

# Aerator Type ABS Venturi Jet

**SULZER**

Jet aerator with single or twin diffuser pipes, for fixed or portable installation, coupled to a Premium Efficiency pump from the XFP range.

## Applications

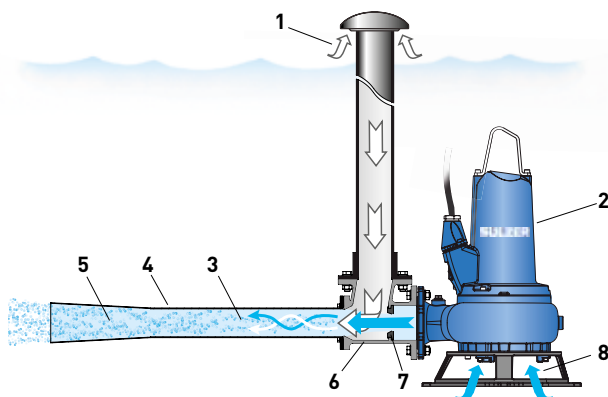
For the combined aeration and mixing of wastewater in small and medium sized tanks. Also for the cleaning of storm water tanks and for use in balancing tanks where a combination of aeration and mixing reduces septicity and minimizes odours.

## Features

- Stand-alone, self-aspirating system, with the option of fixed installation with guide rail and pedestal, or portable installation with stand. The portable option is especially suitable for emergency or intermittent aeration tasks and allows for variable positioning in the tank.
- Uses standard XFP pump featuring continuously rated Premium Efficiency motor, temperature and seal monitoring, and double mechanical seals.
- Blockage-free hydraulic design with Contrablock impeller.
- Lower noise levels and reduced spray compared to surface systems.
- Maximum allowable temperature of the medium for continuous operation is 40 °C.

## Venturi injection principle

The venturi jet aerator is based on the injection principle that produces an effective air-water mix which results in optimum aeration and suspension of solids. The velocity of the primary flow of liquid from the pump is accelerated when pumped through the smaller nozzle inlet, lowering the internal pressure which draws in the secondary flow of air through the air inlet pipe. The liquid and air flows are then mixed in the turbulence of the diffuser pipe and ejected as a jet of fine air bubbles into the tank.



- |                         |                            |
|-------------------------|----------------------------|
| 1. Air inflow           | 5. Mixed flow              |
| 2. XFP submersible pump | 6. Venturi chamber housing |
| 3. Mixing zone          | 7. Nozzle inlet            |
| 4. Diffuser pipe        | 8. Liquid inflow           |



## Motor

Premium Efficiency IE3, three-phase, squirrel-cage motor; 400 V; 50 Hz; 4-pole (1450 r/min) and 6-pole (980 r/min).

**Protection type:** IP 68

**Stator insulation:** Class H.

**Start-up:** 1.3 - 2.9 kW = direct on line (DOL)  
4.0 - 11.0 kW = star-delta (YΔ).

**Cooling:** 100C - 150E self-cooling,  
150G & 200G version with closed cooling system.

**Service factor:** 1.3

## Notes

1. Stand and pedestal supplied as accessories.
2. Air inflow pipe and fittings, elbows, and flanges supplied by the customer.

## Materials

	Description	Material
Aerator	Diffuser pipe	Stainless steel 1.4301 (AISI 304)
	Venturi chamber housing	Cast iron EN-GJL-200
Pump	Motor housing	Cast iron EN-GJL-250
	Motor shaft	Stainless steel 1.4021 (AISI 420)
	Impeller	Cast iron EN-GJL-250
	Volute	Cast iron EN-GJL-250
	Bottom plate	Cast iron EN-GJL-250
	Lifting hoop	Stainless steel 1.4401 (AISI 316)
	Fasteners	Stainless steel 1.4401 (AISI 316)

## Technical data

XFP pump	Motor	Impeller size	Pump discharge DN	Aerator inlet DN	Nozzle ø mm	Water flow m <sup>3</sup> /h	Motor power *		Rated current (A)	Cable size	Weight ** (pump) kg
							P <sub>1</sub>	P <sub>2</sub>			
100C-CB1	PE13/6	1	100	100	55	50	1.6	1.3	3.6	7G1.5	105
	PE22/4	4	100	100	55	70	2.5	2.2	4.6	7G1.5	107
	PE29/4	2	100	100	55	100	3.4	3.0	6.4	7G1.5	109
100E-CB1	PE40/4	5	100	100	55	140	4.4	4.0	8.4	10G1.5	159
150E-CB1	PE60/4	4	150	150	80	190	6.7	6.0	13.6	10G1.5	186
	PE90/4	1	150	150	80	240	10.0	9.0	18.1	10G1.5	198
150G-CB1	PE160/4	3	150	150	80	315	17.4	16.0	33.1	10G2.5	347
200G-CB1 <sup>(1)</sup>	PE185/4	2	200	150	80	500	20.0	18.5	36.9	10G2.5	375

<sup>(1)</sup> XFP 200G requires twin aerators. DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange required for connection to pump discharge.

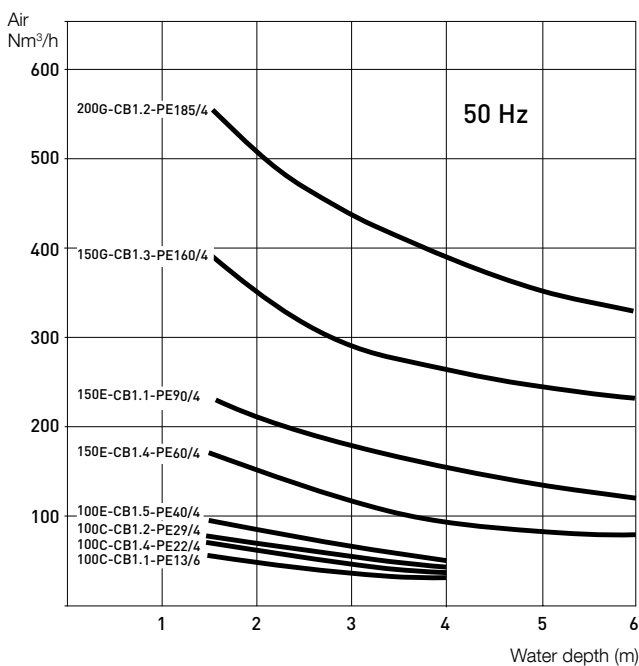
\* P<sub>1</sub> = power at mains. P<sub>2</sub> = power at motor shaft.

\*\* Aerator weight: DN 100 = 20 kg, DN 150 = 40 kg (does not include air inlet pipe or fittings). Portable stand: 100C = 9.5 kg, 100 & 150E = 10.5 kg, 150 & 200G = 17.5 kg.

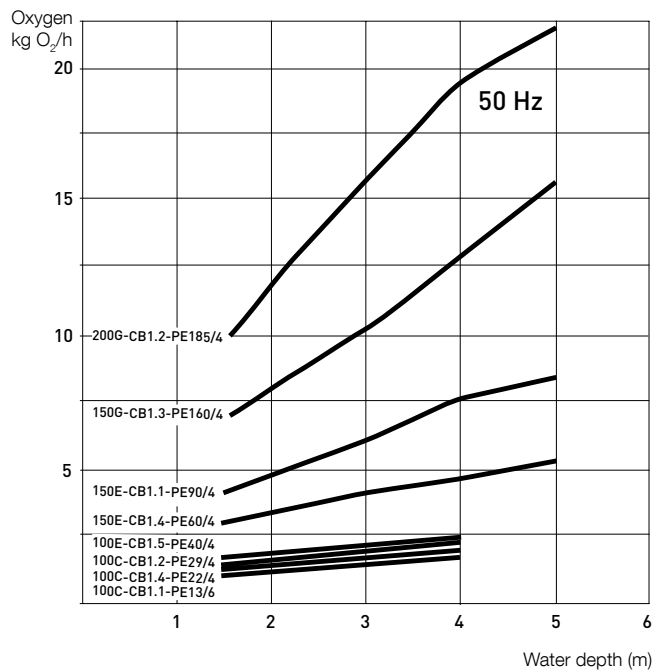
## Aerator selection / Tank dimensions (m)

XFP pump	Motor	Impeller size	Wastewater tank (sample size)			Storm water tank (sample size)		
			Rectangular	Square	Circular	Rectangular (outflow at one side)	Rectangular (central channel)	Circular (central outflow)
100C-CB1	PE13/6	1	6.0 X 4.0	4.9	ø 5.5	-	-	-
	PE22/4	4	7.2 X 4.8	5.9	ø 6.6	-	-	-
	PE29/4	2	8.0 X 5.3	6.5	ø 7.4	8.0 X 6.0	8.0 X 5.0	ø 5.5
100E-CB1	PE40/4	5	9.5 X 6.3	7.8	ø 8.8	10.0 X 8.0	10.0 X 6.5	ø 6.5
150E-CB1	PE60/4	4	12.0 X 8.0	9.8	ø 11.1	18.0 X 10.0	15.0 X 8.0	ø 8.0
	PE90/4	1	15.0 X 10.0	12.2	ø 13.8	22.0 X 12.0	20.0 X 10.0	ø 13.0
150G-CB1	PE160/4	3	17.5 X 11.5	14.2	ø 16.0	24.0 X 13.0	22.0 X 10.0	ø 14.0
200G-CB1	PE185/4	2	21.0 X 13.0	16.4	ø 18.0	27.0 X 14.0	24.0 X 10.0	-

## Air flow performance



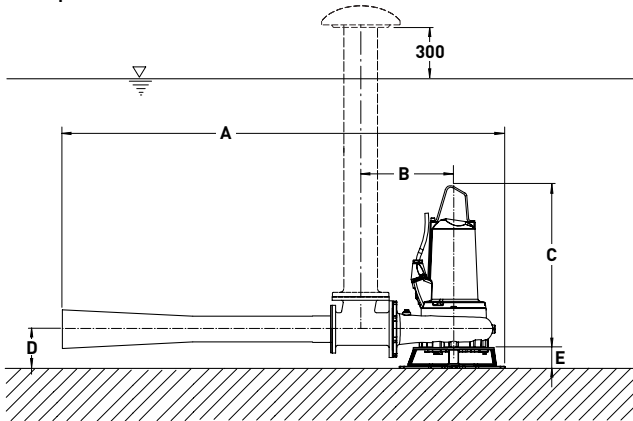
## Oxygen transfer performance



Oxygen transfer data measured as per "Measurement of Oxygen Transfer in Clean Water" ASCE Standard 2-06, 2006.

## Dimensions (mm)

### Transportable installation



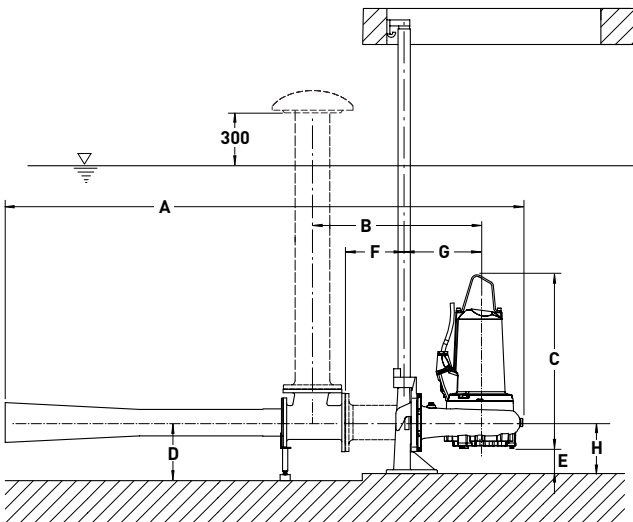
**Note:** in some cases the support stand may need to be weighted to the tank base to prevent lateral movement of the unit.

	100C	100E	150E		150G	200G*
			PE60/4	PE90/4		
<b>A</b>	1596	1636	2239	2239	2319	2384*
<b>B</b>	390	405	471	471	496	543*
<b>C</b>	686	728	749	819	1261	1348
<b>D</b>	193	179	198	198	300	320
<b>E</b>	105	105	105	105	200	200

\* Twin aerators as standard and only.

**Required:** DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange for connecting to pump discharge (not included in dimension; supplied by the customer).

### Installation with straight pedestal

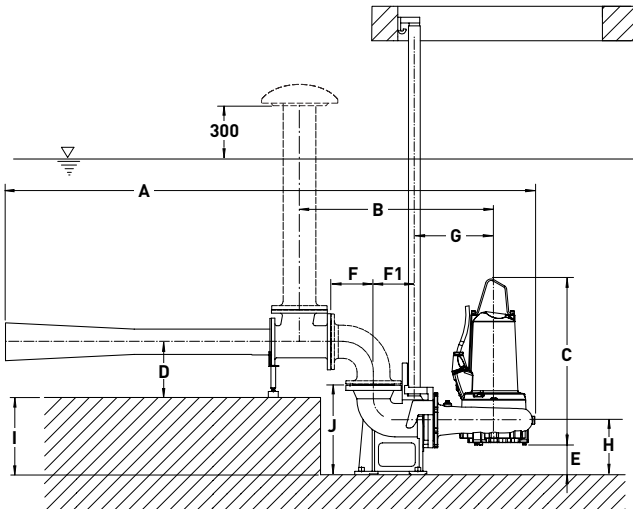


	100C	100E	150E		150G	200G
			PE60/4	PE90/4		
<b>A</b>	1594+F	1627+F	2251+F	2251+F	2316+F	2505+F
<b>B</b>	442+F	655+F	531+F	531+F	556+F	995+F
<b>C</b>	716	762	783	853	1297	1348
<b>D</b>	289	289	286	286	286	286
<b>E</b>	82	92	123	123	114	119
<b>F</b>	**	**	**	**	**	**
<b>G</b>	318	333	372	372	397	546
<b>H</b>	200	200	250	250	250	240

\*\* Variable dimension (supplied, and dimensions specified, by customer).

**Required:** DN 100 or DN 150 flange for XFP 100C - 150G, DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange for XFP 200G.

### Installation with 90° pedestal (duckfoot)



	100C	100E	150E		150G	200G
			PE60/4	PE90/4		
<b>A</b>	1816+F	1846+F	2497+F	2497+F	2562+F	2788+F
<b>B</b>	661+F	676+F	777+F	777+F	802+F	988+F
<b>C</b>	716	762	783	853	1297	1348
<b>D</b>	289	289	286	286	286	286
<b>E</b>	107	117	153	153	144	158
<b>F</b>	**	**	**	**	**	**
<b>F1</b>	180	180	210	210	210	297
<b>G</b>	357	372	408	408	433	533
<b>H</b>	225	225	280	280	280	325
<b>I</b>	262	262	397	397	397	524
<b>J</b>	371	371	463	463	463	550

\*\* Variable dimension (supplied, and dimensions specified, by customer).

**Required:** DN 100 or DN 150 elbow for XFP 100C - 150G, DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor elbow for XFP 200G.

**Note:** further and more detailed dimension drawings for all installation types are available on Sulzer.com or by request.

## Accessories

	Description	Size	XFP		Part no.	
Fixed installation - wet well with Sulzer Automatic Coupling System	<b>Pedestal (kit)*</b> (cast iron EN-GJL-250) 90° cast bend (single guide rail) - DIN flange connection	DN 100	100C & 100E		62320652	
		DN 150	150E & 150G		62320655	
		DN 200	200G		DPT91211A	
	<b>Pedestal (components)*</b> cast iron EN-GJL-250 straight (single guide rail) - DIN flange connection	DN 100		100C & 100E	Gasket	14020018
					Base	32560611
					Bracket	41420520
		DN 150		150E & 150G	Seal	43070518
					Guide piece	31450510
					Gasket	14020020
		DN 200		200G	Base	32560620
					Bracket	31420535
					Seal	43070519
				Guide piece	31450510	
<b>Pedestal bracket fasteners</b> single guide rail version (galvanised steel)			100C & 100E 150E & 150G 200G		62610633	
					62610635	
					62610883	
single guide rail version (stainless steel)			100C & 100E 150E & 150G 200G		62610637	
					62610639	
					62610862	
<b>Pedestal base anchor bolts</b> single and twin guide rail (galvanised steel)			100C & 100E 150E & 150G 200G		62610775	
					62610784	
					62610785	
<b>Chain kit</b> (galvanized steel) including shackle	3 m		100C - 200G		61265065	
	4 m			61265093		
	6 m			61265069		
	7 m			61265096		
<b>Chain kit</b> (stainless steel) including shackle	3 m		100C - 200G		61265081	
	4 m			61265099		
	6 m			61265085		
	7 m			61265102		
Transportable	<b>Ground support stand</b>		100C		61355016	
			100E		61355018	
			150E		61355019	
			150G & 200G.		61355025	
General	<b>Cathodic protection</b> (zinc anodes)		100C - 200G		13905000	
	<b>Leakage relay type ABS CA 461</b>	110 - 230 VAC		100C - 200G		16907010
		18 - 36 VDC, SELV				16907011
<b>Temperature and leakage relay type ABS CA 462</b>	110 - 230 VAC		100C - 200G		16907006	
	18 - 36 VDC, SELV				16907007	

\* Guide rail not included.