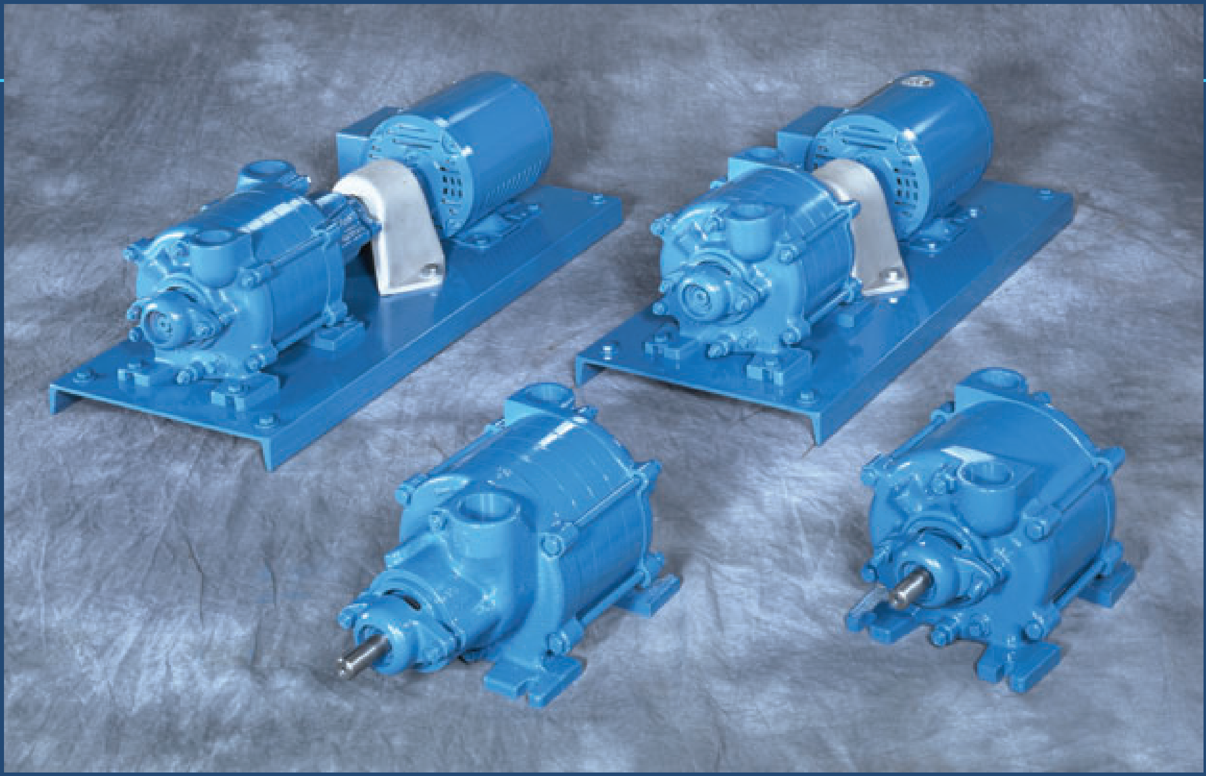
Bulletin 140
December 2005

140 • 240 • 180 • 280 Series

Regenerative Turbine Pumps



• Capacities to 55 GPM
• Heads to 700 Feet

MTH PUMPS

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 55 GPM) applications involving moderate to high pressures (heads to 700 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 sixty years of water passage design with a multistage 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

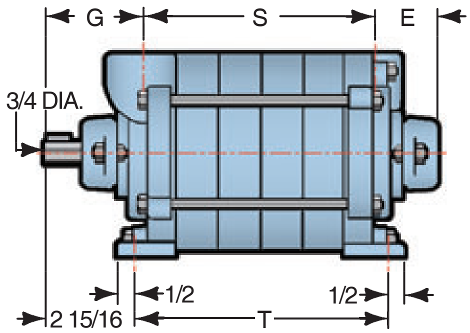
PART	BRONZE FITTED	ALL IRON	BRONZE RING	ALL BRONZE	STAINLESS STEEL
Cover	Cast Iron ASTM A48	Cast Iron ASTM A48	Cast Iron ASTM A48	Bronze ASTM B62	Stainless Steel AISI 316
Seal Cup	Cast Iron ASTM A48	Cast Iron ASTM A48	Cast Iron ASTM A48	Bronze ASTM B62	Stainless Steel AISI 316
Bearing Arm	Cast Iron ASTM 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	Stainless Steel Waukesha 88
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/Ceramic	EPR/Ni-Resist	EPR/Ceramic	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

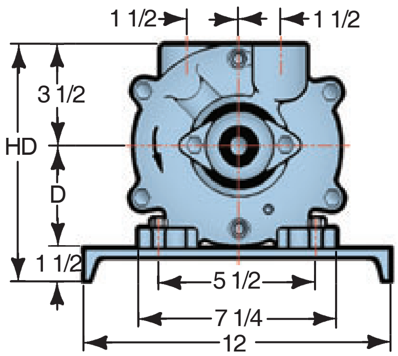
* Suction Pressure Plus a Percentage of Differential Pressure

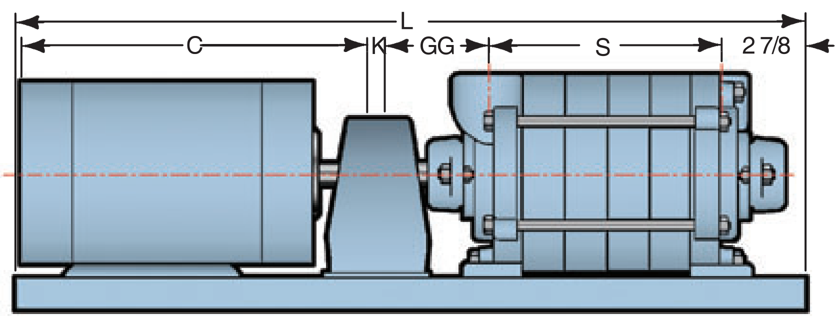
Dimensions



PUMP ONLY

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





140 SERIES

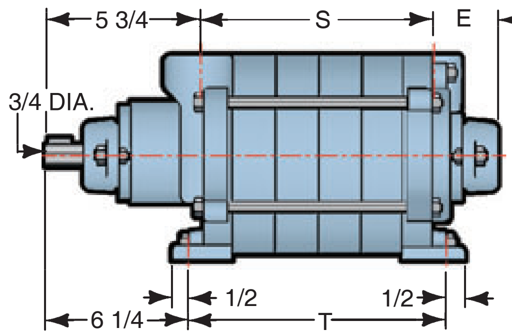
		ALL 140 MODELS				MODEL 141			MODEL 142			MODEL 143			MODEL 144		
FRAME	CPLG	K	D	HD	C	S	GG	L	S	GG	L	S	GG	L	S	GG	L
56	3J	3/8	3 1/2	8 1/2	12	4 1/4	3 13/16	24	6 1/4	3 13/16	26	8 1/4	3 13/16	28	10 1/4	3 13/16	30
143T	4J	5/8	3 1/2	8 1/2	13	4 1/4	3 13/16	24	6 1/4	3 13/16	26	8 1/4	3 13/16	28	10 1/4	3 13/16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

180 SERIES

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

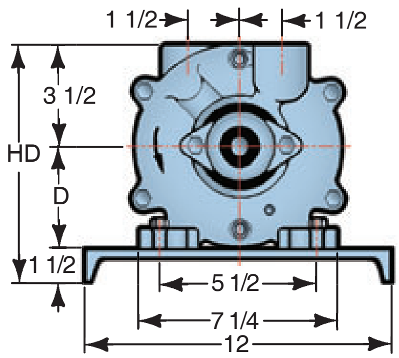
All dimensions in inches. May vary ± 1/4 inches.

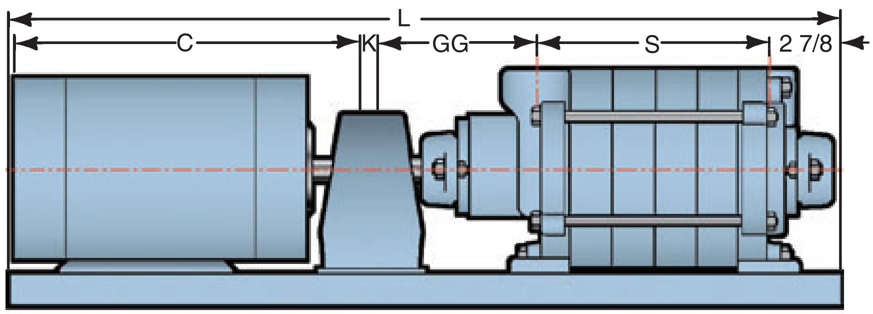
Dimensions



PUMP ONLY

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





240 SERIES

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

280 SERIES

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

All dimensions in inches. May vary ± 1/4 inches.

Design Features

Steep Head/Capacity Curve
Pumping capacity varies only slightly as pressure changes. Steep pressure characteristic overcomes temporary line resistances.

Self Adjusting Impeller
140/180 Series impellers utilize balancing holes to promote hydraulic self-centering and to elimanate the need for external adjustment. The impeller exerts no thrust load on the bearings, thereby extending service life.

400# Case Working Pressure
Rigid structure is designed for maximum casing stregth.

100% Tested
Every pump is fully tested to verify performance prior to shipment.

Volitile Fluid Handling
The turbine impeller handles vapors up to 20% by volume, minimizing the possibility of vapor lock.

Mechanical Seals
Bronze fitted pumps have EPR rubber, high temperature carbon and ceramic seats for best hot water service. Optional seats and materials are availible.

“O” Ring Gaskets
“O” ring seals are used throughout the 140/180 Series pumps to assure positive sealing.

Shaft
Pump shaft is high strength 416 stainless steel material.

Bearings
Heavy duty sealed ball bearings on inboard and outboard ends of the shaft are permanently lubricated for maintenance free service.

Water Flingers
Water flingers provide added protection to ball bearings in the event of seal leakage.

Best Efficiency
New pump designs optimize efficiency for each size available.

Non-Cavitating
140/180 Series pumps may be operated under adverse inlet conditions without audible or measurable cavitation.

Low NPSH
New inlet design provides supior fluid handling ability with low head inlet condition.

Optional Features

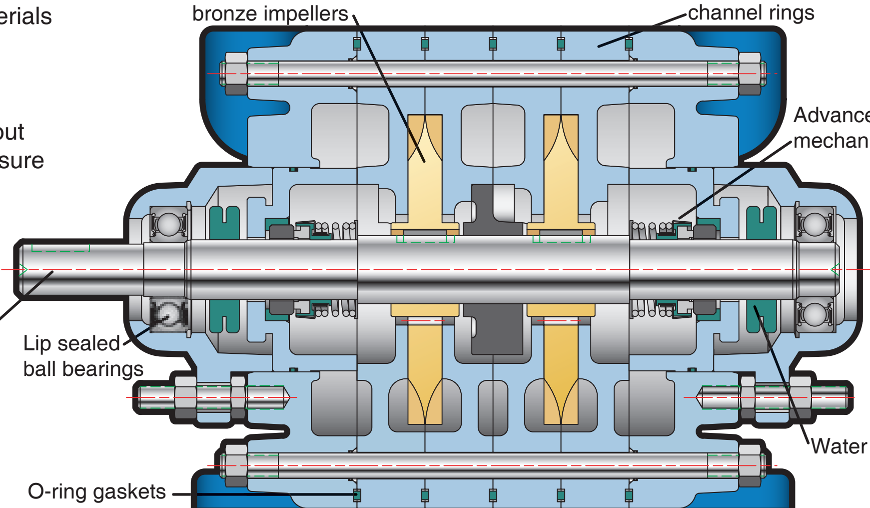
Construction Materials
Bronze fitted, all iron, all bronze and 316 stainless steel are available as stock materials.

”O”Ring Gaskets
Buna, EPR, viton, neoprene or teflon are all available.

Mechanical Seals
Buna, EPR, viton, Neoprene or teflon elastomers, tungsten or silicone carbide seats and balanced or double seal arrangements are all available.

Flush Line
External flush line from pump discharge to seal faces.

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, accounting 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.

140 • 240 • 180 • 280 SERIES

Selection Chart

HEAD IN FEET	U.S. GALLONS PER MINUTE											
	4	5	6	8	10	12	15	20	25	30	40	50
	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	Model HP	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					

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.

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 seperately 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) (TOTALY 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 low NPSHR inducer style design with a centrifugal Francis vane design impeller and a multi-vane diffuser for balancing radial loads. 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 seperately 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) (TOTALY ENCLOSED) (EXPLOSION PROOF) motor. The motor is to be sized to prevent overloading at the highest head condition listed in the specification.

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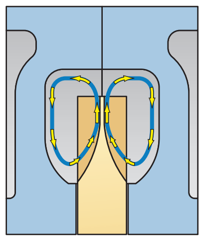
MTH PUMPS

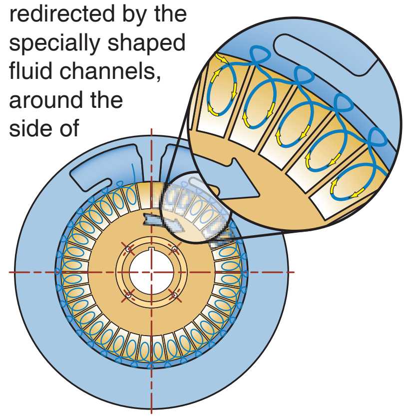
Regenerative Turbine Education

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.



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

MTH PUMPS

Boiler Feed Selection Guide

	Evap		BOILER PRESSURE IN PSI													
Boiler	Rate	Pump	15		50		100		125		150		200		250	
HP	GPM	GPM	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	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	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	141F	.5	141I	1.5	142I	3.0	143I	3.0	143I	5.0	144I	5.0	144I	7.5
100	6.9	14	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.
140 Model pump information is available in our Bulletin 140.

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