

# Submersible Grinder Pump Type ABS Piranha 09 - 125

**SULZER**

Submersible pumps for problem-free pumping of raw sewage in pipe lines from 1¼" (DN 32) and in pressure sewer systems.

## 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 houses in scattered 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 highway and motorway resting sites, community buildings and for renovation projects.
- For use in slaughter houses, food processing plants, paper factories, agriculture and similar areas.
- Piranha 09 is specially designed for private and domestic applications.
- Piranha S26 HH is specially designed for high head applications.
- Maximum allowable temperature of the medium is 104 °F, or short term to 140 °F (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 09 - S30:** 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 PE25/2C - 125/2E:** SiC-SiC double mechanical seals. All seals are independent of direction of rotation and resistant to temperature shock.

## Discharge

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

**Piranha S10 - PE45:** DN 32 flange (1¼" threaded adaptor available as accessory).

**Piranha PE80/2E - PE125/2E:** DN 50 (2") 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. 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 available for Piranha 09. Temperature and leakage relays are required (see accessories table).



## Features

- Unique Piranha shredding system capable of shredding all materials found in sewage such as cloths and plastic bags.
- For the pumping of wastewater containing sewage, offal, organic and industrial effluent.
- Piranha 09 fitted with MF modular motor; Piranha-S with AS, Piranha PE with XFP Premium Efficiency IE3.
- Small discharge lines from 1¼" (DN 32).
- Installations are possible where large ground undulations are present.
- Standard and Ex-versions.
- Piranha 09 have capacitor in upper lid and do not require a control box.
- Piranha S26 HH is fitted with two-stage hydraulics, and shredding system specially adapted for high head pumping.
- Low installation costs due to small diameter discharge pipework.

## Motor

Three-phase 208, 230, 380, 460 and 600 V, or single-phase 208 and 230 V; 60 Hz; 2-pole (3400 rpm) or 4-pole (1750 rpm). Cooled by amply dimensioned cooling areas.

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

**Piranha S10 - S30:** insulation class F, protection type IP 68, Ex and non-Ex.

**Piranha S26/2W HH:** insulation class F, protection type IP 68, non-Ex.

**Piranha PE25/2C - PE125/2E:** 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 FM/CSA standards.

**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 **		Rated current (A)				Speed (rpm)	Cable type ***				Weight **** (lbs)
	Flange DN /ins	Internal thread *	(kW) P <sub>1</sub>	(hp) P <sub>2</sub>	230 V	208 V	460 V	600 V		230 V	208 V	460 V	600 V	
09/2W	32/1¼"	1¼"	2.83	3.02	13.5	n.a.	n.a.	n.a.	3400	(a)	n.a.	n.a.	n.a.	51
09/2D	32/1¼"	1¼"	2.53	2.68	8.0	n.a.	4.0	n.a.	3400	(b)	n.a.	(b)	n.a.	51
S10/4W (†)	32/1¼"	1¼"	1.48	1.34	6.5	7.2	n.a.	n.a.	1750	(c)	(c)	n.a.	n.a.	80
S10/4D	32/1¼"	1¼"	1.33	1.34	5.2	5.8	2.6	2.1	1750	(c)	(c)	(c)	(c)	80
S20/2W (†)	32/1¼"	1¼"	2.45	2.41	11.5	12.7	n.a.	n.a.	3400	(c)	(c)	n.a.	n.a.	80
S20/2D	32/1¼"	1¼"	2.42	2.41	7.2	8.0	3.6	2.9	3400	(c)	(c)	(c)	(c)	80
S26/2W (†)	32/1¼"	1¼"	3.13	3.49	13.7	15.1	n.a.	n.a.	3400	(c)	(c)	n.a.	n.a.	91
S26/2W HH (†)	32/1¼"	1¼"	3.13	3.49	13.7	n.a.	n.a.	n.a.	3400	(c)	n.a.	n.a.	n.a.	96
S30/2D	32/1¼"	1¼"	3.87	4.02	11.0	12.2	5.5	4.4	3400	(c)	(c)	(c)	(c)	126
PE25/2W-C	32/1¼"	1¼"	3.74	3.35	13.3	14.7	n.a.	n.a.	3400	(e)	(e)	n.a.	n.a.	190
PE28/2D-C	32/1¼"	1¼"	3.21	3.75	9.4	10.4	4.7	3.6	3400	(d)	(d)	(d)	(d)	184
PE35/2W-C	32/1¼"	1¼"	4.53	5.36	20.0	22.2	n.a.	n.a.	3400	(f)	(f)	n.a.	n.a.	195
PE35/2D-C	32/1¼"	1¼"	4.48	5.36	13.0	14.3	6.5	5.0	3400	(d)	(e)	(d)	(d)	184
PE45/2W-C	32/1¼"	1¼"	5.11	6.04	22.4	24.8	n.a.	n.a.	3400	(g)	(g)	n.a.	n.a.	201
PE45/2D-C	32/1¼"	1¼"	5.61	6.71	16.0	17.7	8.0	6.1	3400	(e)	(f)	(e)	(d)	196
PE80/2D-E	50/2"	-	8.87	10.70	26.6	29.4	13.3	10.2	3400	(g)	(g)	(e)	(d)	298
PE100/2D-E	50/2"	-	10.80	13.40	34.7	38.3	17.3	13.3	3400	(g)	(g)	(f)	(e)	362
PE110/2D-E	50/2"	-	12.00	14.80	37.1	41.1	18.6	14.2	3400	(g)	(g)	(f)	(f)	362
PE125/2D-E	50/2"	-	13.70	16.80	42.6	47.1	21.3	16.3	3400	(g)	(g)	(g)	(f)	362

\* Piranha 09 flange has internal thread. Piranha S10/4W - PE45/2D-C has threaded flange adaptor as optional accessory.

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

\*\*\* Neoprene cable: (a) SJTOW-A 16/3 (e) SOOW 12/7  
Std & Ex (b) STOW-A 16/4 (f) SOOW 10/7  
(c) SOW-A 14/7 (g) AWM 8/4+16/3  
(d) SOOW 14/7

\*\*\*\* Weight with 49 ft cable

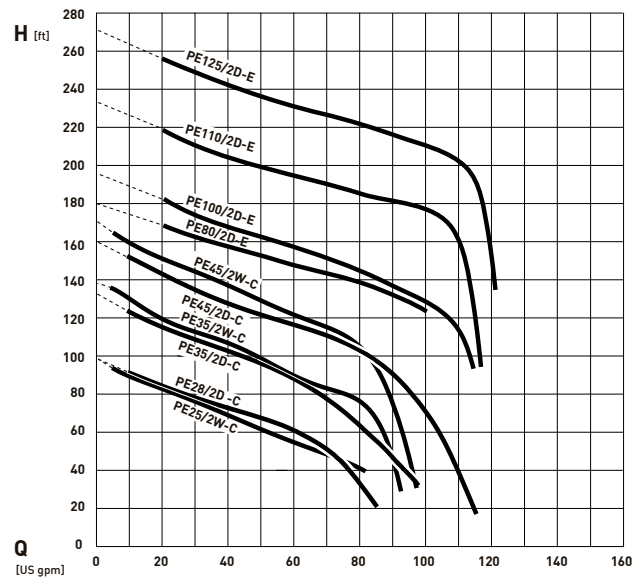
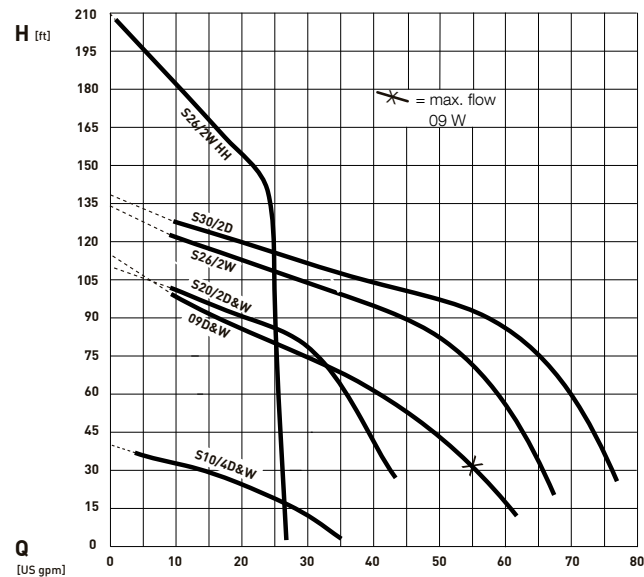
(†) Start and Run capacitor to the following specification required in control panel:

**Start:** 161-193µF for S10/4W & S20/2W, 200µF for S26/2W.

**Run:** 30µF for S10/4W, 20µF for S20/2W, 50µF for S26/2W.

The recommended start time for the motors is two seconds.

## Performance curves

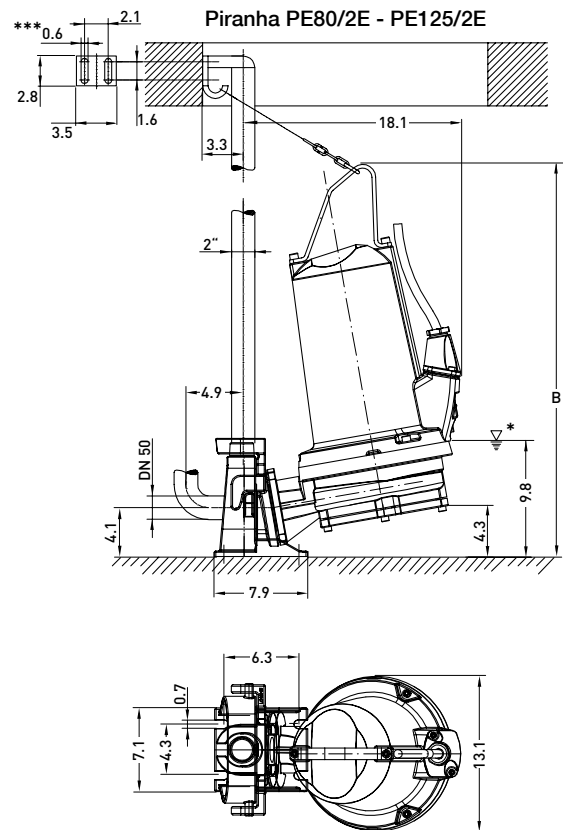
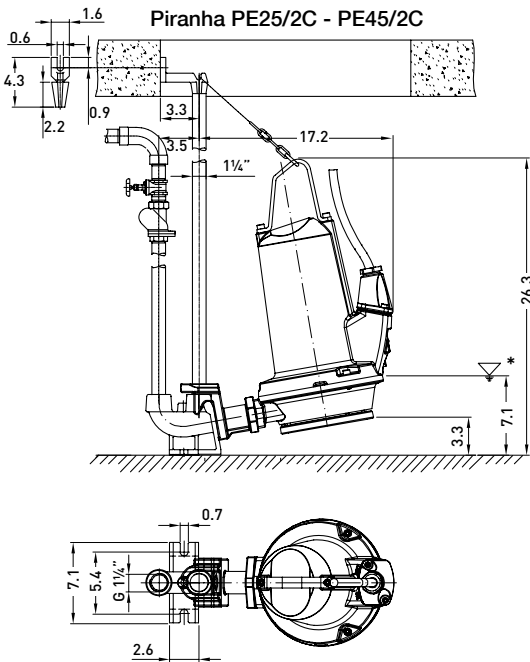
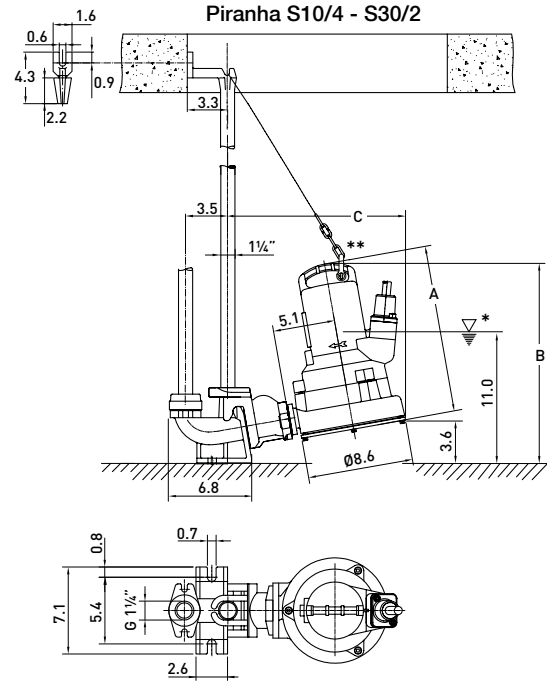
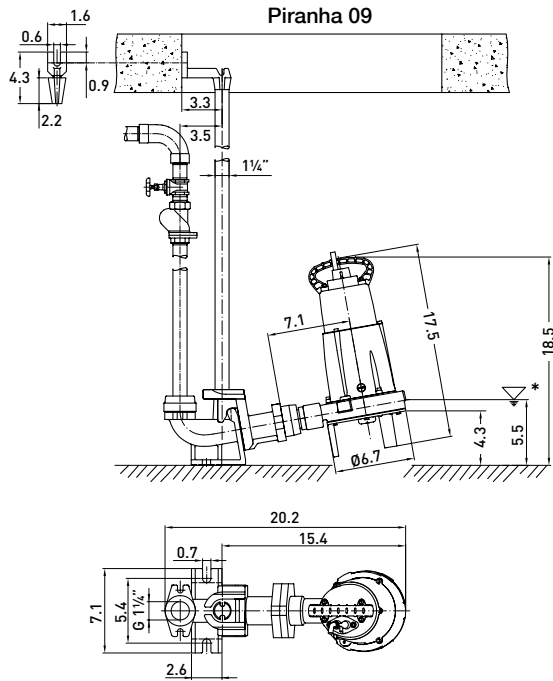


H = Total Head; Q = Discharge Volume.

Curves to Hydraulic Institute

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

## Dimensions (ins)



**Piranha 08 - PE125/2E:** Minimum sump opening  $\varnothing$  24.6 ins.  
Pedestal base secured using M10 masonry anchor bolts, drill hole size 0.6 ins.  
\* Lowest switch-off point for automatic operation.

**Piranha S10/4 - S30/2:** \*\* 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 PE80/2E - PE125/2E:** 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
S10/4 & S20/2	13.7	16.3	14.5
S26/2 & S30/2	14.2	16.8	14.7
S26/2 HH	15.3	16.8	14.7
PE80/2E	-	30.5	-
PE110/2E - PE125/2E	-	33.2	-

## Materials

Description	Material
Upper lid *	Stainless steel AISI 304
Motor housing	Cast iron ASTM A48 Class35B
Rotor shaft	Stainless steel AISI 420
Volute	Cast iron ASTM A48 Class35B
Impeller	Cast iron ASTM A48 Class35B
Fasteners	Stainless steel AISI 316

\* Piranha 09

## Accessories

	Description	Size	Part no.	Piranha
<b>Fixed installation with pedestal</b>	<b>Pedestal</b> (EN-GJL-250) 90° cast bend	G 1¼"	62325007	09
		G 1¼"	62320674	S10/4 - S30/2
		G 1¼"	62320676	PE25/2C - 45/2C
	90° cast bend with built-in non-return valve without bend	G 1¼"	62320536	S10/4 - S30/2
		G 1¼"	62320538	PE25/2C - 45/2C
		DN 50/G2"	62320660	PE80/2E - 125/2E
	<b>Threaded Adaptor</b> hexagon double nipple	G 1¼"	13770011	09
	<b>Guide Rail</b> (galvanized steel)	1¼" x 3.3 ft	31380007	09 - PE125/2E
		1¼" x 6.6 ft	31380008	
		1¼" x 9.8 ft	31380009	
1¼" x 13.1 ft		31380010		
1¼" x 16.4 ft		31380011		
<b>Chain Kit</b> (stainless steel) including shackle	9.8 ft	310101236013	09 - PE125/2E	
	13.1 ft	310101236014		
	19.7 ft	310101236016		
	22.0 ft	310101236017		
<b>Transportable applications</b>	<b>Threaded Flange Kit</b> (EN-GJL-250) including discharge piece, gasket and bolts	G 1¼"	61180512	S10/4 - PE45/2C
	<b>Ground Support Stand</b> (St. 37) with fixing bolts		61900013 61900007	S10/4 - S30/2 PE25/2C - 125/2E
	<b>Fixed Coupling</b> (brass) GEKA with external thread	G 1¼"	15020003	S10/4 - PE45/2C
<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 - PE125/2E
	<b>Head Support</b> (EN-GJL-250) with vibration damping		62665103	S10/4 - S2630
<b>General</b>	<b>Non-return Valve</b> (EN-GJL-250) ball valve with internal thread	G1¼"	61400525	09 - PE125/2E
		G1½"	61400526	
		G2"	61400527	
	<b>Shut-off Valve</b> (brass) with internal thread	G1¼"	14040005	09 - PE125/2E
		G1½"	14040006	
		G2"	14040007	
	<b>Leakage Relay Type ABS CA 461</b>	110 - 230 VAC	16907010	09 - PE125/2E
18 - 36 VDC, SELV		16907011	09 - PE125/2E	
<b>Temperature and Leakage Relay Type ABS CA 462</b>	110 - 230 VAC	16907006	09 - PE125/2E	
	18 - 36 VDC, SELV	16907007	09 - PE125/2E	