

Progressing cavity process pump, designed for pumping of highly viscous materials such as sludges, slurries, thick non-flowing pastes and dewatered sludge cake, in municipal and industrial process applications.

Construction

Materials of construction, available in cast iron or stainless steel, with a choice of rotor and stator materials to suit individual applications e.g. hard chrome plated rotor or natural rubber stator.

Applications

Typical applications for the PC cake pump include:

- Heavy sludge cake transfer for greater than 30% dry solids concentration.
- Dewatered and thickened sludge transfer.
- Sludge blending.
- Imported and organic waste sludge transfer.
- Industrial process sludge with high percentage dry solids concentration.

Features

- An auger screw conveyor for efficient feeding of the pump when handling high percentage dry solid sludge concentrations.
- Gentle pumping action, minimises shear and crush damage to the pumped product.
- Supplied with a baseplate to ease installation, or optional without.
- Fully sealed drive train to maximise life and minimise downtime.
- Hard faced, single mechanical seal as standard, with packed gland as an option.
- Designed to accommodate optional hopper or bridge breaker attachments.

Motor / drives

- Robust drives, specially selected drives and gearboxes for longer life. Options include electric motor drive units supplied as direct-coupled or variable speed drives with mechanical variable speed or frequency inverter.
- Low running speeds, reduced wear for a longer working pump life which extends the periods between routine maintenance. Important in abrasive applications.



Performance

Capacity, for flows up to 947 gpm (215 m³/h) and differential pressure up to 696 psi (48 bar), to operate in a range of process temperatures from 14 °F (-10 °C), up to 212 °F (100 °C).

Performance data

947	WD1				
682	WC1				
379	WB1	WB2	WB4		
216	WA1	WA2	WA4		
176	W91	W92			
150	W81	W82	W84	W86	W88
125	W71	W72	W74		
77	W61	W62	W64	W66	W68
45	W51	W52	W54		
22	W41	W42	W44	W46	W48
5	W31	W32	W34		
0					
	87	174	348	522	696

GPM = capacity. PSI = differential pressure.

Materials

Description	Material
Pump casing	Cast iron, BS EN 1561 grade EN-GJL-HB195, or cast stainless steel, BS 3100 grade 316C 16F
Rotor	Alloy steel, BS970 grade 708M40T/ 709M40T, with HCP 0.25 mm, or 316 stainless steel BS EN 10088 grade X2CrNiMo17-12-2
Stator	See pump coding table, page 2.
Drive shaft	Stainless steel BS EN 10088 grade X12Cr13/X2CrNi18-9
Coupling rod	Steel BS EN 10277, grade 20NiCrMoS2-2 hardened to 650-800Hv, or 316 stainless steel BS EN 10088, grade X2CrNiMo17-12-2
Mechanical seals	Silicon carbide faces, viton o-rings (EPDM by special request), stainless steel 316 springs

For guidance on material options and pump selection please contact Sulzer.

Pump and wear part weights lbs (kg)

Model	Close coupled pump	Bareshaft pump	Stator	Rotor	Auger / Conveyor	Shaft
Standard auger:						
W32	70.5 (32.00)	88.0 (40.00)	3.3 (1.50)	3.1 (1.4)	4.6 (2.1)	1.5 (0.7)
W34	97.0 (44.00)	126.0 (57.00)	7.7 (3.50)	6.6 (3.0)	5.7 (2.6)	3.5 (1.6)
W41	143.0 (65.00)	172.0 (78.00)	4.5 (2.00)	6.2 (2.8)	9.7 (4.4)	1.5 (0.7)
W42	119.0 (54.00)	148.0 (67.00)	8.5 (3.80)	10.4 (4.7)	9.7 (4.4)	3.5 (1.6)
W44	170.0 (77.00)	198.5 (90.00)	17.2 (7.80)	20.5 (9.3)	7.1 (3.2)	6.4 (2.9)
W51	165.0 (75.00)	183.0 (83.00)	9.3 (4.20)	12.0 (5.4)	5.5 (2.5)	3.5 (1.6)
W52	187.0 (85.00)	216.0 (98.00)	18.3 (8.30)	20.5 (9.3)	10.0 (4.6)	6.4 (2.9)
W54	282.0 (128.00)	333.0 (151.00)	35.7 (16.20)	37.0 (16.8)	15.7 (7.1)	9.7 (4.4)
W61	247.0 (112.00)	275.5 (125.00)	16.8 (7.60)	20.5 (9.3)	10.0 (4.6)	6.4 (2.9)
W62	311.0 (141.00)	359.0 (163.00)	32.0 (14.50)	34.6 (15.7)	19.6 (8.9)	9.7 (4.4)
W64	458.5 (208.00)	525.0 (238.00)	62.2 (28.20)	64.4 (29.2)	31.5 (14.3)	9.7 (4.4)
W71	306.0 (139.00)	355.0 (161.00)	22.7 (10.30)	32.4 (14.7)	37.0 (16.8)	9.7 (4.4)
W72	368.0 (167.00)	419.0 (190.00)	43.0 (19.50)	54.0 (24.5)	37.0 (16.8)	9.7 (4.4)
W74	630.5 (286.00)	703.0 (319.00)	83.8 (38.00)	108.7 (49.3)	34.0 (15.4)	19.2 (8.7)
W81	304.0 (138.00)	392.0 (178.00)	30.6 (13.90)	43.9 (19.9)	37.0 (16.8)	9.7 (4.4)
W82	487.0 (221.00)	553.0 (251.00)	58.2 (26.40)	75.8 (34.4)	34.0 (15.4)	19.2 (8.7)
W84	765.0 (347.00)	840.0 (381.00)	113.0 (51.40)	146.4 (66.4)	39.0 (17.7)	20.9 (9.5)
W91	485.0 (220.00)	551.0 (250.00)	48.0 (21.80)	62.8 (28.5)	40.3 (18.3)	19.2 (8.7)
W92	635.0 (288.00)	701.0 (318.00)	91.3 (41.40)	106.5 (48.3)	40.3 (18.3)	19.2 (8.7)
WA1	566.5 (257.00)	633.0 (287.00)	65.0 (29.40)	96.0 (43.6)	40.3 (18.3)	19.2 (8.7)
WA2	813.5 (369.00)	886.0 (402.00)	123.0 (55.80)	157.0 (71.1)	64.2 (29.1)	20.9 (9.5)
WB1	831.0 (377.00)	904.0 (410.00)	121.0 (55.00)	165.8 (75.2)	62.6 (28.4)	20.9 (9.5)
Large auger:						
W42	187.4 (85.00)	213.8 (97.00)	8.4 (3.80)	10.4 (4.7)	29.1 (13.2)	3.5 (1.6)
W44	233.7 (106.00)	262.3 (119.00)	17.2 (7.80)	20.5 (9.3)	29.1 (13.2)	6.4 (2.9)
W52	244.7 (111.00)	271.2 (123.00)	18.3 (8.30)	20.5 (9.3)	40.1 (18.2)	6.4 (2.9)
W54	330.7 (150.00)	377.0 (171.00)	35.7 (16.20)	37.0 (16.8)	40.1 (18.2)	9.7 (4.4)
W62	396.8 (180.00)	485.0 (220.00)	32.0 (14.50)	34.6 (15.7)	84.2 (38.2)	9.7 (4.4)
W64	535.7 (243.00)	600.0 (272.00)	62.2 (28.20)	64.4 (29.2)	76.7 (34.8)	9.7 (4.4)
W72	487.2 (221.00)	535.7 (243.00)	43.0 (19.50)	54.0 (24.5)	93.9 (42.6)	9.7 (4.4)
W74	771.6 (350.00)	815.7 (370.00)	83.8 (38.00)	108.7 (49.3)	93.9 (42.6)	19.2 (8.7)
W82	665.8 (302.00)	729.7 (331.00)	58.2 (26.40)	75.8 (34.4)	145.3 (65.9)	19.2 (8.7)
W84	972.2 (441.00)	992.0 (450.00)	113.3 (51.40)	146.4 (66.4)	145.3 (65.9)	20.9 (9.5)
W92	773.8 (351.00)	835.6 (379.00)	91.3 (41.10)	106.5 (48.3)	170.6 (77.4)	19.2 (8.7)
WA2	-	1146.4 (520.00)	123.00 (55.80)	156.7 (71.1)	232.1 (105.3)	20.9 (9.5)
WA4	-	1466.0 (665.00)	2 x WA2	352.7 (160.0)	170.6 (77.4)	51.6 (23.4)
WB2	-	1477.1 (670.00)	300.00 (136.00)	310.9 (141.0)	170.6 (77.4)	51.6 (23.4)
WB4	-	2072.3 (940.00)	2 x WB2	595.2 (270.0)	170.6 (77.4)	114.6 (52.0)
WC1	-	1400.0 (635.00)	198.4 (90.00)	335.0 (152.0)	146.8 (66.6)	51.6 (23.4)
WC4	-	-	2 x (186)	1102.0 (500.0)	-	97.0 (44.0)
WD1	-	1543.0 (700.00)	264.6 (120.00)	403.4 (183.0)	146.8 (66.6)	51.6 (23.4)

Motor / Baseplate dimensions (inches)

Model	Standard and Bridge breaker			Standard	Bridge breaker	Large auger				All models
	Y	A	V x W	S	S1	Y	A	V x W	S	D
W32	28.4	45.5	12.6 x 6.7	7.3	-	-	-	-	-	*
W34	29.5	64.5	12.6 x 6.7	8.4	-	-	-	-	-	2.0
W41	32.9	52.1	13.8 x 9.8	9.1	-	-	-	-	-	2.6
W42	32.9	60.0	13.8 x 9.8	9.1	16.2	30.3	72.5	29.5 x 9.8	11.1	2.6
W44	35.0	78.2	13.8 x 9.8	9.7	16.7	34.7	90.3	29.5 x 9.8	11.6	3.2
WC1	41.1	62.8	19.7 x 9.8	9.7	-	-	-	-	-	3.2
W52	41.3	73.2	19.7 x 9.8	10.2	17.1	30.3	79.1	29.5 x 9.8	12.2	3.2
WC4	43.3	98.4	19.7 x 9.8	11.2	18.1	30.1	104.6	29.5 x 9.8	13.2	3.9
WD1	49.8	72.6	25.6 x 14.2	11.2	-	-	-	-	-	3.9
W62	50.0	88.5	25.6 x 14.2	12.2	20.3	40.6	97.8	39.4 x 14.2	14.8	3.9
W64	52.4	116.7	25.6 x 14.2	12.6	20.7	40.8	126.5	39.4 x 14.2	15.6	4.9
W71	51.2	80.1	25.6 x 14.2	13.0	-	-	-	-	-	4.9
W72	51.2	94.6	25.6 x 14.2	13.0	20.7	40.4	105.3	39.4 x 14.2	16.3	4.9
W74	55.5	133.7	25.6 x 14.2	16.0	23.6	40.8	144.3	39.4 x 14.2	18.3	4.9
W81	51.2	81.8	25.6 x 14.2	13.0	-	-	-	-	-	4.9
W82	53.9	101.6	25.6 x 14.2	13.4	21.7	41.0	112.8	39.4 x 14.2	19.9	4.9
W84	56.7	141.3	25.6 x 14.2	16.0	24.2	40.6	151.5	39.4 x 14.2	19.9	5.9
W91	61.0	94.8	31.5 x 17.7	14.2	-	-	-	-	-	5.9
W92	61.0	113.0	31.5 x 17.7	14.2	22.6	41.1	120.2	39.4 x 17.7	19.9	5.9
WA1	61.0	97.8	31.5 x 17.7	14.2	-	-	-	-	-	5.9
WA2	64.0	124.1	31.5 x 17.7	16.0	25.8	41.0	134.3	39.4 x 17.7	21.7	5.9
WB1	63.0	109.6	31.5 x 17.7	17.7	-	-	-	-	-	7.9

* 1½" BSP outlet provided.

Dimension "Y" is the recommended dismantling space.

