

Zero Emissions | Field Repairable | Standardized Motors



Seal-Less Mag-Drive Pumps
From Stock or Built-to-Spec™

Ammonia & CO2
Recirculation
Process Pumps

Table of Sizes and Specifications

MODEL Pump Size	ANSI-B73.1 Frame Size	RPM 50/60 Hz	SUCTION FLANGE 150#, 300#, 600#	DISCHARGE FLANGE 150#, 300#, 600#	IMPELLER INCHES Full Size
1.5x1x8	AA	1500/1800	1.5" or 2"	1"	8.25"
1.5x1x8	AA	3000/3600	1.5" or 2"	1"	8.25"
3x2x9	A60	1500/1800	3"	2"	9.25"
3x2x9	A60	3000/3600	3"	2"	9.25"

WMCA Conditions and Specifications

Max. Flow	350 GPM
Max. Head	300 Feet
Max. Allowable Working Pressure	40 BAR/600 PSI Standard
Max. Allowable Working Pressure	100 BAR/1500 PSI Built-to-Spec
Specific Gravity	0.15 - 2.0
Max. Viscosity 3500/1750 RPM	150-200/300-400 cP
Liquid Temperature Range	-139 °F to +600 °F
Pump Material	304-SS, Hastelloy C, Duplex-SS
Motor Horsepower Range	2-30 HP

LOW NPSH - LOW HEAT LOAD

Our company goals are to provide the solutions that protect our surroundings, raise the environmental awareness, and promote the growth of the community.



Services

API & CPI Processes

- Chemical Processing
- Petrochemicals
- Petroleum By-Products
- Hydrocarbons
- Liquefied Gases

Refrigeration Systems

- Ammonia, CO2
- Fluorocarbon Refrigerants

Thermal Transfer Systems

- High-temp Synthetic Oils
- Low-temp Synthetic Oils
- Super Heated Water



Performance Guarantee for
Approved Applications

High Pressure | Low NPSH | Meets ANSI-B73.1

WARRENDER SEAL-LESS MAG-DRIVE PUMPS

Warrender mag-drive seal-less pumps meet EPA zero emissions regulations with versatile magnetic coupling technology. Minimal heat loads, field serviceability and lower installation costs are significant process advantages. Solve your most challenging pumping problems with reliable and cost effective solutions.

Zero Emissions and Maximum Safety

Benefit from a process free of leakage, contamination or toxic releases while avoiding constant monitoring and potential environmental fines. Eliminate all toxic and dangerous chemical releases including volatile and toxic liquids that can react with atmospheric contact.

Advanced Technology and the Highest Quality for Long Pump Life

WARRENDER pump designs are built to the highest quality standards to protect your process, preventing costly maintenance and lost production time.

- Robust, high thickness pump casings
- High efficiency impellers with low NPSH requirements
- High strength, rare earth magnetic couplings suitable for extreme temperatures
- Heavy duty rear casings
- Rugged internal bearing system withstands process upsets

Performance to the Extreme

- Flows from 5 to 350 GPM
- Pressures up to 1500 PSIG
- Heads to 300 feet
- Temperatures from -139°F to +600°F
- Pump liquefied gases or liquids with low NPSH
- Compatible with VFD control systems
- NPSH down to 1 foot

Series WMCA - Process Centrifugal - Low NPSH Seal-Less Centrifugal

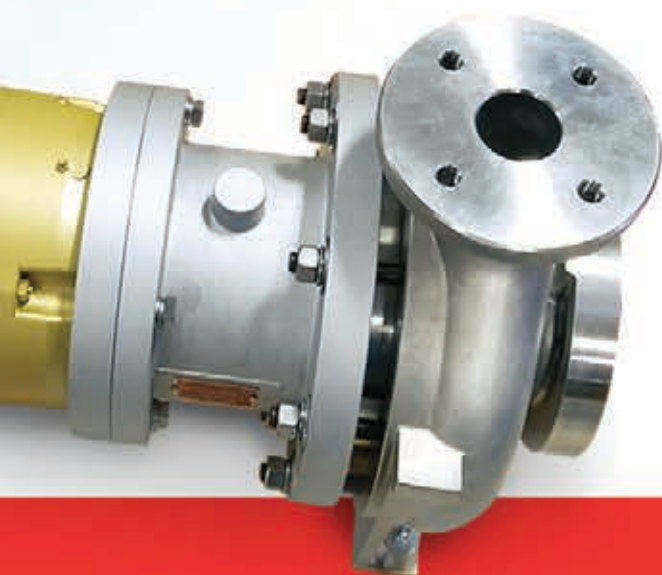
Series WMCA-LN ANSI mag-drive centrifugal pumps are engineered for long-life, zero emissions pumping in the most arduous process conditions. Low heat induction avoids costly down-time and repairs due to flashing, inc hemical, hydrocarbon, ammonia, CO2, and fluorocarbon processes.

WMCA-LN Features

- Low heat load avoids flashing
- Seal-less design free of mechanical seal maintenance
- Magnetic coupling design for process & inventory flexibility
- Standard NEMA motors meet UL and EXP requirements

WMCA Performance Range

- Flows from 5 to 350 GPM (1-80 m3/h)
- Heads to 1000 feet (227 m)
- System Pressures to 1,450 psig (100 bar)
- Temperatures from -139 to +600°F (-95 to +315°C)



Epoxy primer and polyacrylic enamel water based paint system for a corrosion resistant coating, yet environmentally friendly.

Field assembling of the product lubricated bearing arrangement does not require special tools. The bearing materials available in three different materials to provide the best solution for each application: Silicon Carbide (SSIC), Tungsten Carbide (TC), and Carbon

The use of tolerance rings reduces the sleeve and thrust bearing loads to guarantee many years of maintenance-free operation.

Close coupled and bearing pedestal drive assemblies

CF8M pump casing & impeller
High quality casting components

REAR CARTRIDGE KIT
For quick retrofits

Closed impeller statically and dynamically balanced. The axial thrust loads are balanced by back vanes.

Confined casing gaskets prevent leakage to the atmosphere – optional materials available:

- PTFE
- Graphoil type
- Garlock type
- Gylon type
- Flexitallic type

High strength, synchronous magnetic couplings, are free of epoxy or potting materials, and fitted with samarium cobalt rare earth magnets. The high performance magnets can be operated at liquid temperatures up to 662 °F (350 °C) without external cooling. Power capability exceeds 700 HP / 520 kW.

 **WARRENDER**
warrender.com

Seal-Less Pumps | Low NPSH | High System Pressure

Energy Saving | Field Repairable | Standardized Motors



Seal-Less Mag-Drive Pumps
From Stock or Built-to-Spec™

**Ammonia & CO²
Circulation and
Transfer Pumps**



FREON DESIGN



3X2X9



821 Sivert Drive • Wood Dale, IL 60191 • Ph: (847) 247-8677 • Fax: (847) 247-8680
Email: sales@warrender.com

**Providing environmentally
safe seal-less magnetic
pumps of the highest quality
for over 35 years**

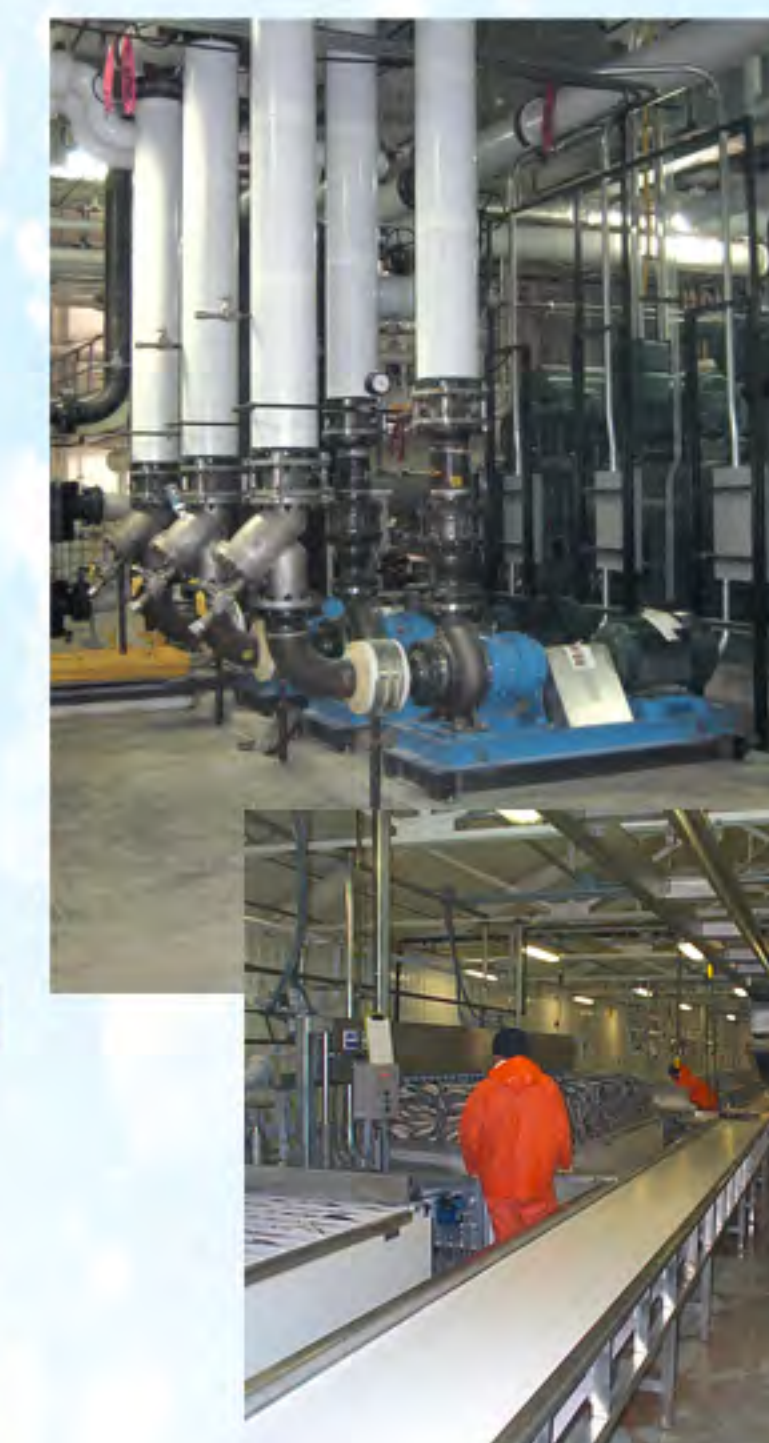
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WMTA6 -LN-3S



3X2X9



Services

Refrigeration Systems

- Ammonia, CO₂
- Fluorocarbon Refrigerants

API & CPI Processes

- Liquified Gases
- Petroleum By-Products
- Hydrocarbons
- Petrochemicals
- Chemical Processing

Thermal Transfer Systems

- High-temp Synthetic Oils
- Low-temp Synthetic Oils
- Super Heated Water

WR-AMM&CO2-0520

Performance Guarantee for Approved Applications

821 Sivert Drive • Wood Dale, IL 60191 • Ph: (847) 247-8677 • Fax: (847) 247-8680

WARRENDER SEAL-LESS MAG-DRIVE PUMPS

Seal-less Pumps - Standard Motors™

Warrender mag-drive seal-less pumps meet EPA zero emissions regulations with versatile magnetic coupling technology. Minimal heat loads, field serviceability and lower installation costs are significant process advantages. Solve your most challenging pumping problems with reliable and cost effective solutions.

Zero Emissions and Maximum Safety

Benefit from a process free of leakage, contamination or toxic releases while avoiding constant monitoring and potential environmental fines. Eliminate all toxic and dangerous chemical releases including volatile and toxic liquids that can react with atmospheric contact.

Advanced Technology and the Highest Quality for Long Pump Life

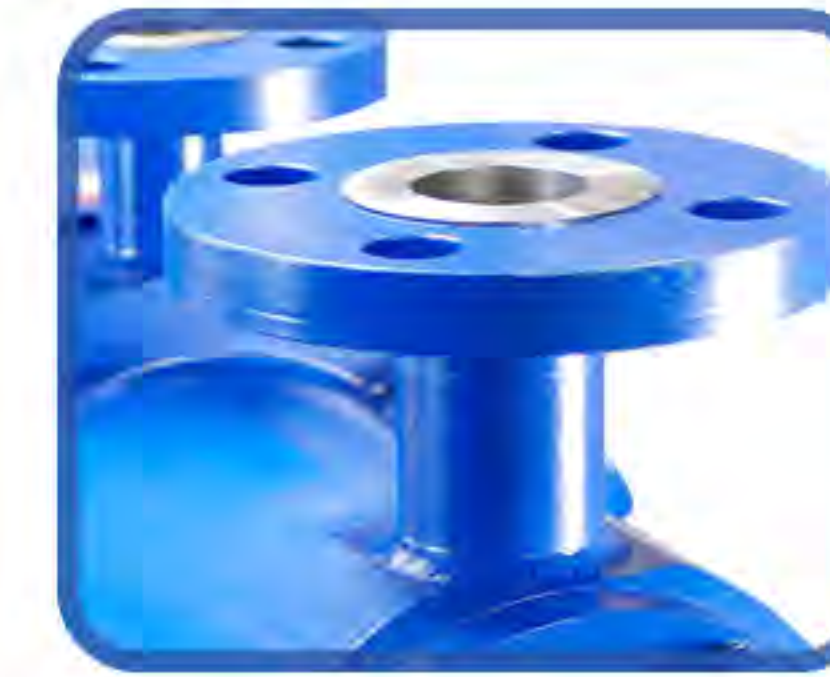
WARRENDER pump designs are built to the highest quality standards to protect your process, preventing costly maintenance and lost production time.

- Robust, high thickness pump casings
- High efficiency impellers with low NPSH requirements
- High strength, rare earth magnetic couplings suitable for extreme temperatures
- Heavy duty rear casings
- Rugged internal bearing system withstands process upsets

Performances to the Extreme

- Flows from 0.1 to 1500 gpm
- Pressures up to 1500 psig
- Heads to 1000 feet
- Temperatures from -139°F to +600°F
- Pump liquefied gases or liquids with low NPSH
- Compatible with VFD control systems

SEAL-LESS
ZERO (0)
EMISSIONS
PUMPS



Three Designs Provide Complete Hydraulic Coverage

- High head turbine - Transfer
- High flow centrifugal - Recirculation
- Low flow rotary vane - Transfer

Typical Applications

- Liquid Ammonia, CO2 and Fluorocarbon Refrigerants
- All EPA monitored chemicals
- Dangerous, toxic, noxious and carcinogenic liquids
- Solvents, hydrocarbons, pyrophorics and other volatile liquids
- Heat transfer fluids (up to + 600°F, 840°F w/ heat exchanger)
- Hot / super heated water
- Liquefied gases
- High pressure circulation systems
- Pressurizing mechanical seal pots
- Sampling, metering or chemical injection systems

- **Zero Emissions**
- **Low Heat Load**
- **No Flashing**



WMTA6 -LN-3S

Performance Curves 3600 RPM (60Hz)

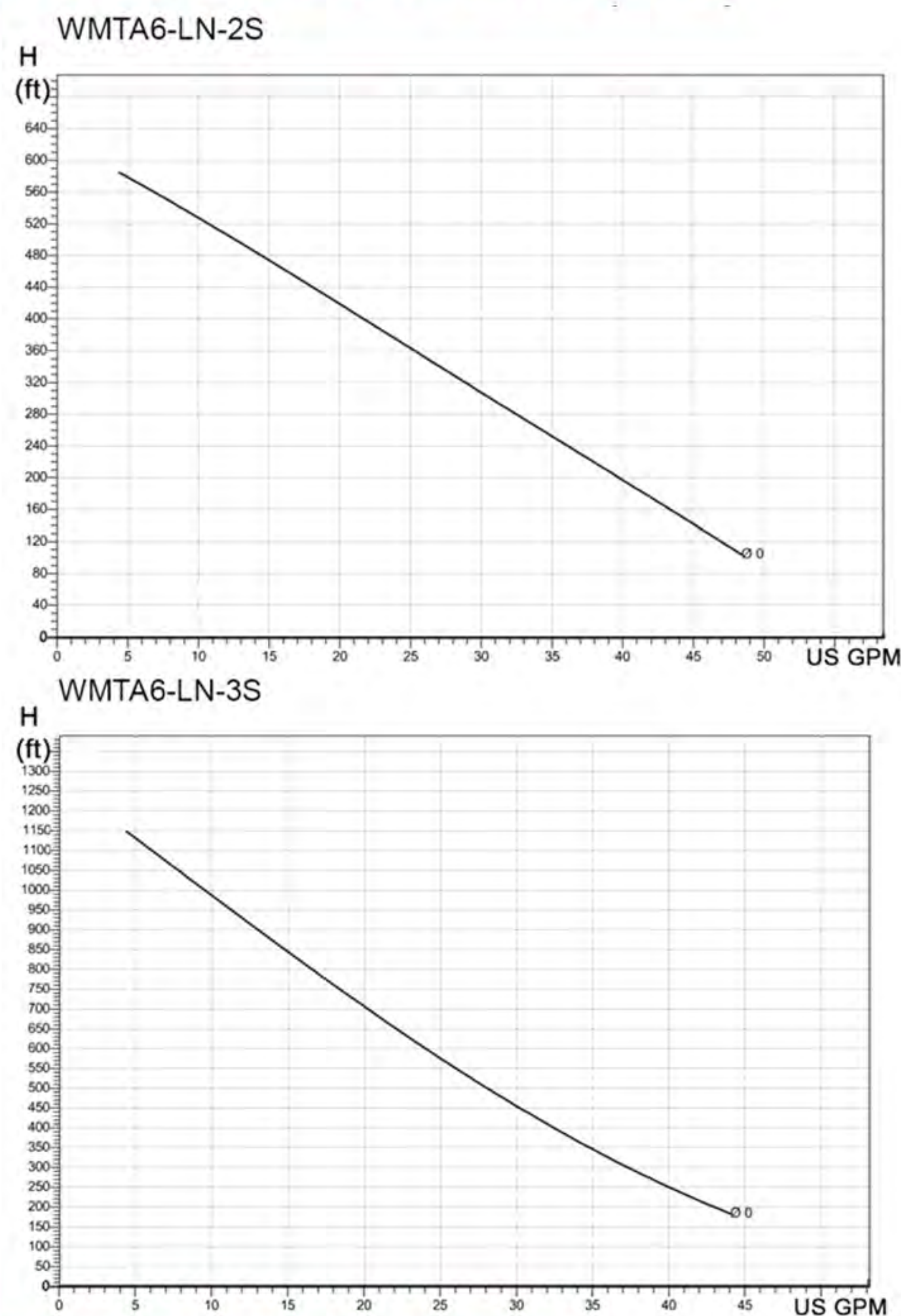
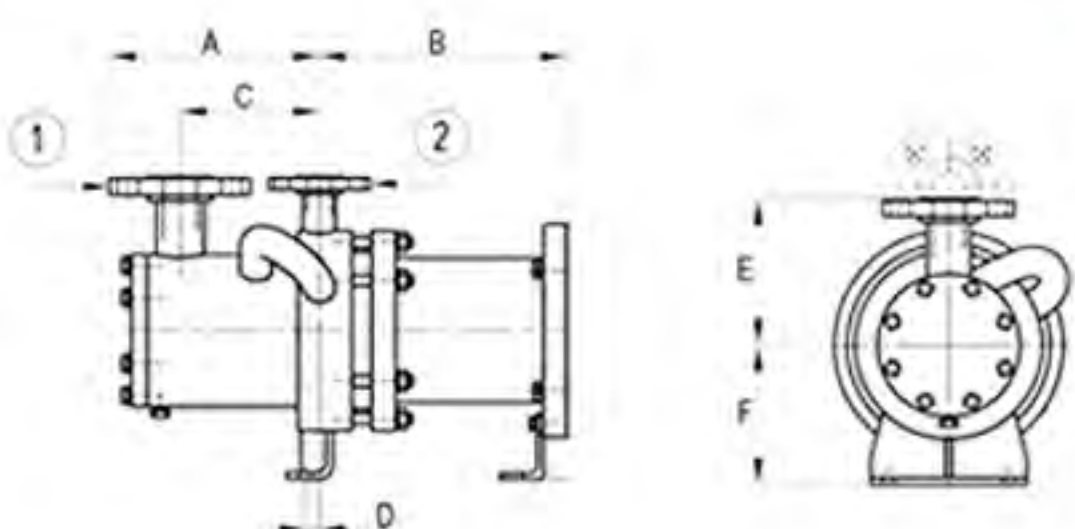


Table of Sizes and Specifications



PUMP MODEL	OVERALL DIMENSIONS (Inches)						PORTS		WEIGHT Lbs.
	A	B	C	D	E	F	FLG 1 SUCTION ANSI 300 #	FLG 2 DISCHARGE ANSI 300 #	
WMTA6F-LN 2S	8.40	10.47	5.91	0.59	6.70	6.30	1 1/2" DN	1" DN	156
WMTA6F-LN 3S	11.54	10.47	8.46	0.59	6.70	6.30	1 1/2" DN	1" DN	180

Series WMTA-LN Regenerative Turbine

(high heads, low to medium flows)

Transfer Pumps: Low NPSH - High Head, Seal-less Turbine

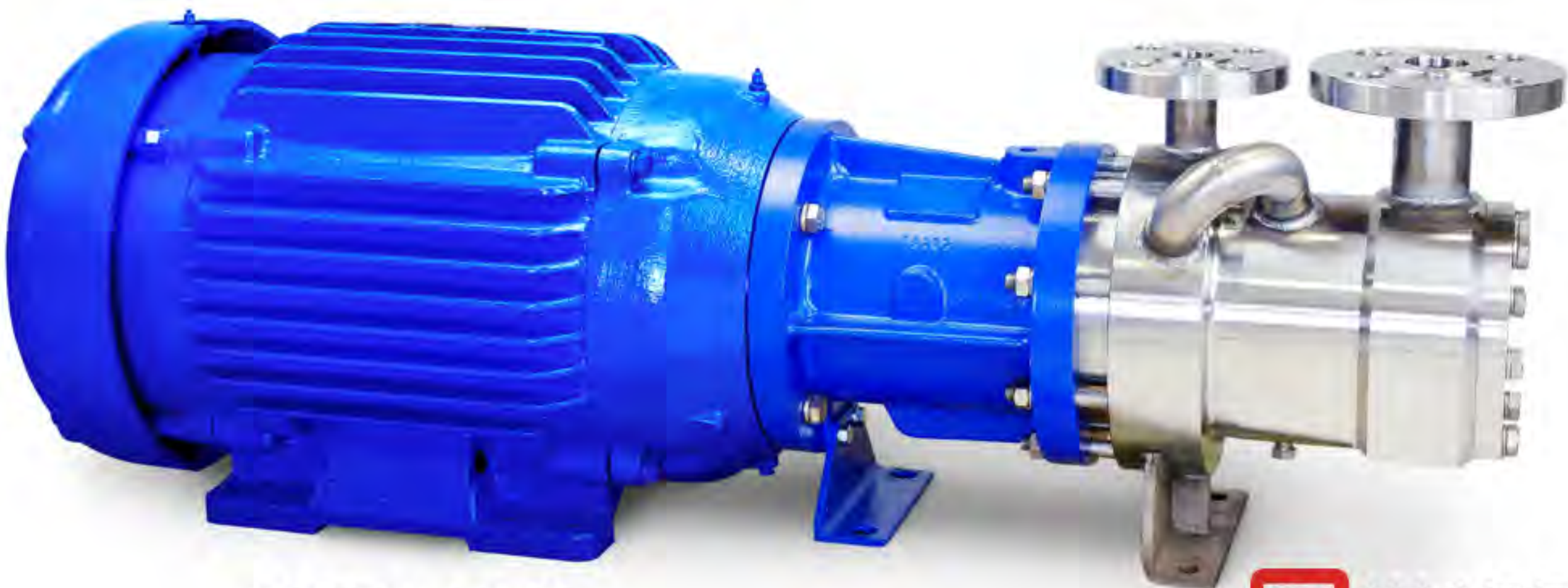
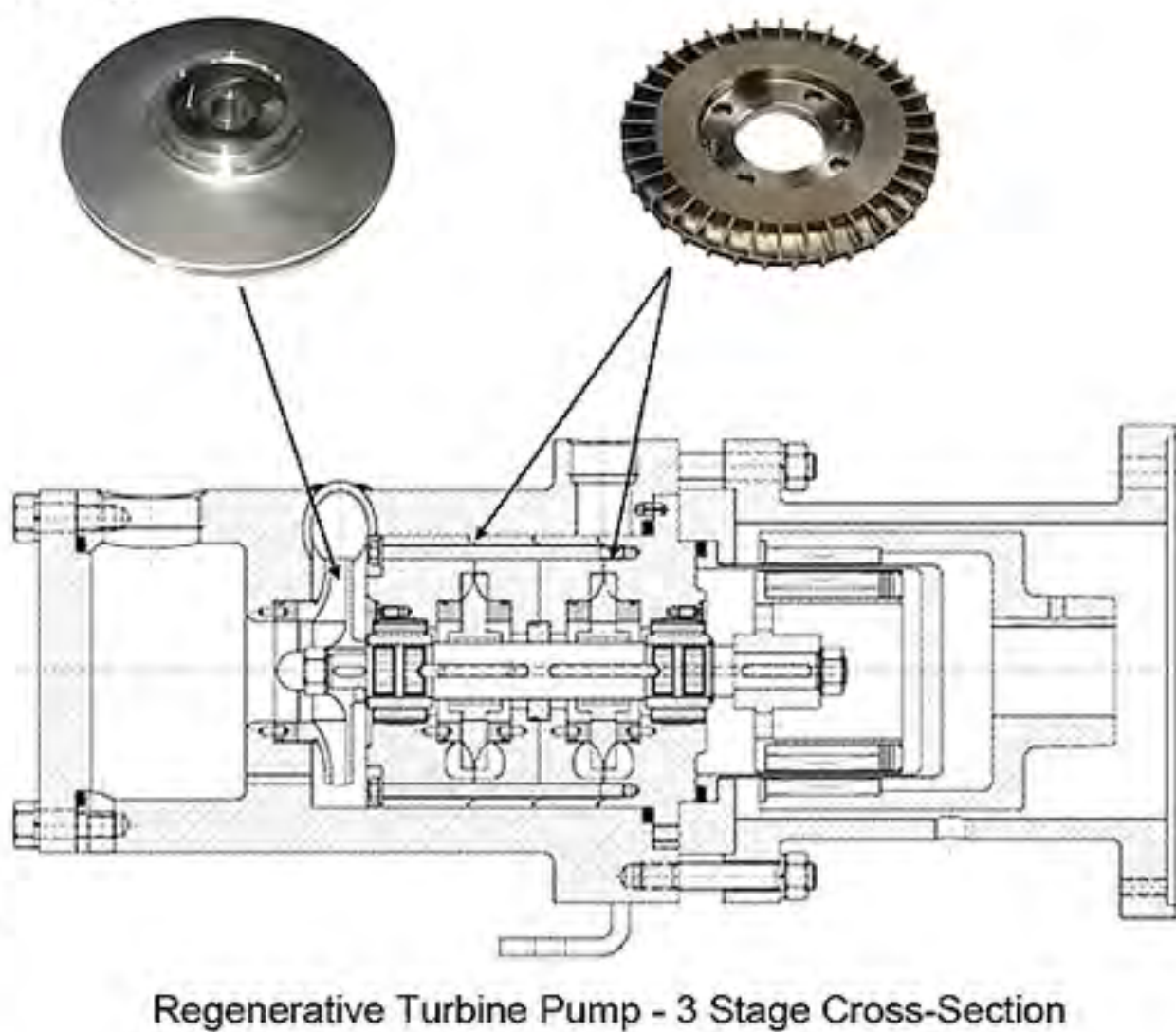
Series WMTA-LN mag-drive regenerative turbine pumps safely meet high head, low NPSH system requirements. Dynamic turbine impeller pumping action handles entrained gases to resist vapor locking.

WMTA-LN Features

- High head pumping with pulsation free performance
- Handles up to 20% entrained gas, resists vapor locking
- Dynamic design (avoid over pressurization w/ P.D. pumps)
- Low heat induction to avoid flashing

WMTA-LN Performance Range

- Flows from 5 to 40 gpm (1.1 - 9.1 m3/h)
- Heads to 1000 feet (305 m)
- System Pressures to 1450 psig (100 bar)
- Temperatures from -139 to +600°F (-95 to +315°C)
- NPSHr to 1'



WMTA6 -LN-2S

WMTA-LN FEATURES

"Barrel" construction, with back inserted volute rings, to have the best hydraulic alignment and the longest wear ring life. Available in 2 or 3 stages

The hydraulic barrier between stages is made of a special high pressure static seal

Epoxy primer and polyacrylic enamel water-based painting for optimal chemical resistance, yet environmentally friendly

Hastelloy®-C276 or Titanium-G5 isolation shell material - providing a safe and efficient solution – system pressure max 100 BAR

Particular design of the hydraulic, with self balancing impeller to improve the wear ring life

The range design is available in 2 or 3 stages, with or without centrifugal inducer to minimize the required NPSH to 1' - 2'

CF8M or WCB pump casing, cover & impellers
High quality casting components

Other materials : Hastelloy C276, Incoloy825, Duplex, or others available on request

Drain plug (1/2"NPT)

REAR CARTRIDGE KIT to ensure easy and fast maintenance retrofits

High torque synchronous rare earth magnetic coupling

The high performance magnets can be operated at liquid temperatures of up to 600°F (315°C) without external cooling

Confined casing O-rings prevents product leakage to atmosphere – different materials available:

- PTFE
- Buna
- Viton
- Kalrez

Field servicing of the lubricated bearings does not require special tools

The bearing materials are available in three different materials to match each application: Silicon Carbide (SiC), Tungsten Carbide (TC), Carbon to allow intermittent dry running