

SULZER

Pumps and pumping systems

Submersible grinder pumps type ABS Piranha



Main industries and applications

Sulzer's range of submersible grinder pumps, type ABS Piranha, contain the most effective cutting system for use in pressure sewer systems. The Piranha pumps have proven themselves to be one of the market's best ongoing performers, having excellent total lifecycle costs from initial purchase through ongoing operation.

The Piranha pumps provide a means of effective and economical wastewater transport utilizing small-diameter discharge pipes as opposed to larger diameter pipes required for gravity systems. These pumps are ideally suited for:

- Private residences and community subdivisions
- Municipal wastewater transport
- Commercial wastewater handling of domestic sewage in business parks, restaurants, hospitals, etc.
- Industrial wastewater handling of industrial areas, slaughter houses, food processing plants, paper mills, agricultural applications, etc.
- Hazardous locations requiring certification in accordance with ATEX (Ex II 2G Ex h db IIB T4 Gb); FM and CSA available as an option on most models



Unleash powerful, blockage-free performance with Piranha

Unique cutting system

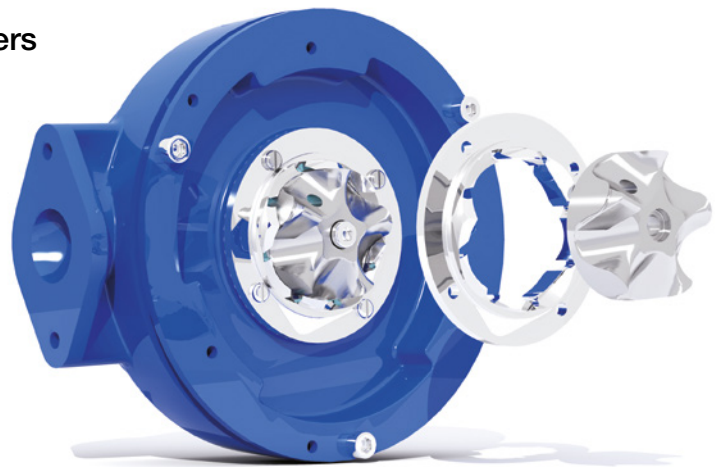
Experience cutting-edge performance with the Piranha grinder pumps. Our innovative system features a spiral bottom plate and a stationary cutter ring, paired with a shredding rotor in front of the impeller. This advanced design ensures blockage-free operation, effortlessly shredding tough materials like cloth and plastic bags.

Adjustable bottom plate for maximum efficiency

Maintain peak performance with ease. The adjustable bottom plate allows you to restore the ideal clearance between the bottom plate and impeller, counteracting wear and ensuring long-term efficiency.

Long service life with reversible cutters

The Piranha S high-head version is built to last, featuring a reversible cutter. Simply rotate the cutter to use both sides, extending its life before needing a replacement. This patent approved design effortlessly shreds material into very fine particles, allowing them to pass through both stages of the pump, ensuring blockage-free operation.



Model and feature comparison

Standard feature	Piranha PE	Piranha S	Piranha 08-09
Premium IE3 motors	●		
Cutting system	●	●	●
Reversible cutter		● (high head)	
Seal leak detection system	●	●	
Temperature monitoring	●	●	●
Adjustable bottom plate	●	●	●
Quick disconnect plug	●	● (non-EX models)	●
Explosion-proof option	●	●	
Built-in capacitor			●
KS version			●

Piranha PE – Premium efficiency in continuous dry or submerged operation

Sulzer's premium range of submersible grinder pumps, type ABS Piranha PE, are equipped with Premium Efficiency IE3 motors in accordance to IEC 60034-20. Sulzer was the first company in the world to offer Premium Efficiency IE3 submersible motors to achieve the perfect balance of reliability and energy consumption. Utilizing Premium Efficiency IE3 motors and the most effective cutting system, the Piranha grinder pumps are one of the best pumps on the market resulting in zero blockages and low life cycle costs, providing reliability and energy savings.

1 Piranha cutting system

A spiral-grooved bottom plate and stationary cutting element, combined with a lobed rotor cutting element prior to the impeller provide optimum, blockage-free operation.

2 Seal leak detection system

Advanced warning allows for repair of the pump seal prior to water entering the motor.

3 Premium Efficiency motor (IE3)

- In accordance to IEC 60034-30
- Low life-cycle costs through energy savings
- Significant CO₂ footprint reduction
- Increased lifetime due to low winding temperature rise

4 Double mechanical seals

- Silicon carbide/silicon carbide (SiC/SiC) provides maximum resistance from abrasives
- Seal protection system increases the longevity of the lower seal and reduces maintenance costs
- SiC/SiC is chemical resistant in wastewater and most other industrial applications

5 Small diameter discharges

- DN32/1-1/4" threaded and DN50/2" flanged
- Low installation costs
- Can be installed in areas where the laying of conventional sewer pipes would not be physically possible

6 Temperature monitoring

Thermal sensors are embedded in the stator windings and can be used to shut the pump off in case of overheating and automatically switch back on once cooled.

7 Bearings

The stainless steel motor shaft is supported by lubricated-for-life, heavy-duty, ball bearings.

8 Cable plug

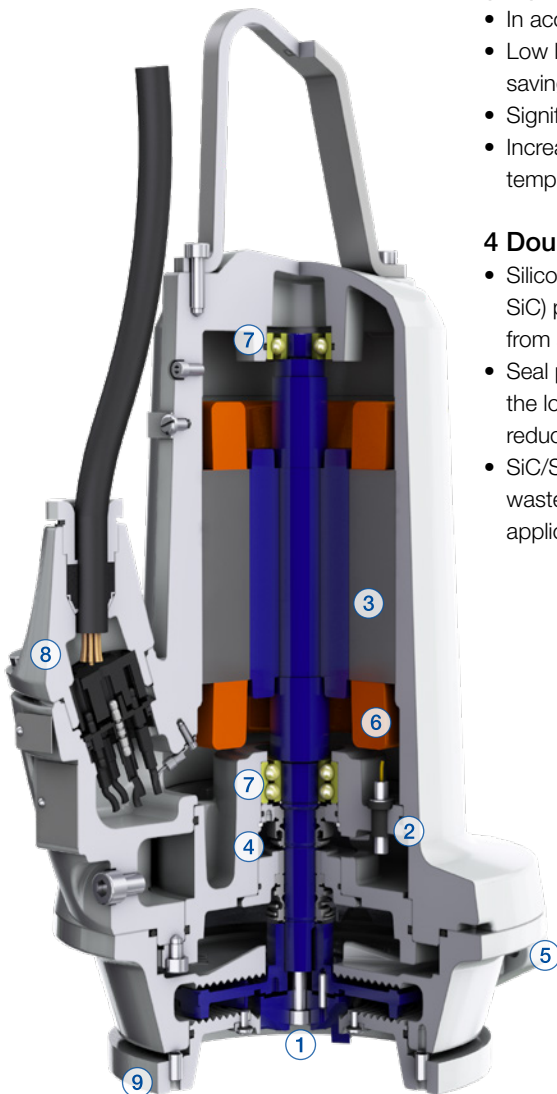
To facilitate the quick and easy changing or repair of the power cable, the connection between the cable and motor is by means of an integrated 10-pole, quick disconnect, terminal block.

9 Adjustable bottom plate

To counter the effects of wearing and to maintain efficiency, the optimum clearance between the bottom plate and the impeller can easily be restored.

10 Explosion proof

ATEX (Ex II 2G Ex h db IIB T4 Gb), FM (Class 1, Div. 1, Groups C&D), and CSA standards available.



Piranha S – Proven reliability in continuous submerged or intermittent dry operation

Sulzer's standard range of submersible grinder pumps, type ABS Piranha S, are equipped with water-tight, fully encapsulated, flood-proof motors. The pump and motor section form a compact unit, providing an economical, yet robust solution without compromising on the reliable design.

1 Piranha cutting system

- A spiral-grooved bottom plate and hardened stainless steel stationary cutting element, combined with a hardened stainless steel lobed rotor cutting element prior to the impeller provide optimum, blockage-free operation
- The high head version has a reversible cutting element, combined with a two-stage, hardened stainless steel lobed rotor cutting element prior to the impeller

2 Seal leak detection system

Advanced warning allows for repair of the pump seal prior to water entering the motor.

3 Shaft sealing

- High quality silicon carbide (SiC/SiC) mechanical seal
- Motor-side sealing provided by an oil lubricated lip seal arrangement

4 Small diameter discharge

- Low installation costs
- Can be installed in areas where the laying of conventional sewer pipes would not be physically possible

5 Explosion proof (optional)

In accordance with FM (Class 1, Div. 1, Groups C&D) and CSA.

6 Bearings

The stainless steel motor shaft is supported by lubricated-for-life, heavy-duty, ball bearings.

7 Temperature monitoring

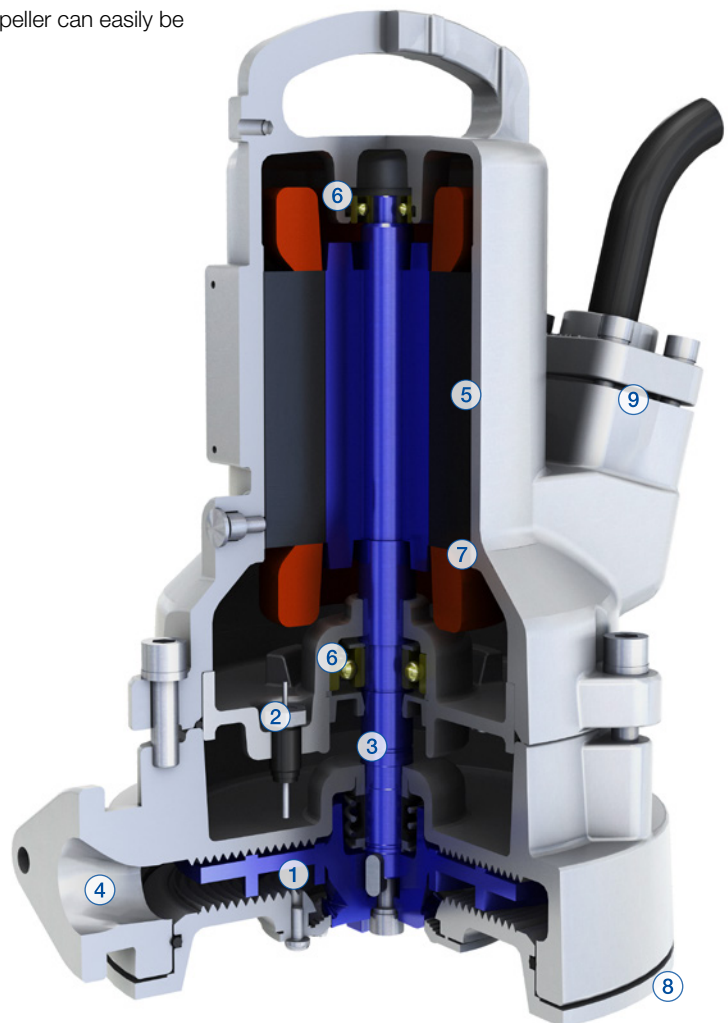
Thermal sensors are embedded in the stator windings and can be used to shut the pump off in case of overheating and automatically switch back on once cooled.

8 Adjustable bottom plate

To counter the effects of wearing and to maintain efficiency, the optimum clearance between the bottom plate and the impeller can easily be restored.

9 Cable plug (non-EX/FM models)

To facilitate the quick and easy changing or repair of the power cable, the connection between the cable and motor is by means of an integrated pin-style, Easy-Fit terminal block.



Piranha 08/09 – Economical performance for intermittent private and domestic operation

The Piranha 08/09 models are designed specifically for private and domestic wastewater applications where simplicity and reliability are key. These compact submersible grinder pumps combine efficient, clog-free performance with ease of installation. Featuring a built-in capacitor, they operate smoothly without requiring an external control box.

Their robust, flood-proof, fully encapsulated motors ensure durability in various settings. Perfect for installations with limited space or smaller discharge pipes, the Piranha 08/09 delivers dependable wastewater handling in a compact, economical package tailored for residential needs.



The right installation to fit any need

The Piranha grinder pumps can be installed in several configurations to fulfill virtually any customer requirements, including:

- Fixed installations with pedestal (guide rail assembly)
- Freestanding, transportable applications
- Installation in areas where large fluctuations in terrain elevation are present

Specifications

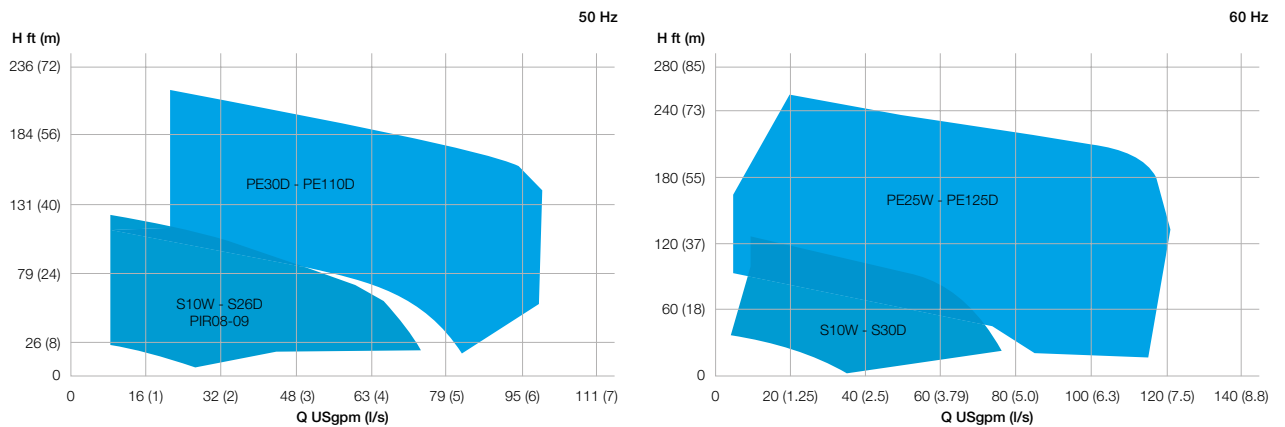
Materials

Pump part	Material
Motor housing, volute, impeller, bottom plate	Cast iron EN-GJL-250 (ASTM A-48, Class 35B)
Rotor shaft	Stainless steel 1.4021 (AISI 420)
Fasteners	Stainless steel 1.4401 (AISI 316)
Mechanical seal	Silicon carbide
Rotating and stationary cutters	Stainless steel 1.4528 (AISI 440B+Co), 58-62 HRC

Operating data

	Piranha 08-09		Piranha S		Piranha PE	
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Capacity (max)	12.5 m ³ /h	14 m ³ /h	16.5 m ³ /h	18 m ³ /h	22 m ³ /h	27 m ³ /h
Head (max)	21 m	33 m	37 m	42.5 m, 60 m HH	70 m	82 m
Speed (max)	2'900 rpm	3'400 rpm	2'900 rpm	3'400 rpm	2'900 rpm	3'400 rpm
Discharge sizes	DN 32, G 1¼"		DN 32, G 1¼"		DN 32, G 1¼", DN 50	
Temperature	40°C, max. 60°C for 5 min					

Performance range



The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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