PC Cake Perform Pump

Progressing cavity process pump, designed to be maintained in place without disconnecting from pipework. 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, 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 perform 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

- Maintain-in-place design allows for quick and easy removal of rotating parts, and clearing of rag build-up, without disconnecting from pipework.
- 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.

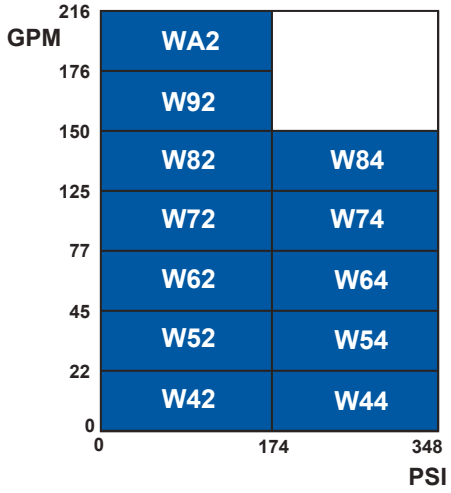
Motor / drives

- 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 216 gpm (49 m^3/h) and differential pressure up to 350 psi (24 bar), to operate in a range of process temperatures from 14 °F (-10 °C), up to 212 °F (100 °C).

Performance data



m^3/h = capacity. Bar = differential pressure.

Materials

Description	Material
Pump casing	Cast iron, BS EN 1561 grade EN-GJL-HB195
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 general guidance only. For specific material options and pump selection please contact Sulzer.

Pump coding

Body	Cast iron	**C**								
Pump design	Wide Inlet Perform		**W**							
Nominal pump capacity at max. speed and zero pressure	22.5 gpm (5.1 m³/h) @ 350 rpm			**4**						
	44.9 gpm (10.2 m³/h) @ 350 rpm			**5**						
	77.1 gpm (17.5 m³/h) @ 350 rpm			**6**						
	125.5 gpm (28.5 m³/h) @ 350 rpm			**7**						
	149.7 gpm (34.0 m³/h) @ 300 rpm			**8**						
	176.1 gpm (40.0 m³/h) @ 250 rpm			**9**						
	215.7 gpm (49.0 m³/h) @ 200 rpm			**A**						
Pump stages	Two				**2**					
	Four				**4**					
Prime mover arrangements and build selection	Options					**A**				
						B				
						C				
						D				
	Bareshaft					**H**				
Mechanical seal type design pump	Standard auger						**J**			
	Large auger						**H**			
	Ribbon auger						**K**			
	Bridge breaker drive options						**D**			
							E			
Packed gland type design pump	Standard auger						**S**			
	Large auger						**L**			
	Ribbon auger						**R**			
	Bridge breaker drive options						**B**			
							C			
Stator material	Natural							**A**		
	EPDM							**E**		
	High nitrile							**J**		
	Nitrile NBR							**R**		
	Fluoroelastomer / Viton							**V**		
	Hypalon							**H**		
	White NBR							**W**		
	Polyester based urethane							**K**		
	Polyether based urethane							**Y**		
Rotating parts	Alloy steel with HCP								**1**	
Prime mover and port options	Standard close coupled									**G**
	Standard bareshaft									**H**
	Bareshaft									**C**
	ANSI + access ports									**A**
	Standard ANSI									**E**
	Japan									**J**
Example:		**C**	**W**	**5**	**4**	**H**	**K**	**J**	**1**	**G**

Pump and wear part weights lbs (kg)

Model	Close coupled pump	Bareshaft pump	Stator	Rotor	Auger / Conveyor	Shaft
W42	198.4 (90.0)	220.5 (100.0)	8.4 (3.8.0)	10.4 (4.7)	29.1 (13.2)	3.5 (1.6)
W44	242.5 (110.0)	275.6 (125.0)	17.2 (7.8)	20.5 (9.3)	29.1 (13.2)	6.4 (2.9)
W52	253.5 (115.0)	286.6 (130.0)	18.3 (8.3)	20.5 (9.3)	40.1 (18.2)	6.4 (2.9)
W54	341.7 (155.0)	396.8 (180.0)	35.7 (16.2)	37.0 (16.8)	40.1 (18.2)	9.7 (4.4)
W62	407.9 (185.0)	562.2 (230.0)	32.0 (14.5)	34.6 (15.7)	84.2 (38.2)	9.7 (4.4)
W64	551.2 (250.0)	628.3 (285.0)	62.2 (28.2)	64.4 (29.2)	76.7 (34.8)	9.7 (4.4)
W72	507.1 (230.0)	562.2 (255.0)	43.0 (19.5)	54.0 (24.5)	93.9 (42.6)	9.7 (4.4)
W74	793.7 (360.0)	837.8 (380.0)	83.8 (38.0)	108.7 (49.3)	93.9 (42.6)	9.7 (4.4)
W82	665.8 (302.0)	749.6 (340.0)	58.2 (26.4)	75.8 (34.4)	145.3 (65.9)	19.2 (8.7)
W84	992.1 (450.0)	1014.1 (460.0)	113.3 (51.4)	146.4 (66.4)	145.3 (65.9)	20.9 (9.5)
W92	793.7 (360.0)	837.8 (380.0)	91.3 (41.4)	106.5 (48.3)	170.6 (77.4)	19.2 (8.7)
W94	959.0 (435.0)	1036.2 (470.0)	2 x 91.3 (41.4)	262.4 (119.0)	170.6 (77.4)	20.9 (9.5)
WA2	1091.3 (495.0)	1168.5 (530.0)	123.0 (55.8)	1567.0 (71.1)	232.1 (105.3)	20.9 (9.5)

Motor / Baseplate dimensions inches (mm)

Model	A	B	C	D	E	F	G	H
W42	72.6 (1845)	57.8 (1468)	6.6 (168)	29.5 (750)	9.8 (250)	4.4 (112)	11.1 (282)	10.6 (270)
W44	90.3 (2293)	75.1 (1907)	7.0 (177)	29.5 (750)	9.8 (250)	4.9 (125)	11.6 (295)	10.6 (270)
W52	79.0 (2006)	63.9 (1623)	6.9 (174)	29.5 (750)	9.8 (250)	4.9 (125)	12.2 (310)	12.6 (320)
W54	104.5 (2655)	85.9 (2182)	8.0 (204)	29.5 (750)	9.8 (250)	5.9 (150)	13.2 (335)	12.6 (320)
W62	97.8 (2485)	79.2 (2012)	8.0 (204)	39.4 (1000)	14.2 (360)	5.9 (150)	14.8 (375)	12.6 (320)
W64	126.5 (3212)	105.9 (2691)	9.1 (232)	39.4 (1000)	14.2 (360)	6.3 (160)	15.0 (382)	12.6 (320)
W72	105.5 (2679)	86.7 (2202)	8.2 (208)	39.4 (1000)	14.2 (360)	6.9 (175)	16.3 (415)	12.6 (320)
W74	144.5 (3670)	121.6 (3089)	10.4 (263)	39.4 (1000)	14.2 (360)	8.9 (225)	18.3 (465)	12.6 (320)
W82	113.1 (2873)	92.2 (2343)	9.5 (241)	39.4 (1000)	14.2 (360)	8.9 (225)	19.9 (505)	13.8 (350)
W84	151.6 (3851)	128.7 (3268)	10.4 (265)	39.4 (1000)	14.2 (360)	8.9 (225)	19.9 (505)	13.8 (350)
W92	120.4 (3057)	99.8 (2535)	9.2 (233)	39.4 (1000)	14.2 (360)	8.9 (225)	19.9 (505)	13.8 (350)
WA2	134.6 (3418)	111.6 (2834)	10.5 (266)	39.4 (1000)	14.2 (360)	9.8 (250)	21.7 (550)	13.8 (350)