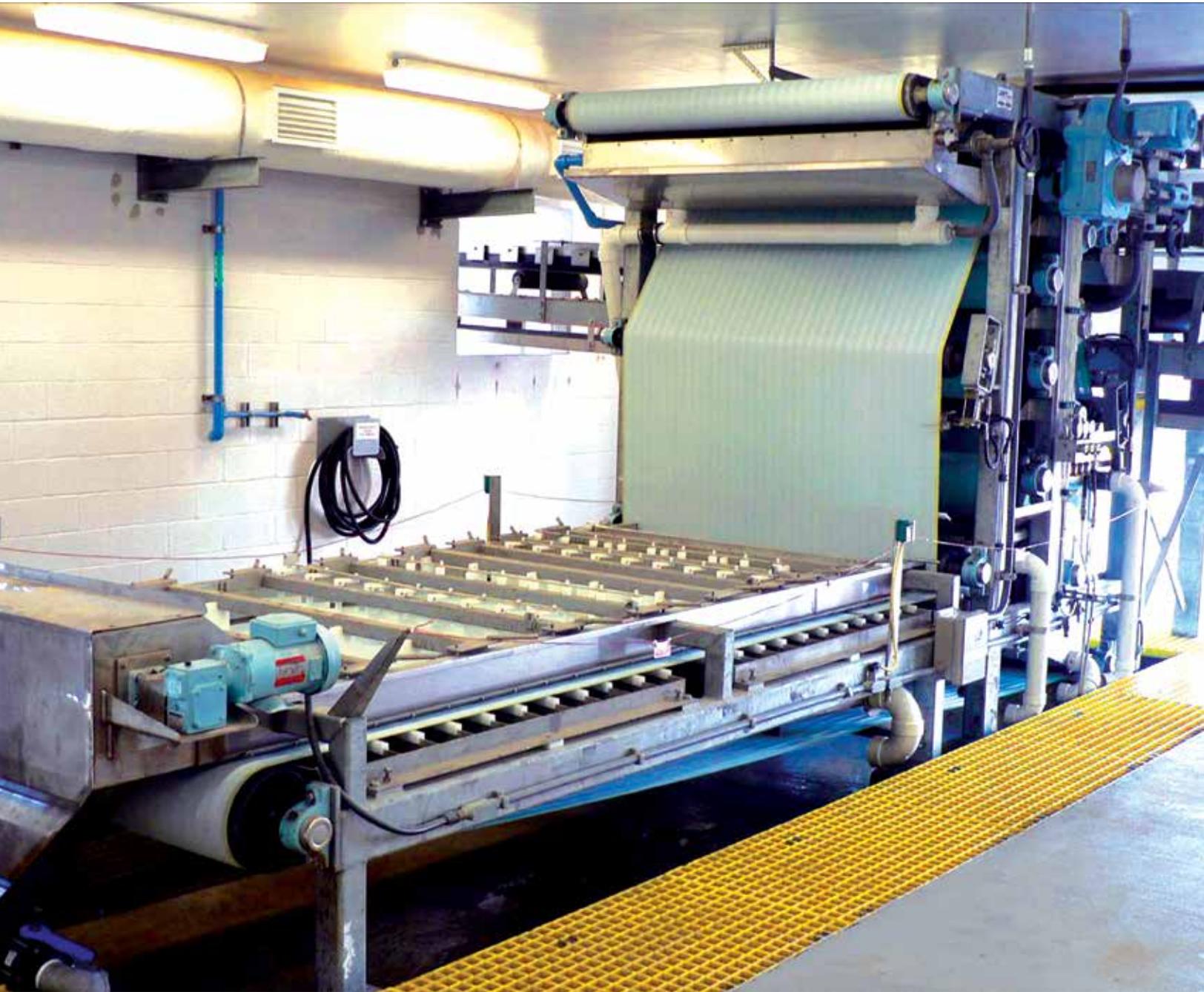




Manufacturer of Dewatering Systems

Model 2VP™ Belt Filter Press

www.bdpindustries.com



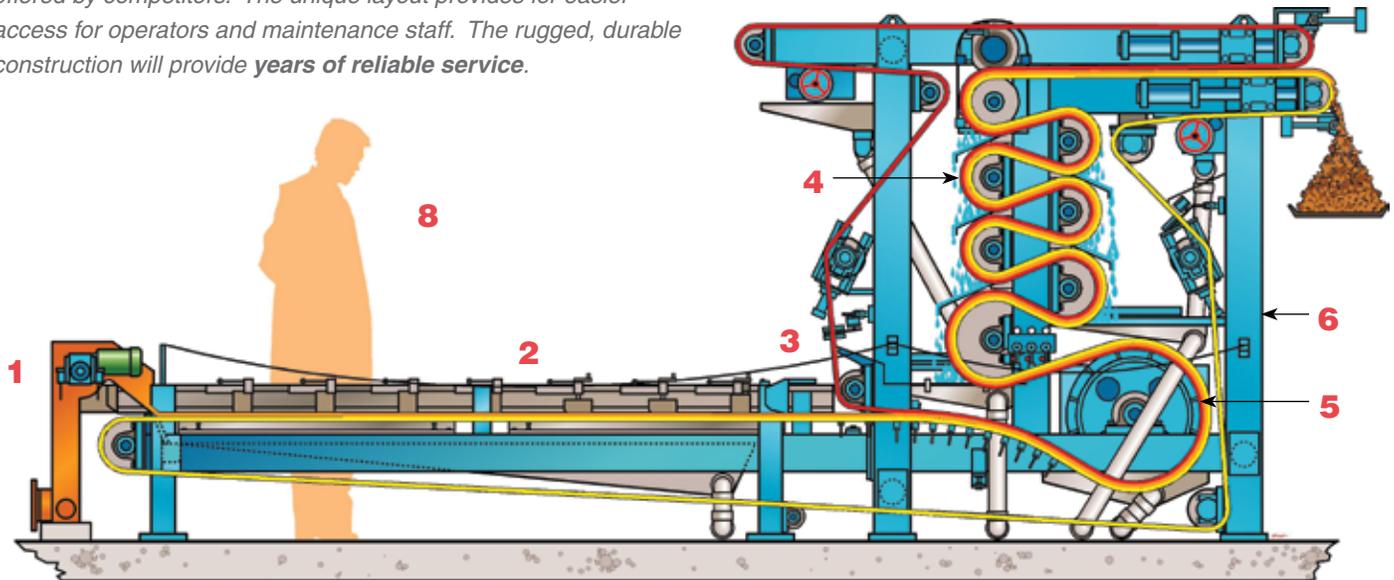
Industry Leader in Design and Manufacture of Filtration Equipment

Model 2VP Belt Filter Press

Better Accessibility and Performance

— with LOWER Installation and Maintenance Costs.

BDP Industries' **Model 2VP Belt Press** has **performance enhancing features** summarized below that make it possible for this model to out perform any conventional 2 belt press design offered by competitors. The unique layout provides for easier access for operators and maintenance staff. The rugged, durable construction will provide **years of reliable service**.



Design Features

- 1 Feed Distributor:** Unique, variable speed paddle wheel provides full belt-width distribution and uniform thickness.
- 2 Gravity Zone:** Accessible by operators at ground level makes observation of the process conditions and adjustment of plows easier so day in and day out performance is enhanced. Separate from the main frame the length can be custom designed to fit the application.
- 3 Spiral Wedge:** Applies increasing cake pressure over the entire length for effective expressing of filtrate with excellent cake retention.
- 4 Vertical Pressure Rolls:** Vertical arrangement allows for filtrate pans under each roll to keep filtrate from falling on adjacent rolls. This eliminates reabsorption of filtrate and improves discharge cake solids. Discharge height adequate for conveyor without raising press.
Up to 12 pressure rolls are available.
- 5 Perforated Roll:** Unique design and stainless steel construction improves dewatering and structural strength of roll.
- 6 Tubular Frame Construction:** Provides superior structural strength over channel and I-beam construction. Enhanced cleanliness. Hot-dip galvanized coating inside and out affords maximum corrosion resistance.
Also available in stainless steel.
- 7 Machined Mounting Pads:** All bearing and structural bolted connections are machined, tapped pads which are welded to frame. This enhances structural strength and corrosion resistance.
- 8 Overall Layout:** Gravity zone and controls located at operator level simplifies process optimization and eliminates costly platforms.

Features and How They Work

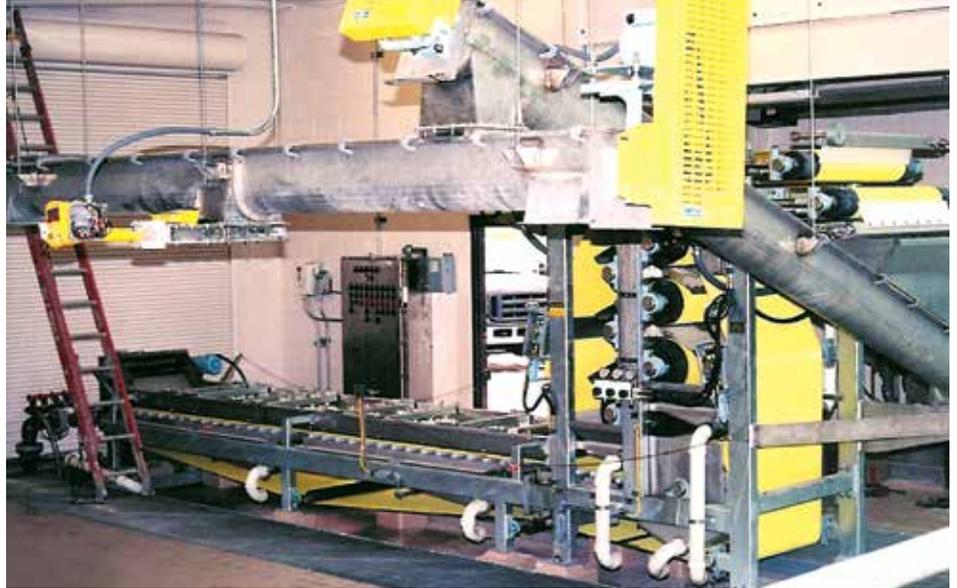
The Model 2VP offers significant improvements in the following areas:

- Feed Distribution
- Gravity Zone Layout
- Wedge Configuration
- Pressure Cake Rewetting
- Perforated Roll fabrication
- Frame Construction
- Overall Layout

The 2VP design:

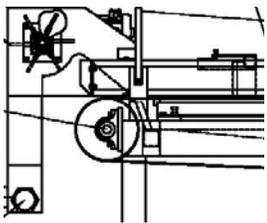
- Provides enhanced furrowing
- Utilizes a pressure gradient on the filter cake that starts lower and goes to a higher level, avoiding spikes
- Reduces the tendency for cake extrusion
- Avoids rewetting of the filter cake from filtrate falling on adjacent areas and rolls

State-of-the-Art Features are why the Model 2VP **OUTPERFORMS** any other conventional two-belt press.



2VP Belt Filter Press

Upflow Adjustable Speed Paddle Wheel Feed Box



This unique design produces extremely uniform slurry distribution. Sludge enters horizontally

at floor level, then transitions to vertical in the upflow conditioning tank and spreads to full belt width. Then the slurry overflows the vertical tank into the paddle wheel distributor weir trough. The adjustable speed paddle wheel pushes the slurry out of the weir trough onto the belt.

Pictured (at right) is 3.5% concentration anaerobically digested sludge; notice the even, full width distribution immediately upon leaving the feed distributor.



Feed box side view



Paddle wheel



Uniform slurry distribution

Model 2VP Belt Filter Press

Gravity Zone

The gravity zone at operator level improves operator viewing and control of the process. Conventional two belt designs have the gravity zone as the highest area of the unit. For the operators to access furrowing plows for cleaning or adjustment or observe flocc structure out of the feed box or feel filtrate for over flocculation requires platforms around the unit. The operators must climb stairs and maintenance staff must work around platforms to change cloth or perform any maintenance.



No costly platforms required for 2VP



Gravity Zone

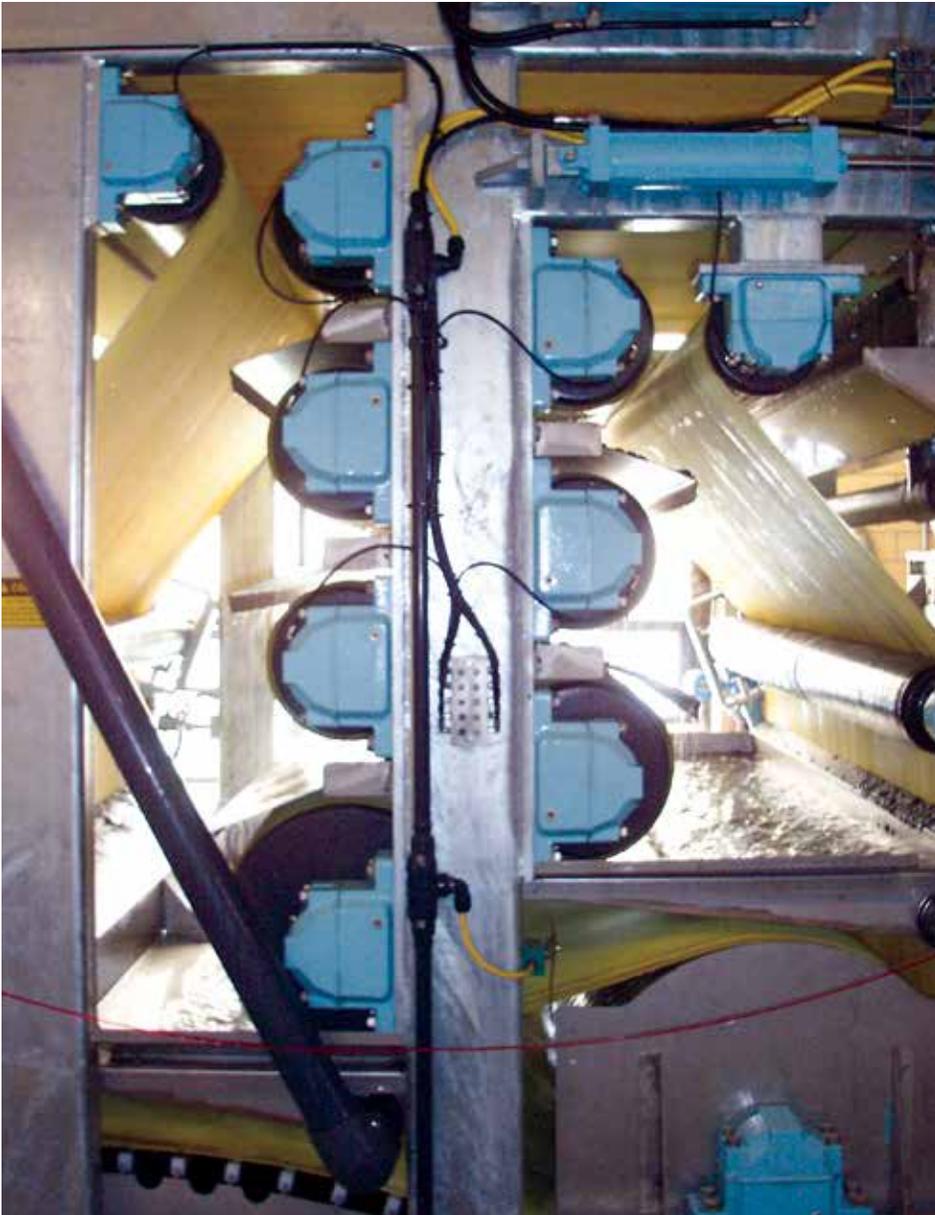
Bottom line: Platforms hamper these activities and in addition increase installation costs. The design of the 2VP Gravity Zone places it at operator level. The improved access to the gravity zone by operators and maintenance staff results in improved performance on a day in and day out basis.

Spiral Wedge

The problem with existing wedge layouts is that the top belt doesn't contact and apply pressure to the cake until typically 2/3 of the way through the zone. By curving the wedge profile the top belt immediately pressurizes the cake making the entire length of the zone effective. In addition, the spiral profile provides a gradual increase in pressure through the zone and forces an encapsulation of the cake to resist extrusion out the side.



Spiral Wedge



Vertical Pressure Zone

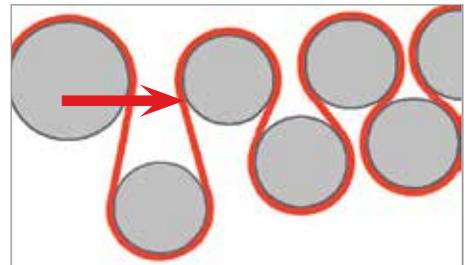
Vertical Pressure Zone

There is no pressure on the filter cake between tangent points of adjacent rolls in the pressure section of a belt press. Therefore, in a horizontal pressure roll configuration, filtrate expressed by each roll runs down the filter cloth to the lower roll and is reabsorbed (pictured below) decreasing discharge cake solids.

BDP has the answer.



BDP's vertical arrangement eliminates the problem of filtrate running off upper rolls and pooling around lower rolls.



With the the Vertical configuration of the Pressure Zone in the model VVP, (shown left) filtrate expressed at each roll drips from the tangent point into a diversion pan; eliminating rewetting.



Perforated Roll



Superior Perforated Roll Construction

The highest frequency of roll failures for belt presses is the perforated roll. Typical construction of perforated rolls makes them susceptible to stress fatigue failure of the steel shell where it is welded to inner stiffening rings. BDP Industries' design eliminates the potential for shell failure as the stress load is carried by a solid inner roll. This revolutionary design is the strongest in the industry.

Model 2VP Belt Filter Press

Frame Construction

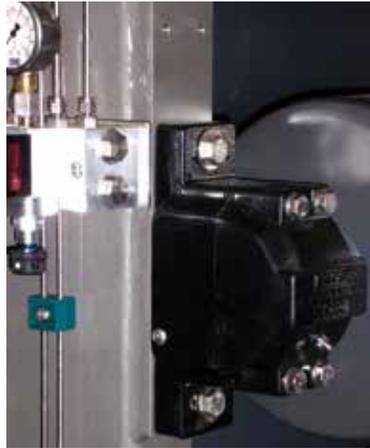
Channel or I-Beam frame construction are problematic in that corners and ledges are created that are difficult to clean. The tubular frame of the 2VP model provide a flat easy to clean surface.

All bearings are mounted on machined pads welded to the fabricated frame. These pad are precision machined and drilled and tapped for installation of all bearings and bolted frame components.

With channel or I beam, the frame is drilled and weakened at every mounting point. The 2VP frame, on the other hand, is strengthened by tubular steel and machine mounted bearing pads.

Vent holes are strategically placed so that when the frame is hot dip galvanized, it is coated inside and out.

Bottom line: The Model 2VP is stronger, more corrosion resistant, and easier to clean than other machines.



Machined Mounting Pads/
Tubular Steel Frame



3/4 meter 2VP, Fairview, Utah Membrane Type WWTP



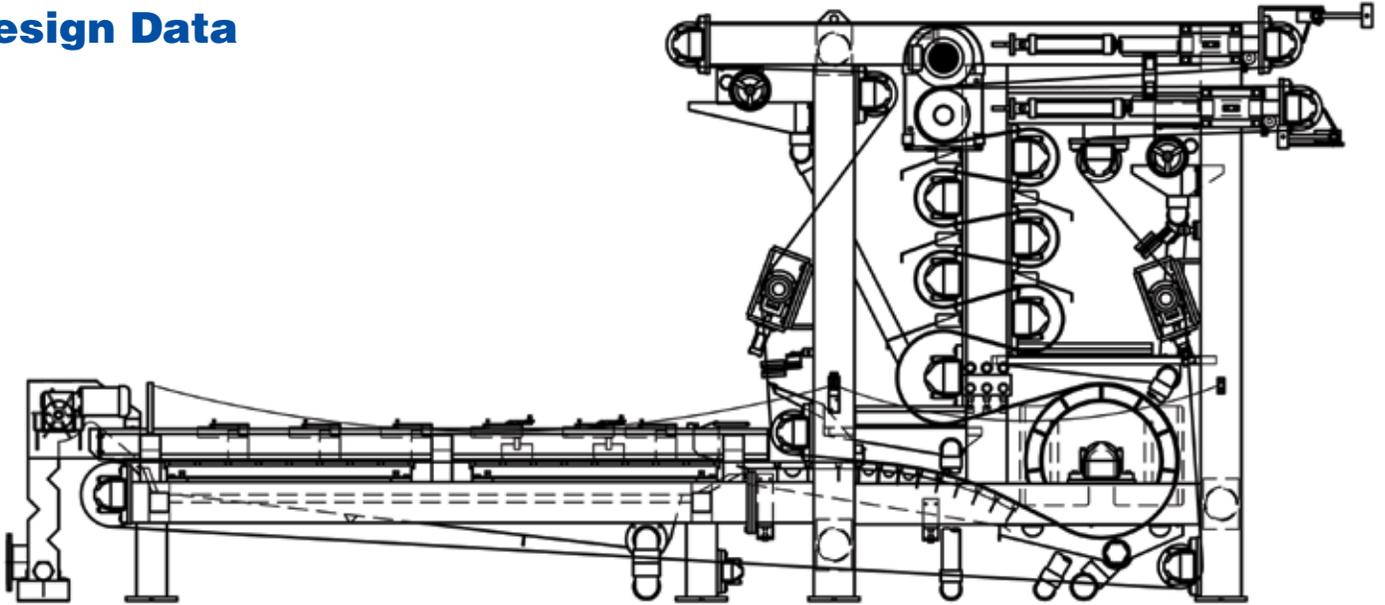
Model 2VP Belt Press

Overall Layout

The model 2VP reduces installation costs and simplifies the facility layout.

Most other belt press designs require the belt press to be elevated due to the low cake discharge point. Raising the press to facilitate cake discharge requires costly platforms and stairs that hamper operator access as already mentioned in the gravity zone discussion. The elevated cake discharge of the model 2VP eliminates the need to raise the press in order to discharge onto most conveyor arrangements. Therefore platforms and stairs are eliminated, reducing installation costs and simplifying the facility layout.

Design Data



Typical Performance Results Municipal Sludge Dewatering Spectrum for 2VP

Sludge Type	Feed Consistency	Solid Loading Rate	Cake Dryness	Polymer Consumption
	%	lbs/hr, m	%	lbs/dt
Aerobically Digested	1 - 3	540 - 810	15 - 20	13 - 20
Waste Activated	.7 - 1.5	540 - 810	14 - 18	11 - 16
Anaerobically Digested	2 - 5	810 - 1350	16 - 22	9 - 13
Primary + WAS	3 - 5	810 - 1620	16 - 24	7 - 11
Primary + WAS + RBC	3 - 5	900 - 1800	18 - 24	11 - 20
Primary + WAS +Trickling Filter	3 - 5	900 - 1980	20 - 25	11 - 18
Primary + RBC	4 - 6	1080 - 2250	20 - 27	9 - 16
Primary + Trickling Filter	4 - 6	1080 - 2250	22 - 27	7 - 15
Raw Primary	4 - 8	2250 - 3150	25 - 31	3 - 6
SBR	1 - 1.5	540 - 720	13 - 16	11 - 16
MBR	.8 - 1	450 - 630	13 - 16	11 - 16

* Polymer consumption is based on 100 percent active ingredients
 Because influents, processes and operation vary greatly, processing results have a wide range.
 The ratio of blends will also have an impact on dewatering. The above represent the ranges that might be expected.

2VP Machine Data

Size	Overall Approx. Dimesions inches (mm)			Operating Weight	Dry Weight	Belt Width	Belt Drive	Feed Box Drive	Belt Wash Water (80 psi boost)		
	Length	Width	Height	lbs (kg)	lbs (kg)	m	hp	hp	gpm	psi	hp
0.5	236 (5994)	68 (1727)	105 (2667)	8,800 (3,990)	6,800 (3,080)	0.6	2	1/3	17	120	5
0.75	236 (5994)	78 (1981)	105 (2667)	9,800 (4,080)	7,800 (3,540)	0.9	2	1/3	28	120	5
1.0	236 (5994)	88 (2235)	105 (2667)	10,800 (4,900)	8,800 (3,990)	1.2	2	1/3	35	120	5
1.5	254 ((6451)	115 (2921)	115 (2921)	17,000 (7,700)	15,000 (6,800)	1.7	3	1/3	50	120	7.5
2.0	268 (6807)	136 (3454)	117 (2972)	24,000 (10,890)	22,000 (9,980)	2.2	5	1/3	65	120	10
2.5	268 (6807)	156 (3962)	117 (2972)	28,000 (12,700)	26,000 (11,790)	2.7	7.5	1/3	80	120	10
3.0	268 (6807)	176 (4470)	117 (2972)	32,000 (14,510)	30,000 (13,600)	3.2	10	1/3	95	120	10

Note: These numbers are preliminary only and based on 10ft long gravity zone.

A Leader in Solids Dewatering.

BDP Industries is an OEM supplier of solids dewatering equipment for several prestigious Fortune 500 companies. With a 40,000 sq. ft. manufacturing facility and the most hands on experience in the industry, BDP has evolved into one of the most modern and complete solids dewatering suppliers in the world.



BDP Industries produces a range of high quality products and services:

- Gravity Belt Thickeners
- Belt Presses
- Screw Presses
- Rotary Drum Concentrators
- Lime Stabilization Systems
- Polymer Systems
- Compost Turning Equipment
- Pulp & Paper Stock Thickeners
- Plate & Frame Presses
- Conveyors
- Process Control Panels
- Equipment Restoration
- On-Site Service
- Mobile Dewatering Demonstrations



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