LEADING TECHNOLOGIES FROM THE PERFORMANCE LEADER

WINKLEPRESS®
BELT FILTER PRESS

DEWATERING & THICKENING

KNOWLEDGE & TECHNOLOGY

THE INDUSTRY'S HIGHEST PERFORMING BELT PRESS

WINKLEPRESS®

Ashbrook Simon-Hartley®

WATER AND WASTEWATER TREATMENT SOLUTIONS

Ashbrook Simon-Hartley®

The Definition of Value

After all the tests are in, and the studies complete, the Winklepress® stands alone as the clear winner in high-performance dewatering. The Ashbrook Simon-Hartley® Winklepress® combines advanced, high-durability engineering, precision workmanship and long-life materials into a single masterpiece of performance and value.

WINKLEPRESS®

The Definition of High-Performance Dewatering

By optimizing the physics and rheology of the liquid/solid separation process through the use of specialized zones, the Ashbrook Simon-Hartley® Winklepress® is able to achieve consistent cake dryness, at high throughput volumes, while consuming only a fraction of the energy and polymer associated with single process systems—such as centrifuges.

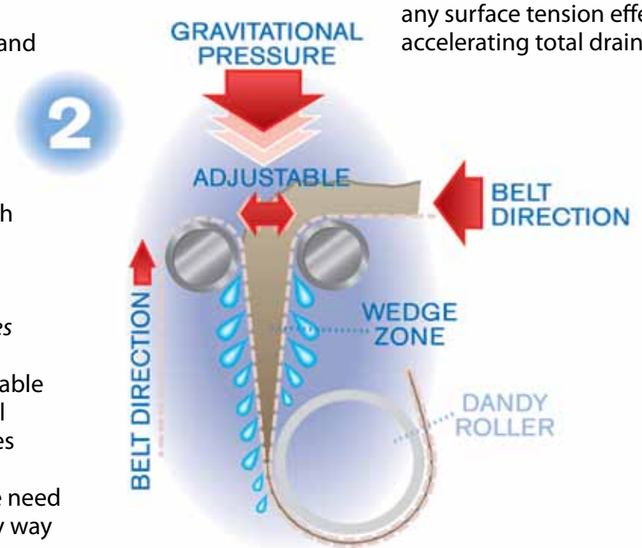
Specialized Zones Optimize Dewatering Process

By maximizing gravitational forces, linear and shear pressure effects, and Ashbrook Simon-Hartley's proprietary engineering features—such as floating chicanes, dandy rollers and precision polymer mixers—the Winklepress® is able to deliver throughput rates unequalled by other technologies.

Other technologies typically have limited process flexibility, with little room for rheological variations in the influent. The Ashbrook Simon-Hartley® Winklepress® maximizes performance with multiple and distinct, but interactive processing zones—taking advantage of numerous dewatering strategies—resulting in exponentially increased dry cake results.

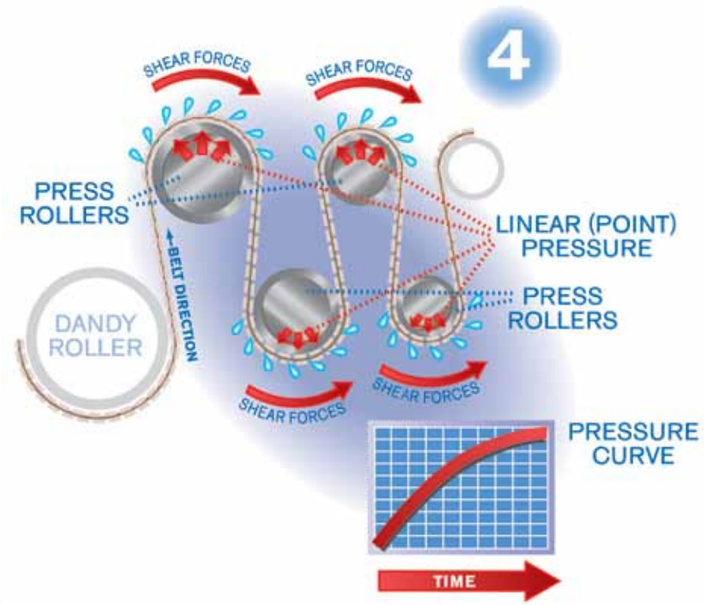
1. Horizontal gravity dewatering zone: This initial zone quickly removes excess liquids and thickens the incoming sludge to improve its dewatering properties. Physical drainage is encouraged with the use of proprietary chicanes, which plow lateral troughs and, in effect, alter the geometry of incoming sludge through rolling and folding dynamics. This facilitates rapid dewatering by exposing existing pockets of free liquid. Also, in this zone, an exclusive Winklepress®, high-density dewatering grid supports the drainage belt and "wipes" it continuously, effectively breaking any surface tension effects—accelerating total drainage.

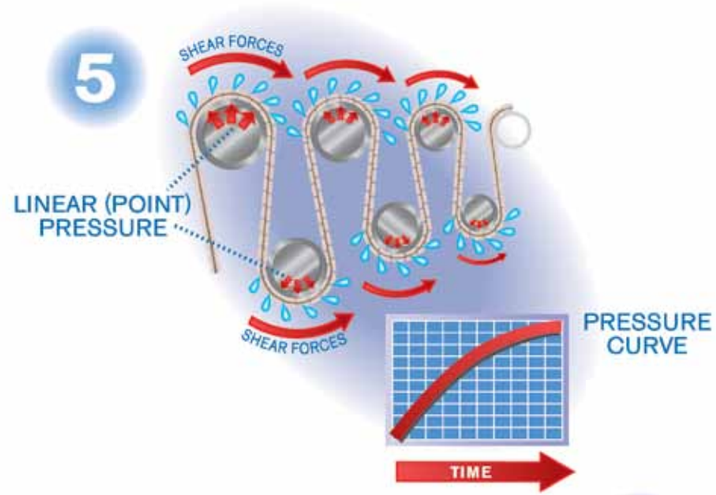
2. Vertical wedge gravity dewatering zone: Using the natural effects of gradually increasing pressure—imposed by gravity on the depth and weight of the sludge—this zone further reduces the volumes of the suspension in preparation for pressing. This is accomplished through the use of the unique Winklepress® vertical wedge, which is created by the convergence of the upper and lower belts. This configuration allows two-sided drainage, which effectively *doubles the surface dewatering area*. The Winklepress® wedge is fully adjustable with four, easily accessible manual actuators. Its unique design makes process adjustments and system optimization possible without the need to stop the Winklepress® or in any way interrupt the dewatering process.



3. Preliminary pressure dewatering zone: In this zone, the sludge is introduced to direct linear pressure—point loading—as it is conveyed, it is sandwiched between both dewatering belts, around the unique Winklepress® dandy roller (a specially perforated roller which aids filtrate removal). As the belts move around the dandy roller, the effects of shear pressure are introduced to the sludge. The shear affect is created by the speed differences of the belts as they move around the circumference of the roller.

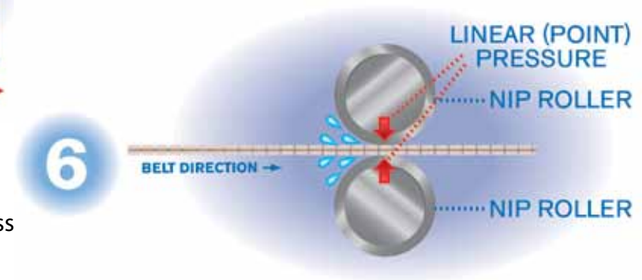
4. Full pressure dewatering zone: This zone is engineered to create gradually increasing pressure levels—both linear and shear—to achieve maximum dewatering without embedding the sludge into the belts. Also, in this zone, the accelerated shear affect serves to enhance angular viscosity, which acts to break the cake structure and expose fresh areas to surface pressure. The cake emerges from the full-pressure zone in a uniformly dry sheet.





5. High-pressure dewatering zone (optional): This optional zone provides increased cake dryness with the addition of rolls, which continue the process of gradually increasing pressure. This zone also extends the total exposure time of the cake to the linear and shear dewatering affects of press pressure.

6. Nip dewatering zone (optional): The addition of this option provides maximum cake dryness using roll-on-roll, adjustable nip pressure. This final point-loaded pressure process creates the driest cake economically achievable.



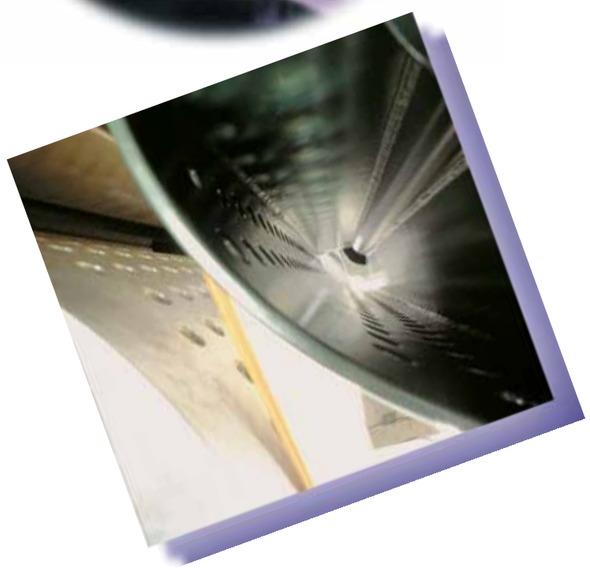
Engineering Wisdom Provides Long-Term Value

Lifetime-rated roller bearings

All roller bearings feature Ashbrook Simon-Hartley's Winklepress® triple labyrinth-sealed housings, which ensure a lifetime of low-maintenance and continuous operation. Lubrication is required only every six months. The oversized bearings and shafts on the Winklepress® allow higher belt tensions, where appropriate, and dramatically increase bearing life in all applications.

Ultra-compact hydraulic system

The hydraulic system for the Winklepress® incorporates a pressure-compensated variable flow pump, which eliminates the need for a large, remotely located reservoir. In fact, this new advanced system only requires a one-gallon fluid reservoir, which can be mounted on the side of the press. This eliminates the civil work and installation costs associated with large remotely located reservoirs.



Patented long-life rollers

The patented, Winklepress® dandy roller is manufactured from stainless steel for corrosion resistance and has internal scoops to enhance water removal. Also, there can be up to three, specially designed, additional perforated rollers following the dandy roller, which effectively increase overall drainage area. The roller size progression has been tailored to obtain a controlled cake pressure in the early stages and a gradual, but consistent, rise in the high-pressure area—resulting in an exceptionally smooth cake pressure curve for maximum cake dryness.

Proprietary polymer mixer

The Ashbrook Simon-Hartley® Winklepress® is equipped with a proprietary, variable polymer mixer. This unit precisely mixes polymer using a unique injection ring, which also aids in the thorough mixing of the flocculent with the slurry—maximizing polymer effectiveness and minimizing polymer consumption.

Designed to operate cleanly

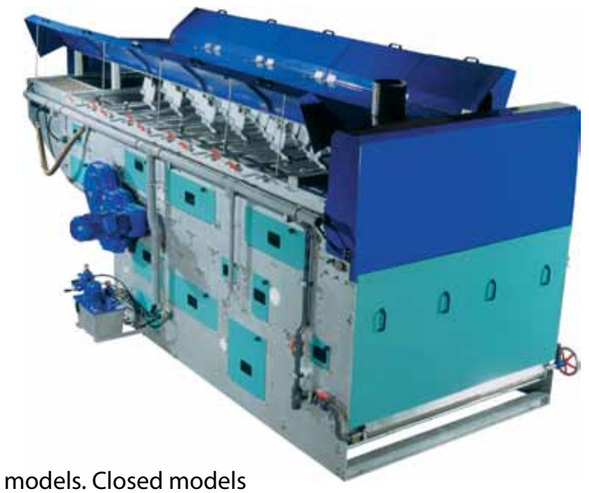
The Winklepress® design and drain pan configurations simplify clean up procedures and increases access to key areas. Filtrate may be used as a partial source of belt wash water supply. Clean operation is enhanced by the patented scraper blade design used on the Winklepress®. This design places even edge loading across the blade by placing springs and operator levers on both ends of the blade. Also, the cake side of the belt never runs against the roller face, minimizing material transfers.

Manifold type inlet feeder

The fully-optimized manifold type inlet feeder on the Winklepress® ensures even distribution of the incoming sludge across the belt. This is one of the first important steps for maximizing the dewatering capabilities of downstream process stages.

Foundationless design

The Winklepress® can be outfitted with an integral, self-contained sump. This allows installation of the belt filter press on a flat floor, without the need for concrete piers, sumps or walls.



Optional Configurations

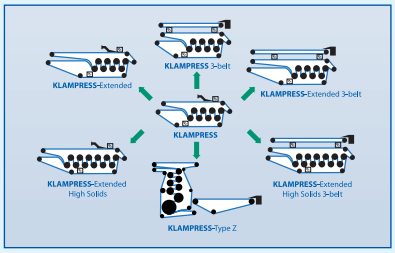
The Winklepress® is available in both open and closed models. Closed models are available with odor hoods and both models are available with the extended gravity deck option for dilute sludges.

The Industry's Most Comprehensive Source of Dewatering and Thickening Technologies and Know-How.

AQUAbelt® Enclosed Version Shown

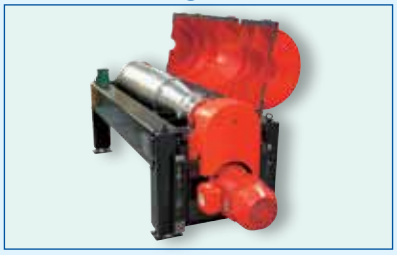
The industry's only gravity belt thickener with technologies advanced enough to guarantee specific solids levels, as well as polymer and power consumption rates.

KLAMPRESS®



The standard of the industry and the leader in efficient, cost-effective zone dewatering. Available with the industry's most comprehensive selection of customizable options.

CQ™ Centrifuge



World class technology combined with proprietary process knowledge to deliver optimum dewatering.

CQ™ Rotary Drum Thickener

The ultimate in cost-effective screen thickening and long-term system reliability.

DISINFECTION
FILTRATION
TREATMENT PLANTS
DEWATERING
CLARIFIERS
MUNICIPAL
INDUSTRIAL
AERATION
MEMBRANE TECHNOLOGIES
FLOW CONTROL
CLASS A BIOSOLIDS

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The products pictured, described, or listed in this publication are illustrative only and are subject to change as appropriate.

Ashbrook Simon-Hartley®

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