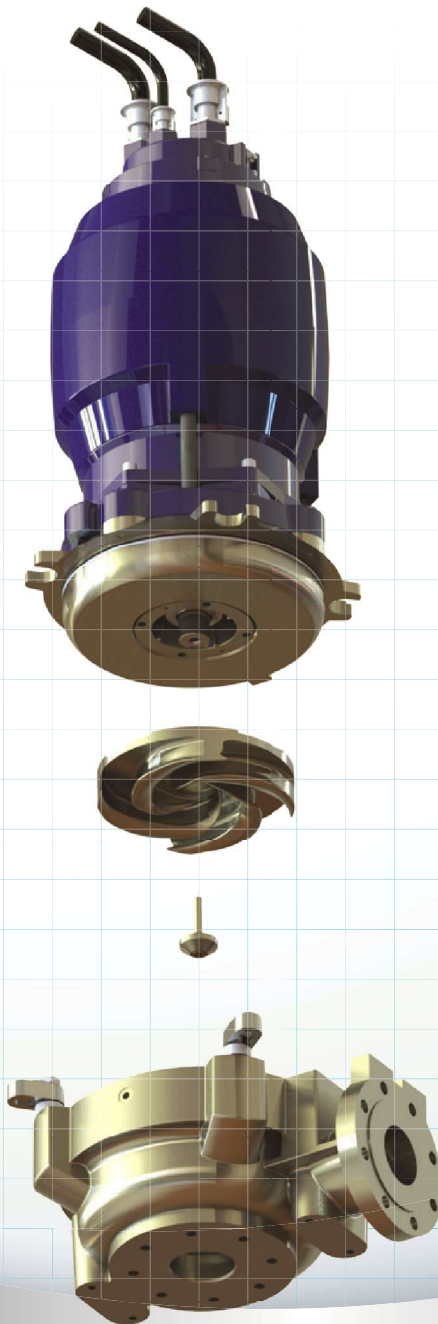



Quality
&
Efficiency



PXFLOW[®]

PUMPS SERVICE & ENGINEERING



[We supply clean water and remove waste water]

Waste water Submersible Pumps

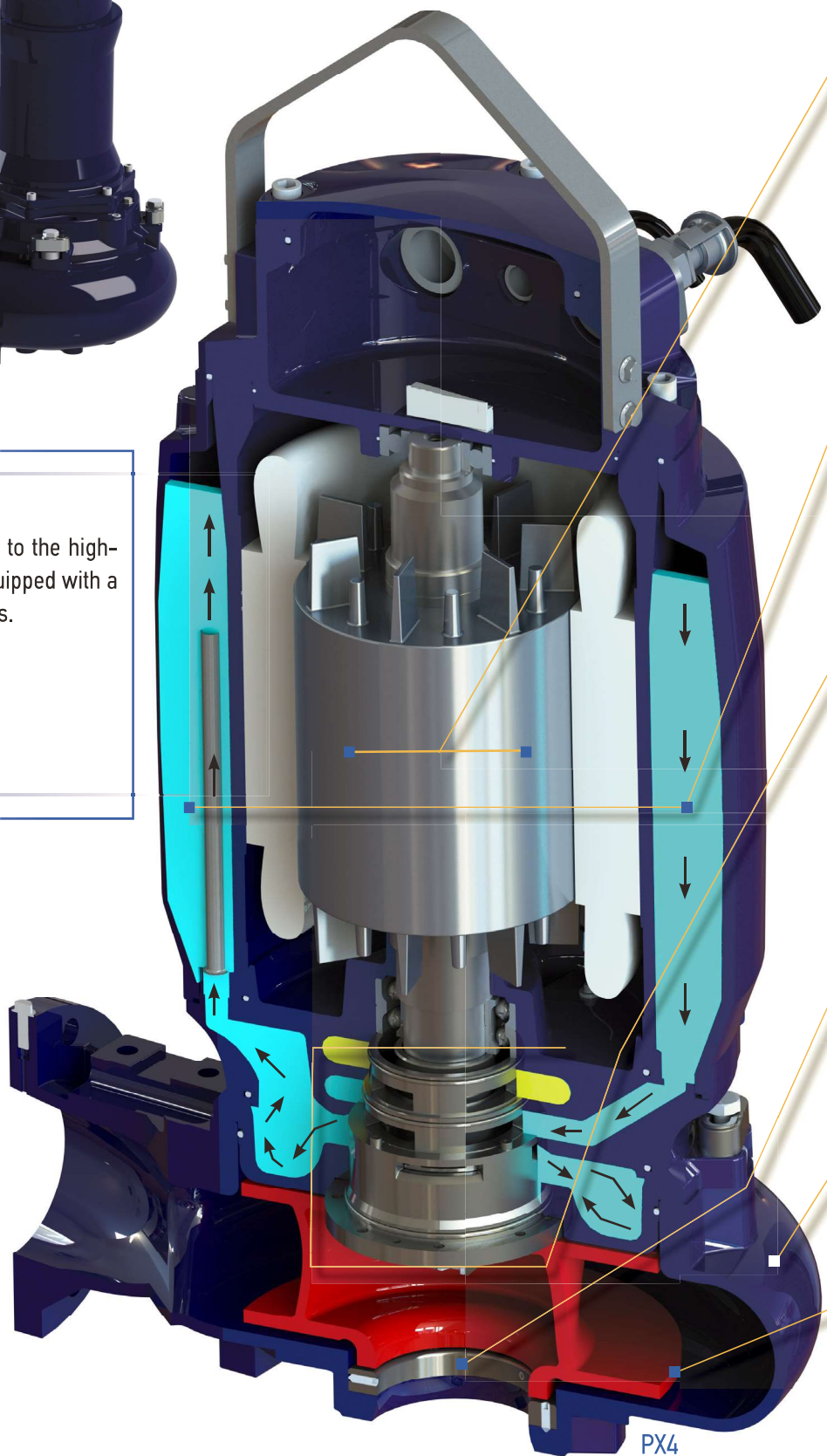
PXFLOW
sewage pumps



DESIGN FEATURES

All **PXFLOW** pumps are designed and built tough to the highest industrial specifications up to date and are equipped with a number of operation/maintenance friendly features.

Only the very best features come as a standard in **PXFLOW** pumps.



PXFLOW code system

- No of poles
 - Motor power P2 Kw (50Hz)
Hp (60Hz)
 - **M** Motor series
 - Impeller code
 - Impeller type V=Vortex, C=Channe
 - Pump volute code
 - **Volute** outlet size
 - Pump series for waste water
- ex. **PX3-150.0 VX3-150+ M3.1D-18,5/4**

MOTOR UNIT*

The pumps are equipped with Siemens motor parts standard IE1 or IE2 (premium efficiency IE3 as option), are fitted with F class insulation, (for operating temperatures up to 155 degrees Celsius), or can be optionally fitted with H class insulation.

Three thermal overload switches, one per phase, are inside the winding, to combat high temperature loads. The oversized stainless steel rotor shaft and the two oversized ball bearings ensure the motor's smooth and vibration free rotation. Consequently the motor's operational life time is significantly extended.



INTERNAL MOTOR COOLING SYSTEM WITH "ECOFLU COOLING JACKET" *

All **PXFLOW** standard motor sizes are equipped with a closed cooling system. An internal impeller that is fitted in between the two mechanical shaft seals circulates the cooling liquid (ecoflu) in a closed loop inside a cooling jacket.

The heat is then transferred to the pumped liquid by means of a cooling flange (heat exchange).

This efficient cooling system has the following great advantages:

- Maintains the optimal temperature range for the motor bearings.
- The cooling system is separated from the pumped liquid to eliminate any risk of clogging and sedimentation.
- The double sound absorbing pump motor casing, enables the unit to be running at an extremely low noise levels.

CARTRIDGE SEALING SYSTEM "FAST SEAL" *

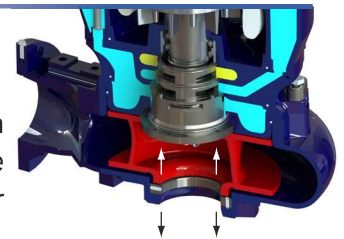
The shaft system consists of a double set of mechanical seals that are built into a replaceable cartridge. The cartridge sealing system can be easily removed on site without the need of any special tools and thus eliminating the risk of any improper installation. The primary seal (impeller side) is made of abrasive resistant carbide against silicon carbide. The secondary seal (motor side) is made of heat resistant carbon against silicon carbide (option for PX1&2). Both mechanical seals incorporate a stainless steel shaft sleeve (316 as option) protecting the pump shaft. Every cartridge sealing system has been pressure tested at the factory regardless if it is being installed inside a **PXFLOW** pump or sold separately as spare parts.



CLEARANCE REDUCTION SYSTEM "REDUCER" *

The channel impellers are fitted with volute/impeller clearance reduction wear rings.

This system easily allows the ring to be repositioned axially in order to reduce the clearance between the channel impeller and the volute. This sealing method advantages over other methods which use radial impeller and volute wear rings that cannot be repositioned and have to be replaced when wear levels are not acceptable.



PUMP VOLUTES

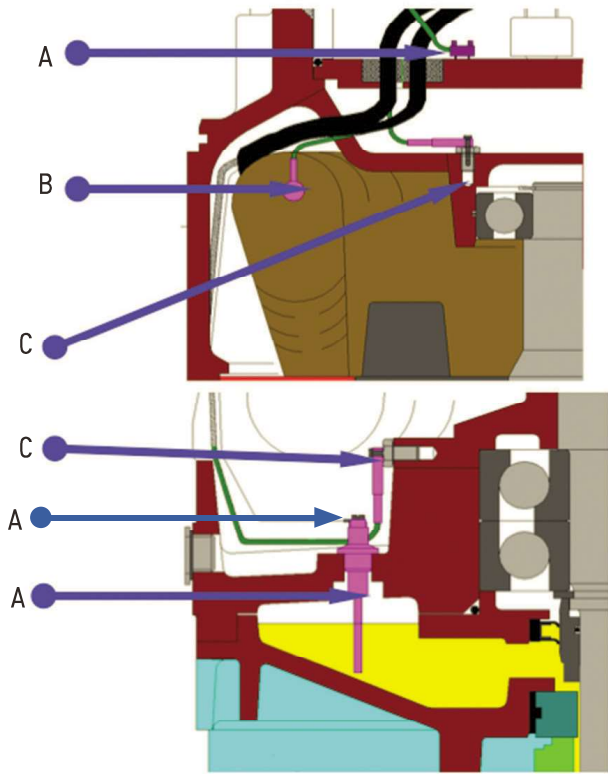
The **PXFLOW** volutes are made from high quality cast iron and have been designed to have additional thickness on the walls. Extra attention has been given to the inside smoothed volute surfaces so higher hydraulic efficiency and minimum turbulence can be achieved. The volute is connected with the motor unit through a fast lock* connection system by means of stainless steel latch bolts for easy and fast removal. The motor unit can be quickly removed from the pump's volute for an easy inspection.



IMPELLERS

PXFLOW impellers are made from hardwearing ductile iron, (stainless steel 316 or DUPLEX as an option), and come in three types (single channel, multi channel and vortex) with a non clogging design that meets the pumping liquid needs and duty. The initial impeller design can be easily adjusted, (when trimmed), to meet the customer's performance requirements. **PXFLOW** impellers are dynamically balanced and machined to exacting tolerances to reduce any unwanted vibrations.





MOTOR PROTECTIONS

A. Moisture sensors

All **PXFLOW** pumps are equipped with two moisture sensors that are linked together in a series connection. Both sensors are connected to an electronic moisture monitoring system in order to effectively detect any increase in moisture inside the following areas:

- Terminal connection area (upper motor side).
- Inside the motor housing enclosure.
- Oil chamber of the sealing cartridge unit.

B. Motor winding Thermo-sensor

All **PXFLOW** pumps are equipped with thermo sensors to protect the stator from overheating and burning in the event of a motor malfunction. The thermal protection in the typical standard motor configuration consists of three bi-metals switches in series connection that are embedded in each respecting motor winding. Optionally we can offer with PTC or PT 100.

C. Bearing Thermo-sensors

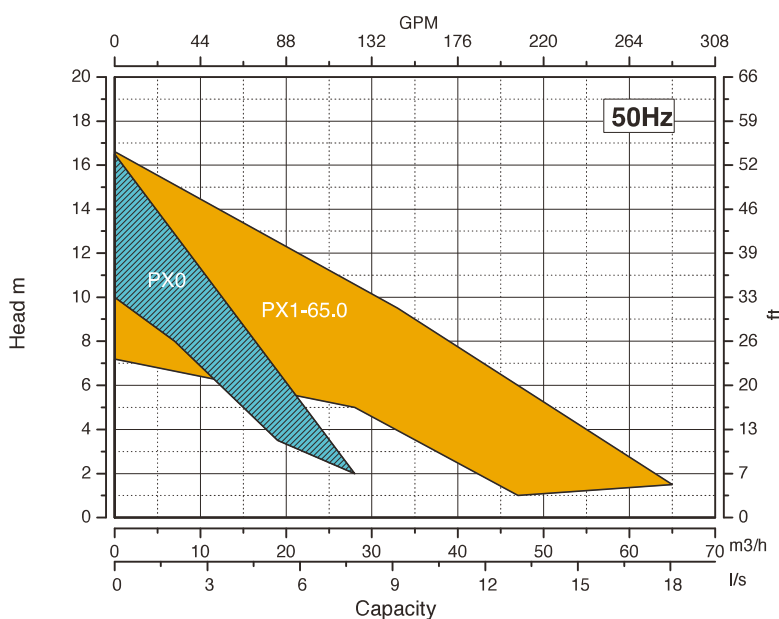
In our largest pumps, (series PX3 & PX4 and above), the upper* and lower bearings housings can be equipped with the PT100 thermo sensors which provide the protection necessary against excessive temperatures.

** only for PX4 M4 series)*

SERIES PX0,PX1-65 WITH VORTEX IMPELLER

The PX0 and Px1-65 pumps are made of cast iron and are equipped with a vortex impeller that is designed for pumping wastewater and other contaminated liquids.

The Px0 series, (single phase voltage configuration), is available with float switches and thermal protection or without them. The three phase voltage configuration can also be equipped with thermal protection upon the customer's request.



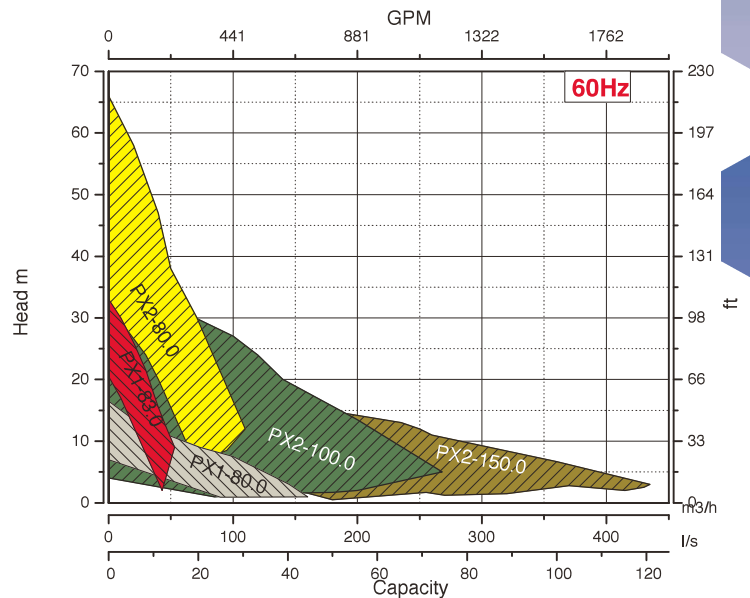
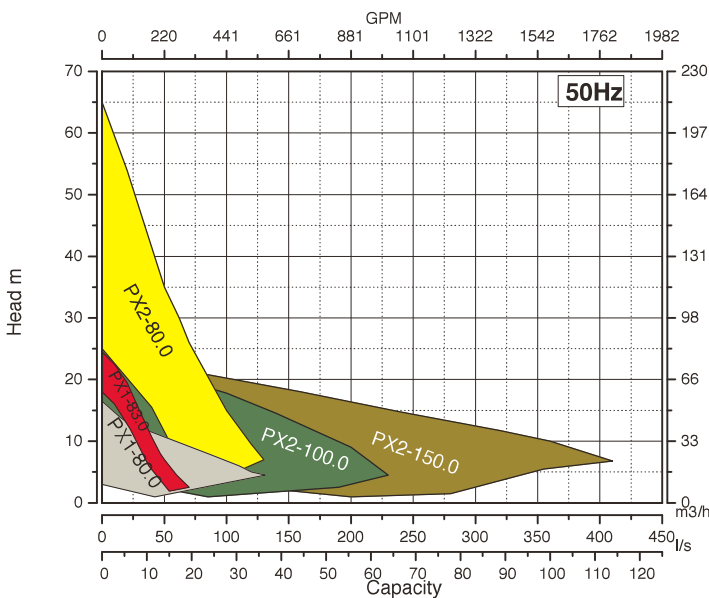
PX1, PX2



DESIGN FEATURES

- Internal motor cooling system with "ECOFLU" (closed loop through a cooling jacket)
- Cartridge sealing system "Fast Seal"
- Easily adjustable channel impeller clearance system "Reducer"* , for all installation types, for improved performance and less clogging occurrences
- Oil tap drain
- Free choice* channel or vortex impeller that can be fitted to the same volute
- Fast lock assembly/disassembly feature with only two latch bolts for quick and easy volute/impeller inspection (major advantage is the significant reduction of man-hours)
- Electrical motor **PXFLOW** - SIEMENS motor parts standard IE1 or higher efficiency IE2 (premium efficiency IE3 as option), have Class F insulation (rated for 155 degrees Celsius) as standard (Class H as option)
- Motor inspection hole
- Cable entry on the side of the pump cover
- Handle in Stainless steel

**PX1-83.0, PX2-80.0 is only available in the Vortex impeller design and has got no wear rings.*



Model	PX1-80.0	PX1-83.0	PX2-80.0	PX2-100.0	PX2-150.0
Rating 50Hz	1,5-3,5 kW	4-5 kW	4-13,5 kW	3-15 kW	3-15 kW
Rating 60Hz	2,5-6 HP	6-7,5 HP	7,5-20 HP	4,6-25 HP	4,6-25 HP
Motor	2/4/6 pole	2 pole	2/4 pole	4/6 pole	4/6 pole
Pump outlet flange	80-100/3"-4"	65-80/2 1/2"-3"	80/3"	100/4"	150/6"
Pump inlet flange	80-100/3"-4"	100/4"	80/3"	100/4"	150/6"
Impeller types	channel / vortex	vortex	vortex	channel / vortex	channel / vortex
installation types available	wet/dry/portable	wet/dry/portable	wet/dry/portable	wet/dry/portable	wet/dry/portable

PX3

DESIGN FEATURES

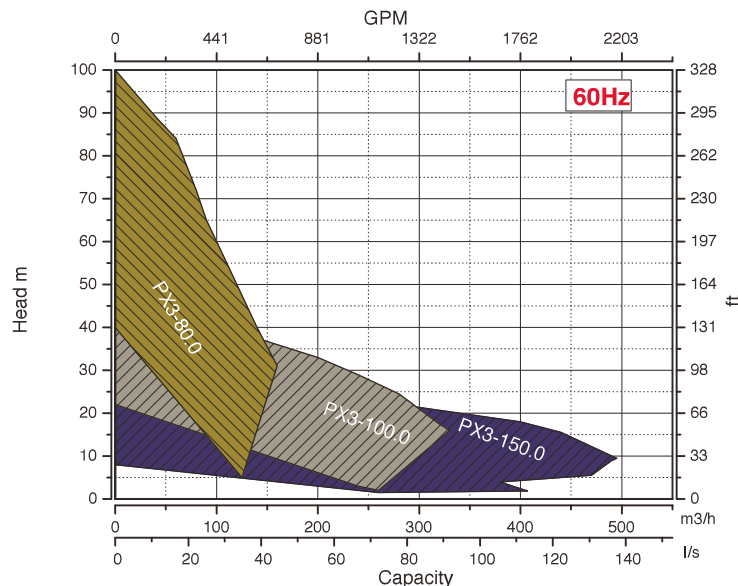
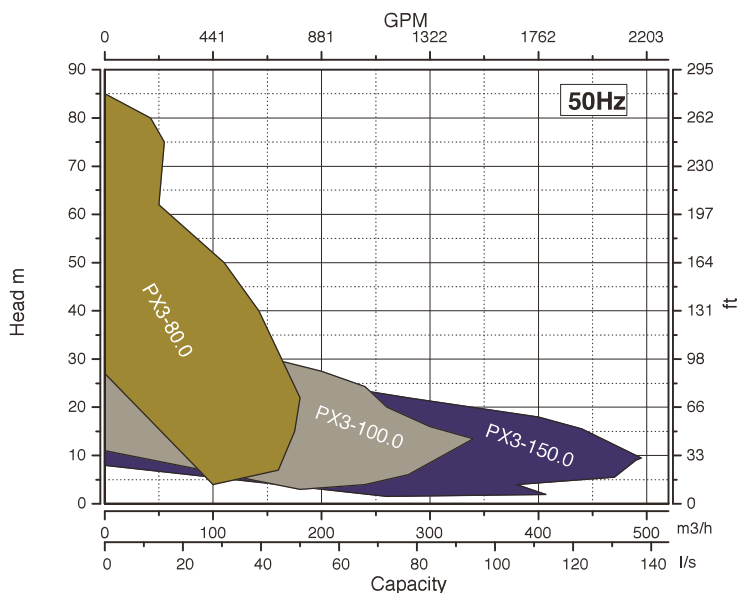
- Internal motor cooling system with "ECOFLU" (closed loop through a cooling jacket)
- Cartridge sealing system "Fast Seal"
- Easily adjustable channel impeller clearance system "Reducer"*, for all installation types, for improved performance and less clogging occurrences
- Oil tap drain
- Free choice* channel or vortex impeller that can be fitted to the same volute
- Fast lock assembly/disassembly feature with only four latch bolts for quick and easy volute/impeller inspection (major advantage is the significant reduction of man-hours)
- Electrical motor **PXFLOW-SIEMENS** motor parts standard IE1 or higher efficiency IE2 (premium efficiency IE3 as option) have Class F insulation (rated for 155 degrees Celsius) as standard (Class H as option)
- Motor inspection hole
- Cable entry on the side of the pump cover
- Handle in Stainless steel

*PX3-80.0 is only available in the Vortex impeller design and has got no wear rings.



• M3.1C

• M3.1D



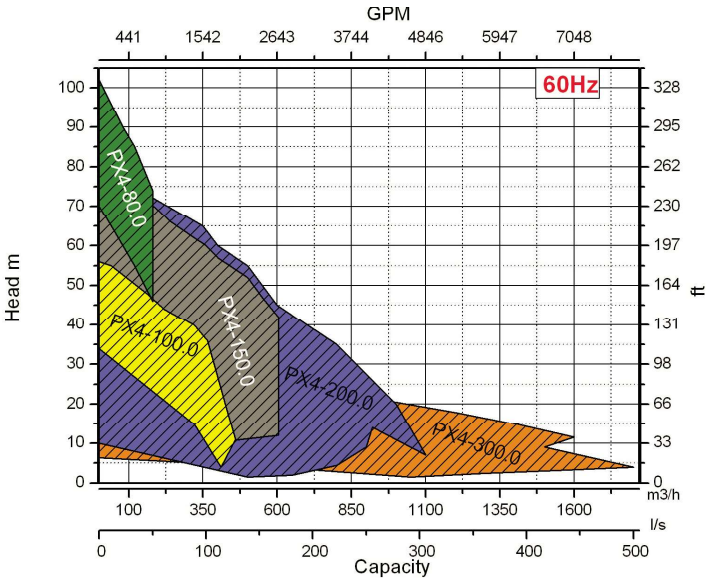
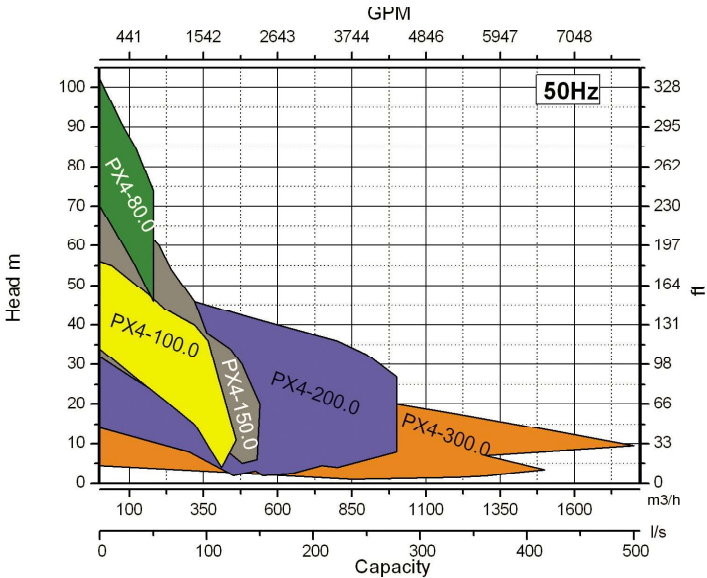
Model	PX3-80.0	PX3-100.0	PX3-150.0
Rating 50Hz	8-37kW	7.5-37kW	7.5-37kW
Rating 60Hz	19-46HP	15-40HP	15-40HP
Motor	2pole	2/4/6pole	4/6pole
Pump outlet flange	80-100/3"-4"	100/4"	150/6"
Pump inlet flange	80-100/3"-4"	100/4"	150/6"
Impeller types	vortex	channel / vortex	channel/vortex
installation types available	wet/dry/portable	wet/dry/portable	wet/dry/portable

PX4

DESIGN FEATURES

- Internal motor cooling system with "ECOFLU " (closed loop through a cooling jacket)
- Cartridge sealing system " Fast Seal "
- Easily adjustable channel impeller clearance system "Reducer", for all installation types, for improved performance and less clogging occurrences
- Oil tap drain
- Free choice* channel or vortex impeller that can be fitted to the same volute
- Fast lock assembly/disassembly feature with only six latch bolts for quick and easy volute/impeller inspection (major advantage is the significant reduction of man-hours)
- Electrical motor **PXFLOW** - SIEMENS motor parts standard IE1 or higher efficiency IE2 (premium efficiency IE3 as option) have Class H insulation (rated for 180 degrees Celsius) as standard
- Motor inspection hole
- Cable entry on the side of the pump cover
- Handle in Stainless steel

* PX4-80.0 is only available in the Vortex impeller design and has got no wear rings.



Model	PX4-80.0	PX4-100.0	PX4-150.0	PX4-200.0	PX4-250.0	PX4-300.0
Rating 50Hz	37-93 kW	37-93 kW	22-110 kW	22-110 kW	22-110 kW	22-110 kW
Rating 60Hz	46-125 HP	46-125 HP	15-180 HP	15-180 HP	15-180 HP	15-180 HP
Motor	2 pole	2/4 pole	2/4 pole	4/6/8 pole	4/6/8 pole	4/6/8 pole
Pump outlet flange	80-100/3"-4"	100/4"	150/6"	200/8"	250/10"	300/12"
Pump inlet flange	80-100/3"-4"	100/4"	150/6"	200/8"	250/10"	300/12"
Impeller types	vortex	channel / vortex	channel / vortex	channel / vortex	channel / vortex	channel
installation types available	wet/dry/portable	wet/dry/portable	wet/dry/portable	wet/dry/portable	wet/dry/portable	wet/dry/portable

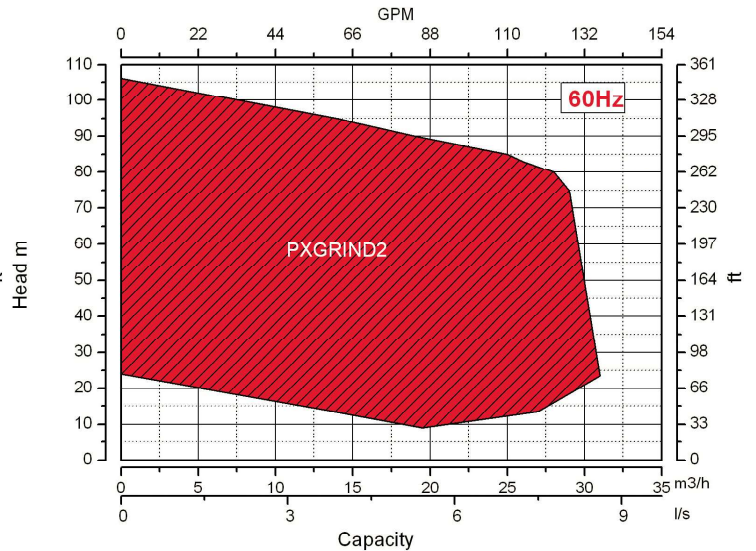
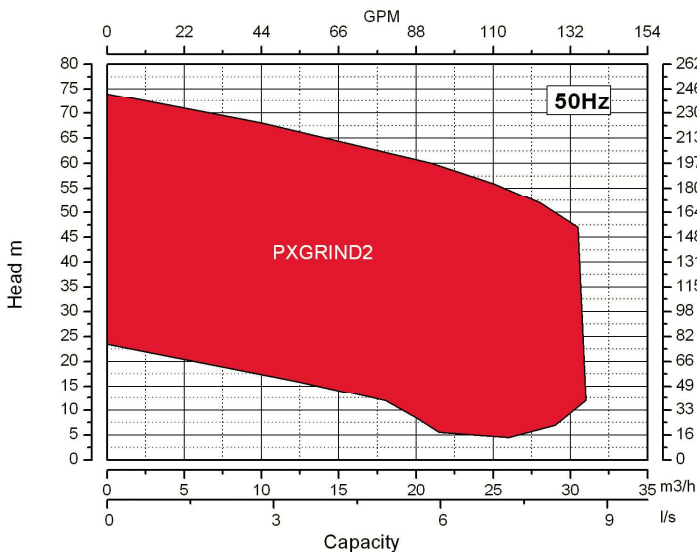


GRINDER PUMPS

The **PXGRIND** pumps are equipped with a grinding system that effectively reduces all destructible solid pieces and fibrous materials, such as paper, textile, plastics, etc into small particles so they can be led away through pipes of relatively small diameter.

DESIGN FEATURES

- Stainless steel cutter system
- Internal motor cooling system with "ECOFLU" (closed loop through a cooling jacket)
- Cartridge sealing system "Fast Seal"
- Easily adjustable channel impeller clearance system "Reducer" for improved performance and less clogging occurrences
- Oil tap drain
- Ductile multi channel impeller
- Fast lock assembly/disassembly feature with only two latch bolts for quick and easy volute/impeller inspection (major advantage is the significant reduction of man-hours)
- **PXFLOW** - SIEMENS motor parts standard IE1 or higher efficiency IE2 (premium efficiency IE3 as option)
- Motor inspection hole
- Cable entry on the side of the pump cover
- Handle in Stainless steel



Model	PXGRIND2
Rating 50Hz	6.5-13.5 kW
Rating 60Hz	10-20 HP
Motor	2/4 pole
Pump outlet flange	50/2"
Pump inlet flange	Grinder
Impeller types	Channel
installation types available	wet/portable

A

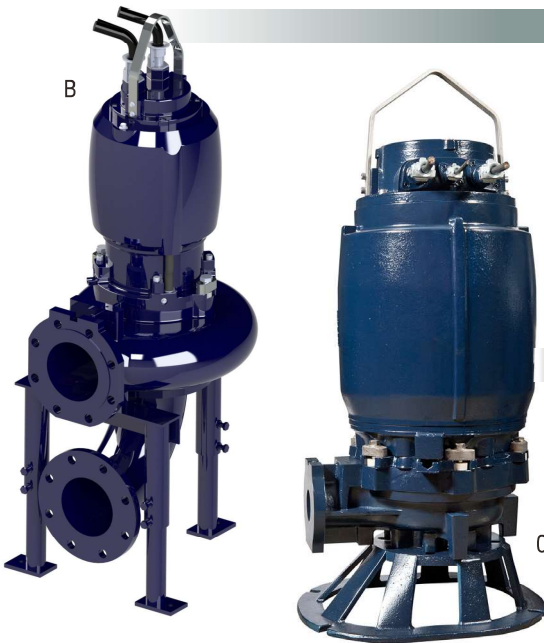


TYPES OF INSTALLATION

A. Wet type installation

The self guiding coupling system allows for the quick and efficient pump unit inspection. The elbow shaped stationary Discharge Connection Bracket (DCB) is securely fastened at the bottom of the sump. The pump's discharge outlet is perfectly aligned with the DCB's opening and the connection is maintained sealed by the pump's own weight.

B



B. Dry type installation

In this case a **PXFLOW** pump, equipped with the ECOFLU (internal motor cooling system), is installed in a separate pump chamber. All piping is bolted directly to the pump volute (suction and discharge end). The fast lock connection system permits the fast motor unit and impeller removal from the pump's volute for an easy and friendly inspection. These pumps can replace old existing pumps with dry motors and can still remain operational even if there still water inside the pump chamber.

C. Transportable installation

This type of submersible pump is equipped with a suction stand that comes with or without a strainer. This portable pump unit can be an excellent solution for dewatering construction sites especially when equipped with the ECOFLU cooling system.

SERVICE ADVANTAGES

Discharge flange connection and adapter designed for quick and easy replacement of other pumps brand. **PXFLOW** pumps, depending the replacement brand, can use **PXFLOW adapter** or the existing flange adapter and can be installed on existing base elbow which stays in wet well with their guide rails systems.

