

Standard Products Guide
Regenerative Turbine Pumps
Centrifugal Pumps



Single Stage Close-coupled Turbine Products

MTH Pumps is a commercial and industrial pump manufacturer serving a wide variety of markets and industries including boiler feed, condensate return, chillers / temperature controllers, water services, refrigeration, petroleum, as well as many chemical process applications. Our Standard Product lines include mechanically sealed regenerative turbines for low flow, high pressure, applications (up to 1000PSI / 150GPM) as well as two lines of small centrifugals (155PSI / 230GPM). All pumps are tested before shipment. We also have custom engineered products such as sealless canned versions of our turbine product lines as well as a large line of sealless canned centrifugals in ranges up to 300PSI and 2000GPM. In fact, to our knowledge, MTH Pumps offers the broadest line of regenerative turbine and sealless canned pump products available in the world. We also have extensive experience custom designing pumps for specific OEM needs where high reliability and cost reduction are a primary concern. If you don't find what you are looking for in the Standard Products you see within this brochure, please consult our website at WWW.MTHPumps.com or contact us at Sales@MTHPumps.com.

P31 Series



P31 Series

The MTH P31 Series regenerative turbine pumps handle variable capacities up to 5 gallons per minute and 250 feet of head at temperatures up to 250°F. These units also feature an adjustable casing to provide variable performance output or readjustment of worn internal clearances to extend service life. It's compact size and top suction and discharge allow for installation in tight enclosures. The P31's open vented motor utilizes solid state starting and carries UL and CE approvals. These units are

offered with stainless steel casings only. Standard construction includes a nickel-silver impeller, a carbon/ceramic seal, and Viton elastomers.

OPTIONAL FEATURES

The P31 Series pump offers an optional integral relief valve. Alternative motor options including three phase and sealless canned are also available. W88 impellers, as well as, alternative seal materials, and elastomers are available on request.

T31 • E41 • E51 Series

The T31, E41, and E51 Series close-coupled regenerative turbine pumps utilize our custom manufactured dual face 3450RPM D3 motors that incorporate a 304 stainless steel shaft and heavy-duty bearing. The stainless steel shaft eliminates the necessity of a shaft sleeve, thereby reducing the parts count and simplifying OEM maintenance and servicing procedures. All D3 motors also feature a two-pole 50//60Hz rating, as well as UL and CE approvals useful for RANGE



E51 Series

E41 Series

T31 Series

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
P31	5	110
T31	9	100
E41	20	150
E51	32	250

OEM's with worldwide customers. The three-phase versions of the D3 motors feature a compact TEFC enclosure and a range from 1/3 to 3HP. The single phase D3 motors have an ODP enclosure and a range from 1/3 to 2HP. The E41 and E51 are also available in a close-coupled vertical flange mount configuration. Standard construction includes a bronze impel-

ler, a carbon/ceramic seal, and buna elastomers.

OPTIONAL FEATURES

Construction materials of all iron, all bronze, and 316 stainless steel are available. Special seal materials, elastomers, and internal seal flush are available for temperature and fluid compatibility.

MTH PUMPS Single Stage Turbine Products

T41 • T51 Series

MTH T41 and T51 Series regenerative turbine pumps, like their E41 and E51 OEM versions, offer excellent performance in low flow, high head, clean fluid applications, but offer additional mounting and motor options for extended range and more specialized services. Like all of our turbine products, these units combine the latest concepts in turbine hydraulic design optimization, with computer controlled manufacturing, to produce high efficiency and performance with low NPSH requirements. These easily serviceable pumps provide long life in clean fluid applications featuring a floating, self-adjusting impeller design with no metal to metal contact. This design is especially suited to high purity and low fluid lubricity applications where the carbon vanes and metal gears of many positive displacement pumps are troublesome. Regenerative turbine impellers also effectively handle high percentages of entrained vapor to help reduce the possibility of vapor lock. All pumps are 100% tested to guarantee performance prior to shipment.

CONSTRUCTION

Standard construction is cast iron bronze fitted. Internal wetted cast iron parts are electroless nickel-plated and the double-sided bronze impeller is hydraulically balanced to minimize wear. A replaceable stainless steel shaft sleeve is also provided for maximum fluid compatibility. Standard seals are rated for 230°F.



OPTIONAL FEATURES

Construction materials of all iron, all bronze, and 316 stainless steel are available. Pumps can also be pedestal mounted for flexible coupling drive by almost any type of motor. Special

seal materials, elastomers, internal seal flushes, and seal cooling jackets are available for temperature and fluid compatibility. Sealless canned ST41 and ST51 Series also available.

RANGE

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
T41	20	150
T51	40	250

T41 • T51 Mounting Options



MTH PUMPS High Pressure Multi-stage Turbine Pumps

M50 • L50 Series

MTH M50 and L50 Series Regenerative Turbine Pumps are multi-stage versions of the popular T51 Series and are ideally suited for low flow applications (2 to 38 GPM) requiring higher discharge pressures than are available from a single stage unit. Head pressures to 2300 feet are available in a five stage M55. Both the M50 and L50 Series are available in close coupled, vertical base mount and horizontal pedestal base mounted configurations. For applications with low vapor pressure fluids, or where NPSH availability is low, the L50 Series adds a low NPSHR centrifugal inducer stage to help feed the high pressure regenerative turbine stages. Standard 56C face motors are used up to 3 HP. Vertical base mount pump motors 5 HP and larger are TEFC enclosure. Pedestal base mount pumps utilize standard rigid base motors.

CONSTRUCTION

Standard construction is cast iron bronze fitted. Iron parts are hard electroless nickel plated. Impellers are bronze, hydraulically balanced, and self-centering to minimize side wear. Pump shafts are 416 stainless steel, while interstage bushings are carbon/graphite in a stainless steel cartridge. Pump bearing pedestal and motor are furnished with permanently lubricated sealed ball bearings for maintenance free service. "O" ring gaskets are utilized to assure sealing and for ease of maintenance. Standard mechanical seals are rated for 230°F operation and furnished with a flush line on multi-stage pumps. All pumps are 100% tested to verify performance prior to shipment.

RANGE

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
M50/L50	38	1000



OPTIONAL FEATURES

All iron, all bronze, and cast 316 stainless steel construction is available from stock. Buna, EPR, Viton, Neoprene and Teflon "O" ring and seal elastomer materials, as well as

silicon carbide, tungsten carbide, ni-resist, and graphite loaded silicon carbide seal seats are also available. For sealless canned versions of these units, see the SM50 and SL50 Series.

L50 Series Inducer



L50 Series inducer style pumps are designed specifically for applications where the net positive suction head available at the pump inlet is limited, such as in boiler feed water deaerator and refrigerant services. A centrifugal style impeller with good low NPSH characteristics is utilized to lower the inlet head requirements.

This first stage impeller is used in conjunction with a multi-vane diffuser to provide the second stage regenerative turbine with adequate suction head.

L50 Series pumps can effectively handle NPSH availability as low as two feet, depending on the model and capacity.

MTH PUMPS

Turboflex Multi-stage Turbine Pumps

MTH Turboflex radially split foot mounted 100 and 200 Series regenerative turbine pumps offer the high pressure characteristics of a multi-stage pump (heads up to 1150 feet) at flow ranges beyond those available in any of our other regenerative turbine products (up to 150 GPM). These heavy duty industrialized units also utilize the latest concepts in regenerative turbine hydraulic design, and benefit from tightly computer controlled manufacturing techniques. TURBOFLEX pumps feature 1750 RPM motors to deliver long life, high efficiency performance with low NPSH requirements. For applications with NPSH availability as low as one foot, the 200 Series adds a centrifugal style inducer in front of the turbine stages. Like our other turbine products, the multi-vane turbine impellers handle entrained vapors to help reduce the possibility of vapor lock in boiler feed water, ammonia, and other refrigerant services.

CONSTRUCTION

Standard construction is cast iron bronze fitted. Suction and discharge covers, seal cups, bearing arms and casing channel rings are cast iron material. Pump shaft is high strength 416 stainless steel. Impeller is cast bronze, hydraulically balanced and self-adjusting for longer life. Sealed ball bearings are permanently lubricated for maintenance free operation. "O" ring gasketing is used to assure sealing and for ease of maintenance. Standard mechanical seals are rated for 230° F operation. All units are flexible-coupled for easy service and motor flexibility. Pumps are 100% tested to guarantee performance prior to shipment.

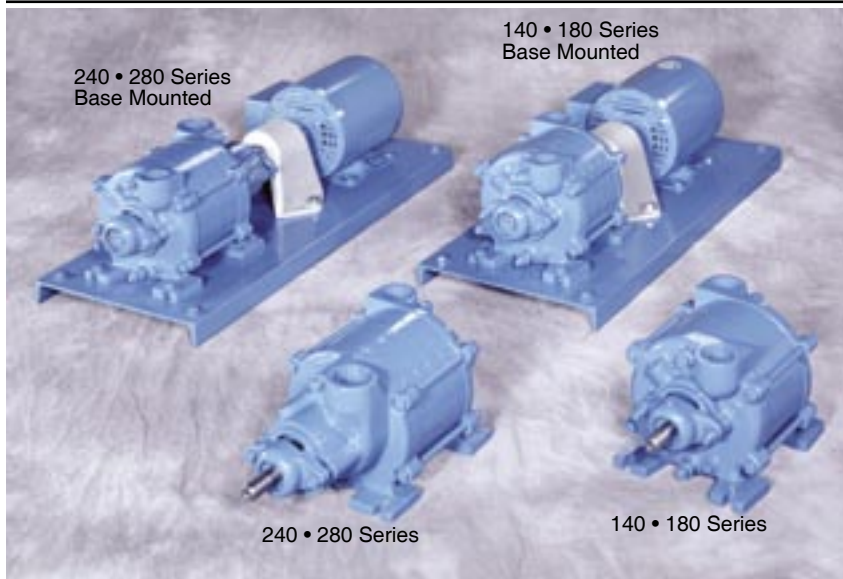
OPTIONAL FEATURES

Turboflex pumps are also available in all iron, all bronze, and 316 stainless steel construction. Silicon & tungsten carbide seal seats, EPR/Neoprene/

RANGE

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
140/180	50	350
150/160/170	140	500

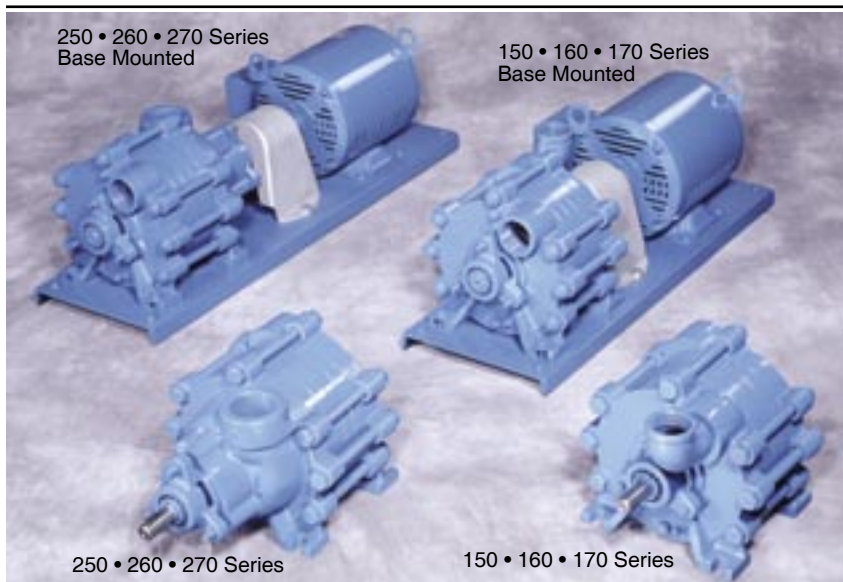
140 • 240 • 180 • 280 Series



Teflon/Viton "O" ring gasket materials, external seal flush, and balanced or double mechanical seals are also available. For low NPSH/low vapor pressure fluid service, the 200 Series adds an inducer stage. Reduced NPSHR is obtained by using a centrifugal inlet impeller along with

a multi-vane diffuser to provide the second stage regenerative turbine with adequate suction head. NPSHR is reduced to as low as one foot on 240 • 280 Series pumps and as low as two feet on 250 • 260 • 270 Series pumps. Sealless canned models will be available in the future.

150 • 250 • 160 • 260 • 170 • 270 Series



MTH PUMPS Small Centrifugal Pumps

C41 • C51 • C61 Series

For customers whose needs fall into the lower pressure ranges, MTH is proud to offer two lines of small centrifugal pump products to complement our higher pressure regenerative turbines. Towards this end MTH has developed the high quality, low cost 4", 5", and 6" C Series, semi-open impeller, all stainless steel centrifugals for the OEM market. These units are cost competitive against stamped stainless steel centrifugals, but with a heavy duty cast impeller and casing design. Each pump model is pre-trimmed and selected to provide the best pressure and capacity for a given impeller and motor horsepower combination (up to 3HP and 100GPM). Casing adjustment screws on the C Series take advantage of the semi-open impeller design by providing the capability to occasionally renew pump performance by tightening internal clearances and minimizing losses developed from normal wear. These



units also make use of our custom manufactured D3 dual face motors found on our T31, E41, and E51 turbine pumps, and feature a stainless steel shaft and a heavy duty front motor bearing. D3 Motors also feature UL and CE approvals. The C Series standard construction is investment cast 316 SS casings and impellers with Viton elastomers. Options - See below.

C SERIES RANGE

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
C41	100	25
C51	80	40
C61	70	60

D51 • D61 • D71 • D91 Series

The 5", 6", 7", and 9" D Series, closed impeller, cast iron bronze fitted and all bronze centrifugal pumps were designed with more flexibility and options to cover the wide range of applications found in the general industrial market up to about 25HP. The D Series close-coupled centrifugal pumps provide economical high performance for 5 to 230 GPM applications requiring heads from 10 to 360 feet. Standard 56J and JM frame motors are utilized for increased motor options. Units are trimmed to order for each customer application. The D51 and D61 models are cast iron bronze fitted, while the D71DE and D91EF models are all bronze. Buna elastomers are standard on the entire D Series line. D Series pumps use carbon/ceramic seals as standard and are rated for 230°F (110°C) operation.



D SERIES RANGE

Series	Maximum Capacity (GPM)	Maximum Pressure (PSI)
D51CD	83	47
D61DE	110	63
D71DE	175	112
D91EF	230	155

OPTIONAL FEATURES

The C Series and D Series centrifugals both offer a variety of seal and elastomer options. The D Series also offers a wide variety of optional motors, as well as self-priming, vertical flange mount, and high temp seal

cooling jacketed variants. For highly customized sealless centrifugal solutions for chemical process, refrigeration, and hot oil applications, please see our complete line of H Series sealless canned centrifugals.

MTH PUMPS

Engineered Products and Accesories



The mission of MTH Pumps is to design, develop, and produce pumping products to fit applications in which they are technically correct solutions that also address the peripheral needs of the customer. To

this end, the company has endeavored to become highly vertically integrated to maximize the flexibility and agility of the company to meet product and customer needs. To facilitate the engineering centered nature of the company, MTH has acquired a number of resources needed to bring it to the leading edge of engineered product



design and development. MTH utilizes highly experienced de-

sign engineers, solid modeling CAD software, rapid prototyping equipment, its own pattern and mold making shop, its own foundry and fabrication shop, state of the art auto-loading CNC machining equipment, and a wealth of inspection and testing equipment to rapidly design and develop the right solution for the job. In many cases, the design of



custom pumps and accessories has netted a significant cost savings to the customer over the use of standard off the shelf products. Whether the customer is looking for a slight modification to one of our standard products, a totally new pump design, or a completely different kind of

product, MTH has the broad range of resources required to complete the task.

In the area of pump design, MTH has entered into the sealless pump market with sealless canned ver-



sions of many of our standard products such as the SM50, SL50, ST31, ST41, ST51, SP31, and more are coming. The H Series sealless canned centrifugals are a substantial line of products that encompass flows in excess of 2100 GPM, heads in excess of 410 feet, temperatures from -95°F to 662°F (350°C), and features

variants to handle corrosive chemicals, slurries, refrigerants, hot oils, and any number of other fluid applications requiring heating or cooling jackets. Other custom OEM sealless products utilize extended shaft vertical immersible



or controlled leakage designs.

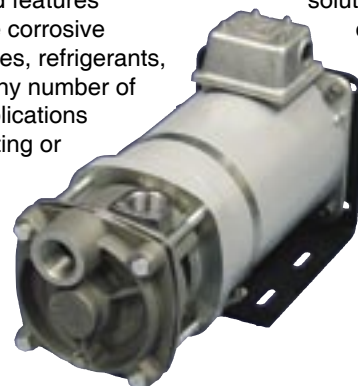
We have also developed products for special centrifugal designs, DC applications in both sealless and sealed versions, disk friction centrifugals, axial flow turbines for aerial firefighting, and submersible craft trim and drain pumps. Other engineered products and accessories include the X41 Series of sealless canned chiller pumps, seal quench glands to extend seal life in difficult applications, special valves and suction strainers, mounting brackets, stainless steel tanks and systems, and custom piping trees and manifolds. For MTH customers, our advice is always: "if you don't see it, please ask."

While MTH Pumps' primary talents lie in engineering design, our efforts to meet and exceed customer speci-

fications and satisfaction extend beyond the engineering and manufacturing arena. Special

sourcing arrangements, construction materials, custom assembly, packaging, labeling, and testing services, quality surveillance, inventory stocking arrangements, and JIT shipping schedules are all a part of the

solution that our existing customers have found in a valuable product partner that is MTH Pumps.





MTH PUMPS

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