NEW



The e-MP Series

HIGHLY EFFICIENT AND VERSATILE MULTISTAGE PUMPS UP TO 1,700hp

Applications limited only by your imagination



Product timeline



1910: the story begins

The story began with the invention of the diffuser. It dramatically increased the efficiency of multistage pumps by optimizing flow from one stage to the next.

Multistage pump models for medium pressure

1910 1925 1950



Model A

Flow: 1,585 US gpm / 360m³/h Head: 256ft / 78m



Steel industry



Model D Flow: 1,717 US gpm / 390m³/h Head: 590ft / 180m



Public utility



Model D/DV Flow: 2,113 US gpm / 480m³/h Head: 925ft / 282m



Public utility

Multistage pump models for high pressure

1920 1950



Model H

Flow: 968 US gpm / 220m³/h Head: 1,312ft / 400m



Boiler feed



Model HK/HE

Flow: 1,387 US gpm / 315m³/h Head: 3,690ft / 1,125m



Brewery



2017: the story continues

The story is continued with the e-MP. It is the next generation of highly efficient and flexible multistage pumps.

1970 1998 2017



Model P Flow: 7,925 US gpm / 1,800m³/h Head: 984ft / 300m



District heating



Model MP Flow: 1,497 US gpm / 340m³/h Head: 1,640ft / 500m



Mine dewatering



Model e-MP Flow: 2,600 US gpm / 600m³/h Head: 2,000ft / 630m

2000 2017



Model MPE

Flow: 1,320 US gpm / 300m³/h Head: 2,625ft / 800m



Snow making

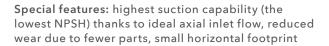


Model e-MP Flow: 2,600 US gpm / 600m³/h Head: 2,000ft / 630m

 $[\]star 100$ bar versions are branded G&L and are available with heads up to 3,100ft / 950m.

Introducing the four e-MP models, designed according to ISO5199







Special features: higher suction nozzle flexibility, reduced wear due to fewer parts, small horizontal footprint

e-MPA

Sizes: 2" to 6"

Configurations: horizontal

Power:

2-pole: 10hp - 1,700hp / 7.5kW - 1,250kW 4-pole: 3hp - 220hp / 2.2kW - 160kW

Heads up to 2,000ft / 630m*

Flows up to 2,600 US gpm / 600m3/h**

Temperature of pumped liquid: -13°F to +284°F, optional 356°F/

-25°C to +140°C, optional 180°C

Inlet pressure up to 145 psi / 10 bar

Shaft sealing:

Mechanical seal, cartridge seal, soft packing

Bearings:

Suction side: plain bearing

Discharge side: double angular ball bearing

Nozzles:

Suction side: axial

Discharge side: radial, 90° rotatable (left, top, right)

e-MPR

Sizes: 2" to 6"

Configurations: horizontal

Power:

2-pole: 10hp - 1,700hp / 7.5kW - 1,250kW 4-pole: 3hp - 220hp / 2.2kW - 160kW

Heads up to 2,000ft / 630m*

Flows up to 2,600 US gpm / 600m3/h**

Temperature of pumped liquid:

-13°F to +284°F, optional 356°F / -25°C to +140°C, optional 180°C

Inlet pressure up to 145 psi / 10 bar

Shaft sealing:

Mechanical seal, cartridge seal, soft packing

Bearings:

Suction side: plain bearing

Discharge side: double angular ball bearing

Nozzles:

Suction side: 90° rotatable (left, top, right)

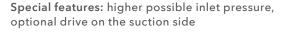
Discharge side: radial, 90° rotatable (left, top, right)

Check with factory for more information.

 $[\]star 100$ bar versions are branded G&L and are available with heads up to 3,100ft / 950m.

^{**}50Hz configurations available with flows up to 3,750 US gpm / 850 m 3 h.







Special features: smallest footprint, four positions by nozzle (90°, 180°, 270°, 360°)

e-MPD

Sizes: 2" to 6"

Configurations: horizontal

Power:

2-pole: 10hp - 1,700hp / 7.5kW - 1,250kW 4-pole: 3hp - 220hp / 2.2kW - 160kW

Heads up to 2,000ft / 630m*

Flows up to 2,600 US gpm / 600m³/h**

Temperature of pumped liquid:

-13°F to +284°F, optional 356°F /

-25°C to +140°C, optional 180°C

Inlet pressure up to 580 psi / 40 bar

Shaft sealing:

Mechanical seal, cartridge seal, soft packing

Bearings:

Suction side: radial ball bearing

Discharge side: double angular ball bearing

Nozzles

Suction side: 90° rotatable (left, top, right) Discharge

side: radial, 90° rotatable (left, top, right)

e-MPV

Sizes: 2" to 6"

Configurations: vertical

Power:

2-pole: 10hp - 480hp / 7.5kW - 355kW 4-pole: 3hp - 220hp / 2.2kW - 160kW

Heads up to 1,600ft / 488m*

Flows up to 2,600 US gpm / 600m³/h**

Temperature of pumped liquid:

-13°F to +284°F

-25°C to +140°C

Inlet pressure up to 145 psi / 10 bar

Shaft sealing:

Mechanical seal, cartridge seal, soft packing

Bearings:

Suction side: plain bearing

Discharge side: double angular ball bearing

Nozzles:

Suction side: 90° rotatable

Discharge side: radial, 90° rotatable

Customer benefits and technical features

Customer benefits

1 Improved Design

Simply and cost-effectively integrate the e-MP into nearly any high pressure application, thanks to its versatile mechanical configuration and its first stage suction impeller. This newly redesigned impeller provides high suction capabilities needed to meet the rigorous demands of hot water or condensate pumping applications.

2 Safe operation

Protect your people and reduce downtime with the e-MP. It incorporates an assortment of built-in safeguards. Plus, you can further control and monitor safety by connecting the pump to a variety of variable frequency drive options.

3 Energy savings

Leave a greener footprint. The high efficiency hydraulics of the e-MP were optimized by computational fluid dynamics calculations and they reduce both life cycle costs and energy demand.

4 Optimized MTBRs

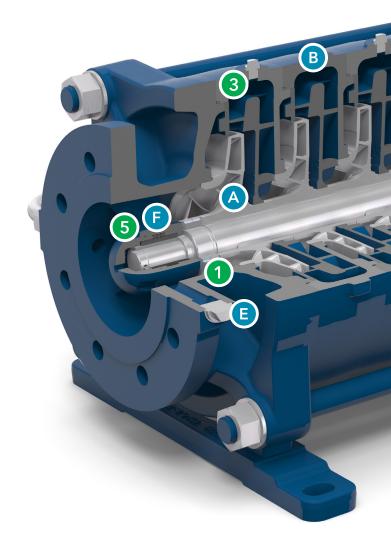
With the help of optional sensor interfaces on the e-MP, pressure, temperature and vibration sensors can be installed. A preventative maintenance schedule for the pump can be projected in advance, by connecting them to an intelligent plant monitoring and diagnostic system.

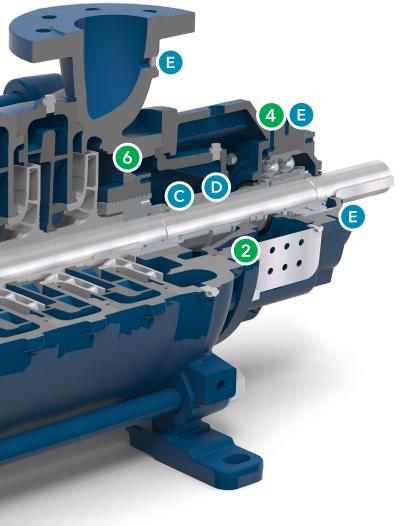
5 Reduced wear

The newly designed plain bearing in the suction housing is made of tungsten carbide and is elastically supported to resist extreme vibrations and shocks. A balancing drum reduces the axial thrust of the bearings and the load on the mechanical seal. The ultimate result is a more efficient, more effective operation.

6 Easy maintenance

The bearing at the drive side, the mechanical seal and the balancing drum sub-assembly are all easily accessible without having to remove the pump from the piping system. The pump's configuration minimizes the number of parts needed to cover the complete performance range, which simplifies assembly and streamlines spare parts management.





Technical features

A Suction Impeller

Each e-MP is equipped in the first stage with a suction impeller. Due to the wider inlet diameter of this specially designed impeller, the velocity of the liquid is lower. This results in reduced losses and increased suction capability (or low NPSH).

B U-turn channels

Each stage casing's salient rounded edges are called U-turn channels as the cut profile resembles a "U." This function turns pumped liquid 180° to the next stage, during which the rounded edges ensure a balanced velocity allocation of this liquid, reducing losses and increasing hydraulic efficiency.

C Balancing system

The balancing system consists of the balancing bush, installed in the discharge casing, and its counterpart, the balancing drum, assembled on the shaft. The pumped liquid's pressure in the discharge casing pushes liquid between the bush and drum gap into the seal housing. Here, pressure acts on the drum to build force against the axial thrust of the impellers to reduce both load on the mechanical seal as well as axial thrust for the bearing, for reduced wear. The complete system can be replaced for maintenance without disassembling the pump from its piping.

D Seal housing

A large self-cleaning seal housing equips each e-MP. Its cleaning process begins with its conical chamber design, transporting particles outwards along the chamber to the relief piping, then back from sealing chamber to suction side.

E Sensor interfaces

Two pressure sensor interfaces are standard on the e-MP, one at suction and one at discharge nozzle to measure inlet and outlet pressure. Optional sensor interfaces are available at the bearing bracket: two sensors (one for horizontal, one for vertical) to measure vibrations and one sensor that measures the bearing's temperature. The sensors can be connected to any intelligent system to monitor the e-MP's performance and operation.

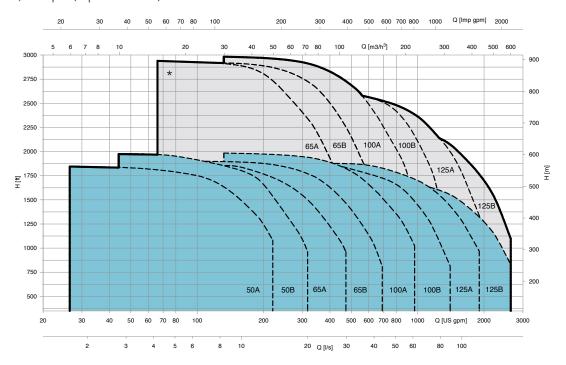
F Plain bearing

The e-MPA, e-MPR and e-MPV are equipped at the suction side with plain bearings, which are lubricated by the pumped liquid. The bearings are made of tungsten carbide and are elastically supported to resist extreme vibrations and shocks.

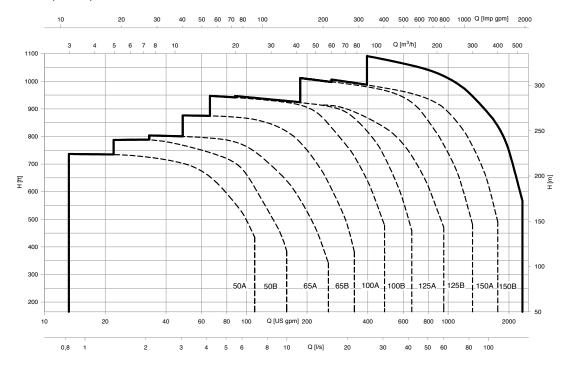
Performance range

60Hz

3,550 rpm (2-pole motors)



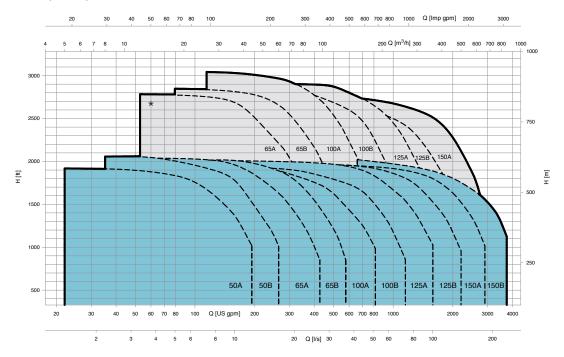
1,750 rpm (4-pole motors)



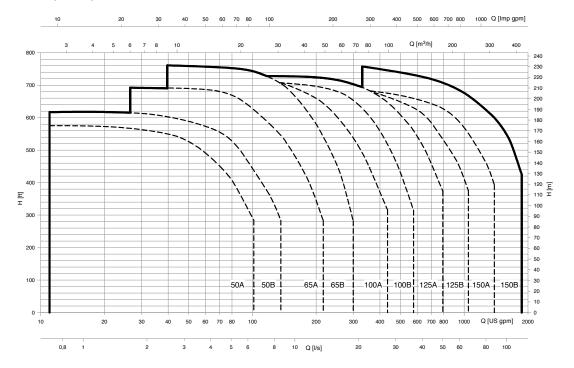
 $^{^{\}star}100$ bar versions are branded G&L and are available with heads up to 3,100ft / 950m. Check with factory for more information.

50Hz

2,950 rpm (2-pole motors)



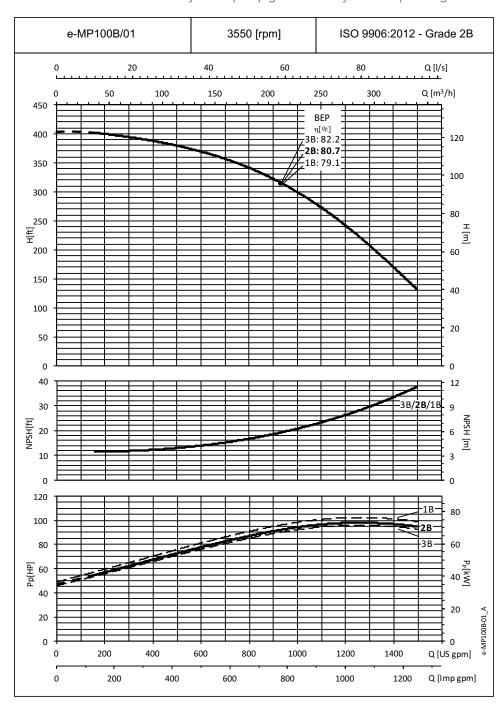
1,450 rpm (4-pole motors)



 $^{^{\}star}100$ bar versions are branded G&L and are available with heads up to 3,100ft / 950m. Check with factory for more information.

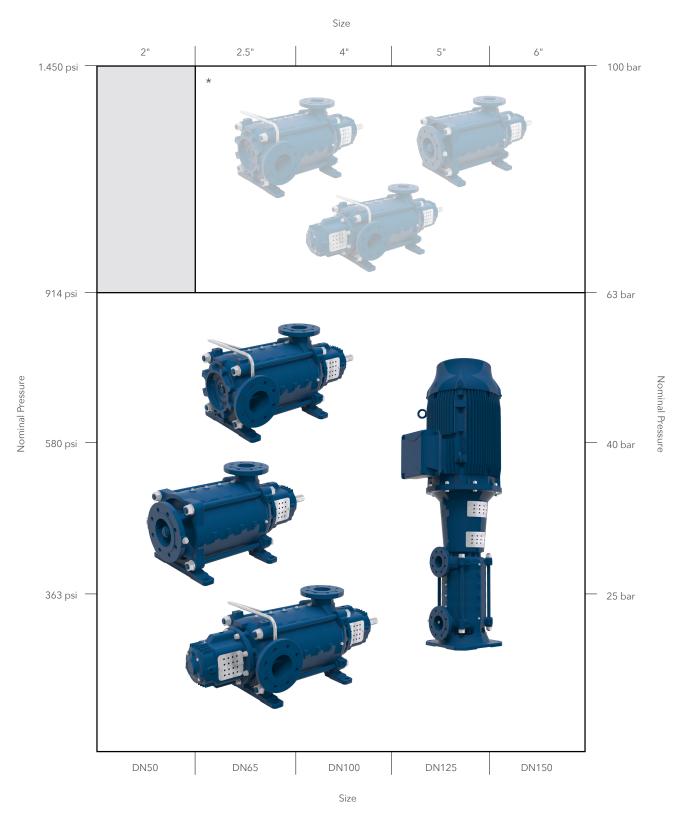
Efficiency

The performance of the e-MP pumps is published according to ANSI/HI 14.6 and ISO 9906, test acceptance grade 2B. These standards define several acceptance grades with different tolerance bands for head, flow, power and efficiency. It is important to understand the relation between the performance test acceptance grade specified and the minimum efficiency of the pump guaranteed by this acceptance grade.



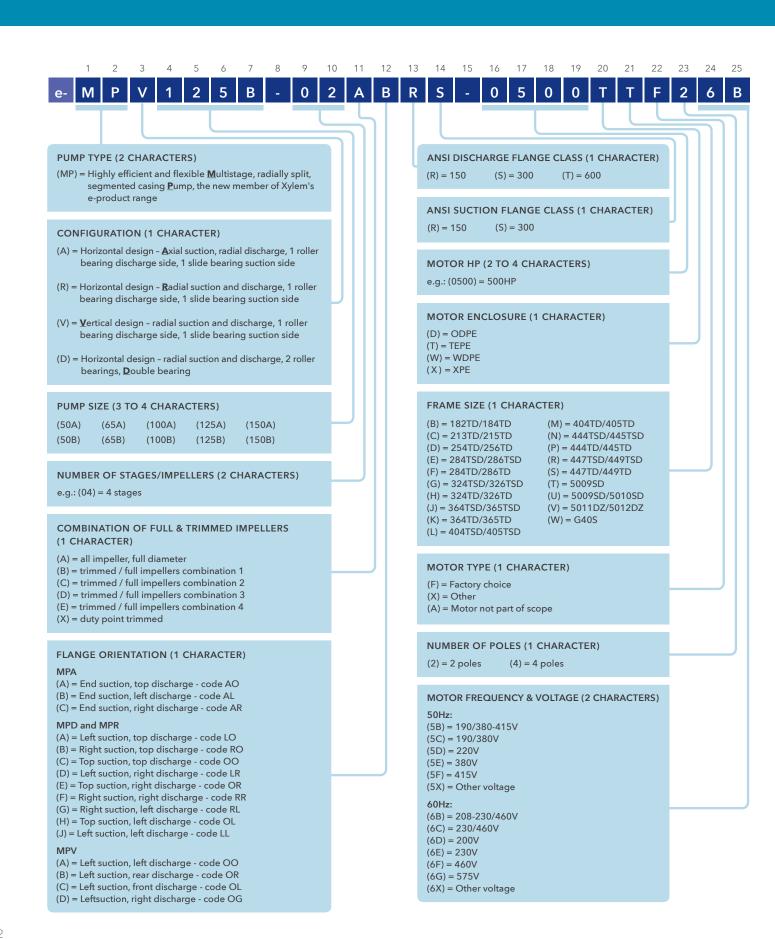
The example above summarizes differences in the published performance based on three different acceptance grades (1B, 2B and 3B). Different tolerances allowed between the published and the actual efficiency (-3% for Grade 1B, -5% for Grade 2B and -7% for Grade 3B) could be misleading when acceptance grade is not considered in the assessment of a pump performance.

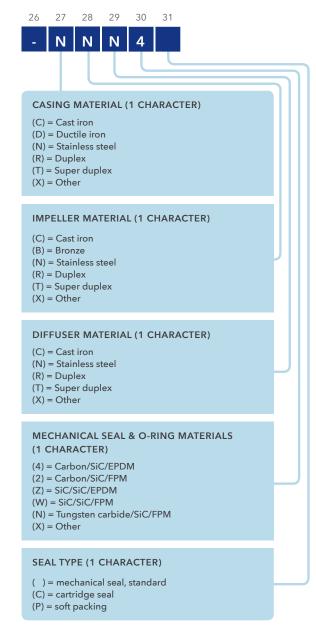
e-MP models by nominal pressure and size



 $^{^{\}star}100$ bar versions are branded G&L and are available with heads up to 3,100ft / 950m. Check with factory for more information.

Nomenclature





Examples

Pump coupled with motor, MPV125B-02ABRS-0500TTF26B-NNN4:

Series eMP, vertical configuration, radial suction and discharge, size DN125, hydraulic B, 2 stages/impellers, all impellers with full diameter, flange orientation: left suction and rear discharge, ANSI suction flange class 150, ANSI discharge flange class 300, 500HP factory choice motor with TEPE enclosure, 5009SD frame size, 2 poles, 60Hz at 208-230/460V, stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM.

Bare pump, MPV125B-02ABRS-0500TTA26B-NNN4:

Position 22 ("A") defines the purchase of bareshaft pump. Series eMP, vertical configuration, radial suction and discharge, size DN125, hydraulic B, 2 stages/impellers, all impellers with full diameter, flange orientation: left suction and rear discharge, ANSI suction flange class 150, ANSI discharge flange class 300, to be used with motor frame size 5009SD, 2 poles (motor not part of scope), stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM.

Note:

- 1) "e-" in front of MP is used for all marketing materials and in the selection tools
- 2) "e-" in front of MP is NOT used on the name plate and NOT in denomination of pumps
- 3) Not used nomenclature characters, e.g. if the digit description is [] are skipped and the next used digit is shifted to the left
- 4) Position 22 ("F," "X" vs "A") makes the difference between a pump coupled with motor and bareshaft pump.

Standard pump material configurations

	ссс	СВС	CNC	NNN
Nominal operating pressure	up to 580 psi / 40 bar			
Suction impeller (1st stage)	Cast iron (EN-GJL-200)	Bronze (CuSn10-C)	Stainless steel (1.4408)	Stainless steel (1.4408)
Impeller	Cast iron (EN-GJL-200)	Bronze (CuSn10-C)	Stainless steel (1.4408)	Stainless steel (1.4408)
Diffuser	Cast iron (EN-GJL-150)	Cast iron (EN-GJL-150)	Cast iron (EN-GJL-150)	Stainless steel (1.4408)
Stage casing	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Stainless steel (1.4408)
Suction casing	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Stainless steel (1.4408)
Discharge casing	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Stainless steel (1.4408)
Seal cover	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Stainless steel (1.4408)
Bearing bracket / motor adapter	Cast iron (EN-GJL-250)			
Pump foot (horizontal / vertical)	Cast iron (EN-GJL-250)*			
Wear ring	Optional, duplex (1.4462)	Optional, duplex (1.4462)	Optional, duplex (1.4462)	Duplex (1.4462)
Drum	Stainless steel (1.4057)			
Drum bush	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Cast iron (EN-GJL-250)	Duplex (1.4462)
Shaft	Stainless steel (1.4057)	Stainless steel (1.4057)	Stainless steel (1.4057)	Duplex (1.4462)
Shaft sleeve	Stainless steel (1.4057)	Stainless steel (1.4057)	Stainless steel (1.4057)	Duplex (1.4462)
Relief pipe	Stainless steel (1.4571)			

	DCC	DBC	DNC
Nominal operating pressure	up to 914 psi / 63 bar		
Suction impeller (1st stage)	Cast iron (EN-GJL-200)	Bronze (CuSn10-C)	Stainless steel (1.4408)
Impeller	Cast iron (EN-GJL-200)	Bronze (CuSn10-C)	Stainless steel (1.4408)
Diffuser	Cast iron (EN-GJL-150)		
Stage casing	Ductile iron (EN-GJS-400-15)		
Suction casing	Ductile iron (EN-GJS-400-15)		
Discharge casing	Ductile iron (EN-GJS-400-15)		
Seal cover	Ductile iron (EN-GJS-400-15)		
Bearing bracket / motor adapter	Cast iron (EN-GJL-250)		
Pump foot (horizontal / vertical)	Cast iron (EN-GJL-250)*		
Wear ring	Optional, duplex (1.4462)		
Drum	Stainless steel (1.4057)		
Drum bush	Cast iron (EN-GJL-250)		
Shaft	Stainless steel (1.4057)		
Shaft sleeve	Stainless steel (1.4057)		
Relief pipe	Stainless steel (1.4571)		

	RNN	RRR	ТТТ
Nominal operating pressure	up to 914 psi / 63 bar		
Suction impeller (1st stage)	Stainless steel (1.4408)	Duplex (1.4517)	Super duplex(1.4469)
Impeller	Stainless steel (1.4408)	Duplex (1.4517)	Super duplex (1.4469)
Diffuser	Stainless steel (1.4408)	Duplex (1.4517)	Super duplex (1.4469)
Stage casing	Duplex (1.4517)	Duplex (1.4517)	Super duplex (1.4469)
Suction casing	Duplex (1.4517)	Duplex (1.4517)	Super duplex (1.4469)
Discharge casing	Duplex (1.4517)	Duplex (1.4517)	Super duplex (1.4469)
Seal cover	Duplex (1.4517)	Duplex (1.4517)	Super duplex (1.4469)
Bearing bracket / motor adapter	Cast iron (EN-GJL-250)		
Pump foot (horizontal / vertical)	Cast iron (EN-GJL-250)*		
Wear ring	Duplex (1.4462)	Duplex (1.4462)	Super duplex (1.4410)
Drum	Stainless steel (1.4057)	Duplex (1.4462)	Super duplex (1.4410)
Drum bush	Duplex (1.4462)	Duplex (1.4462)	Super duplex (1.4469)
Shaft	Duplex (1.4462)	Duplex (1.4462)	Super duplex (1.4410)
Shaft sleeve	Duplex (1.4462)	Duplex (1.4462)	Super duplex (1.4410)
Relief pipe	Stainless steel (1.4571)	Austenitic steel (1.4539)	Austenitic steel (1.4539)

		REFERENCE STANDARDS		
MATERIAL		USA**	EUROPE	
Cast iron	(EN-GJL-150)	ASTM - CLASS 25	EN 1561 - JL1020	
Cast iron	(EN-GJL-200)	ASTM - CLASS 30	EN 1561 - JL1030	
Cast iron	(EN-GJL-250)	ASTM - CLASS 35	EN 1561 - JL1040	
Ductile iron	(EN-GJS-400-15)	ASTM - 65-45-12	EN 1563 - JS1030	
Bronze	(CuSn10-C)	ASTM - C90700	EN 1982 - CC480K	
Cast steel	(1.0619)	ASTM - WCB	EN 10213 - GP240GH	
Stainless steel	(1.4408)	ASTM - CF8M	EN 10283 - GX 5 CrNiMo 19 11 2	
Duplex	(1.4517)	ASTM - CD4MCuN	EN 10283 - GX 2 CrNiMoCuN 25 6 3 3	
Super duplex	(1.4469)	ASTM - CE3MN	EN 10283 - GX 2 CrNiMoN 26 7 4	
Carbon steel	(1.0038)	ASTM - Grade C, D	EN 10025 - S235JR	
Stainless steel	(1.4057)	ASTM - 431	EN 10088 - X 17CrNi 16 2	
Stainless steel	(1.4571)	ASTM - 316Ti	EN 10088 - X 6 CrNiMoTi 17 12 2	
Austenitic steel	(1.4539)	ASTM - 904L	EN 10088 - X 1 NiCrMoCu 25 20 5	
Duplex	(1.4462)	ASTM - F51	EN 10088 - X 2 CrNiMoN 22 5 3	
Super duplex	(1.4410)	ASTM - F53	EN 10088 - X 2 CrNiMoN 25 7 4	

 $[\]hbox{* Carbon steel (1.0038) for size 125 and 150 in horizontal configuration. * Similar grades according to U.S. standards.}$

Standard scope of supply and accessories

Standard scope of supply

(See nomenclature on page 12 for name sequence)

Pump mounted on frame, coupled with motor

MPA100B-04ABRS-0500TTF26B-NNN4



Pump mounted on frame, with coupling, motor not part of scope or supplied by customer

MPA100B-04ABRS-0500TTA26B-NNN4



Bareshaft pump

MPA100B-04BRS-0500TTA26B-NNN4



Position 22 ("F," "X" vs "A") makes the difference between a pump coupled with motor and a bareshaft pump.

Accessories

- Frames
- Couplings and coupling guards
- Motors:

2-pole: 10hp to 1,700hp / 7.5kW to 1,250kW 4-pole: 3hp to 220hp / 2.2kW to 160kW

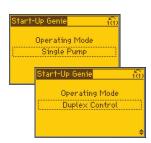
- Monitoring and control interfaces
- Temperature and vibration sensor interfaces (pressure sensor interface is standard)
- Can be paired with Goulds Water Technology variable speed drives such as the HYDROVAR

Do you have requirements outside of the standard and optional range? Consult our Xylem sales force to discuss special engineered-to-order solutions, e.g. fly wheels to avoid water shocks in piping.

Aquavar® intelligent pump controller







Intelligent Variable Speed Control - Aquavar®

The Aquavar® Intelligent Pump Controller from CentriPro combines over 20 years of variable speed pumping experience with an all-new hardware platform. The Aquavar is designed specifically by hydraulic engineers with advanced pump protection features for precise control of speed, pressure, flow and level over a wide range of submersible and above ground applications.

Your wish is Aquavar's command! The CentriPro Start-Up Genie guides you through quick and easy commissioning in as few as 12 total screens. Take advantage of the full 10 Genie sections to further customize applications with pump protections, I/O options, and Duplex operation. For straightforward applications, just set your motor information, operation mode and "Autoset" the rest of the parameters. The Genie reduces and simplifies set-up and configuration time to about 15 minutes for the most common control configurations!

Here are just a few of the other features and benefits of this versatile product:

- Quick-start Genie for fast and simplified programming
- Removable, graphical keypad with backlit display
- Multipump operation without PLC for up to 2 pumps via Duplex mode: multipump capabilities include auto lead/ lag and synchronous operation.
- Dedicated Single phase input
- Wide range of voltage and enclosure options
- My Personal Menu allows user to focus on specific user selected and saved parameters
- Alarm Log key for quick access to last 5 alarms and maintenance events
- Hand on, Auto on, and Off buttons for easy pump operation at the keypad - No toggling between local and remote operation
- Modbus® RTU, MatasysN2, FLN, and BACnet included as standard - Other communications available with option cards
- Capable of starting up to 2 fixed speed pumps, with standard relay outputs
- USB Connectivity Remotely commission and monitor through PC software
- Standard dual DC-link reactors Reduces the level of harmonics similar to a 5% AC line reactor without the voltage drop across the full load range
- EMC/RFI filters designed to reduce drive noise emission

Markets and applications



General industry

All manufacturing industries, including steel, sugar, timber, tire and rubber, pulp and paper, car, food and beverage

Applications: cooling and heating circuits for industrial processes, sprinkler systems, washing and cleaning systems, firefighting systems, filter systems, water transport systems, booster systems, water treatment systems



Oil and gas

On-shore platforms, off-shore platforms, refineries, fracking

Applications: transport of crude oil, sea water/water injection, firefighting systems, water transport, water treatment



Commercial building services

Applications: water transport, booster systems, firefighting systems, HVAC systems



Power plants

Renewable energy, hydropower, biomass, geothermal, fossil power

Applications: boiler feed, condensate pumping, deaerating, water injection, water transport, auxiliary systems, firefighting systems, cooling and heating circuits, district cooling and heating systems



Mining

Applications: dewatering (filtered water), water transport, firefighting systems



Agriculture

Applications: water transport, irrigation



Public utilities

Water works, desalination plants, drainage and flood protection

Applications: district cooling and heating systems, water transport, water treatment systems, desalinization, reverse osmosis, nanofiltration, firefighting systems, booster systems



Leisure industry

Ski resorts, amusement parks

Applications: snow making, water transport, water boosting



Others

Applications: e.g. auxiliary applications in chemical industry, all water boosting applications

Xylem's multistage pump ranges have been satisfying the needs of customers for over a century. Today, they operate successfully across the world in a variety of markets and applications.

Pumpable fluids:

- Water
- Gray/used water
- Groundwater
- Potable water
- Thermal water
- Seawater in all regions
- Brackish water
- Feed water
- Hot water
- Condensate
- Cooling/heating water

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com



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Fax: (888) 322-5877

www.gouldswatertechnology.com

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