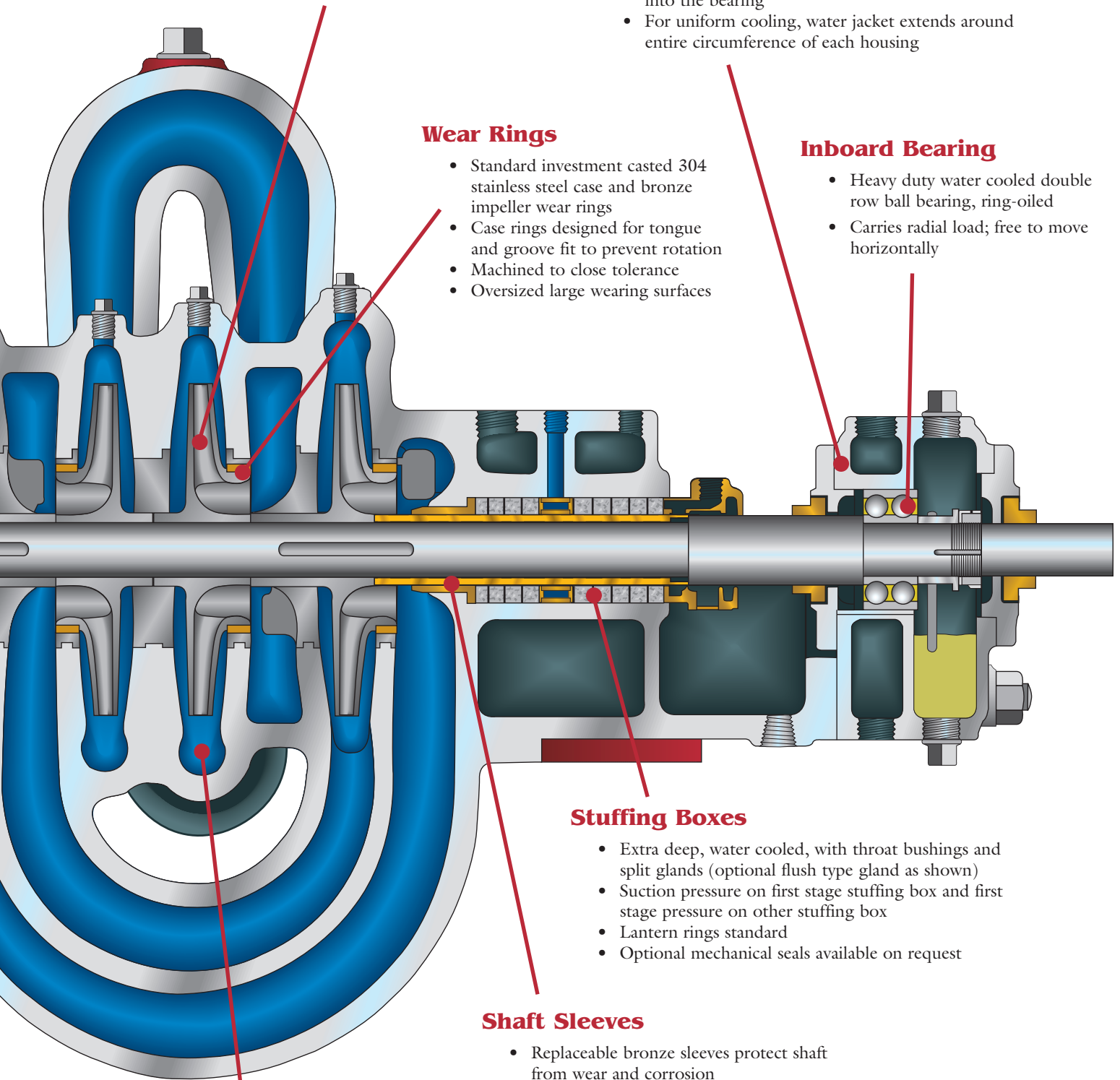
- Split on the horizontal center line for easy access; cartridge-mounted to permit easy removal of rotating element, with bronze shaft bushings which also act as water slingers to prevent leakage into the bearing
- For uniform cooling, water jacket extends around entire circumference of each housing

Wear Rings

- Standard investment casted 304 stainless steel case and bronze impeller wear rings
- Case rings designed for tongue and groove fit to prevent rotation
- Machined to close tolerance
- Oversized large wearing surfaces

Inboard Bearing

- Heavy duty water cooled double row ball bearing, ring-oiled
- Carries radial load; free to move horizontally



Stuffing Boxes

- Extra deep, water cooled, with throat bushings and split glands (optional flush type gland as shown)
- Suction pressure on first stage stuffing box and first stage pressure on other stuffing box
- Lantern rings standard
- Optional mechanical seals available on request

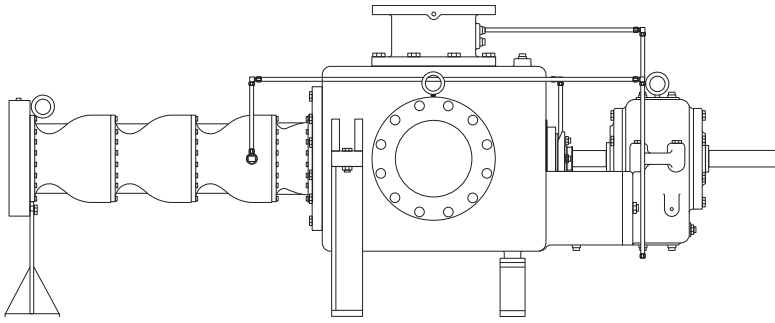
Shaft Sleeves

- Replaceable bronze sleeves protect shaft from wear and corrosion

Volutes

- Staggered, to balance radial thrust hydraulically

Model HT Pump



Francis Enclosed Impeller

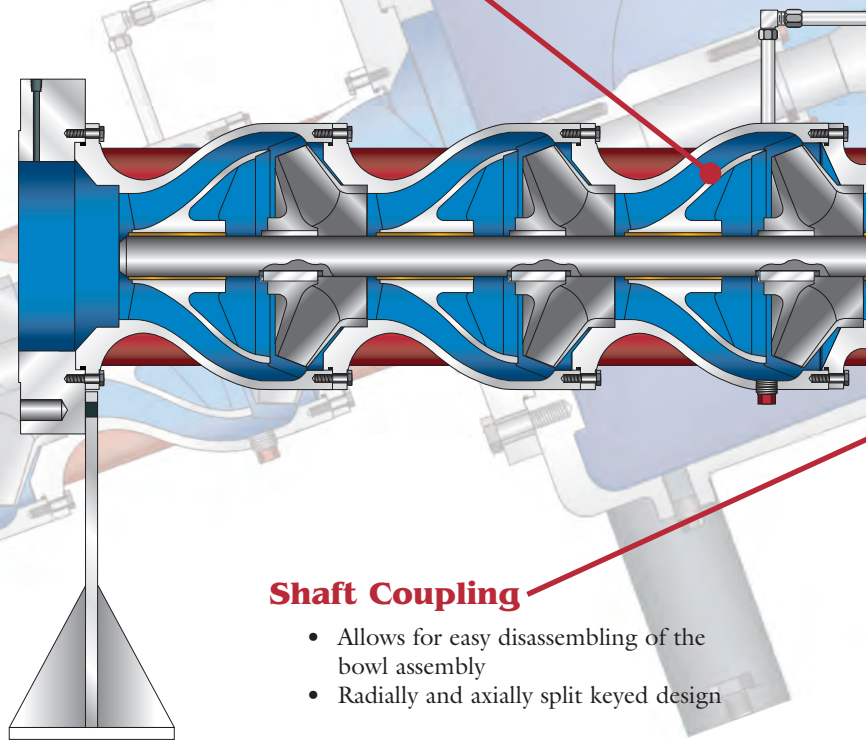
Sizes: 3" to 10" Discharge
Flows: 2500 GPM
Heads: 2500 Feet
Temp: 400° F

Services:

-  **Aerospace**
-  **Building Trades**
-  **Chemical**
-  **Food & Beverage**
-  **General Industry**
-  **Marine**
-  **Mining & Aggregate**
-  **Oil & Gas**
-  **Power Generation**
-  **Petro-Chemical**
-  **Pharmaceutical**

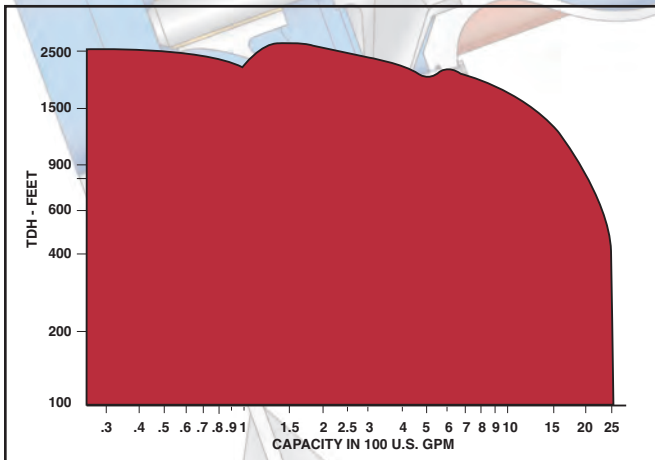
Bowl Assembly

- O-ring bowl construction allows for dry-pit applications
- Modular bowl assembly allows for the swapping of the entire bowl assembly during servicing
- Heavy wall ASTM A48 class 30 cast iron construction with 304 stainless steel impellers or other specified material
- Reversed bowl assembly allows low pressure on suction chamber
- Impellers are expertly machined to customer specifications
- 416 stainless steel pump shaft
- Heavy duty bronze bowl bearings standard
- Keyed impellers standard



Shaft Coupling

- Allows for easy disassembling of the bowl assembly
- Radially and axially split keyed design

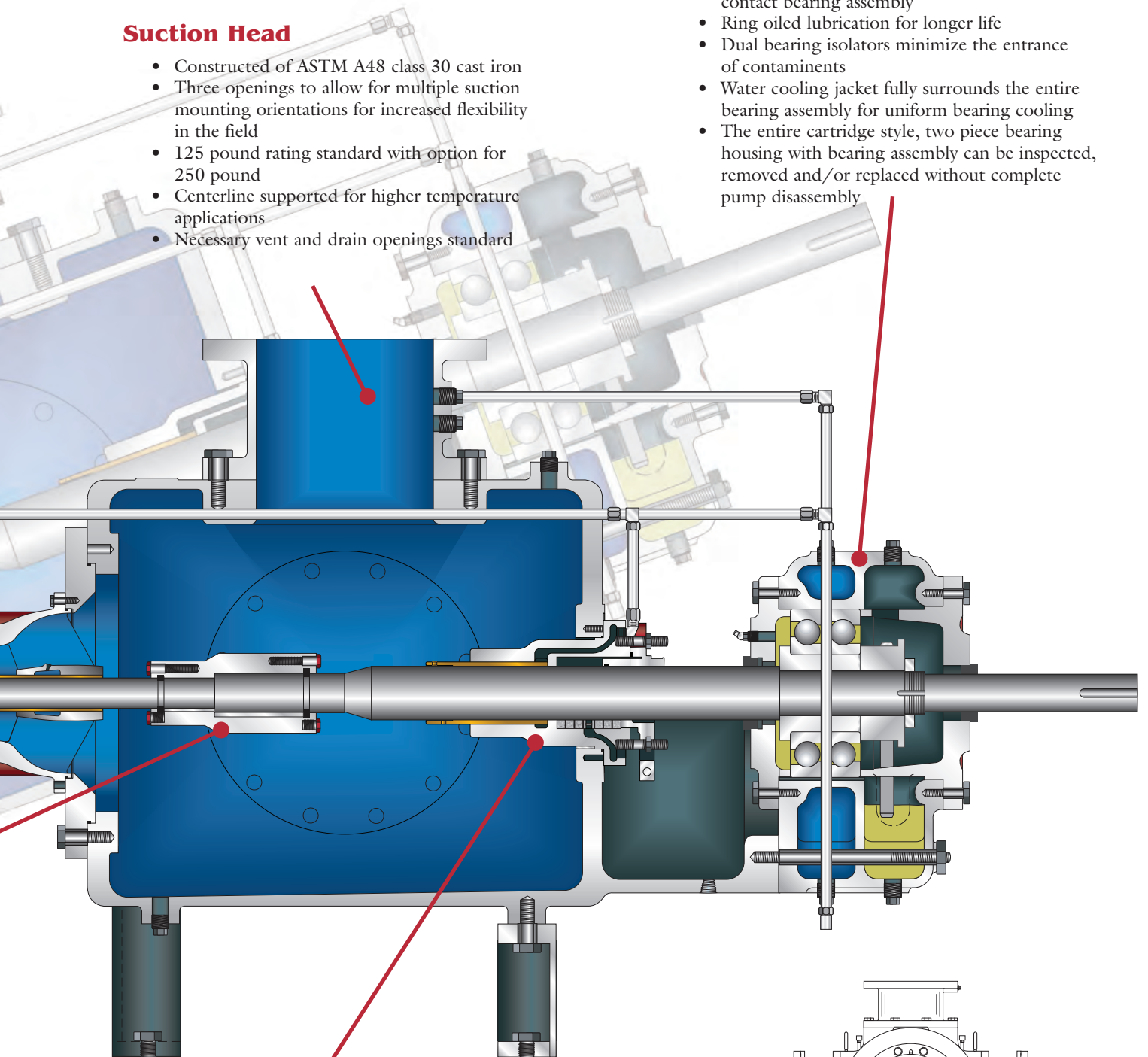


Suction Head

- Constructed of ASTM A48 class 30 cast iron
- Three openings to allow for multiple suction mounting orientations for increased flexibility in the field
- 125 pound rating standard with option for 250 pound
- Centerline supported for higher temperature applications
- Necessary vent and drain openings standard

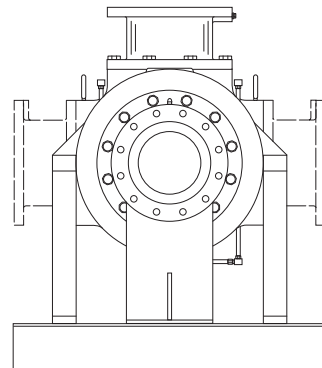
Thrust Bearing Housing

- Constructed of ASTM A48 class 30 cast iron
- Heavy duty, water cooled, duplex angular contact bearing assembly
- Ring oiled lubrication for longer life
- Dual bearing isolators minimize the entrance of contaminants
- Water cooling jacket fully surrounds the entire bearing assembly for uniform bearing cooling
- The entire cartridge style, two piece bearing housing with bearing assembly can be inspected, removed and/or replaced without complete pump disassembly



Seal Chamber

- Separate seal chamber ensures that the seal is protected during operation
- Standard 820 series component mechanical seal
- Integral bronze throat bushing standard
- Optional packing, component or cartridge seals available
- Optional flush plans available upon request



View from Discharge End

Our long tradition of quality pump manufacturing began in 1873 making us one of the first pump manufacturers in this country. **American-Marsh Pumps** provides the user dependability and durability. Durability by design is always the most cost effective solution.

SHAFTS

American-Marsh Pumps standard product design includes 420 stainless steel shafts designed for minimum shaft deflection in high temperature environments. Each shaft is machined to close tolerances and designed to exceed HP requirements of each pump.

CASING

Casing is split on the horizontal centerline and provided with extra thick casing walls. Surfaces are machined to accurate tolerances in our machining centers.

BEARINGS

In the OSMH, HK & HT models, double row angular contact bearings (for thrust) and double row radial bearings are a standard feature. Single row bearings are employed for HH series pumps. Lubrication is available in ring oiled or purge grease designs.

SLEEVES

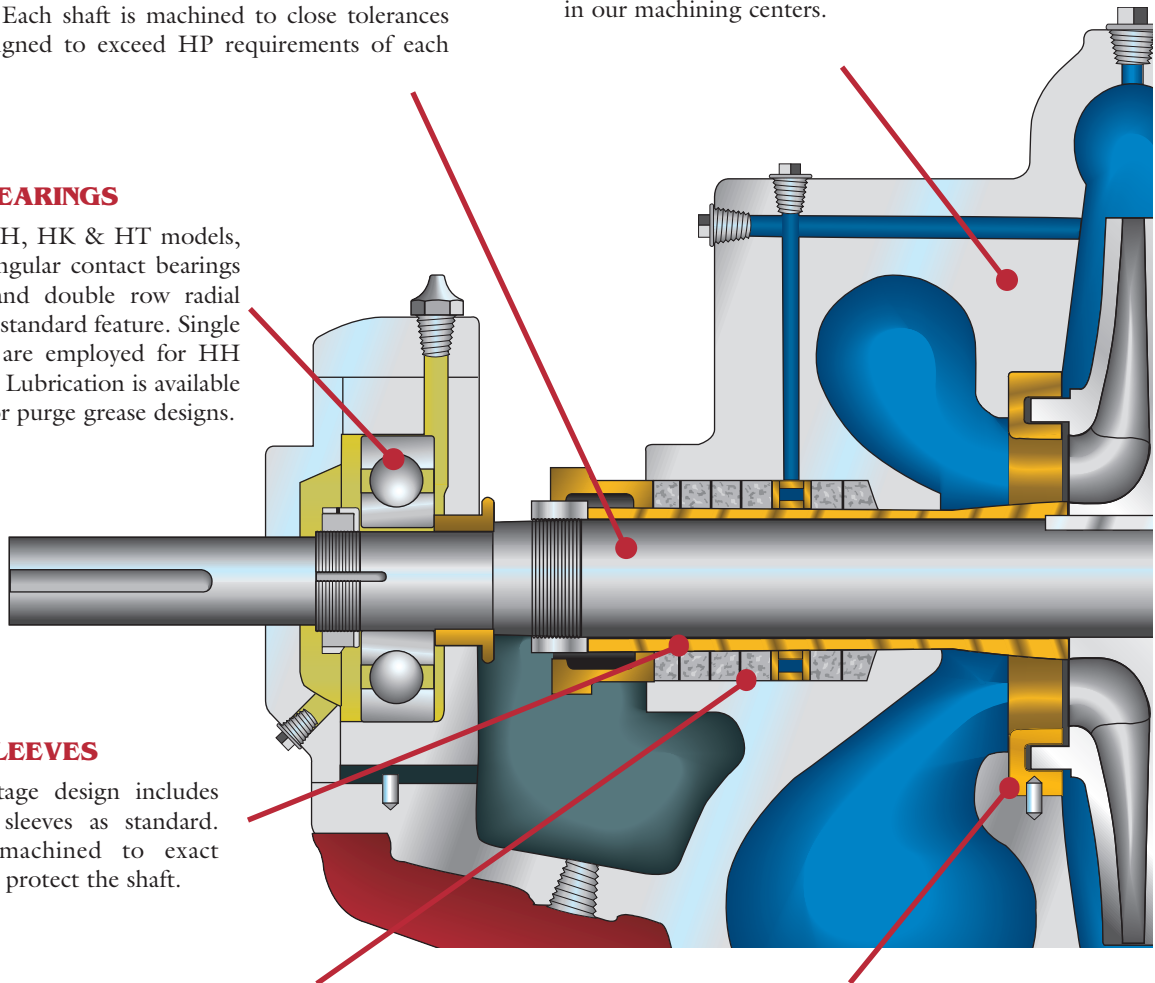
Each multistage design includes bronze shaft sleeves as standard. Sleeves are machined to exact tolerances and protect the shaft.

MECHANICAL SEALS/ PACKING

Stuffing boxes can be provided with standard or low leak packing or mechanical seal as required by the customer and application.

WEAR RINGS

Impeller and case wear rings are oversized with large wearing surfaces to extend the life of each pump. Rings are available in bronze, iron, stainless steel or other alloys as required.



OTHER PUMP PRODUCTS

SPLIT CASE

To 32+\" Discharge
30,000+ GPM, 550'

VERTICAL TURBINE

To 42+\" Bowl
85,000+ GPM, 2500+'

SELF PRIMER

To 12\" Discharge
6400 GPM, 200'

ANSI

To 8\" Discharge
7400 GPM, 985'

END SUCTION

To 12\" Discharge
9000 GPM, 450'

American-Marsh Pumps

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