



B&P PROCESS
EQUIPMENT



The Power of Flexibility - B&P Pusher Centrifuges

Unmatched Separation of Coarse Solids from
Free Draining Crystalline Slurries



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Slower speed means better economics.

In centrifuge operations, slower rotating speeds can significantly increase the operational life of expensive components (Figure A) and reduce the risk of machine failure. Lower speeds can also mean reduced energy requirements (Figure B).

Thicker cake means purer cake.

Cake thickness increases in proportion to increased basket length (see Figure C). Thicker cake is purer than thinner cake because impurities typically tend to collect near the screen surface. This less pure layer will invariably get mixed in with the rest of the batch, lowering average purity. Clearly, this will have less effect on average purity in a thicker cake than in a thinner one.

Single-step systems yield purer cake than two-step systems.

Two-step systems tumble cake from one stage to the next, mixing the less pure material into the purer cake (see Figure D). Tumbling further degrades particles and causes additional loss of fines to the centrate. With B&P's single step system the impure layer does not get mixed into the rest of the cake. This means less particle breakdown and fewer lost crystals.

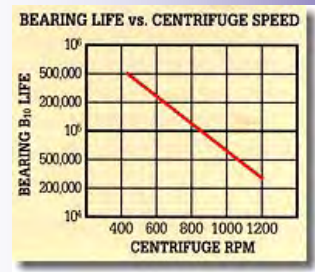
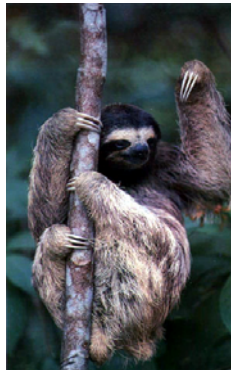


Figure A

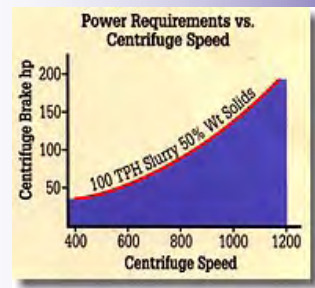


Figure B

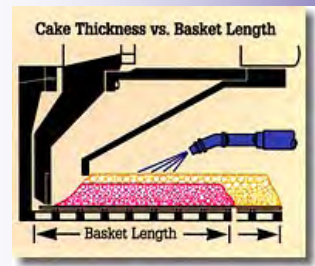


Figure C

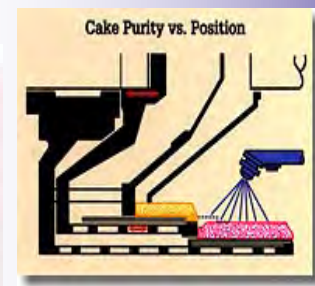
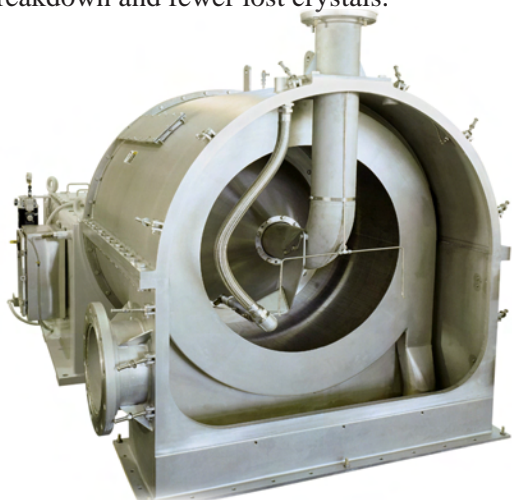
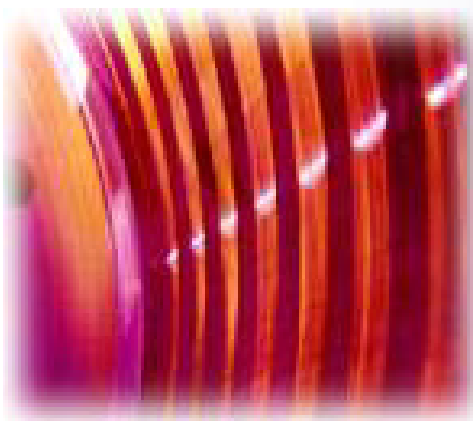


Figure D

B&P Pusher Centrifuges offer relentless productivity and separation of coarse solids from free-draining crystalline slurries. For gentle single-stage handling, B&P's Pushers have been used in a myriad of applications from soda ash processing to paraxylene production all over the world. B&P pusher centrifuges remain the standard.

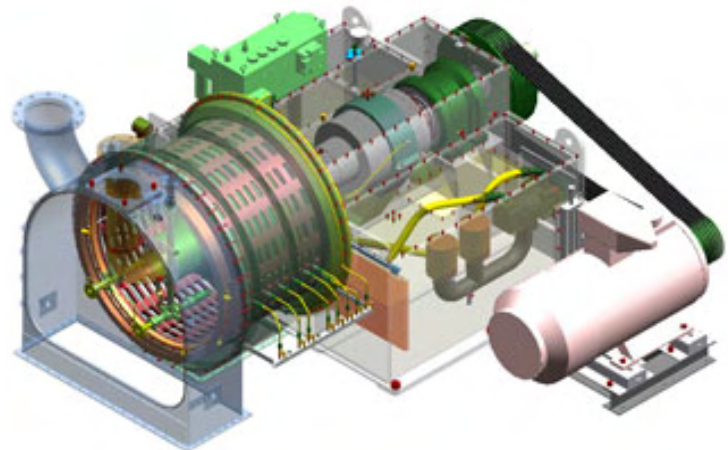
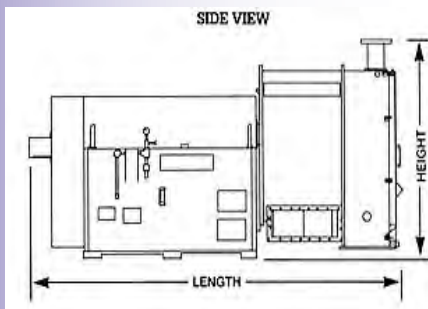
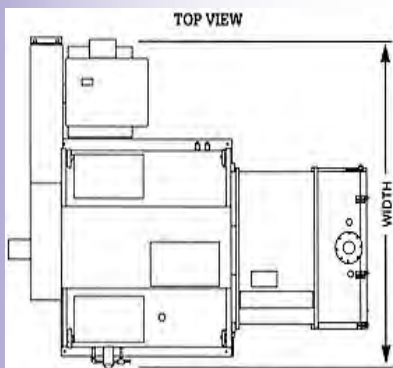


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Pusher Centrifuge Specifications

Model	S-200	S-250	S-350	S-450	S-600	S-800	S-900	S-1100	S-1200
Power (hp)	7.5	10	15	30	40	50	100	150	200
[kw]	[5.5]	[7.5]	[11]	[22]	[30]	[37]	[75]	[110]	[150]
Capacity (stph)	2.2	5.5	7.5	15	20	25	50	75	100
[mtpH]	[2]	[5.0]	[6.7]	[14]	[18]	[23]	[45]	[68]	[91]
Length (in.)	52	67	85	97	99	108	135	140	149
[mm]	[1320]	[1700]	[2160]	[2464]	[2515]	[2743]	[3429]	[3556]	[3786]
Width (in.)	42	47	51	66	62	74	102	103	116
[mm]	[1067]	[1194]	[1295]	[1676]	[1575]	[1880]	[2591]	[2616]	[2946]
Height (in.)	22	25	38	41	56	51	70	74	93
[mm]	[559]	[635]	[965]	[1041]	[1422]	[1295]	[1778]	[1880]	[2362]
Weight (lb.)	1350	1700	4000	6000	8000	9000	17400	26000	39000
[kg]	[614]	[773]	[1818]	[2846]	[3636]	[4091]	[7909]	[11818]	[17727]

Nominal capacities in short tons per hour for granulated salt, discharged at 3% moisture from a 50% weight solids feed slurry, with 40% of the crystals greater than 500 micron (35 mesh) and 99% greater than 150 micron (100 mesh). Solids bulk density of 1125 kg/m³ (70 lb/ft³).



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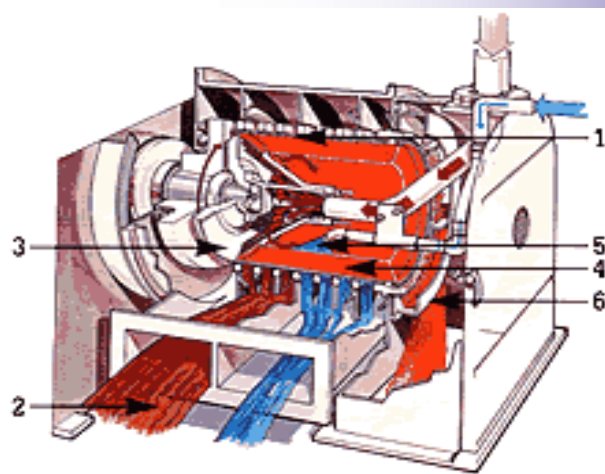
Pushers

We started making Baker Perkins pusher centrifuges in the 1930s and customers have seen our design and performance parameters change dramatically in the 60 years since. For relentlessly productive separation of coarse solids from free-draining crystalline slurries and gentle single-stage handling, B&P pusher centrifuges remain the standard.

B&P pushers are used in a myriad of applications all over the globe. From traditional separation processes to specialized operations. Salt from dilute caustic in chloralkali plants. Military-grade nitrocellulose separation. Dilute acid cottonseed delinting. Soda ash processing. Heavy metals recovery. Paraxylene processing. And on. And on.

Briefly, here's how a B&P pusher operates:

1. The feed slurry is deposited on a wedge slot filtration screen.
2. Solids collect on the screen and feed liquors drain through.



3. The pusher plate rotates with the basket and reciprocates.

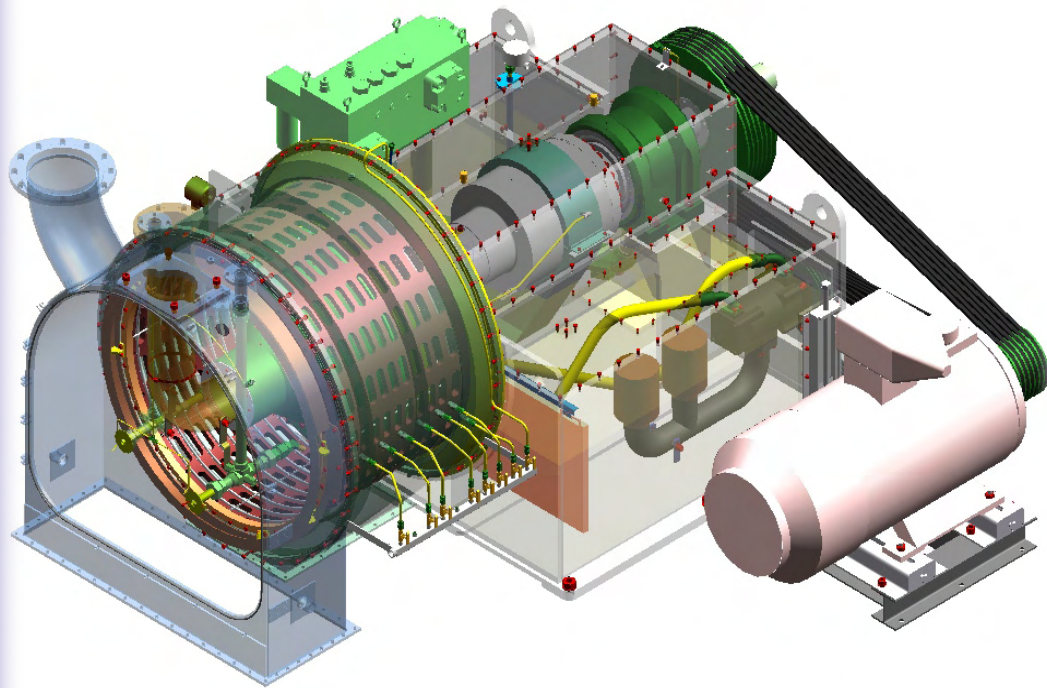
4. On the forward stroke, the plate pushes solids along the screen, consolidating into a uniform cake. On the reverse stroke, fresh screen is exposed where more slurry separates.

5. Cake dries as it moves along the length of the screen and a wash liquor may be sprayed to remove impurities.

6. The cake is pushed off the discharge end of the screen and directed to the collection chute for additional processing.



Flexibility



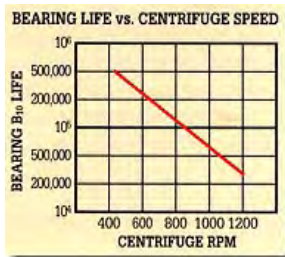
The Fastest Way to Centrifuge Efficiency is Slow Motion

B&P can show you how to get more out of your centrifuge operations by slowing things down. Greater production. Longer uptime. Increased machine life. Lower operating costs. And a higher-quality product. Even with lower RPM's, production stays high. Lower rotation speeds lengthen component life and reduce machine failure, reduce downtime, repair costs and machine replacement expense.

Don't Stop When You're on a Roll

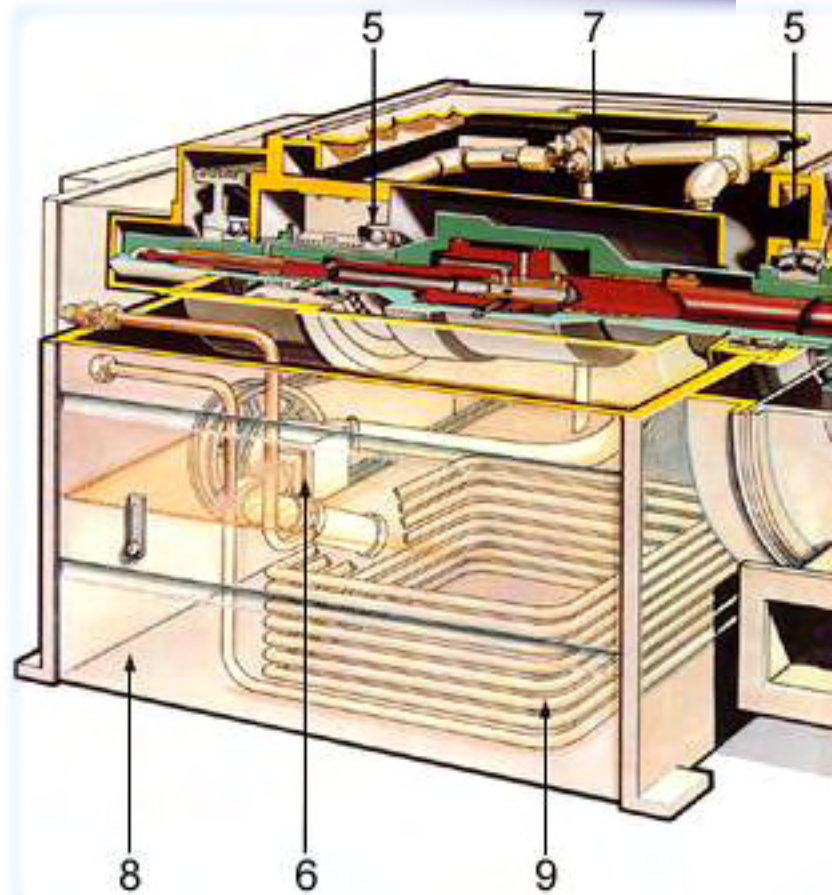
These rugged and dependable centrifuges are operated continuously - 24 hours a day for extended periods maintaining production levels unmatched by other technologies. Depending on process variables, B&P pushers regularly produce thousands of pounds of cake per horsepower hour.

Robust Design for

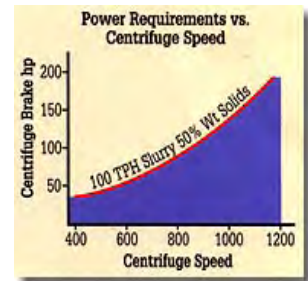
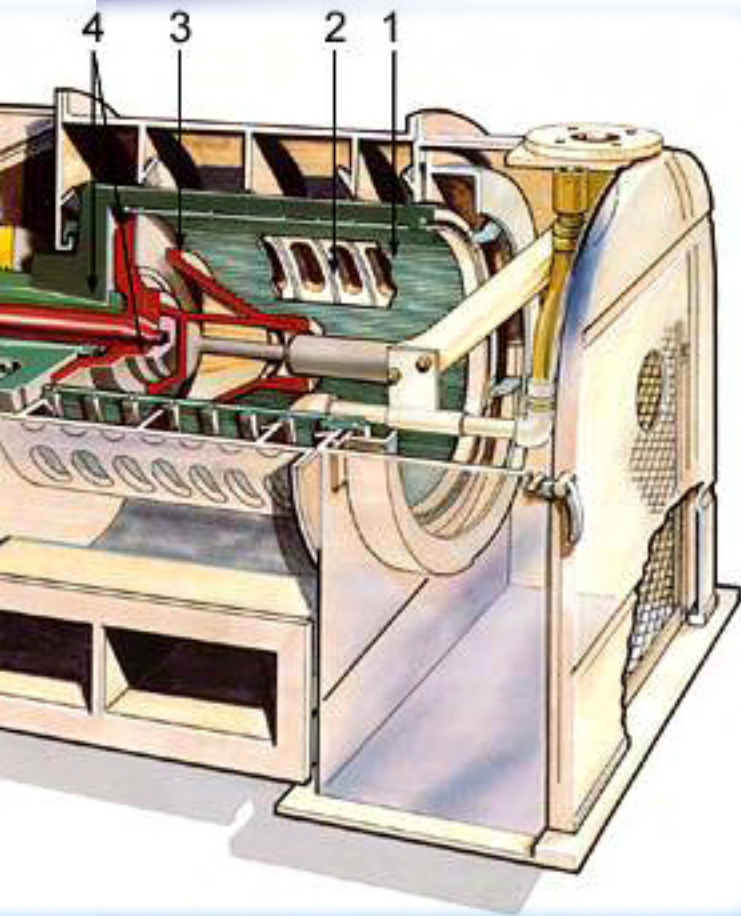


B&P pusher centrifuges have amassed an impressive track record for reliability under all kinds of service conditions. This dependability is founded in our sound design concepts, precise engineering and top-grade materials. Here's an inside look at some of the B&P pusher centrifuge's notable design features:

1. A single-piece wedge-slot screen captures solids.
2. The screen is supported by a centrifugally cast, milled-slot cage basket.
3. The cake is pushed by the reciprocating action of the pusher plate to which the feed funnel is attached.
4. The basket and pusher assemblies are attached to their respective shafts with precision tapers to assure concentricity and balance of the rotating members.
5. The main hollow shaft, which drives the basket, is carried by widely spaced, heavy-duty bearings.
6. The hydraulic pump is belt-driven by the main drive motor.
7. The pusher shaft is driven forward and backward by the internal, self-contained hydraulic piston. This assembly requires no external controls.



Rugged Reliability



8. The rugged base of the pusher houses the hydraulic reservoir and provides a rigid support for the entire rotating assembly.

9. Cooling coils maintain hydraulic system temperature at optimum levels.

Obviously any machine with moving parts is subject to wear, but intelligent design can limit the effects of wear. For instance, product abrasion will cause screen wear at the pusher end of the screen. So we designed the screen so it can be pulled, turned end-to-end and re-installed to double its service life. In other cases, we have designed these machines so wear is concentrated largely on relatively inexpensive replaceable parts.

Other examples:

- The wedge-slot screen design and construction enhances the operational life of the entire machine. This

screen is built of T-shaped bars that run the full length of the basket. These bars are precisely spaced and rigidly anchored by circumferential rings. This design presents a smooth surface for the cake, minimizing sliding friction, abrasive wear and product degradation.

-The open structure of the screen's outer diameter makes it easy to backwash and remove crystalline products that form in some applications.



Since B&P is in the Business of meeting individual customer needs, it only follows that we have paid particular attention to customer support.

Rebuild. Who better to rebuild your Baker Perkins and B&P machines than the folks who made them in the first place? Critical tolerances are restored to their original specs. B&P can supply new OEM parts as required. Also B&P can upgrade your old equipment to meet current safety and environmental regulations.

Through our Houston Service Center we can provide complete engineering, field service, and replacement parts documentation. Our on-site engineering experts promise quick turn-around, attentive follow-up support and a six-month warranty.



Global Field Service. The B&P Field Service Team has logged over a million miles per man traveling the globe trouble-shooting Baker Perkins and B&P machines.

B&P will go wherever you are with technical support for new start-ups, training seminars for customer maintenance and production staff, machine evaluations, appraisals of Baker Perkins and B&P machinery, and Product Maintenance Programs.

Customer Service. B&P is the key to your machine's past and its future productivity. We have your original blueprints no matter how old the machine is, and a complete service and parts replacement record from over the years.

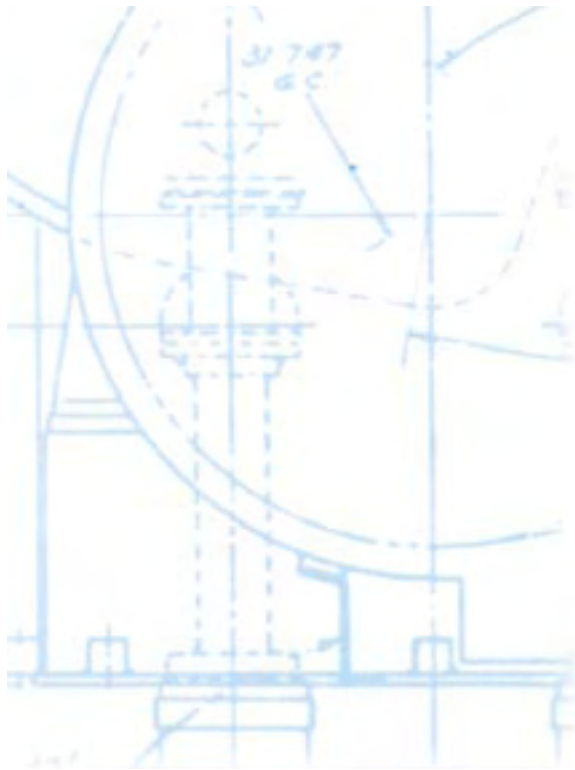
B&P's expert engineering staff works with OEM parts for precise fit and top performance wherever possible and we will manufacture custom replacement parts whenever necessary. B&P can even show you how to set up a Customer Part Inventory Program so you can stock optimal levels of replacement parts yourself and minimize downtime even further.

No Orphans

No B&P machine is ever an orphan. Ever! This really says something since there are Baker Perkins and B&P machines still going strong out after 80 years. But B&P's Customer Service Group won't let them go. B&P will support and service these workhorses forever.

B&P has records on all machines dating back over 50 years. We have your original prints. We know your machine's history - what parts have been installed, when and why. With our top-caliber Global Field Service and Rebuild Groups knowing your machines as well as the guys who made them. And in some cases, they are the guys who made them.

B&P's OEM parts perform like the originals. We will manufacture new components and drop ship them right to your doorstep. Fast! What we are trying to say is that B&P protects your investment and helps your process equipment live longer, with productive lives. Remember, we never, ever leave any orphans!



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