

# Submersible Grinder Pump Type ABS Piranha 08 - 110

# SULZER

Submersible pumps for problem-free pumping of sewage containing faecal matter in pipe lines from 1¼" (DN 32).

## Applications

Piranha submersible pumps have been designed for effective and economic dewatering using discharge lines of small diameter, in private, municipal and industrial areas.

- Sewage removal from living units and houses in remote settlements where the laying of a conventional sewer would be too expensive, where large ground undulations are present or where it is only possible to lay pipe lines of small diameter.
- Sewage removal from motorway resting sites, communal buildings and for renovation of buildings or areas of a city.
- For use in slaughter houses, food processing plants, paper factories, agriculture and similar areas.
- Piranha 08 and 09 are specially designed for private and domestic applications.
- Maximum allowable temperature of the medium is 40 °C, or short term to 60 °C (max. 5 minutes).

## Construction

The water pressure-tight, encapsulated fully flood-proof motor and the pump section form a compact, robust, unit construction.

## Bearings

The stainless steel motor shaft is supported in lubricated-for-life ball bearings.

## Shaft sealing

**Piranha 08 - S26:** Between motor and hydraulic section by means of a high quality sealing unit using a silicon carbide mechanical seal. Seal at motor side is by oil lubricated lip seal.

**Piranha PE30/2C - 110/2E:** Double mechanical seals, SiC-SiC at the hydraulic side, SiC-C at the motor.

All seals are independent of direction of rotation and resistant to temperature shock.

## Discharge

**Piranha 08 and 09:** DN 32 flange with G 1¼" internal thread.

**Piranha S10 - S26 and PE30/2C:** DN 32 flange (G 1¼" threaded adaptor available as accessory).

**Piranha PE55/2E - PE110/2E:** DN 50 with DIN-flange.

## Shredding system

Spiral bottom plate and stationary cutter ring combined with a shredding rotor located before the impeller, for optimum blockage-free running.

## Temperature monitoring

Thermal sensors in the stator to switch off the pump in the case of overheating and switch on automatically after cooling down (optional for non-Ex Piranha-S model). Temperature and leakage relays are required (see accessories table).

## Seal monitoring

DI system consisting of a sensor in the motor and oil chambers which signals an inspection alert if there is leakage at the shaft seals (not in oil chamber on Ex Piranha-S). Not available for Piranha 08 and 09; optional for non-Ex Piranha-S. Temperature and leakage relays are required (see accessories table).



## Features

- Unique Piranha shredding system capable of shredding items such as cloths and plastic bags.
- For the pumping of wastewater containing sewage, offal, organic and industrial effluent.
- Piranha 08 and 09 fitted with MF modular motor; Piranha-S with AS, Piranha PE with XFP Premium Efficiency IE3.
- Piranha 08 and 09 available as KS version with float switch.
- Small discharge lines from 1¼" (DN 32).
- Installations are possible where large ground undulations are present.
- Standard and Ex-versions (see motor data below).
- Piranha 08 and 09 have capacitor in upper lid and do not require a control box.
- Low installation costs due to small diameter discharge pipework.

## Motor

Three-phase 400 V or single-phase 220-240 V, 50 Hz, 2-pole (2900 r/min) or 4-pole (1450 r/min).

Cooled by amply dimensioned cooling areas.

**Piranha 08 & 09:** insulation class F, protection type IP 68, non-Ex only.

**Piranha S10 - S26:** insulation class F, protection type IP 68, Ex and non-Ex.

**Piranha PE30/2C - PE110/2E:** Premium Efficiency IE3 with NEMA Class A temperature rise, insulation class H, protection type IP 68, Ex only.

Explosive-proof versions are in accordance with international standard ATEX II 2G Ex db IIB T4 Gb.

**Types of operation and frequency of starting:** Piranha-S has been designed for intermittent use only (S3, 25%) when dry-installed, and continuous use (S1) when submerged.

Pumps of the Piranha-PE series have been designed for continuous operation S1 when either submerged or dry-installed.

## Technical data

Piranha W = 1-phase D = 3-phase	Discharge		Motor power** (kW)		Rated current (A)	Rated voltage (V)	Speed (r/min)	Cable size***	Weight**** (kg)
	Flange DN	Internal thread *	P <sub>1</sub>	P <sub>2</sub>					
08W	32	G 1¼"	1.41	1.00	6.41	220-240 1~	2900	3G1.0	18
08D	32	G 1¼"	1.34	1.00	2.71	400 3~	2900	4G1.0	18
09W	32	G 1¼"	2.56	1.84	11.60	220-240 1~	2900	3G1.0	23
09D	32	G 1¼"	2.56	2.00	4.64	400 3~	2900	4G1.0	23
S10/4W <sup>(†)</sup>	32	G 1¼"	1.69	1.00	7.49	220-240 1~	1450	4G1.5	32
S12/2W <sup>(†)</sup>	32	G 1¼"	1.77	1.20	8.22	220-240 1~	2900	4G1.5	32
S12/2D	32	G 1¼"	1.69	1.20	3.29	400 3~	2900	4G1.5	32
S13/4D	32	G 1¼"	1.93	1.30	3.60	400 3~	1450	4G1.5	32
S17/2W <sup>(†)</sup>	32	G 1¼"	2.36	1.65	10.60	220-240 1~	2900	4G1.5	32
S17/2D	32	G 1¼"	2.31	1.70	3.97	400 3~	2900	4G1.5	32
S21/2D	32	G 1¼"	2.79	2.10	4.75	400 3~	2900	4G1.5	34
S26/2D	32	G 1¼"	3.43	2.60	5.64	400 3~	2900	4G1.5	37
PE30/2D-C	32	G 1¼"	3.42	3.00	5.58	400 3~	2900	7G1.5	85
PE55/2D-E	50 DIN	-	6.08	5.50	10.30	400 3~	2900	10G1.5	126
PE70/2D-E	50 DIN	-	7.74	7.00	13.50	400 3~	2900	10G1.5	130
PE90/2D-E	50 DIN	-	9.84	9.00	17.00	400 3~	2900	10G1.5	152
PE110/2D-E	50 DIN	-	12.10	11.00	20.10	400 3~	2900	10G1.5	152

\* Piranha 08 and 09 flange has internal thread. Piranha S10/4 - S26/4 and Piranha PE30/2D-C has threaded flange adaptor as optional accessory.

\*\* P<sub>1</sub> = Power at mains; P<sub>2</sub> = Power at motor shaft.

\*\*\* Piranha S10/4 Ex and Piranha S10/4- S26/2 with Di and klixon: 7G1.5

\*\*\*\* Weight with 10 m cable

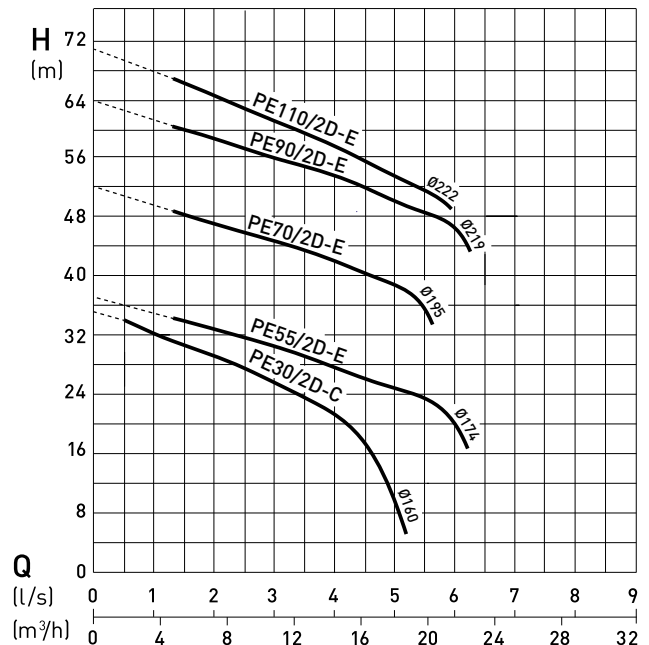
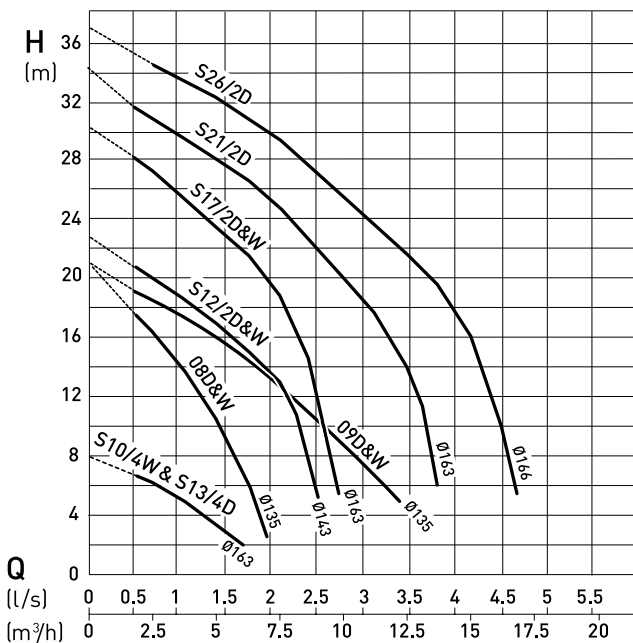
<sup>(†)</sup> Start and Run capacitor is not built-in to the pump and is required instead in the control panel to the following specification:

**Start:** 125-160µF.

**Run:** 40µF (2x20µF) for S10/4W, 30µF for S12/2W and S17/2W.

The recommended start time for the motors is two seconds.

## Performance curves

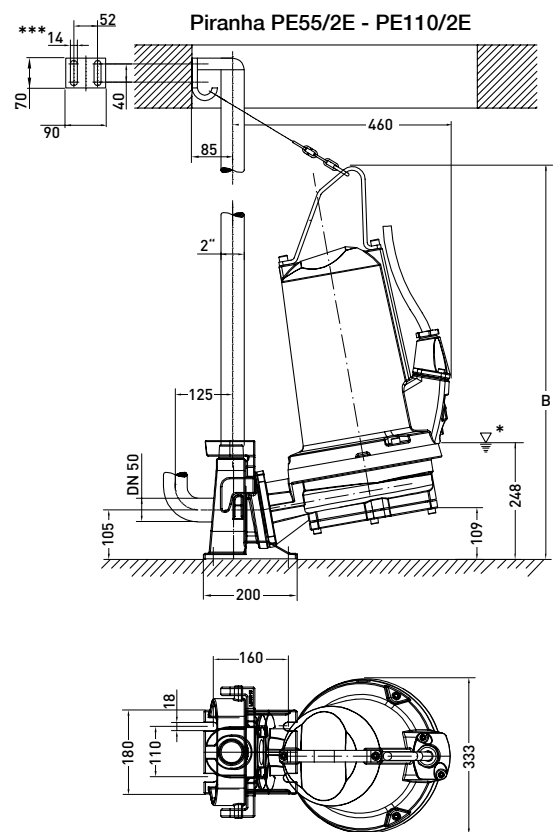
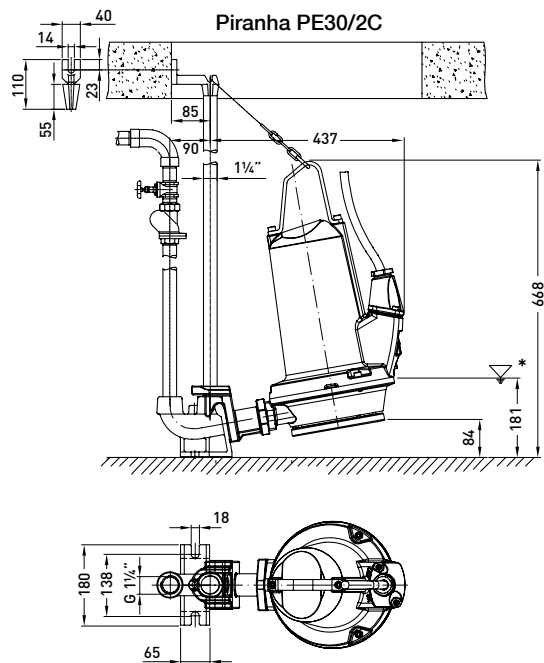
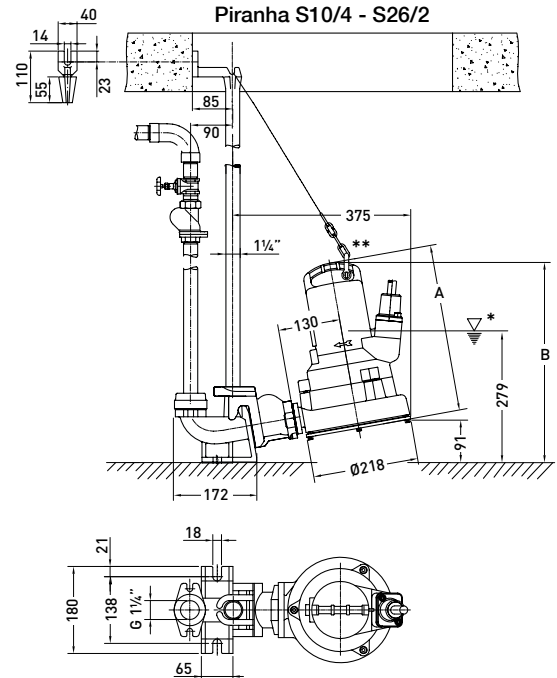
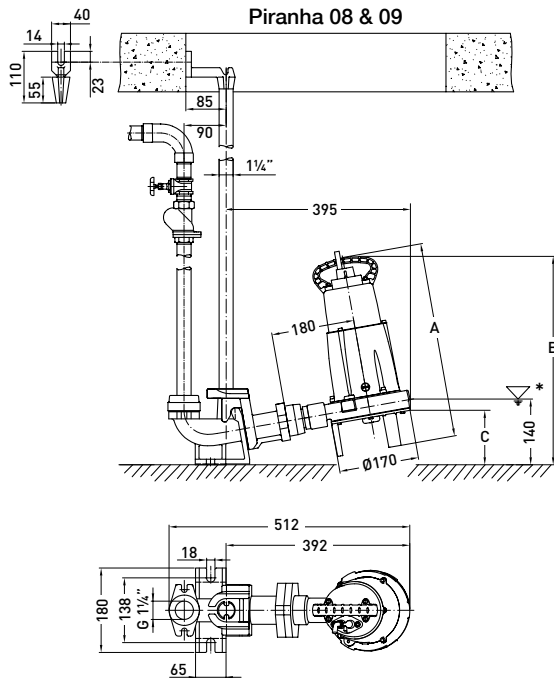


H = Total Head; Q = Discharge Volume.

Curves to ISO 9906 (60 Hz available on request)

N.B. please use the ABSEL program to validate pump selection.

## Dimensions (mm)



**Piranha 08 - PE110/2E:** Minimum sump opening  $\varnothing$  625 mm.  
 Pedestal base secured using M10 masonry anchor bolts, drill hole size 14 mm.  
 \* Lowest switch-off point for automatic operation.

**Piranha S10/4 - S26/2:** \*\* To allow the pump to be lowered and fixed correctly to the pedestal, the shackle must be fixed to the handle at the point furthest from the guide rail.

**Piranha PE55/2E - PE110/2E:** Discharge line connection with threaded flange DN 50/2" PN16.  
 Discharge elbow supplied by customer.  
 \*\*\* Hexagon head wood screw 10 x 70 DIN 571 and dowel size 12.

Piranha	A	B	C
08	420	445	117
09	445	470	108
S10/4 - S17/2	347	414	-
S21/2 & S26/2	360	427	-
PE55/2E - PE90/2E	-	774	-
PE110/2E	-	844	-

## Materials

Description	Material
Upper lid *	Stainless steel 1.4301 (AISI 304)
Motor housing	Cast iron EN-GJL-250
Rotor shaft	Stainless steel 1.4021 (AISI 420)
Volute	Cast iron EN-GJL-250
Impeller **	Cast iron EN-GJL-250
Fasteners	Stainless steel 1.4401 (AISI 316)

\* Piranha 08 and 09. \*\* Polyamide for Piranha 08

## Accessories

	Description	Size	Part no.	Piranha
<b>Fixed installation with pedestal</b>	<b>Pedestal</b> (cast iron EN-GJL-250) 90° cast bend	G 1¼"	62325007	08 & 09
		G 1¼"	62320674	S10/4 - S26/2
		G 1¼"	62320676	PE30/2C
	90° cast bend with built-in non-return valve without bend	G 1¼"	62320536	S10/4 - S26/2
		G 1¼"	62320538	PE30/2C
		DN 50/G2"	62320660	PE55/2E - 110/2E
	<b>Threaded Adaptor</b> hexagon double nipple	G 1¼"	13770011	08 & 09
	<b>Guide Rail</b> (galvanized steel)	1¼" x 1 m	31380007	08 - S26/2, PE30/2C
		1¼" x 2 m	31380008	
		1¼" x 3 m	31380009	
		1¼" x 4 m	31380010	
		1¼" x 5 m	31380011	
<b>Chain Kit</b> (galvanized steel) including shackle	3 m	61265065	08 - PE110/2E	
	4 m	61265093		
	6 m	61265069		
	7 m	61265096		
<b>Chain Kit</b> (stainless steel) including shackle	3 m	61265081	08 - PE110/2E	
	4 m	61265099		
	6 m	61265085		
	7 m	61265102		
<b>Transportable applications</b>	<b>Threaded Flange Kit</b> (EN-GJL-250) including discharge piece, gasket and bolts	G 1¼"	61180512	S10/4 - PE30/2C
	<b>Ground Support Stand</b> (St. 37) with fixing bolts		61900013 61900007	S10/4 - S26/2 PE30/2C - 110/2E
	<b>Fixed Coupling</b> (brass) GEKA with external thread	G 1¼"	15020003	S10/4 - PE30/2C
	<b>Hose Coupling</b> with nozzle, outer dia. 34 mm	G 1¼"	15020018	S10/4 - PE30/2C
<b>Horizontal</b> (tank connection)	<b>Pump</b> with built-in flange on suction side	DN 150/PN 16 to DIN 2633	On request	S10/4 - S26/2
	<b>Head Support</b> (EN-GJL-250) with vibration damping		62665103	S10/4 - S26/2
<b>General</b>	<b>Non-return Valve</b> (EN-GJL-250) ball valve with internal thread	G1¼"	61400525	08 - PE110/2E
		G1½"	61400526	
		G2"	61400527	
	<b>Shut-off Valve</b> (brass) with internal thread	G1¼"	14040005	08 - PE110/2E
		G1½"	14040006	
		G2"	14040007	
	<b>Leakage Relay Type ABS CA 461</b>	110 - 230 VAC	16907010	08 - PE110/2E
18 - 36 VDC, SELV		16907011	08 - PE110/2E	
<b>Temperature and Leakage Relay Type ABS CA 462</b>	110 - 230 VAC	16907006	08 - PE110/2E	
	18 - 36 VDC, SELV	16907007	08 - PE110/2E	