

Star PolyPresses



**Durable Filter Presses for
Efficient Dewatering**



Dependable dewatering. High corrosion resistance.

Star Filters has been manufacturing quality, dependable stainless steel plate and frame filters for liquid processing applications for over 100 years. We've built a solid reputation from our production of filter presses that quickly and efficiently get the job done time after time.

Now we've brought that expertise to a new line of heavy-duty, polypropylene filter presses -- the Star PolyPress -- for dependable dewatering with high corrosion resistance.

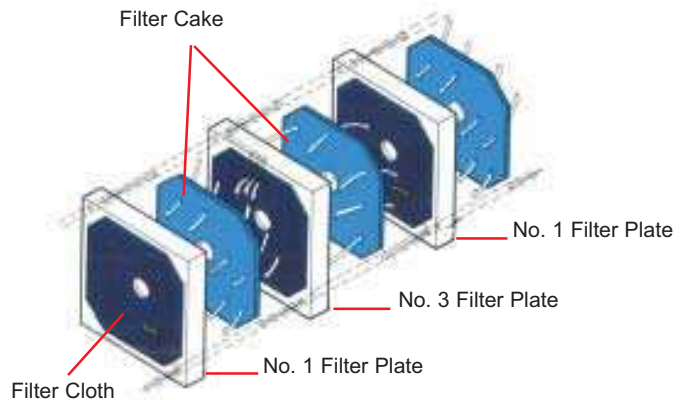
What is dewatering and why a filter press?

Star PolyPresses are specifically designed for efficient dewatering of both wastewater sludges and process slurries. Dewatering is the process of separating liquids from solids. Efficient dewatering must accomplish two goals: remove as much liquid as possible in order to concentrate the solids and compress these solids into compact cakes for easy, low-cost disposal in the case of wastewater sludges, or for reduced cost from further drying in the case of process slurries where the cake is the product.

The filter press has proven itself to be the most efficient dewatering device available today. Because it operates at much higher differential pressures, the filter press produces cakes with lower moisture content than either belt presses or rotary drum vacuum filters. These pressures make the filter press much more forgiving than a centrifuge and allow it to produce consistently high solids content cakes, even under inconsistent feeding conditions. The filter press is typically less costly to install than comparable rotary drum vacuum filters, belt presses or centrifuges. It is significantly less expensive and easier to maintain and operate than the other three, and the service life has been proven time and time again to be much longer.

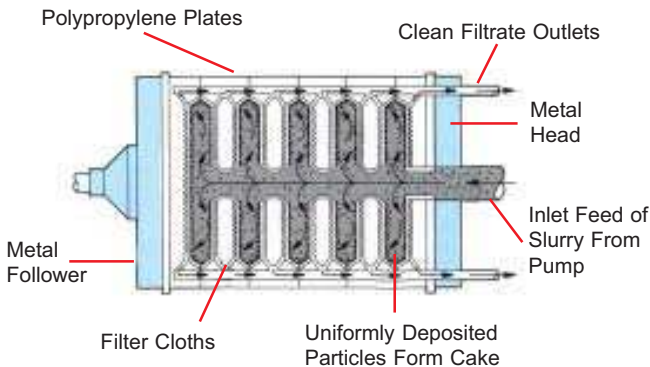
In addition to all these advantages, the Star PolyPress -- because it is a filter -- typically produces a liquid filtrate clean enough to be easily disposed of or recycled in washing or process applications.

As the illustration indicates, wet sludge is then pumped in through the center inlet and forced into chambers which are formed by the matching recessed polypropylene plates. Each plate has a filtrate drainage area which is covered with filter media that immediately begins to trap particles. As the sludge particles build up, they themselves begin to act as an in-depth filter medium, allowing only clear liquid filtrate to pass through for discharge through the corner outlet ports. As the chambers fill up completely with cake, the differential pressure climbs to the maximum design limit and the stream of filtrate starts to lessen, eventually becoming a trickle. Pumping of the sludge now stops and the first phase is completed.



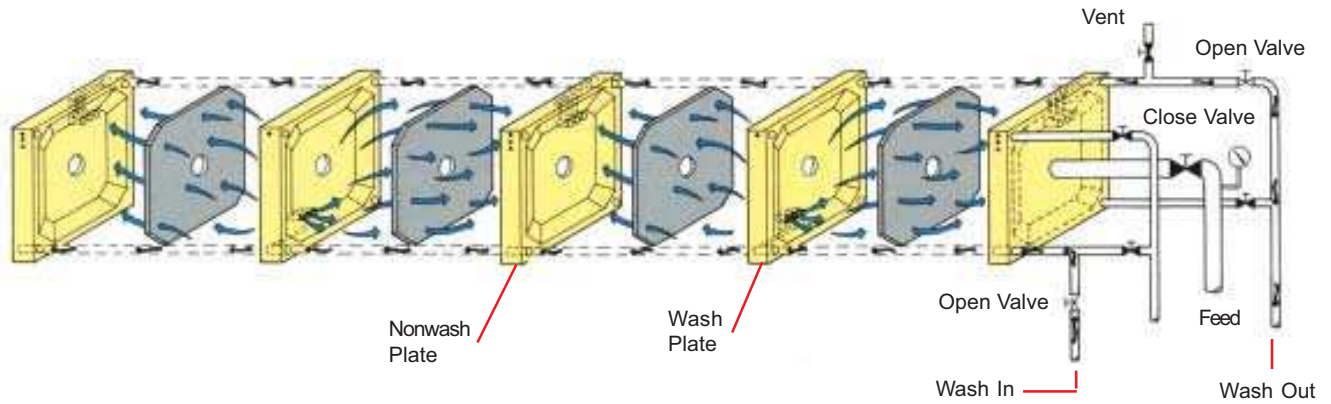
Air blowdown dries and releases cakes

The second phase of dewatering using a Star PolyPress involves air drying and possibly a washing process. First, the center inlet is valved off. Then air is forced into a top corner port. Because of the porting design, the air must pass through the cakes from one filtrate drainage area to the corresponding filtrate drainage area on the alternate plate before exiting from a lower port. This air blowdown removes residual liquids and helps release the cakes from the filter cloth.



How filter presses dewater.

First, a pneumatically controlled hydraulic pump applies high pressure to securely close the plates and seal them against internal bypass and/or excessive external leakage.



Optional washing process

A solvent may be used in some applications to carry a dry product through the dewatering process. In such applications where the solids are the product, an optional cake washing step may be necessary to remove this solvent.

During the wash, liquid is forced through a bottom port in the opposite direction of the original filtration flow. It travels through the cake from one filtrate drainage area to another as in the air blowdown step and out another port to remove any trace solvents. The cake is then blown down again to remove residual water before being discharged.

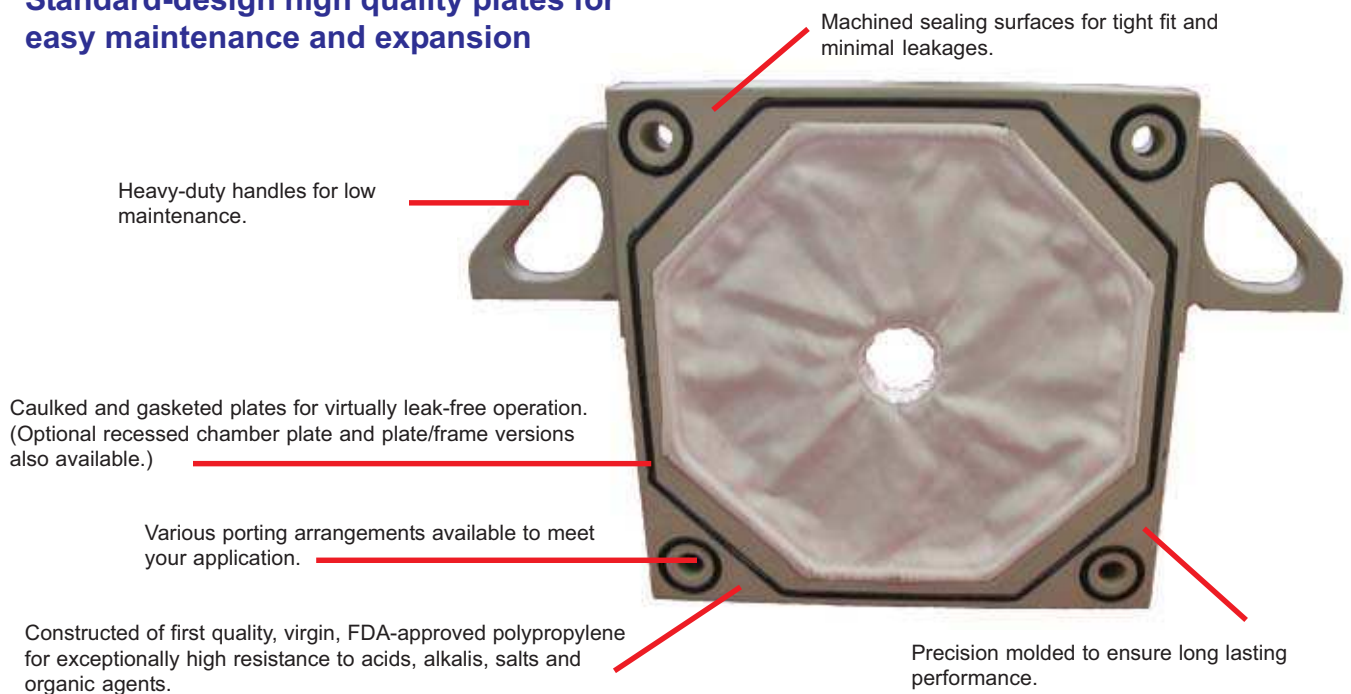
The Star PolyPress provides consistent, efficient dewatering

Star PolyPresses provide low-cost, dependable dewatering of wastewater sludges and process slurries. Only the highest-quality polypropylene plates are used to resist corrosive chemicals, and our standard air blowdown manifolds mean drier, easier-to-release cakes. EPDM gaskets ensure tight seals and long gasket life. Star PolyPresses are compact in construction, too, so they don't take up excessive, valuable floor space. All hydraulic

components are fully enclosed to protect them from harsh environments, yet they are easy to access for maintenance. Each Star filter press comes tested, ready to operate and backed by our experienced personnel.

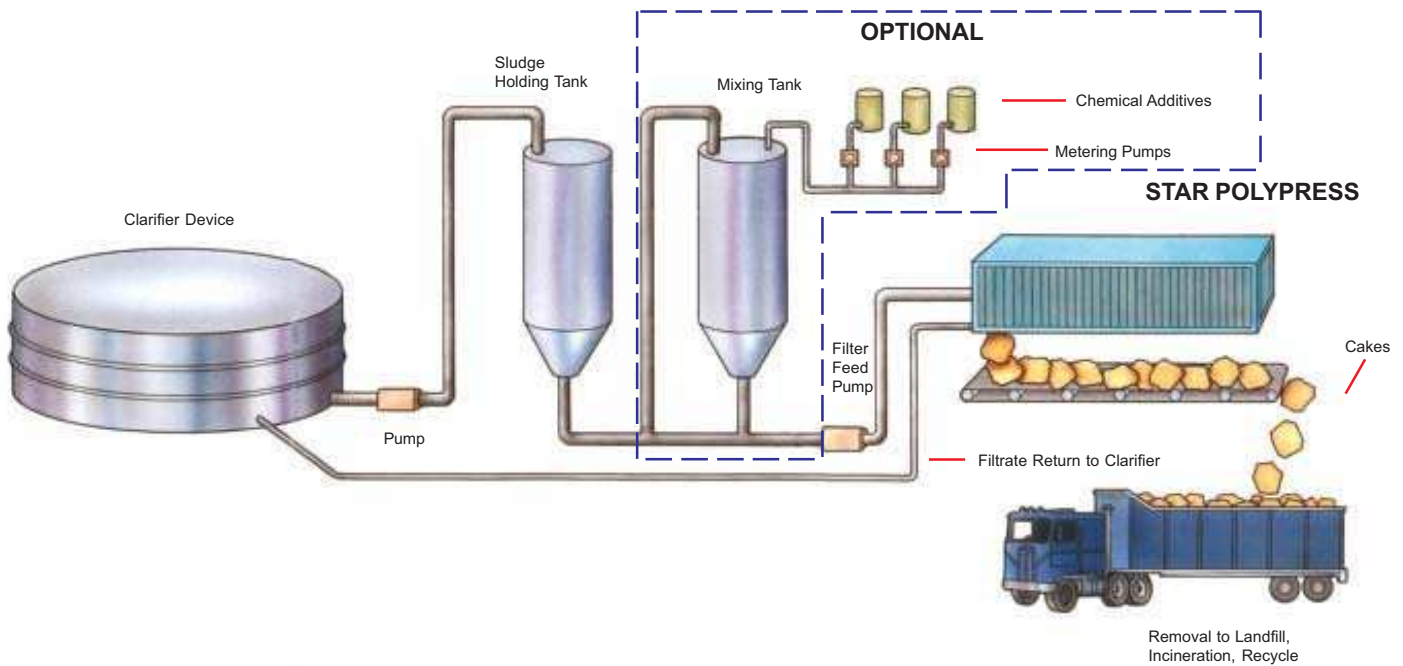
Star PolyPresses can easily take wet sludge with only a 5% solids content and dewater it at 100 PSI to produce manageable cakes with solids content between 35 and 45%.

Standard-design high quality plates for easy maintenance and expansion



Typical wastewater sludge dewatering system

Typically, sludge is collected or generated in clarifiers and then pumped into holding and/or mixing tanks where conditioning agents are added to precipitate solids and flocculate them into larger particles for separation. The conditioned sludge is then pumped into the dewatering press at pressures up to 100 PSI. Filtrate is released for additional filtration, reuse or disposal and the dry cakes are removed for further drying, incineration or disposal.



Features and Benefits

Heavy-duty fabricated steel stand	Strength and durability
High-quality, lightweight polypropylene plates . . .	Lightweight press; corrosion resistance; low cost
Caulked and gasketed recessed chamber plates	Virtually leak free; clean operation; easy cake discharge
Polypropylene filter cloths	Corrosion resistance; long service life; low maintenance costs
High-quality hydraulic components	Dependability; low maintenance costs; non-electric; spare parts readily available
Standard air blowdown manifold	Drier cakes; better cake release
Sandblasted to near-white finish; epoxy paint . . .	Corrosion resistance; low maintenance finish
Stainless steel-clad side bars	Corrosion resistance; low maintenance
Rollers on moving head	Easy opening/closure
Simple control panel	Easy operation; complete control; operator safety
Steel cabinet with full-width door for hydraulic controls	Safe, easy access; attractive appearance
Slab heads on 470-mm economy model	Low purchase cost; lightweight construction
Completely air-powered operation	Safe, non-electric operation; low operating costs
Air/hydraulic closure on 630-mm, 800-mm, and 1000-mm models	Labor-saving, self-compensating operation
Manual/hydraulic closure on 470-mm economy model	Low purchase cost; lightweight construction
Expandability	Low cost for future growth

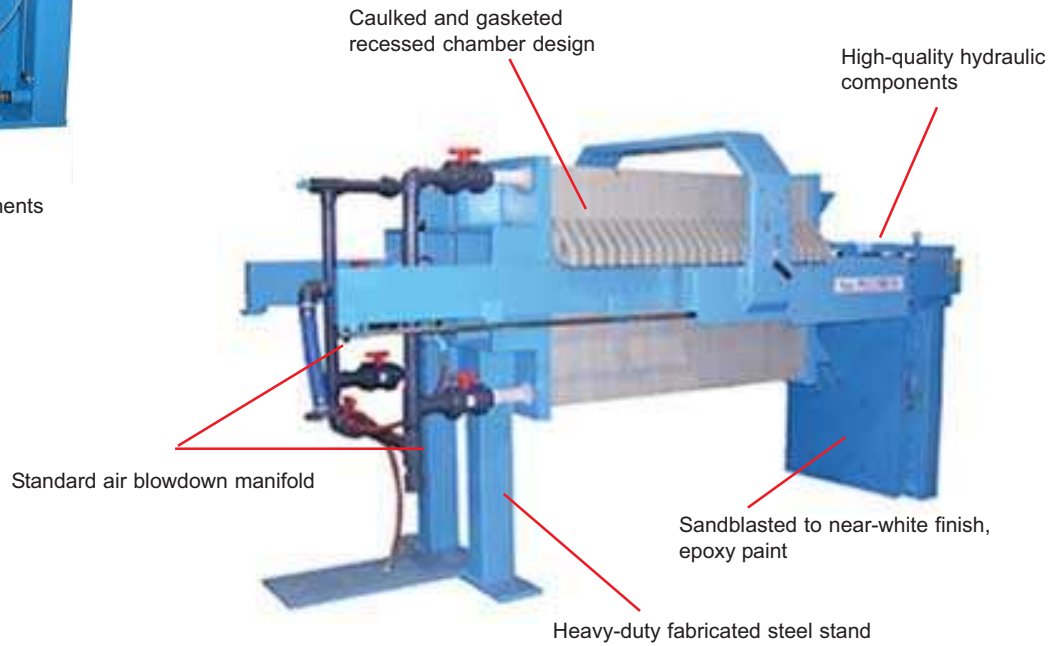
The Star PolyPress features quality engineering

Quality hydraulic components

Star PolyPress air/hydraulic closures are designed for dependability and easy maintenance. All of the hydraulic components, with the exception of the cylinder itself, are mounted on a detachable panel.



High-quality hydraulic components



Star PolyPress standard model sizes and features

Plate Size Overall Dim.	PolyPress Volume*	PolyPress Area*	Number of Chambers	Closure Mechanism	Maximum Cake Thickness	Overall Length with Pump	Inlet Size (NFT)	Base Model Number
470mm (18"x18" sq.) W 30" H 60"	1ft ³ 2ft ³ 3ft ³ 4ft ³	20ft ² 40ft ² 60ft ² 80ft ²	6 12 18 24	Manual/Hyd. Manual/Hyd. Manual/Hyd. Manual/Hyd.	32mm 32mm 32mm 32mm	65" 78" 78" 78"	2" 2" 2" 2"	ECRC6-470Q ECRC12-470Q ECRC18-470Q ECRC24-470Q
630mm (25"x25" sq.) W 42" H 50"	3ft ³ 4ft ³ 5ft ³ 6ft ³ 8ft ³	62ft ² 80ft ² 105ft ² 124ft ² 160ft ²	10 13 17 20 26	Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd.	40mm 40mm 40mm 40mm 40mm	103" 110" 119" 126" 140"	2" 2" 2" 2" 2"	RC10-630Q RC13-630Q RC17-630Q RC20-630Q RC27-630Q
800mm (31"x31" sq.) W 52" H 60"	8ft ³ 10ft ³ 12ft ³ 15ft ³ 20ft ³	172ft ² 216ft ² 258ft ² 324ft ² 432ft ²	16 20 24 30 40	Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd.	50mm 50mm 50mm 50mm 50mm	121" 130" 139" 152" 175"	3" 3" 3" 3" 3"	RC16-800Q RC20-800Q RC24-800Q RC30-800Q RC40-800Q
1000mm (39"x39" sq.) W 60" H 63"	25ft ³ 30ft ³ 35ft ³ 40ft ³ 45ft ³ 50ft ³	516ft ² 620ft ² 724ft ² 828ft ² 930ft ² 1034ft ²	30 36 42 48 54 60	Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd. Air/Hyd.	50mm 50mm 50mm 50mm 50mm 50mm	171" 185" 200" 214" 228" 242"	3" 3" 3" 3" 3" 3"	RC30-1000Q RC36-1000Q RC42-1000Q RC48-1000Q RC54-1000Q RC60-1000Q
1200 mm (48"x48" sq.)	Consult factory for sizing and specifications.							

Note: Standard cake thickness is 32mm (1-1/4")

* All capacities are nominal (+/- 2%)

Available Options

Filter Feed Pumps - Sludge or slurry, for your specific application.

Automatic Pump Control Systems - To regulate feed pump flow and pressure for uniform cake formation.

Semi-Automatic Plate Shifters - Pneumatically powered, over-the-top devices utilizing deadman control so one operator can manage even the largest models.

Expansion Bars - For easy, economical expansion of your Star PolyPress by simply adding more plates.

Blank Dividers - To reduce the capacities of the PolyPress for smaller batches.

Air-Blowdown Manifolds - Standard on most Star PolyPresses to remove residual water from cakes. Designed with custom internal porting -- also allow you to wash process cakes and/or alter inlet/outlet locations.

Sludge Holding and Conditioning Tanks - For complete Dewatering Systems.

Core Blow - To eliminate wet, sloppy cores and ensure dry cakes in frequent cycle operations.

Plates and Frames - When frequent media changes are necessary.

Standard Recessed Chamber Plates - When gaskets are not necessary.

Membrane Plates - For extra-dry cakes and/or better cake washing.

Wide Selection of Filter Cloths

Stainless Steel Stands, Heads and Sidebars - For extremely corrosive environments.

Heavy-Duty, Semi-Pneumatic Casters - For portability.

Heavy-Duty, Self Dumping Cake Hoppers - For cake removal.

Elevated Platforms - To position larger PolyPresses over rolloff boxes or trucks.

Custom-Engineered Equipment

About Our Company

Star Filters, a leading manufacturer of plate and frame filter presses, was founded in 1904 as Star Liquid Machinery of the Bronx, New York. In 1978, the company was moved to a 21,000 sq. ft. manufacturing facility in Timmonsville, South Carolina and became known as Star Systems.

The Hilliard Corporation of Elmira, New York, founded in 1905, purchased Star Systems in 1986, updated and simplified the Star name to Star Filters, and incorporated the Star products into the Elmira manufacturing facility.

The Hilliard Corporation is a recognized leader in filtration with its popular HILCO® product line.

More Star Filters Products

All products are engineered and built in the U.S.A. For more information on other Star Filters products, request the following literature, or visit our website at www.starfilters.com.

Star Filter Presses (SFP-4)
Star Products for the Wine Industry (SWP-3)
Star Compact Wine Filter (SWF-2)
Star Depth-Style Filter Media Pads (SMP-1)
Star Industrial Storage and Mixing Tanks (SST-1)
Star 20-cm Filter (SSF-1)
Star Oil Treatment Systems (OTS-3)
Star Bench Top Plate and Frame Filter (SBT-1)
Filtration Products for the Beverage Industry (SBP-1)
Ceramic Membrane Crossflow Vinegar Filtration System (CMV-1)

*The Hilliard Corporation reserves the right to change specifications and dimensions at any time.
Please contact the factory for the most current information.*

Star® and HILCO® are registered trademarks.

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