



AMERICAN-MARSH PUMPS

“DURABILITY BY DESIGN SINCE 1873”

480 Series Vertical Turbine Pumps

Flows to: 85,000+ GPM
Heads to: 2500+ Feet
Temperatures to: 400° F

Compliance to API 610 Standards Upon Request

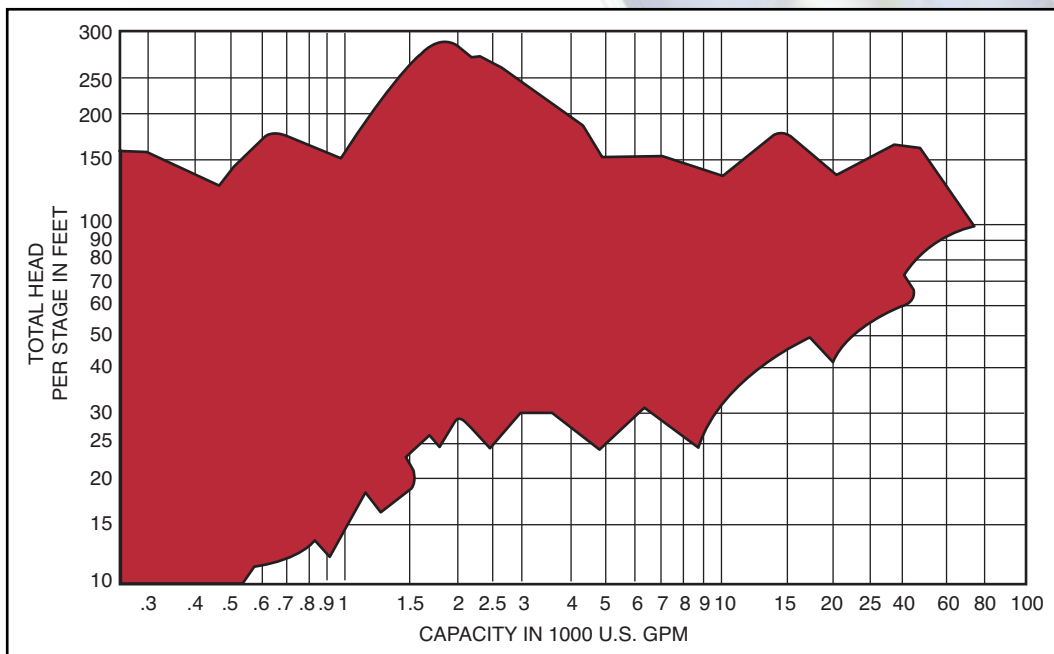
140 Years of Pump Manufacturing

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.





Specifications Vertical Turbines

Bowl Assembly: The pump bowls shall be of close grained, cast iron ASTM A48 Class 30 or other specified material. The water passages on bowl sizes 6" through 18" shall be lined with porcelain enamel or fusion epoxy lined to reduce friction loss, shall be free of blow holes, sand holes and other detrimental defects, and shall be accurately machined and fitted. The impellers shall be of 304 investment casted stainless steel (enclosed or semi-open) and dynamically balanced. Impellers through 18" shall be securely fastened to the shaft with taper split bushings of steel. Larger sizes shall be double-keyed. Impellers shall be adjusted vertically by an external means. The pump shaft shall be of A582 grade 416 stainless steel, turned, ground and polished.

Strainer: A basket or conical type strainer shall be provided having a net inlet area equal to at least four times the suction pipe area. The maximum opening size shall not be more than 75% on the minimum opening of the water passage through the bowl and impeller.

Column Assembly: The outer column pipe shall be 5" and larger of ASTM A53 grade B steel pipe of ASTM A120 in interchangeable sections not over 10' in length for 1800 RPM and 5' in length for 2200 RPM and above. Maximum runout in 10' shall not exceed 0.005". Column pipe may be supplied in a threaded or flanged configuration. Top and bottom sections of column pipe on product lubricated pumps shall not exceed 5' in length.

The lineshafts shall be provided with ASTM A269 grade 304 stainless steel threaded sleeves at the location of each lineshaft bearing. Bearing spacing shall not exceed 10' for 1800 RPM and 5' for 2200 RPM and above.

Discharge Head: The discharge head shall be of close grain, cast iron, ASTM A48 class 30, free of sand holes and other defects, accurately machined and with a surface discharge. Discharge flange shall be machined and drilled to ANSI standards for 125 lb. rating. The top of the discharge head shall have a rabbet fit to accurately locate the vertical hollow shaft driver, and have a diameter equal to the drive base diameter (BD).

An optional fabricated steel discharge head of schedule 40 fabricated steel can be supplied. The fabricated steel discharge head shall be accurately machined with an above ground or below ground discharge. Discharge flange shall be machined and drilled to ANSI standards. The top of the discharge head shall have a rabbet fit to accurately locate the vertical hollow shaft driver, and have a diameter equal to the driver base diameter (BD).

For barrel applications, a "T" discharge head can be supplied. The discharge head shall be fabricated of carbon steel materials using ASTM A181 flanges, ASTM A53

grade B body pipe and ASTM A36 steel plate with the suction and discharge flanges inline with each other and located 180° apart, or as specified. The suction and discharge flanges shall be machined and drilled to ANSI raised face standards with bolt holes straddling discharge centerline.

For submersible applications, the surface plate shall be fabricated from carbon steel with a flat face base flange to match the well casing flange, short radius 90° steel elbow terminating in a 150 pound raised faced steel discharge flange. The surface plate shall be fitted with properly sized electrical junction box to allow for splicing surface cables and well cables. A short 12", threaded or flanged, nipple shall extend below the surface plate for connection to riser pipe.

Stuffing Box: The seal arrangement provided shall be one of the following (packing or mechanical seal):

The standard cast iron stuffing box shall be rated for 125 PSI discharge pressure and shall be fitted with graphite acrylic packing. It shall have a lantern ring or grease chamber placed as required below the top packing ring. Throttle bearing shall be bronze with stainless steel bolting and with brass or stainless steel adjusting nuts. Sealing between the stuffing box and the discharge head shall be accomplished by means of an o-ring.

A unit which requires a mechanical seal shall have a housing bolted to the head with an o-ring seal. The housing shall have a lower bronze throttle bushing. The housing seal chamber shall accommodate a single sleeved (balanced/unbalanced) mechanical seal suitable for the maximum pressure developed by the pump and temperature of the pumped fluid. Seal materials shall be compatible with the liquid pumped.












Motor: The electric motor shall be vertical hollow shaft or vertical solid shaft, three phase (50 or 60 Hz), a non-reverse ratchet, P-base, squirrel cage induction design. Enclosure shall meet NEMA weather protected type 1 design with stainless steel screens to prevent entrance of rodents. Motor shall have Class B or Class F insulation with temperature rise as specified by NEMA standards for class insulation used and shall have a 1.15 service factor.

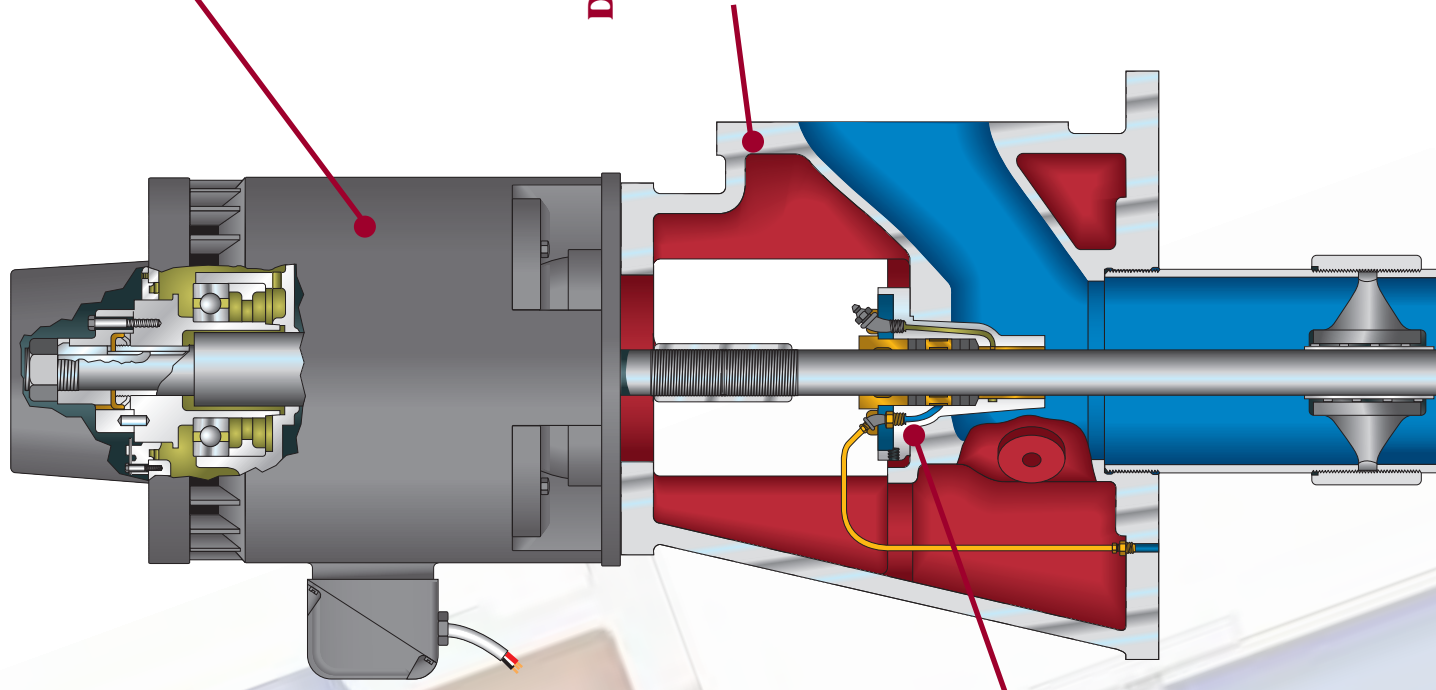
Motor Adapter (Submersible): A motor adapter of close grained ductile iron with rabbeted fits shall be supplied to connect the submersible motor to the bowl assembly. It shall include the motor adapter bearing assembly and a corrosion resistant metal strainer whose free area shall be at least three times the impeller suction eye area. The maximum strainer opening shall not be more than 75% of the minimum opening through the bowl or impeller.

Open Lineshaft

Flows To: 60,000 GPM
 Heads To: 2500+ Feet
 Settings To: 100+ Feet

Markets:

-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Construction
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Water & Wastewater



Motor

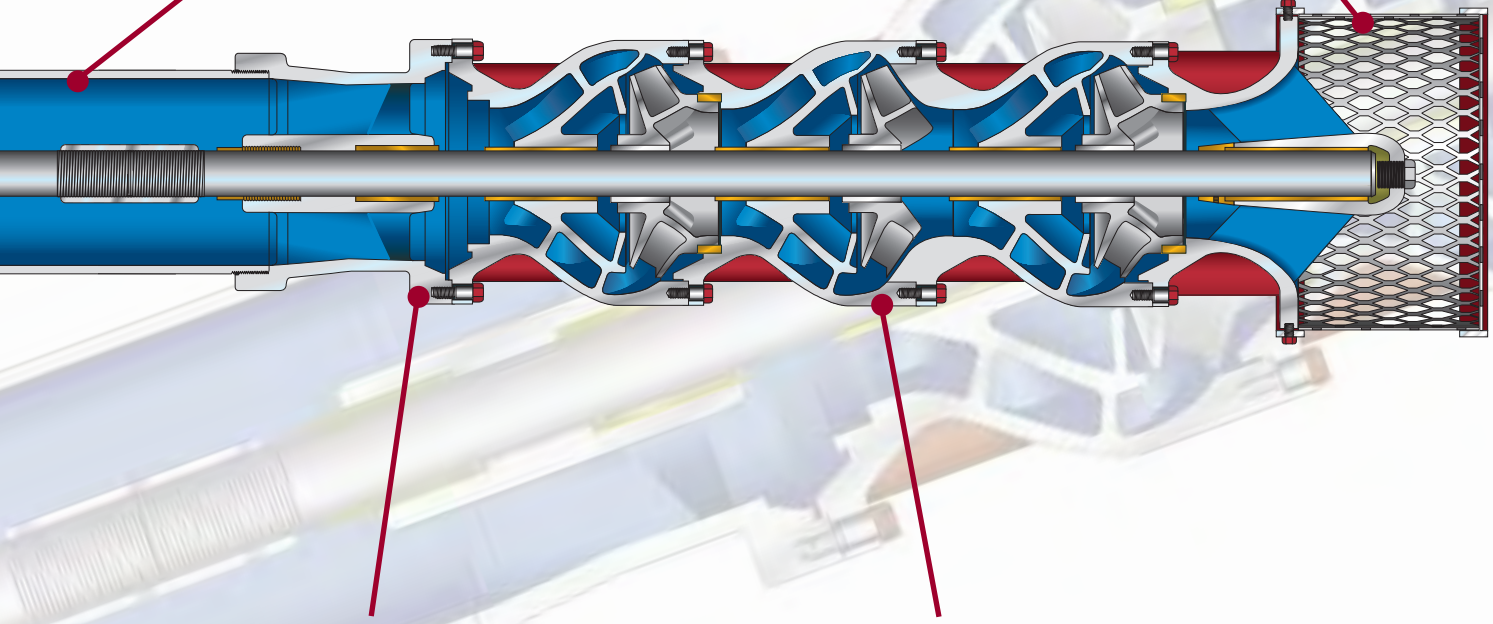
- Vertical hollowshaft or solid shaft
- Can be supplied with a non-reverse ratchet or self-release coupling
- Top adjusting nut allows user to adjust lateral setting
- Bearing designed to carry thrust loads and is oil lubricated
- Available in WP-I, WP-II, TEFC & Explosion-Proof enclosures
- Optional right angle gear drives

Discharge Head

- Heavy duty ASTM A48 class 30 cast iron construction standard (shown)
- Optional fabricated steel heads available
- High profile head allows for ease in servicing packing or mechanical seal
- Carbon steel top shaft with stainless steel optional
- Headshaft coupling connects top shaft to headshaft
- Spacer couplings are available for use with mechanical seals
- Integral drip basin collects leakage from stuffing box

Stuffing Box

- Packed with lantern ring standard
- Grease port for throat bushing lubrication
- Optional component or cartridge seals available
- High pressure stuffing boxes and shaft sleeves are optional



Discharge Case

- Heavy duty ductile iron construction standard
- Two bronze bearings for additional support
- Additional vanes for minimizing turbulence thus improving efficiency

Bowl Assembly

- Heavy wall ASTM A48 class 30 cast iron construction with 304 investment casted stainless steel impellers
- Impellers are expertly machined to customer specifications
- Diffuser bowls through 18" have standard vitreous enamel lining
- Impellers are available in enclosed or semi-open construction
- 416 stainless steel bowlshaft is standard
- Bronze bowl bearings standard
- Tapered impeller collers are used on bowls through 18" with keyed impellers used on larger sizes
- Heavy duty grease packed suction case bearing with sand collar

Column Assembly

- Heavy wall carbon steel construction
- Larger diameter, steel shaft material
- Heat straightened shafting standard
- 304 investment casted stainless steel bearing retainer with cutlass rubber insert
- Product lubricated lineshaft bearings
- Threaded column is standard through 12" and flanged for larger sizes
- Overall length is engineered to customer specifications


Strainer

- Basket or cone strainers are available upon request
- Galvanized steel, bronze or stainless steel materials are available
- Vortex suppressors can be supplied to minimize inlet losses

Enclosed Lineshaft

Flows To: 60,000 GPM
 Heads To: 2500+ Feet
 Settings To: 1500+ Feet

Markets:

-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Construction
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper



Francis Enclosed Impeller



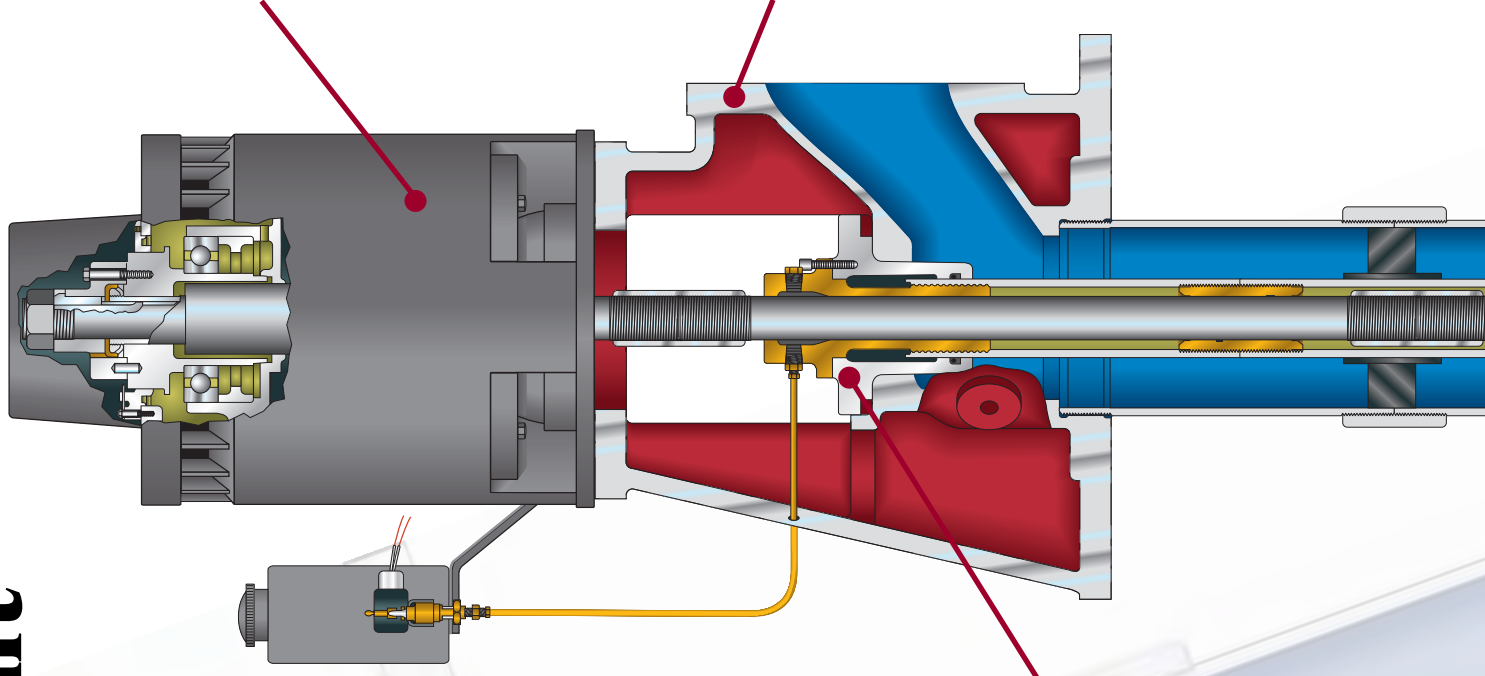
Francis Open Impeller

Motor

- Vertical hollowshaft or solid shaft
- Can be supplied with a non-reverse ratchet or self-release coupling
- Top adjusting nut allows user to adjust lateral setting
- Bearing designed to carry thrust loads and is oil lubricated
- Available in WP-I, WP-II, TEFC & Explosion-Proof enclosures
- Optional right angle gear drives

Discharge Head

- Heavy duty ASTM A48 class 30 cast iron construction standard (shown)
- Optional fabricated steel heads available
- Carbon steel top shaft with stainless steel optional
- Headshaft coupling connects top shaft to headshaft
- Spacer couplings are available for use with mechanical seals
- Integral drip basin collects leakage from stuffing box



Tension Tube Assembly

- Allows the tensioning of the enclosing tube to ensure proper lineshaft bearing alignment
- Allows for the means of using oil, grease or water for enclosed lineshaft lubrication
- Constructed of high quality bronze to resist corrosion and prevent "freezing" to the enclosing tube

Discharge Case

- Heavy duty ductile iron construction standard
- Tubing adapter connects inner column assembly to bowl assembly
- Two bypass ports with dual lip seals prevent pressurized fluid from the bowl assembly from entering the enclosing tube
- Additional vanes for minimizing turbulence thus improving efficiency

Bowl Assembly

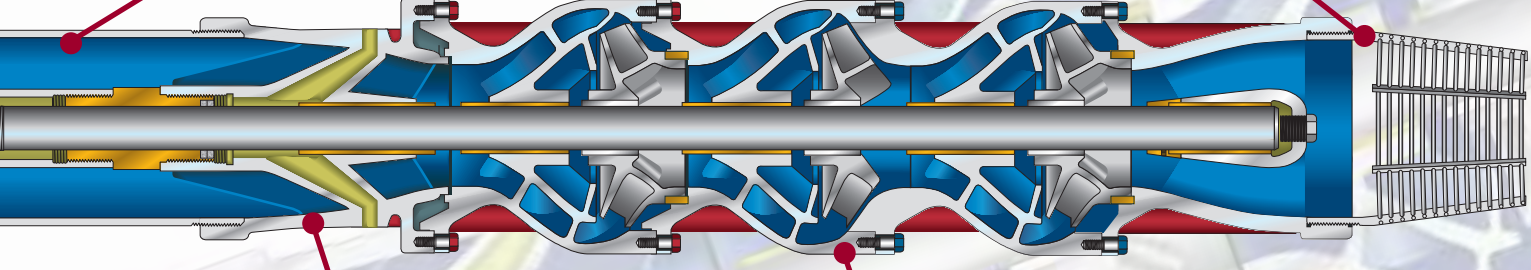
- Heavy wall ASTM A48 class 30 cast iron construction with 304 investment casted stainless steel impellers
- Impellers are expertly machined to customer specifications
- Diffuser bowls through 18" have standard vitreous enamel lining
- Impellers are available in enclosed or semi-open construction
- 416 stainless steel bowlshaft is standard
- Bronze bowl bearings standard
- Tapered impeller collets are used on bowls through 18" with keyed impellers used on larger sizes
- Heavy duty grease packed suction case bearing with sand collar

Column Assembly

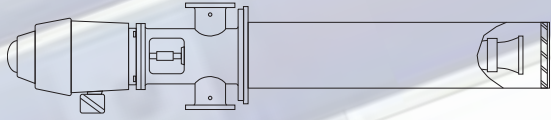
- Heavy wall carbon steel construction
- Larger diameter, steel shaft material
- Heat straightened shafting standard
- Lineshaft bearings are spaced at five foot intervals and are constructed of high quality bronze
- Machined helical grooves in lineshaft bearing ensure uniform lubrication over the entire bearing surface
- The shaft enclosing tube isolates all shafting and bearings from the pumped fluid
- Overall length is engineered to customer specifications

Strainer

- Basket or cone strainers are available upon request
- Galvanized steel, bronze or stainless steel materials are available
- Vortex suppressors can be supplied to minimize inlet losses



Fabricated Can



Flows To: 60,000 GPM
 Heads To: 2500+ Feet
 Settings To: 20+ Feet

Markets:

-  Building Trades
-  Chemical
-  Construction
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Water & Wastewater



Francis Enclosed Impeller

Motor

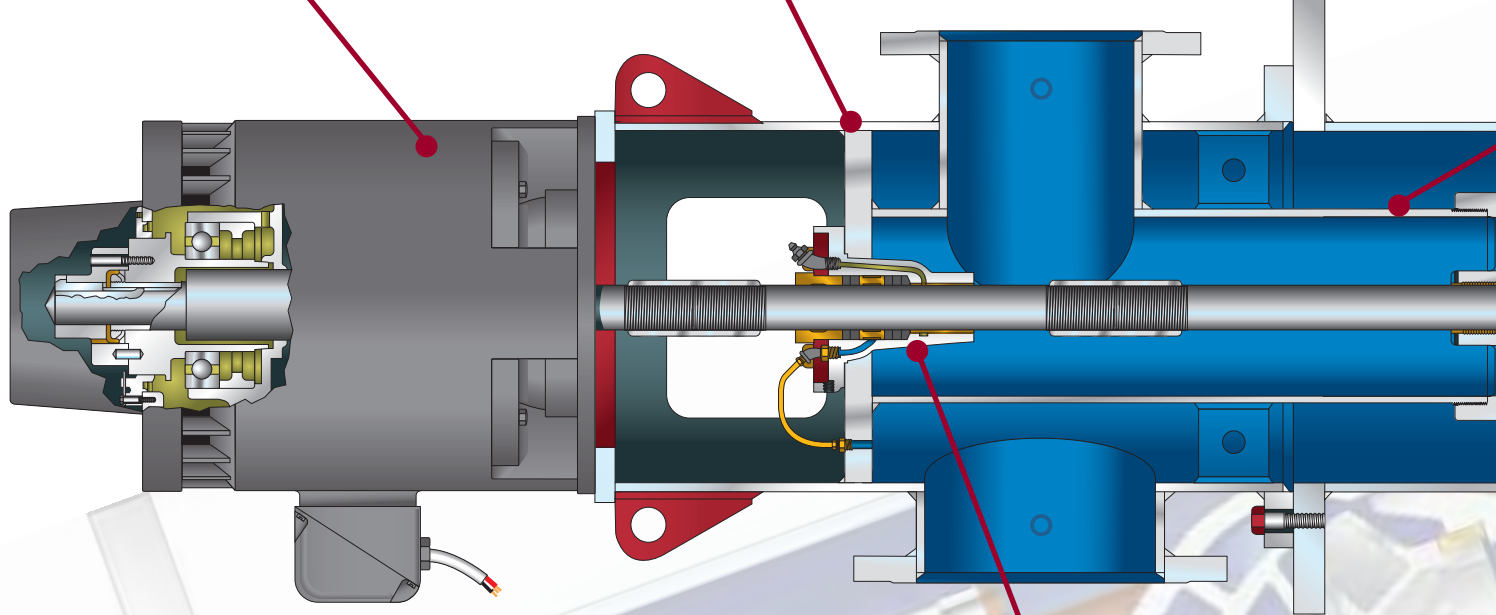
- Vertical hollowshaft or solid shaft
- Can be supplied with a non-reverse ratchet or self-release coupling
- Top adjusting nut allows user to adjust lateral setting
- Bearing designed to carry thrust loads and is oil lubricated
- Available in WP-I, WP-II, TEFC & Explosion-Proof enclosures
- Optional right angle gear drives

Discharge Head

- Fabricated "T" head for inline piping connections (shown)
- Optional flange pressure ratings can be specified per application
- Option ASTM A48 class 30 cast iron head with below base suction in barrel
- Carbon steel top shaft with stainless steel optional
- Headshaft coupling connects top shaft to headshaft
- Spacer couplings are available for use with mechanical seals
- Integral drip basin collects leakage from stuffing box

Stuffing Box

- Packed with lantern ring standard
- Grease port for throat bushing lubrication
- Optional component or cartridge seals available
- High pressure stuffing boxes and shaft sleeves are optional



Discharge Case

- Heavy duty ductile iron construction standard
- Two bronze bearings for additional support
- Additional vanes for minimizing turbulence thus improving efficiency

Suction Vessel

- Heavy wall high strength carbon steel or other specified alloy
- Optional below base suction available

Bowl Assembly

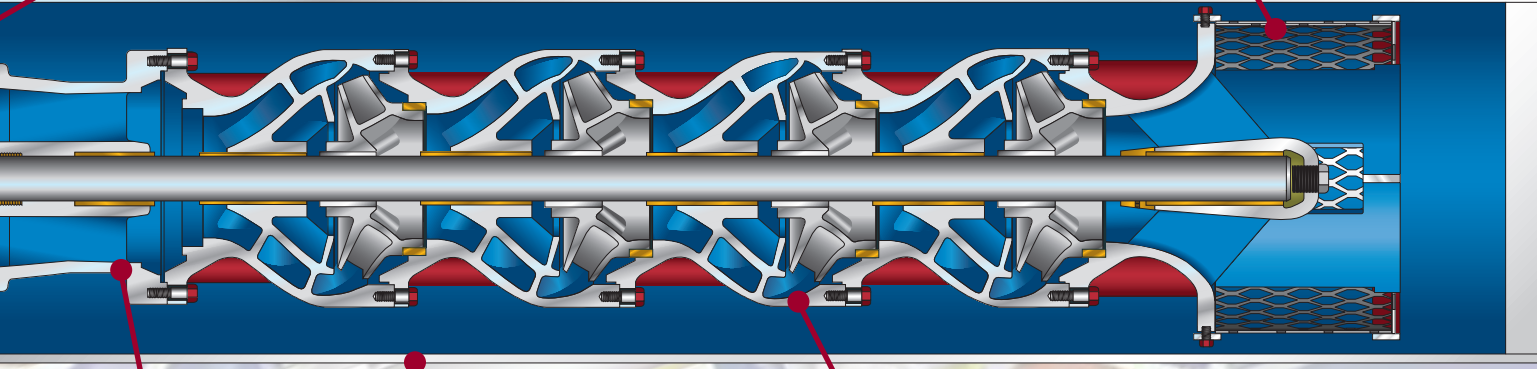
- Heavy wall ASTM A48 class 30 cast iron construction with 304 investment casted stainless steel impellers
- Impellers are expertly machined to customer specifications
- Diffuser bowls through 18" have standard vitreous enamel lining
- Impellers are available in enclosed or semi-open construction
- 416 stainless steel bowlshaft is standard
- Bronze bowl bearings standard
- Tapered impeller collets are used on bowls through 18" with keyed impellers used on larger sizes
- Heavy duty grease packed suction case bearing with sand collar

Column Assembly

- Heavy wall carbon steel construction
- Larger diameter, steel shaft material
- Heat straightened shafting standard
- Product lubricated lineshaft bearings
- Threaded column is standard through 12" and flanged for larger sizes
- Overall length is engineered to customer specifications
- Enclosed lineshaft column optional

Strainer













- Basket strainers are available upon request
- Galvanized steel, bronze or stainless steel materials are available
- Vortex suppressors can be supplied to minimize inlet losses



Submersible

Flows To: 60,000 GPM
 Heads To: 2500+ Feet
 Settings To: 1500+ Feet

Markets:

-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Construction
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Water & Wastewater



Francis Enclosed Impeller



Francis Open Impeller



Mixed Flow Impeller

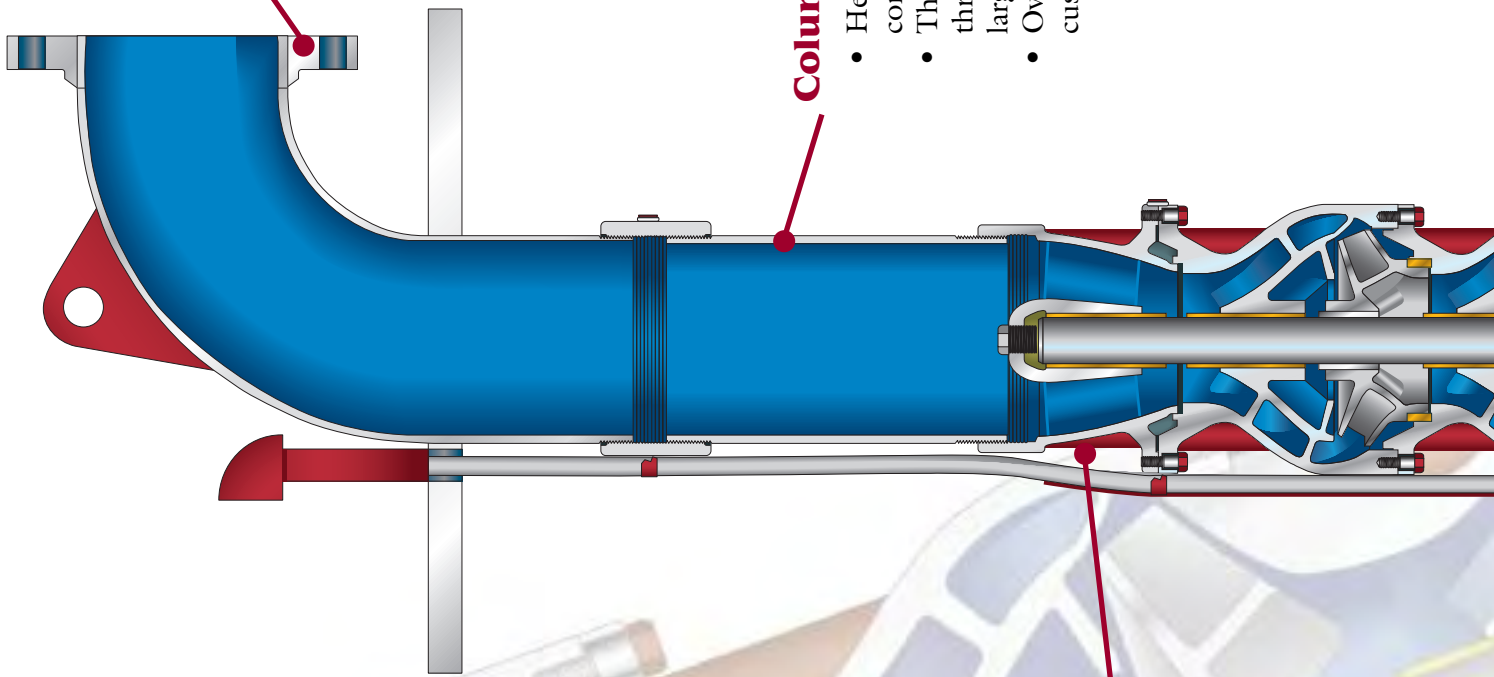


Axial Flow Impeller

- ### Discharge Elbow & Surface Plate
- High strength fabricated steel designed to support entire pump assembly
 - Can be supplied with a variety of flange pressure ratings

- ### Column Assembly
- Heavy wall carbon steel construction
 - Threaded column is standard through 12" and flanged for larger sizes
 - Overall length is engineered to customer specifications

- ### Discharge Case
- Heavy duty ductile iron construction standard
 - Two bronze bearings for additional support
 - Additional vanes for minimizing turbulence thus improving efficiency



Cable Guard

- Protect the motor leads during installation
- Manufactured of stainless steel to resist corrosion

Bowl Assembly

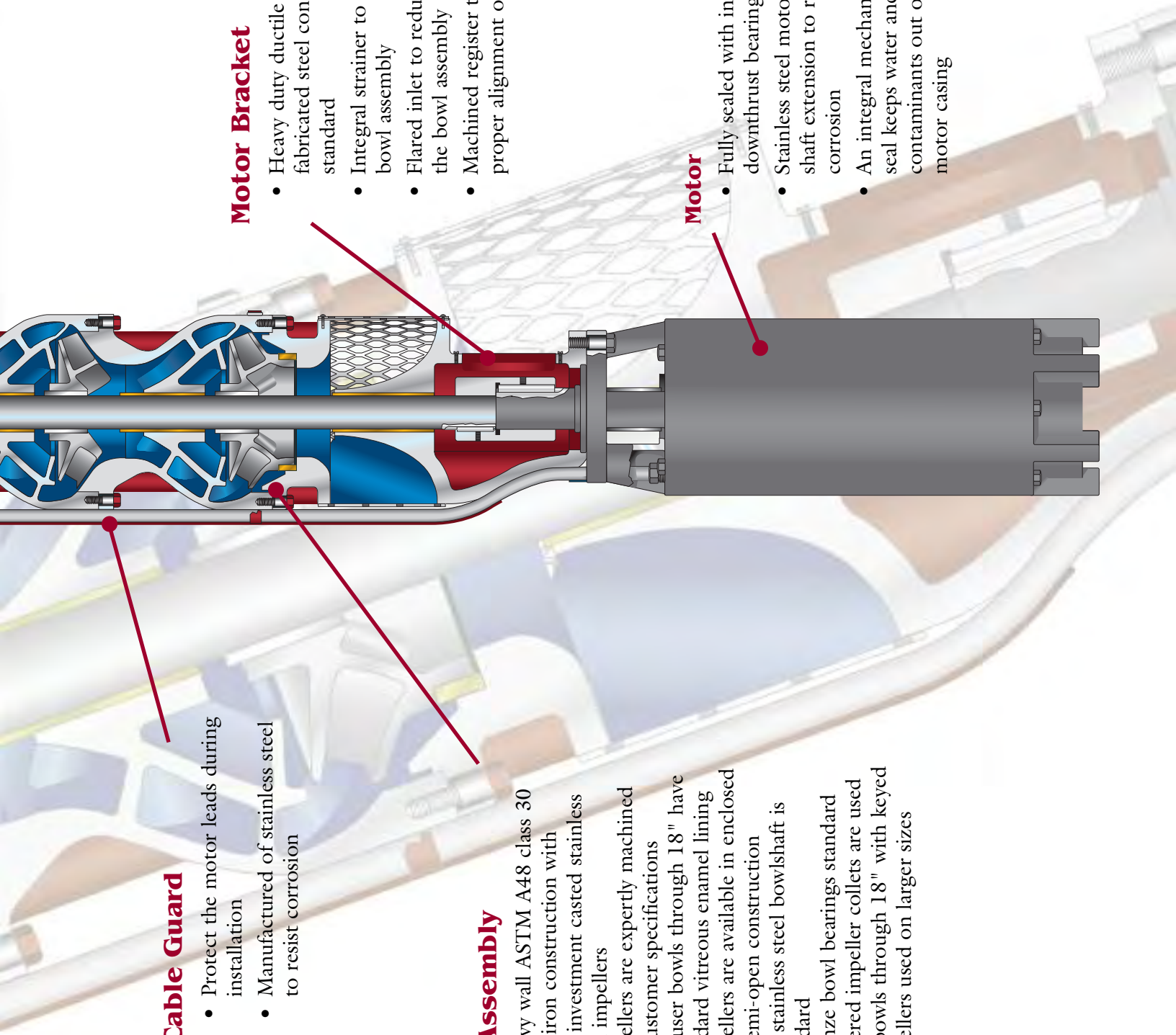
- Heavy wall ASTM A48 class 30 cast iron construction with 304 investment casted stainless steel impellers
- Impellers are expertly machined to customer specifications
- Diffuser bowls through 18" have standard vitreous enamel lining
- Impellers are available in enclosed or semi-open construction
- 416 stainless steel bowlshaft is standard
- Bronze bowl bearings standard
- Tapered impeller collets are used on bowls through 18" with keyed impellers used on larger sizes

Motor Bracket

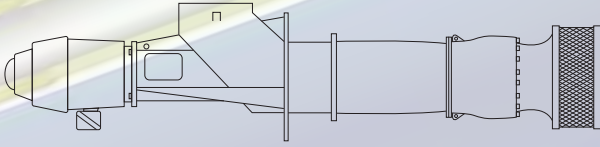
- Heavy duty ductile iron or fabricated steel construction standard
- Integral strainer to protect the bowl assembly
- Flared inlet to reduce losses into the bowl assembly
- Machined register to allow for proper alignment of the motor

Motor

- Fully sealed with integral downthrust bearing
- Stainless steel motor shaft extension to resist corrosion
- An integral mechanical seal keeps water and contaminants out of motor casing



Axial & Mixed Flow



Flows To: 85,000+ GPM
 Heads To: 100+ Feet
 Settings To: 100+ Feet

Markets:

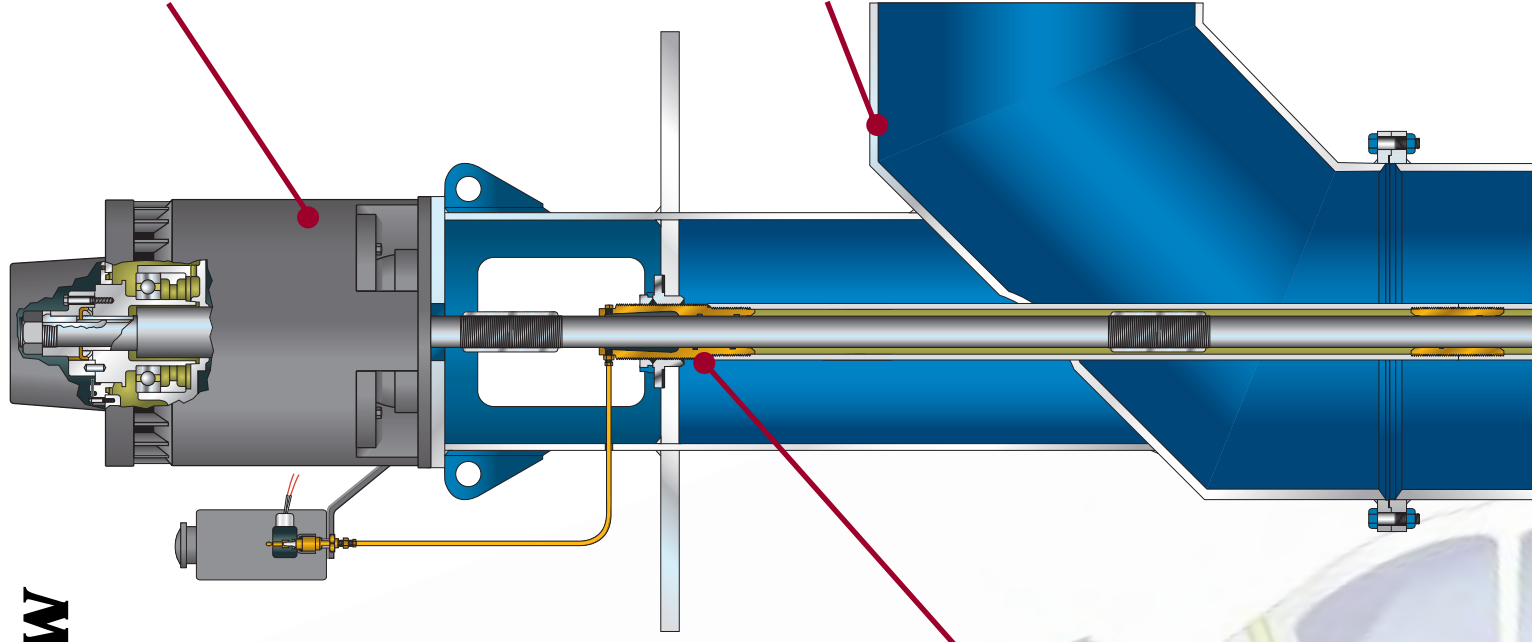
-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Construction
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Water & Wastewater



Axial Flow Impeller



Mixed Flow Impeller



Motor

- Vertical hollowshaft or solid shaft
- Can be supplied with a non-reverse ratchet or self-release coupling
- Top adjusting nut allows user to adjust lateral setting
- Bearing designed to carry thrust loads and is oil lubricated
- Available in WP-I, WP-II, TEFC & Explosion-Proof enclosures
- Optional right angle gear drives

Discharge Head

- Fabricated steel above or below ground discharge head
- Carbon steel top shaft with stainless steel optional
- Headshaft coupling connects top shaft to headshaft
- Spacer couplings are available for use with mechanical seals
- Integral drip basin collects leakage from stuffing box

Tension Tube Assembly

- Allows the tensioning of the enclosing tube to ensure proper lineshaft bearing alignment
- Allows for the means of using oil, grease or water for enclosed lineshaft lubrication
- Constructed of high quality bronze to resist corrosion and prevent "freezing" to the enclosing tube

Discharge Case

- Heavy duty ASTM A48 class 30 cast iron construction standard
- Tubing adapter connects inner column assembly to bowl assembly
- Two bypass ports with dual lip seals prevent pressurized fluid from the bowl assembly from entering the enclosing tube

Bowl Assembly

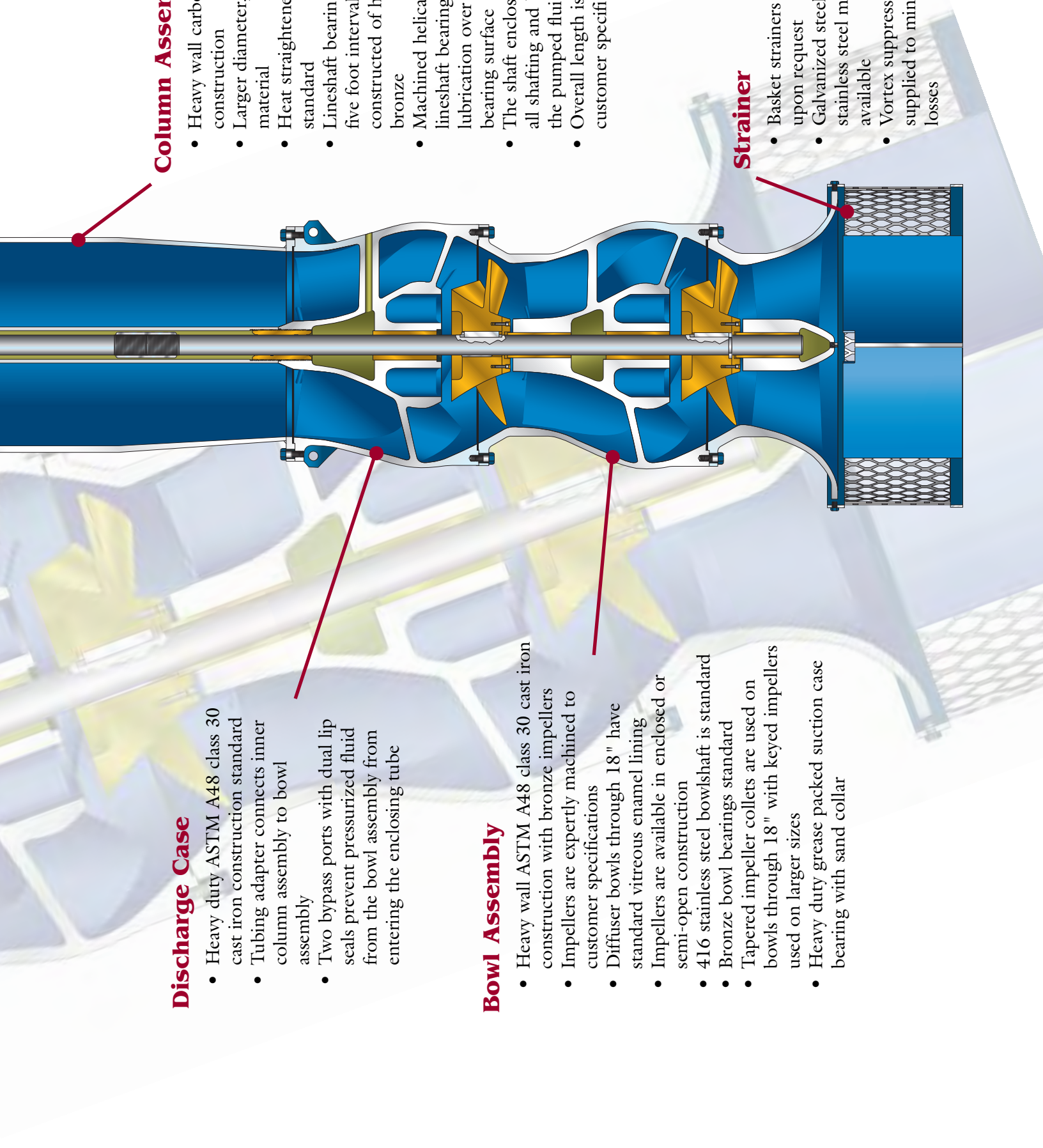
- Heavy wall ASTM A48 class 30 cast iron construction with bronze impellers
- Impellers are expertly machined to customer specifications
- Diffuser bowls through 18" have standard vitreous enamel lining
- Impellers are available in enclosed or semi-open construction
- 416 stainless steel bowl/shaft is standard
- Bronze bowl bearings standard
- Tapered impeller collets are used on bowls through 18" with keyed impellers used on larger sizes
- Heavy duty grease packed suction case bearing with sand collar

Column Assembly

- Heavy wall carbon steel construction
- Larger diameter, steel shaft material
- Heat straightened shafting standard
- Lineshaft bearings are spaced at five foot intervals and are constructed of high quality bronze
- Machined helical grooves in lineshaft bearing ensure uniform lubrication over the entire bearing surface
- The shaft enclosing tube isolates all shafting and bearings from the pumped fluid
- Overall length is engineered to customer specifications

Strainer

- Basket strainers are available upon request
- Galvanized steel, bronze or stainless steel materials are available
- Vortex suppressors can be supplied to minimize inlet losses

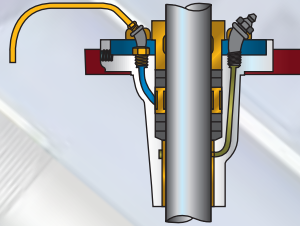


Vertical Turbine Options

Optional Metallurgy

All portions of the pump are available in optional metallurgy. Casted parts, such as bowls, suction cases and discharge cases, are available in cast iron, ductile iron, Novolloy, Ni-resist, 316 stainless steel and Cd4MCu. Fabricated parts, such as column and discharge heads, are available in carbon steel, 316 stainless steel and 316L low carbon stainless steel.

Lineshaft and bowl bearings are available in many material options such as bronze, carbon graphite, metal backed marine and teflon.

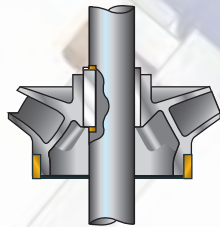


Packing or Mechanical Seal

A wide variety of packing and/or mechanical seals are available all engineered for the specific application.

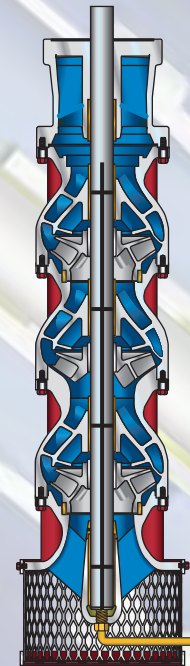
Keyed Impellers

Used in applications where temperatures exceed 180° F.



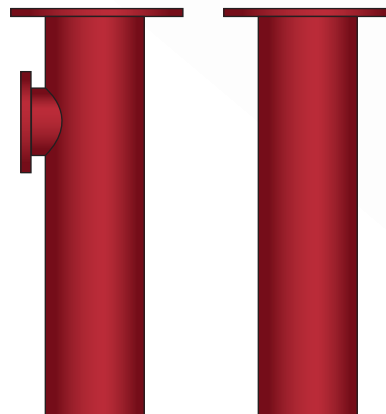
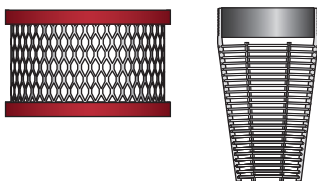
Rifle-Drilled Bowl Assembly

For applications where the pumped fluid has damaging solids or abrasives. An external source of fluid is supplied to the bell of the pump and it passes through an internally drilled pathway in the bowl shaft to each bowl bearing. This flush plan keeps the bowl bearings free of contaminants.



Strainers

Basket or cone strainers can be supplied upon request. Strainers are available in a wide variety of materials including galvanized steel, bronze or 316 stainless steel.

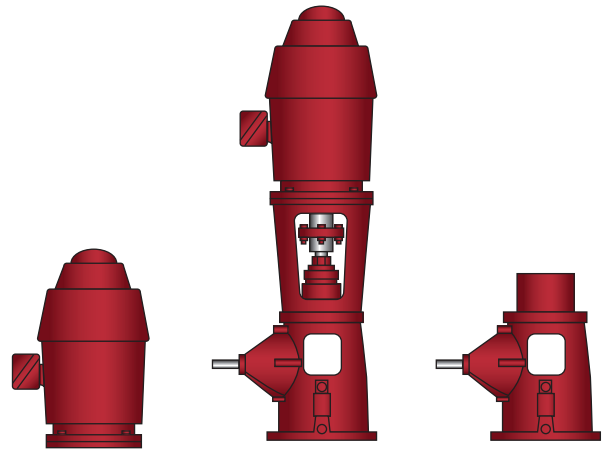


Suction Barrels

Barrels can be specified with or without suction flange. Suction barrels can be supplied with extra high pressure flanges and can be manufactured out of carbon steel or 316 stainless steel.

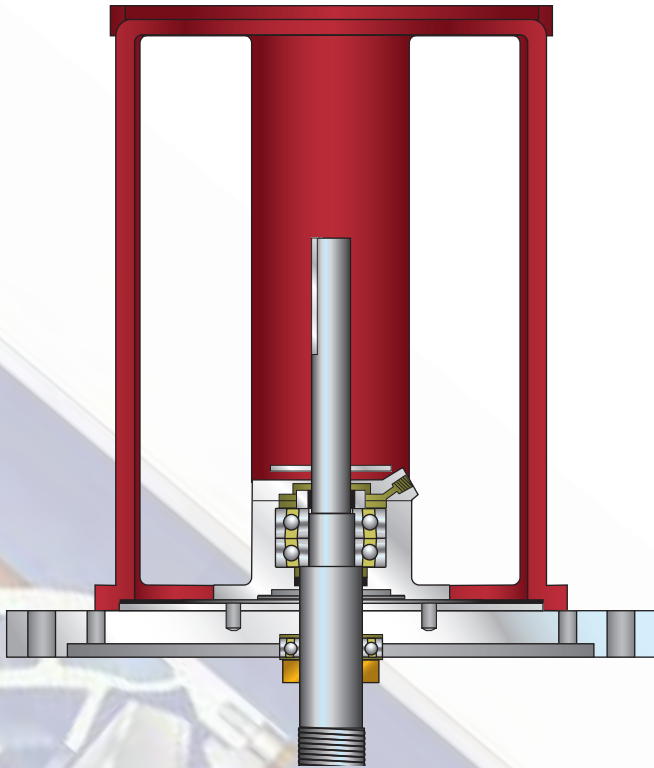
Motor Thrust Stand

For automotive and demanding applications where the need for an external thrust bearing and C-face motor is required. This option can utilize C-face or U-frame motors in exotic motor enclosures such as TEFC, Corro-Duty, Automotive-Duty and/or Explosion-Proof.



Driver Options

Vertical turbine pumps are available driven by an electric vertical hollow shaft motor, electric vertical solid shaft motor, right angle gear drive or a combination right angle gear drive with electric motor option.



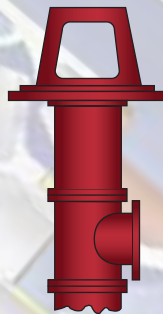
Lineshaft Options

Lineshaft is available in many different materials including carbon steel, 416 stainless steel, 316 stainless steel and 17-4 PH stainless steel.



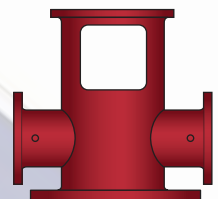
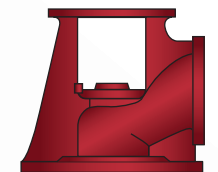
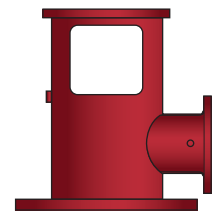
Below Base Discharge

For applications where a standard discharge head is unacceptable, an option for a below base discharge is available. This type of discharge head is available in fabricated steel or 316 stainless steel.



Discharge Heads

Discharge heads are available in cast iron or fabricated steel construction. The fabricated steel heads are available in a surface discharge or inline "T" configuration. All fabricated heads are available in 316 stainless steel.



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.

COLUMN ASSEMBLY

The column assembly is constructed of heavy wall carbon steel. This assembly can be supplied in an open or enclosed lineshaft configuration. All shafting is heat straightened and bearings are spaced at appropriate intervals to minimize vibration and to extend pump life. Lineshaft bearings have helical grooves to ensure uniform lubrication. The overall length of the pump can be engineered to meet the customer's specifications.

DISCHARGE CASE

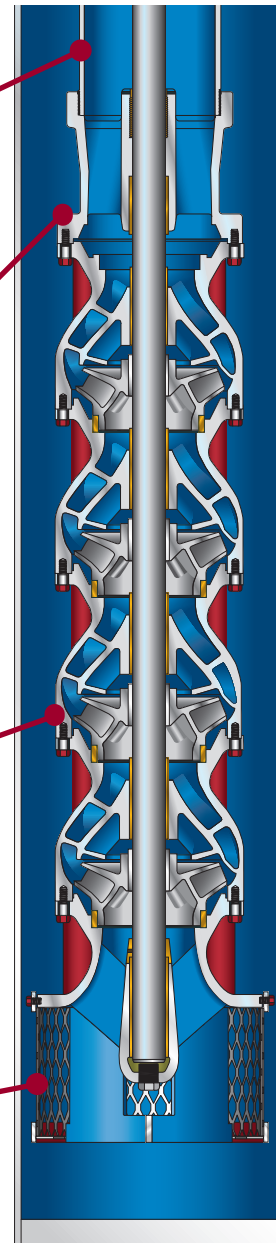
The discharge case is constructed of heavy duty ductile iron. On enclosed lineshaft construction, two lip seals and two flush ports are provided standard for long life and durability. Additional vanes are employed for minimizing friction losses of the fluid as it leaves the bowl assembly.

BOWL ASSEMBLY

Bowl assemblies are constructed of heavy wall class 30 cast iron. All impellers, both enclosed and semi-open, are constructed with heavy vanes and shrouds for long life. Diffuser bowls through 18" diameter have a standard vitreous enamel coating on the interior to increase efficiency and durability in aggressive applications. Bowl assembly shafts are standard 416 stainless steel and impellers through 18" are colleted standard (larger sizes are keyed standard). The suction case has a grease packed bearing with sand collar standard.

STRAINER

Optional strainers can be supplied in a conical, basket or vortex suppressor configuration. These strainers can be supplied in galvanized steel, bronze or stainless steel.



OTHER PUMP PRODUCTS

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

SELF PRIMER
To 12\" Discharge
6400 GPM, 200'

END SUCTION
To 12\" Discharge
9000 GPM, 450'

MULTI-STAGE
To 8\" Discharge
2500 GPM, 2500+'

VERTICAL SUMP
To: 12\" discharge
9000 GPM, 985'

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Collierville, TN 38017
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PH: (901)860-2300
FX: (901)860-2323

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