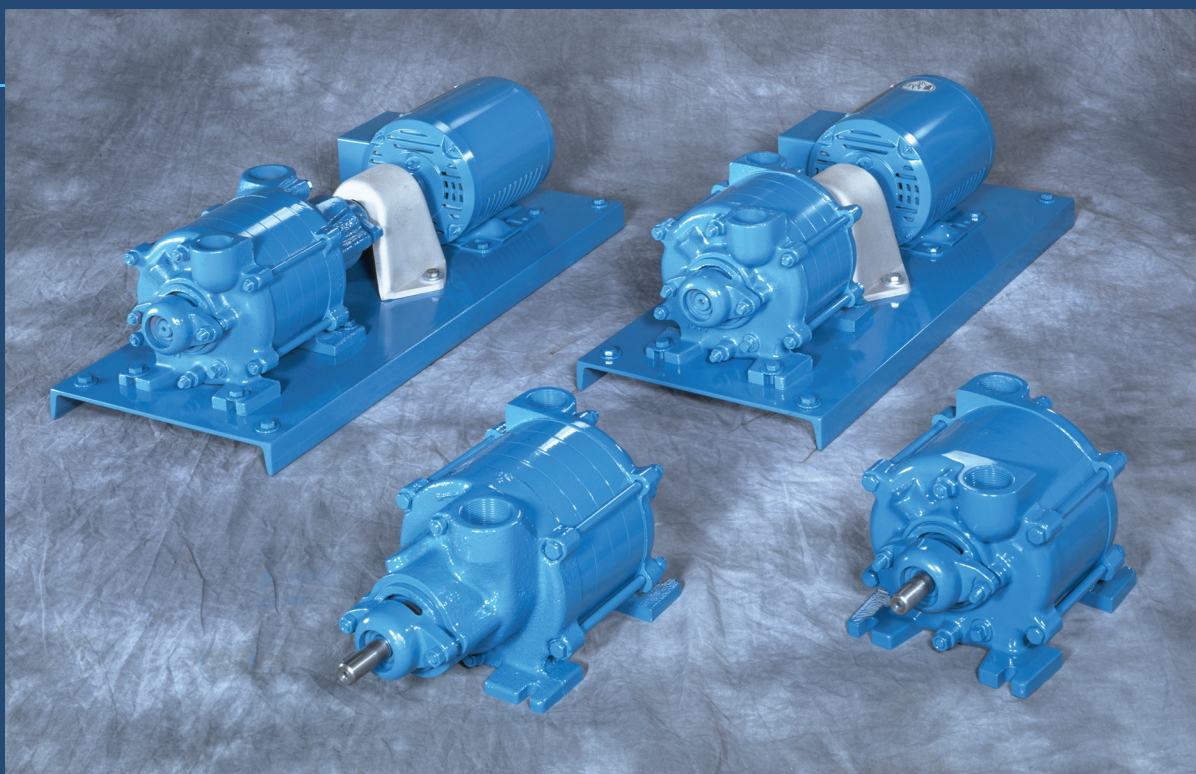


140 • 240 • 180 • 280 Series
**Regenerative
Turbine Pumps**



- Capacities to 60 GPM
- Heads to 800 Feet

140 • 240 • 180 • 280 Series Regenerative Turbine Pumps

140 • 240 • 180 • 280 Series regenerative turbine pumps represent the most economical, high performance alternative for low flow (to 60 GPM) applications involving moderate to high pressures (heads to 800 feet). By combining years of regenerative turbine pump designs with precision computer controlled manufacturing, the 140 • 240 • 180 • 280 Series delivers high efficiency pumping operation, even at low NPSH. High quality parts and an easily serviceable design provide low maintenance and long life.

Water Passage Design

MTH has combined seventy years of water passage design with a multi-stage mechanical concept to achieve maximum capacity and pressure while minimizing horsepower requirements. By optimizing the number of pumping stages with each water passageway, MTH improves both efficiency and pressure in the 140 • 240 • 180 • 280 Series, exceeding the standards realized by previous techniques.

Impeller Profile

One of the most notable improvements in regenerative turbine pump technology incorporated in 140 • 240 • 180 • 280 Series pumps involves

the ability to determine the optimum impeller width and blade length. These factors have a significant effect on the required horsepower versus pressure curve for regenerative turbine pumps. By optimizing these for each 140 • 240 • 180 • 280 Series pump, peak efficiency is improved and "off peak" horsepower requirements are reduced as well.

Impeller Blades

After the most favorable impeller profile has been determined for a particular water passageway cross-section, MTH calculates the number of blades needed to maximize the performance of that pump. Current blade design in 140 • 240 • 180 • 280 Series pumps increases both efficiency and design pressure without the manufacturing difficulties associated with producing contoured blade impellers.

State-of-the-art computer controlled machines simplify manufacturing of the various MTH impellers utilized in the 140 • 240 • 180 • 280 Series. The result is a high performance pump providing efficiency characteristics exceeding those of more expensive units.

NPSH Requirements

140 • 240 • 180 • 280 Series regenerative turbine pumps meet low net positive suction head (NPSH) requirements without efficiency loss. This is achieved by keeping the inlet fluid velocity low and then gently accelerating to passageway velocities.

Low NPSH Requirements

240 • 280 Series regenerative turbine pumps provide exceptionally low NPSH requirements to suit boiler feed water deaerator applications. This reduced NPSH is obtained by using a first stage centrifugal Francis vane impeller with inlet flow paths shaped to maintain a constant fluid velocity. This reduces entry losses to the impeller as well as maintaining pump efficiency. A multi-vane diffuser is used in conjunction with the centrifugal impeller for balancing radial loads and extracting the maximum pressure from the flow produced by the first stage impeller. Pressure and flow produced by the low NPSH inducer assures that the succeeding stages are adequately fed.

STANDARD MATERIALS

| PART | BRONZE FITTED | ALL IRON | BRONZE RING | ALL BRONZE | STAINLESS STEEL |
|--------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Cover | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Bronze ASTM B62 | Stainless Steel AISI 316 |
| Seal Cup | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Bronze ASTM B62 | Stainless Steel AISI 316 |
| Bearing Arm | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Bronze ASTM B62 | Stainless Steel AISI 316 |
| Channel Ring | Cast Iron ASTM A48 | Cast Iron ASTM A48 | Bronze ASTM B62 | Bronze ASTM B62 | Stainless Steel AISI 316 |
| Impeller | Bronze ASTM B62 | Carbon Steel 12L14 | Bronze ASTM B62 | Bronze ASTM B62 | W88 ASTM A494 |
| Shaft | Stainless Steel AISI 416 | Stainless Steel AISI 416 | Stainless Steel AISI 416 | Stainless Steel AISI 316 | Stainless Steel AISI 316 |
| "O" Rings | Buna N | Buna N | Buna N | Buna N | Viton A |
| Seals | EPR/Carbon | EPR/Carbon | EPR/Carbon | Buna/Ceramic | Viton/Ceramic |
| Seats | EPR/Ceramic | EPR/Ni-Resist | EPR/Ni-Resist | Buna/Ceramic | Viton/Ceramic |
| Ball Bearing | #204 | #204 | #204 | #204 | #204 |

LIMITATIONS

| | |
|------------------------|--------------|
| Discharge Pressure | 400 PSI |
| Seal Pressure* | 200 PSI |
| Suction Pressure (Min) | 26" Hg. Vac. |
| Speed | 1750 RPM |
| Horsepower | 15 HP |

Temperature

| | |
|--|---------|
| Standard Construction | -20° F |
| Ceramic Seal Seat - Water | +230° F |
| Ni-Resist Seal Seat - Water | +230° F |
| Silicon Carbide Seal Seat & External Seal Flush | +250° F |

* Suction Pressure Plus a Percentage of Differential Pressure

140 • 240 • 180 • 280 SERIES

Design Features

MTH 140 • 240 • 180 • 280 Series

regenerative turbine pumps are engineered to provide long life, low-maintenance service for low-flow applications involving moderate to high pressures -- such as boiler feed and similar uses. Available in single, two, three, or four stage models, MTH pumps offer these proven design features...

Steep Operating Characteristics.

Near-constant capacity is maintained over wide variations in pressure. High shut-off pressure overcomes temporary line resistance.

No Vapor Binding. MTH impellers are designed to handle up to 20% vapor by volume in the liquid being pumped.

No Metal to Metal Contact. MTH clearances enable handling of non-lubricating fluids while maintaining adequate heads.

Low Head Requirements. MTH pumps have excellent NPSH characteristics, which makes them ideally suited for difficult applications.

Minimum Shaft Deflection provided by heavy-duty outboard bearing supports on both sides of the impeller.

Balanced Radial Loads. On multi-stage MTH pumps, radial load equalization is designed into the pump, eliminating the need for external adjustment

Standard Pumps have hydraulically balanced impellers, 3/4" stainless steel shafts, and corrosion-resistant seals throughout.

400# Case Working Pressure.

Rigid structure is designed for maximum casing strength.

100% Tested.

Every pump is fully tested to verify performance prior to shipment.

Mechanical Seals incorporate EPR or Viton seals, ceramic or Ni-resist faces, and stainless steel components. These advanced seals permit elevated-temperature operation even with aggressive fluids.

Lip-Sealed #204 Ball Bearings

on both inboard and outboard ends, operate within rugged cast-

iron bearing supports and are permanently lubricated for long, maintenance-free life.

Replaceable Channel Rings, along with "O"rings at all sealing points, contribute to trouble-free operation.

Non-Cavitating.

140•240•180•280 Series pumps may be operated under adverse inlet conditions without audible or measurable cavitation.

Optional Features

Construction Materials. Bronze fitted, all iron, bronze ring, all bronze and 316 stainless steel are available as stock materials.

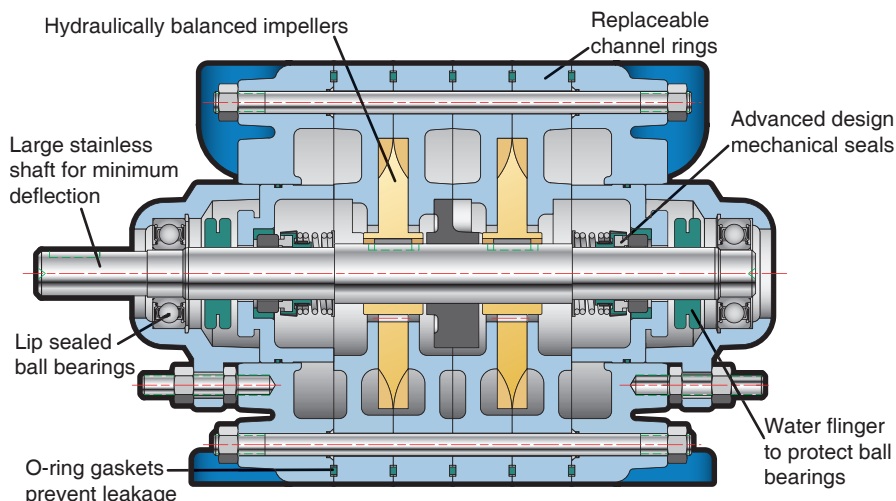
Mechanical Seals. Buna, EPR, Viton, Neoprene or Teflon elastomers, Ni-resist, Tungsten, or Silicone Carbide seats and balanced or double seal arrangements are all available.

"O"Ring Gaskets. Buna, EPR, Viton, Neoprene or Teflon are all available.

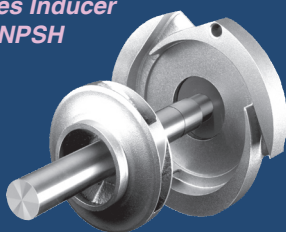
Seal Flush Line. External flush line from pump discharge to seal faces all-low for higher fluid temperature.

External Water Seal Connection.

Tapped openings can be provided for seal flushing from an external source.



200 Series Inducer for Low NPSH



The 200 Series inducer style pumps are ideally suited to applications where available NPSH at the pump inlet is limited, such as boiler feed water deaerator service.

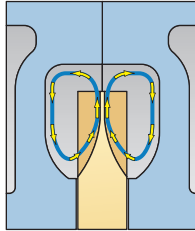
A centrifugal impeller with low NPSH characteristics is utilized as the pump's first stage impeller, providing for the lower inlet head requirement.

This first stage impeller is used in conjunction with a multi-vane diffuser to provide the NPSH required by the second stage regenerative turbine.

Available NPSH as low as one foot can be effectively handled with 240 • 280 Series pumps, depending on the pump model and capacity.

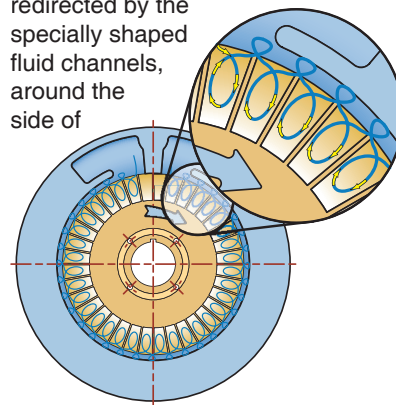
Regenerative Turbine Education

The primary difference between a centrifugal and a regenerative turbine pump is that fluid only travels through a centrifugal impeller once, while in a turbine, it takes many trips through the vanes. Referring to the cross-section diagram, the impeller vanes move within the flow-through area of the water channel passageway. Once the liquid enters the pump, it is directed into the vanes which push the fluid forward and impart a centrifugal force outward to the impeller periphery. An orderly circulatory flow is therefore imposed by the impeller vane which is converted to velocity. Fluid velocity (or kinetic energy) is then available for conversion to flow and pressure depending on the external system's flow resistance as diagrammed by a system curve.



of the pressure building capability of an MTH regenerative turbine, close internal clearances are required. In many cases, depending on the size of the pump, impeller to casing clearances may be as little as one-thousandth of an inch on each side. Therefore, these pumps are suitable for use only on applications with clean fluids and systems, or else the fluid must be pre-filtered before reaching the pump.

Next, as the circulatory flow is imposed on the fluid and it reaches the fluid channel periphery, it is then redirected by the specially shaped fluid channels, around the side of



the impeller, and back into the I.D. of the turbine impeller vanes, where the process begins again. This cycle occurs many times as the fluid passes through the pump. Each trip through the vanes generates more fluid velocity, which can then be converted into more pressure. The multiple cycles through the turbine vanes are called regeneration, hence the name regenerative turbine. The overall result of this process is a pump with pressure building capability ten or more times that of a centrifugal pump with the same impeller diameter and speed.

In some competitive designs, you will find that only a single-sided impeller is used. That design suffers from a thrust load in the direction of the motor that must be carried by the motor bearings. MTH turbines use a two-sided impeller design that builds pressure equally on both sides. This has the advantage of allowing the pump pressure to hydraulically self-center the impeller in the close clearance impeller cavity, while not burdening the motor bearings with excessive thrust loads.

It is useful to note at this point, that in order to prevent the internal loss

140 • 240 • 180 • 280 SERIES

Engineering Specifications

140 • 180 Series

The contractor shall furnish (and install as shown on the plans) an MTH Turboflex regenerative type pump model _____ size _____ of (BRONZE FITTED) (BRONZE RING) (ALL IRON) (ALL BRONZE) (316 STAINLESS STEEL) construction. Each pump shall have a capacity of _____ GPM when operating at a total head of _____ feet at the specified temperature, viscosity, specific gravity, and with _____ feet NPSHA. The maximum speed shall not exceed 1750 RPM. Pump shall be of the vertically split case design with removable bearing housings and is to be furnished with mechanical seals. The channel rings shall be replaceable external type. The suction connection shall be _____" NPT located in the top vertical position and be cast separately from the discharge. The discharge shall be _____" NPT in the top vertical position and the pump shall be self-venting. The impeller(s) shall be located on a stainless steel shaft between sealed grease lubricated ball bearings. The impeller(s) shall be hydraulically self positioning with no external adjustment necessary. Each pump shall be tested at the specified capacity and head prior to shipment. The pump shall be mounted on a steel baseplate, flexibly coupled with aluminum guard to a _____HP _____phase _____Hertz

_____volt _____RPM horizontal (DRIP-PROOF) (TOTALLY ENCLOSED) (EXPLOSION PROOF) motor. The motor is to be sized to prevent overloading at the highest head condition listed in the specification.

240 • 280 Series

The contractor shall furnish (and install as shown on the plans) an MTH Turboflex low NPSH inducer style regenerative type pump model _____ size _____ of (BRONZE FITTED) (BRONZE RING) (ALL IRON) (ALL BRONZE) (316 STAINLESS STEEL) construction. Each pump shall have a capacity of _____ GPM when operating at a total head of _____ feet at the specified temperature, viscosity, specific gravity, and with _____ feet NPSHA. The maximum speed shall not exceed 1750 RPM. Pump shall be of the vertically split case design with removable bearing housings and is to be furnished with mechanical seals. The channel rings shall be replaceable external type. The suction connection shall be _____" NPT located in the top vertical position and be cast separately from the discharge. The discharge shall be _____"

NPT in the top vertical position and the pump shall be self-venting. The impeller(s) shall be located on a stainless steel shaft between sealed grease lubricated ball bearings. The impeller(s) shall be hydraulically self positioning with no external adjustment necessary. Each pump shall be tested at the specified capacity and head prior to shipment. The pump shall be mounted on a steel baseplate, flexibly coupled with aluminum guard to a _____HP _____phase _____Hertz _____volt _____RPM horizontal (DRIP-PROOF) (TOTALLY ENCLOSED) (EXPLOSION PROOF) motor. The motor is to be sized to prevent overloading at the highest head condition listed in the specification.



MTH PUMPS

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Cold Water Selection Guide

| HEAD IN FEET | U.S. GALLONS PER MINUTE | | | | | | | | | | | |
|--------------------|-------------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 4 Model HP | 5 Model HP | 6 Model HP | 8 Model HP | 10 Model HP | 12 Model HP | 15 Model HP | 20 Model HP | 25 Model HP | 30 Model HP | 40 Model HP | 50 Model HP |
| 25 | * | * | * | 141D .5 | 141E .5 | 141F .5 | 141G .5 | 141H .75 | 141I .75 | 141IA 1 | 181M 1.5 | 181P 1.5 |
| 50 | * | * | 141D .5 | 141E .5 | 141F .5 | 141G .5 | 141H .75 | 141I 1 | 181K 1 | 181M 1.5 | 181P 1.5 | 181R 2 |
| 75 | * | * | 141D .5 | 141E .5 | 141F .75 | 142F .75 | 141H 1 | 141I 1 | 141IA 1.5 | 181M 2 | 181R 3 | 182R 5 |
| 100 | * | 141D .5 | 141E .5 | 141F .75 | 142F .75 | 141H 1 | 141I 1 | 141IA 1.5 | 182K 2 | 181P 2 | 182P 3 | 183R 5 |
| 125 | 141D .75 | 141E .75 | 141E .75 | 141G 1 | 142F 1 | 142G 1.5 | 142H 1.5 | 142I 2 | 182K 2 | 182M 3 | 182P 3 | 183R 5 |
| 150 | 141E .75 | 141E .75 | 142D 1 | 143E 1 | 142G 1.5 | 143G 1.5 | 142H 2 | 143I 3 | 142IA 3 | 182M 5 | 182R 5 | 184R 7.5 |
| 175 | 141E 1 | 142D 1 | 142E 1 | 142F 1.5 | 142G 1.5 | 142H 2 | 142I 2 | 182K 3 | 143IA 3 | 182P 5 | 183P 5 | |
| 200 | 141E 1 | 142D 1 | 142E 1 | 142F 1.5 | 143F 1.5 | 142H 2 | 142I 3 | 142IA 3 | 183K 3 | 183M 5 | 183R 7.5 | |
| 225 | 142D 1.5 | 143D 1.5 | 142E 1.5 | 142F 1.5 | 143G 2 | 143H 3 | 142I 3 | 142IA 3 | 143IA 5 | 183P 5 | 184P 7.5 | |
| 250 | 142D 1.5 | 143D 1.5 | 142E 1.5 | 143F 2 | 143G 2 | 143H 3 | 143I 3 | 143IA 5 | 144IA 5 | 183P 5 | 184R 10 | |
| 300 | 143D 1.5 | 142E 1.5 | 143E 1.5 | 143F 2 | 143H 3 | 142I 3 | 143I 5 | 143IA 5 | 183P 7.5 | 184P 7.5 | | |
| 350 | 144D 2 | 144D 2 | 143E 2 | 144F 3 | 144H 5 | 144H 5 | 143I 5 | 144IA 5 | 184M 7.5 | 184P 7.5 | | |
| 400 | 144D 2 | 143E 2 | 144E 2 | 144G 3 | 144H 5 | 143I 5 | 144I 5 | 144IA 5 | 184P 7.5 | | | |
| 450 | 144D 2 | 143E 2 | 144E 2 | 144G 3 | 143I 5 | 144I 5 | 183K 7.5 | 184P 10 | 184R 15 | | | |
| 500 | 144D 3 | 144E 3 | 144F 3 | 143I 7.5 | 143I 7.5 | 144I 7.5 | 144IA 7.5 | | | | | |
| 550 | 143E 3 | 144E 3 | 143I 5 | 143I 5 | 144I 7.5 | 144IA 7.5 | | | | | | |
| 600 | 144E 3 | 144G 5 | 143I 7.5 | 144I 7.5 | 144I 7.5 | 144IA 7.5 | | | | | | |
| 650 | 144E 3 | | | | | | | | | | | |
| 700 | 144E 3 | | | | | | | | | | | |

Selections based on coldwater flooded suction 1.0 S.G. Open Dripproof Motor.
Consult individual pump curve for final selection.
*Refer to T41 Series Bulletin.

Boiler Feed Selection Guide

| Boiler HP | Evap Rate GPM | Pump GPM | BOILER PRESSURE IN PSI | | | | | | | | | | | | | |
|--------------|---------------------|-------------|------------------------|-----|-------|-----|-------|------|-------|------|-------|------|-------|------|-------|------|
| | | | 15 | | 50 | | 100 | | 125 | | 150 | | 200 | | 250 | |
| | | | Model | HP | Model | HP | Model | HP | Model | HP | Model | HP | Model | HP | Model | HP |
| 15 | 1.0 | 3.1 | 141D | .3 | 141D | .75 | 142E | 1.0 | 142E | 1.5 | 142F | 1.5 | 143E | 2.0 | 144E | 3.0 |
| 20 | 1.4 | 4.1 | 141D | .3 | 141D | .75 | 142E | 1.0 | 142E | 1.5 | 142F | 1.5 | 143E | 2.0 | 144E | 3.0 |
| 25 | 1.7 | 4.4 | 141D | .3 | 141D | .75 | 142E | 1.0 | 142E | 1.5 | 143E | 1.5 | 143E | 2.0 | 144E | 3.0 |
| 30 | 2.1 | 5.0 | 141D | .3 | 141D | .75 | 142E | 1.0 | 142E | 1.5 | 143E | 1.5 | 143E | 2.0 | 144E | 3.0 |
| 40 | 2.8 | 5.6 | 141D | .3 | 141E | .75 | 142F | 1.5 | 142G | 2.0 | 143E | 1.5 | 144F | 3.0 | 144I | 7.5 |
| 50 | 3.5 | 7.0 | 141D | .3 | 141F | .75 | 142F | 1.5 | 143F | 2.0 | 143F | 2.0 | 144I | 5.0 | 144I | 7.5 |
| 60 | 4.2 | 8.3 | 141E | .3 | 141F | .75 | 142G | 2.0 | 143G | 2.0 | 143G | 5.0 | 144I | 5.0 | 144I | 7.5 |
| 70 | 4.8 | 9.6 | 141F | .5 | 141I | 1.5 | 142I | 3.0 | 143I | 3.0 | 143I | 5.0 | 144I | 5.0 | 144I | 7.5 |
| 80 | 5.5 | 11.0 | 141F | .5 | 141I | 1.5 | 142I | 3.0 | 143I | 3.0 | 143I | 5.0 | 144I | 5.0 | 144I | 7.5 |
| 100 | 6.9 | 14.0 | 141G | .5 | 141I | 1.5 | 142IA | 3.0 | 143I | 3.0 | 143IA | 5.0 | 144I | 5.0 | 152I | 10.0 |
| 125 | 8.6 | 17.5 | 141I | .75 | 141IA | 1.5 | 142IA | 3.0 | 143I | 3.0 | 143IA | 5.0 | 144IA | 7.5 | 152I | 10.0 |
| 150 | 10.7 | 21.0 | 141I | .75 | 141IA | 1.5 | 151I | 5.0 | 143IA | 5.0 | 144IA | 5.0 | 152I | 7.5 | 153I | 10.0 |
| 200 | 13.8 | 28.0 | 141IA | 1.0 | 182K | 2.0 | 151K | 5.0 | 152I | 5.0 | 162D | 7.5 | 162D | 10.0 | 163D | 15.0 |
| 250 | 17.3 | 33.0 | 181M | 1.5 | 151K | 3.0 | 152K | 5.0 | 152K | 7.5 | 162D | 7.5 | 162G | 10.0 | 153L | 15.0 |
| 300 | 20.7 | 38.0 | 181M | 1.5 | 151K | 3.0 | 152K | 5.0 | 152K | 7.5 | 152L | 10.0 | 162G | 15.0 | 153L | 15.0 |
| 350 | 24.2 | 43.0 | 181P | 1.5 | 151L | 5.0 | 152L | 7.5 | 152L | 10.0 | 152L | 10.0 | 162G | 15. | 153L | 15.0 |
| 400 | 27.6 | 48.0 | 181R | 2.0 | 151L | 5.0 | 162L | 7.5 | 152L | 10.0 | 162G | 15.0 | 162G | 15.0 | 163G | 20.0 |
| 500 | 34.5 | 57.0 | 151L | 3.0 | 161G | 5.0 | 162G | 10.0 | 162G | 10.0 | 163G | 15.0 | 164G | 20.0 | 173H | 25.0 |
| 600 | 41.5 | 71.0 | 161G | 3.0 | 161G | 5.0 | 172H | 15.0 | 172H | 15.0 | 172J | 20.0 | 173H | 20.0 | 173K | 30.0 |
| 700 | 43.5 | 77.0 | 161G | 3.0 | 171K | 7.5 | 172K | 15.0 | 172K | 15.0 | 173K | 20.0 | 174H | 20.0 | 174J | 30.0 |

NOTES

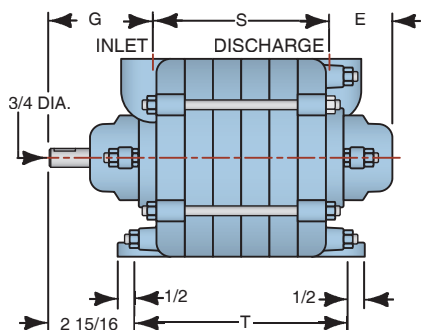
Selections are for water at 200°F (Maximum) with above 3 feet NPSHA (Net Positive Suction Head Available) over NPSHR (Net Positive Suction Head Required).

All pumps are selected for intermittent (on-off) operation and with ODP (Open Drip Proof) motors operating at 1750RPM.

This selection is for reference only. Refer to the technical data of the specific model number to ascertain the suitability of the model in your application, or call the factory.

150 • 160 • 170 Model pump information is available in our Bulletin 150.

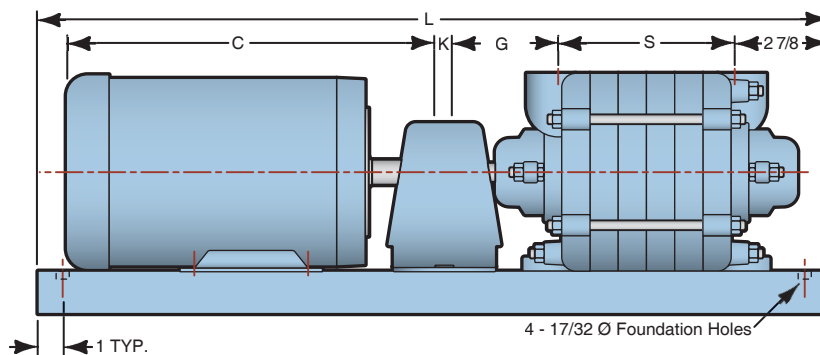
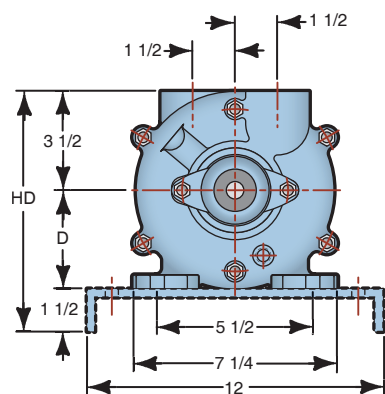
Dimensions



Pump Only Dimensions

| PUMP SERIES | INLET | DISCHARGE | E | G | S | T |
|-------------|------------|------------|-------|---------|--------|----|
| 141 | 1 1/4" NPT | 1 1/4" NPT | 2 1/8 | 3 13/16 | 4 1/4 | 6 |
| 142 | 1 1/4" NPT | 1 1/4" NPT | 2 1/8 | 3 13/16 | 6 1/4 | 8 |
| 143 | 1 1/4" NPT | 1 1/4" NPT | 2 1/8 | 3 13/16 | 8 1/4 | 10 |
| 144 | 1 1/4" NPT | 1 1/4" NPT | 2 1/8 | 3 13/16 | 10 1/4 | 12 |
| 181 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 3 11/16 | 5 1/2 | 7 |
| 182 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 3 11/16 | 8 1/2 | 10 |
| 183 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 3 11/16 | 11 1/2 | 13 |
| 184 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 3 11/16 | 14 1/2 | 16 |

ROTATION: Clockwise when viewed from driver end.



140 Series Flex Coupled Pump Dimensions

| FRAME | CPLG | ALL 140 MODELS | | | | MODEL 141 | | MODEL 142 | | MODEL 143 | | MODEL 144 | |
|-------|------|----------------|-------|--------|----|-----------|-----|-----------|-----|-----------|-----|-----------|----|
| | | K | D | HD | C | S | L | S | L | S | L | S | L |
| 56 | 3J | 3/8 | 3 1/2 | 8 1/2 | 12 | 4 1/4 | 24 | 6 1/4 | 26 | 8 1/4 | 28 | 10 1/4 | 30 |
| 143T | 4J | 5/8 | 3 1/2 | 8 1/2 | 13 | 4 1/4 | 24 | 6 1/4 | 26 | 8 1/4 | 28 | 10 1/4 | 30 |
| 145T | 4J | 5/8 | 3 1/2 | 8 1/2 | 14 | 4 1/4 | 24 | 6 1/4 | 26 | 8 1/4 | 28 | 10 1/4 | 30 |
| 182T | 5J | 3/4 | 4 1/2 | 9 1/2 | 16 | 4 1/4 | 26 | 6 1/4 | 30 | 8 1/4 | 32 | 10 1/4 | 35 |
| 184T | 5J | 3/4 | 4 1/2 | 9 1/2 | 17 | --- | --- | 6 1/4 | 30 | 8 1/4 | 32 | 10 1/4 | 35 |
| 213T | 6J | 7/8 | 5 1/4 | 10 1/4 | 19 | --- | --- | --- | --- | 8 1/4 | 35 | 10 1/4 | 40 |
| 215T | 6J | 7/8 | 5 1/4 | 10 1/4 | 20 | --- | --- | --- | --- | --- | --- | 10 1/4 | 40 |

180 Series Flex Coupled Pump Dimensions

| FRAME | CPLG | ALL 180 MODELS | | | | MODEL 181 | | MODEL 182 | | MODEL 183 | | MODEL 184 | |
|-------|------|----------------|-------|--------|----|-----------|-----|-----------|----|-----------|----|-----------|----|
| | | K | D | HD | C | S | L | S | L | S | L | S | L |
| 56 | 3J | 3/8 | 3 1/2 | 8 1/2 | 12 | 5 1/2 | 26 | 8 1/2 | 28 | 11 1/2 | 30 | 14 1/2 | 35 |
| 143T | 4J | 5/8 | 3 1/2 | 8 1/2 | 13 | 5 1/2 | 26 | 8 1/2 | 28 | 11 1/2 | 30 | 14 1/2 | 35 |
| 145T | 4J | 5/8 | 3 1/2 | 8 1/2 | 14 | 5 1/2 | 26 | 8 1/2 | 28 | 11 1/2 | 30 | 14 1/2 | 35 |
| 182T | 5J | 3/4 | 4 1/2 | 9 1/2 | 16 | 5 1/2 | 28 | 8 1/2 | 30 | 11 1/2 | 32 | 14 1/2 | 40 |
| 184T | 5J | 3/4 | 4 1/2 | 9 1/2 | 17 | 5 1/2 | 28 | 8 1/2 | 30 | 11 1/2 | 32 | 14 1/2 | 40 |
| 213T | 6J | 7/8 | 5 1/4 | 10 1/4 | 19 | --- | --- | 8 1/2 | 35 | 11 1/2 | 40 | 14 1/2 | 45 |
| 215T | 6J | 7/8 | 5 1/4 | 10 1/4 | 20 | --- | --- | 8 1/2 | 35 | 11 1/2 | 40 | 14 1/2 | 45 |

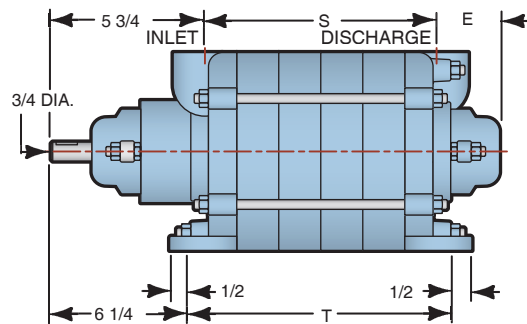
NOTES

All dimensions in inches. May vary \pm 1/4 inches.

Not for construction purposes unless certified.

ROTATION: Clockwise when viewed from driver end.

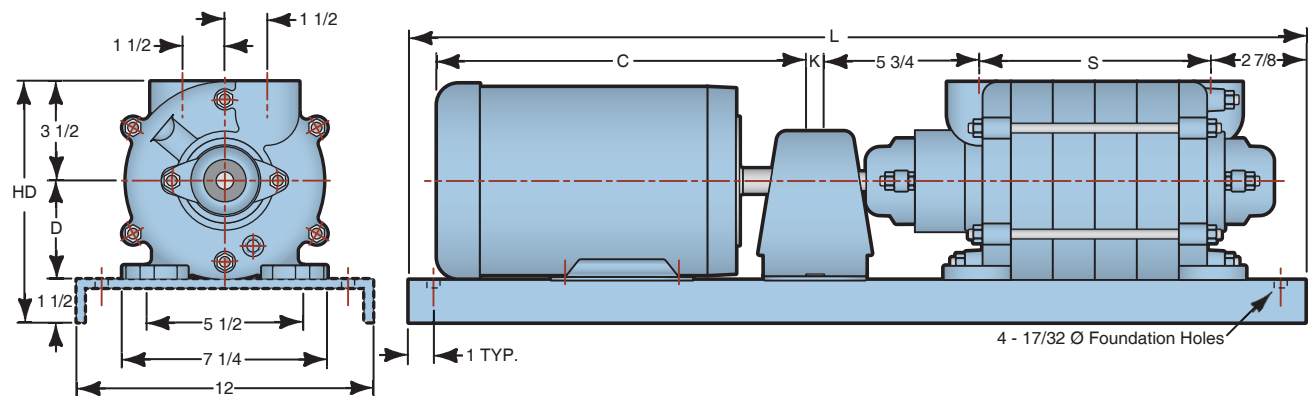
Dimensions



Pump Only Dimensions

| PUMP SERIES | INLET | DISCHARGE | E | S | T |
|-------------|------------|------------|-------|--------|----|
| 241 | 1 1/2" NPT | 1 1/4" NPT | 2 1/8 | 5 5/8 | 6 |
| 242 | 1 1/2" NPT | 1 1/4" NPT | 2 1/8 | 7 5/8 | 8 |
| 243 | 1 1/2" NPT | 1 1/4" NPT | 2 1/8 | 9 5/8 | 10 |
| 244 | 1 1/2" NPT | 1 1/4" NPT | 2 1/8 | 11 5/8 | 12 |
| 281 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 6 5/8 | 7 |
| 282 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 9 5/8 | 10 |
| 283 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 12 5/8 | 13 |
| 284 | 1 1/2" NPT | 1 1/2" NPT | 2 1/4 | 15 5/8 | 16 |

ROTATION: Clockwise when viewed from driver end.



240 Series Flex Coupled Pump Dimensions

| FRAME | CPLG | ALL 240 MODELS | | | | MODEL 241 | | MODEL 242 | | MODEL 243 | | MODEL 244 | |
|-------|------|----------------|-------|--------|----|-----------|-----|-----------|-----|-----------|----|-----------|----|
| | | K | D | HD | C | S | L | S | L | S | L | S | L |
| 56 | 3J | 3/8 | 3 1/2 | 8 1/2 | 12 | 5 5/8 | 28 | 7 5/8 | 30 | 9 5/8 | 32 | 11 5/8 | 35 |
| 143T | 4J | 5/8 | 3 1/2 | 8 1/2 | 13 | 5 5/8 | 28 | 7 5/8 | 30 | 9 5/8 | 32 | 11 5/8 | 35 |
| 145T | 4J | 5/8 | 3 1/2 | 8 1/2 | 14 | 5 5/8 | 28 | 7 5/8 | 30 | 9 5/8 | 32 | 11 5/8 | 35 |
| 182T | 5J | 3/4 | 4 1/2 | 9 1/2 | 16 | 5 5/8 | 30 | 7 5/8 | 32 | 9 5/8 | 35 | 11 5/8 | 38 |
| 184T | 5J | 3/4 | 4 1/2 | 9 1/2 | 17 | 5 5/8 | 30 | 7 5/8 | 32 | 9 5/8 | 35 | 11 5/8 | 38 |
| 213T | 6J | 7/8 | 5 1/4 | 10 1/4 | 19 | --- | --- | --- | --- | 9 5/8 | 40 | 11 5/8 | 40 |
| 215T | 6J | 7/8 | 5 1/4 | 10 1/4 | 20 | --- | --- | --- | --- | 9 5/8 | 40 | 11 5/8 | 40 |

280 Series Flex Coupled Pump Dimensions

| FRAME | CPLG | ALL 280 MODELS | | | | MODEL 281 | | MODEL 282 | | MODEL 283 | | MODEL 284 | |
|-------|------|----------------|-------|--------|----|-----------|-----|-----------|-----|-----------|----|-----------|----|
| | | K | D | HD | C | S | L | S | L | S | L | S | L |
| 56 | 3J | 3/8 | 3 1/2 | 8 1/2 | 12 | 6 5/8 | 28 | 9 5/8 | 32 | 12 5/8 | 35 | 15 5/8 | 38 |
| 143T | 4J | 5/8 | 3 1/2 | 8 1/2 | 13 | 6 5/8 | 28 | 9 5/8 | 32 | 12 5/8 | 35 | 15 5/8 | 38 |
| 145T | 4J | 5/8 | 3 1/2 | 8 1/2 | 14 | 6 5/8 | 28 | 9 5/8 | 32 | 12 5/8 | 35 | 15 5/8 | 38 |
| 182T | 5J | 3/4 | 4 1/2 | 9 1/2 | 16 | 6 5/8 | 30 | 9 5/8 | 35 | 12 5/8 | 38 | 15 5/8 | 40 |
| 184T | 5J | 3/4 | 4 1/2 | 9 1/2 | 17 | 6 5/8 | 30 | 9 5/8 | 35 | 12 5/8 | 38 | 15 5/8 | 40 |
| 213T | 6J | 7/8 | 5 1/4 | 10 1/4 | 19 | --- | --- | --- | --- | 12 5/8 | 40 | 15 5/8 | 42 |
| 215T | 6J | 7/8 | 5 1/4 | 10 1/4 | 20 | --- | --- | --- | --- | 12 5/8 | 40 | 15 5/8 | 42 |

NOTES

NOTES
All dimensions in inches. May vary $\pm \frac{1}{4}$ inches.

Not for construction purposes unless certified.

ROTATION: Clockwise when viewed from driver end.

