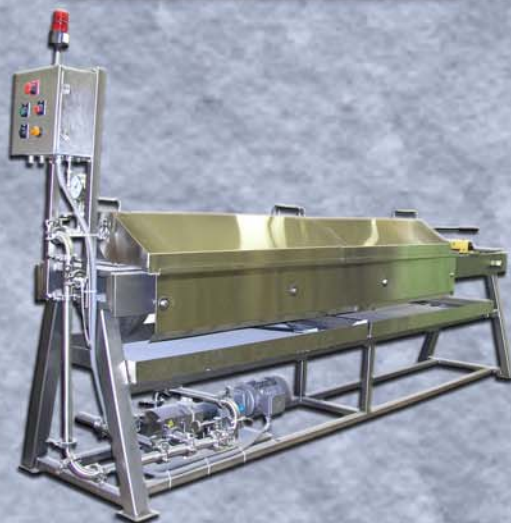


# Star Filter Presses

Long Life. Low Maintenance. Easy Operation.



**STAR FILTERS**

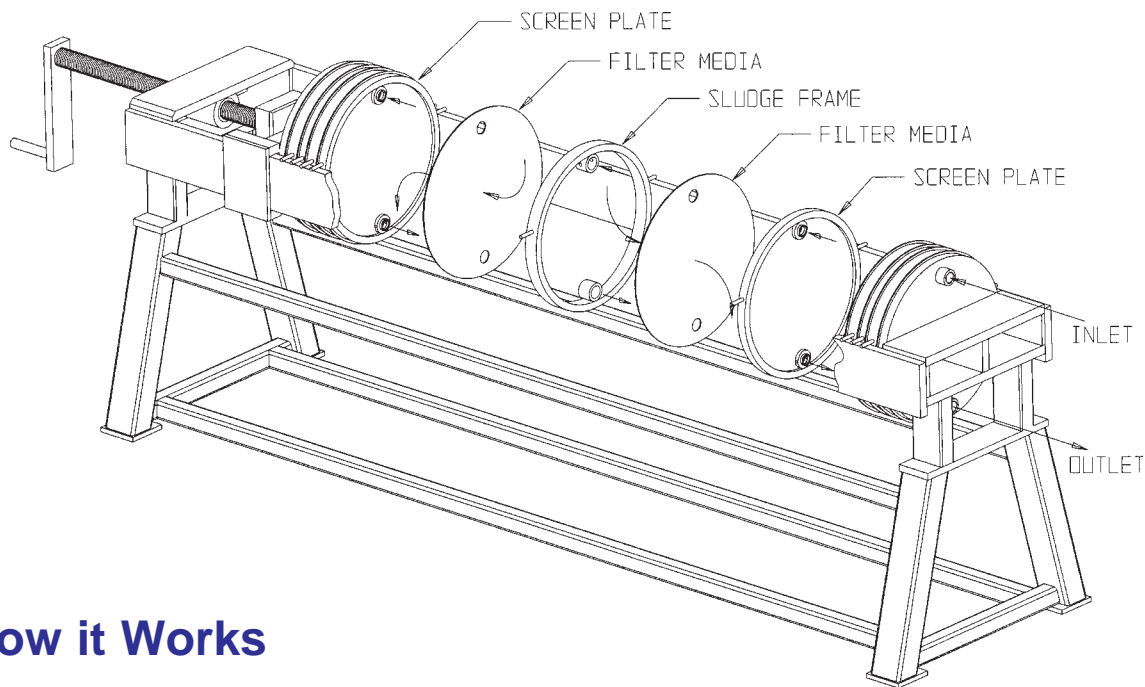
# Star Filter Press

## Designed and Built for Years of Service

Star Plate and Frame Filter Presses are designed and built to provide you with years of dependable service.

Our filters are sturdily built, with a rugged carbon steel stand coated in durable epoxy paint. Standard heads, plates, frames, and their components are fabricated from 304 stainless steel. Heavily reinforced for maximum life, the precision-machined plates, frames, and heads warrant a tight seal and near-zero leakage without gaskets.

Star Filter Presses can be fabricated in 316 and 316L stainless steel, as well as other special alloys upon request.



## How it Works

The liquid to be filtered enters the Star Filter by way of an inlet manifold formed by the inlet ports when the press is closed. The inlet manifold is ported into the frames. All of the frames are filled simultaneously. When the frames are filled with liquid, the pressure generated by the filter's feed pump pushes the liquid through the filter sheets loaded onto each side of the frame and into the corresponding plates between each frame. The solids are trapped inside the frames by this filtration action.

The plates -- the clean side of the filter -- are ported into the outlet manifold. The filtrate (filtered liquid) passes out of all of the plates simultaneously into the outlet manifold and thereby out of the Star Filter.

Solids being removed from the liquid build up on the filter sheets until they fill the frames completely. At such a point, the filter is full and the filtration cycle should be ended. A significant rise in the pressure, generally 60 psi, on the inlet side of the Star Filter is the most typical indicator that the Star Filter is full.

Typically, Star Filters are loaded with inexpensive, disposable paper filter sheets. When the Star Filter is full, the press is opened. The plates and frames are separated, and the paper filter sheets are removed and discarded. The filtercake, or sludge in the frames is then removed as well.

New filter sheets are installed and the Star Filter is ready for another cycle.

# Applications and Markets. . .

## *Food and Beverage Processing*

syrup  
beer and wine  
industrial frying oil  
honey  
broth  
brine  
extract  
soup  
juices  
soft drinks  
vinegar  
salad oil  
roasted nuts



## *Mining and Metalworking*

gold  
silver  
aluminum hydroxide  
industrial oils



## *Pharmaceuticals, Cosmetics, Biotech Processing*

soap  
perfume  
hand lotion  
shampoo  
syrup  
proteins  
blood plasma  
vaccines  
saline  
gelatin



## *Chemical and Petrochemical Processing*

paint  
varnish  
pigments  
hot wax  
polish  
antifreeze  
kerosene  
surfactants  
photographic solutions  
ink  
biotech broths



## Features . . .

- Sludge frames of open design
- Fabricated stainless steel construction
- Closed delivery - internal porting
- USDA approved
- Heavy-duty SS side bars
- Precision-machined plates, frames, and heads
- Stainless steel drain pan
- Raising blocks or casters
- Made in USA
- Smooth-acting, dependable press screw closure w/ hydraulic sealing on some models
- Standard, sanitary 4" pressure gauge
- Filter media doubles as gasketing material
- Utilizes low-cost paper filter media or cloth filter media
- High ratio of filtration area to floor space
- Extra-large inlet porting

## Benefits . . .

- High sludge capacity
- Low maintenance
- Large filtration surface area
- No gaskets to maintain
- Excellent corrosion resistance
- Withstands temperatures of up to 375°F (190°C)
- Easy to operate, simple to clean
- Expandable by adding plates and frames
- Low filter media replacement costs
- Easy to sanitize
- Minimal plate stack drip
- High liquid flow rates
- Portable

## Sizes . . .

- 12", 18", 24", 30" Round
- 17" - 25" Square
- Custom: consult factory

### **Filtration Lab**

*An in-house filtration lab is available for testing liquid/solid separations. This service is provided to help determine the quality of the end product, the appropriate size Star Filter, and the best filter media for specific applications.*

### **Pilot Test Units**

*Star Filters are available in smaller sizes for rent for in-plant testing. Rental fees can be applied to the purchase of the filter.*

### **Media Options**

*Round  
Square  
Compact  
Polypropylene  
Sizes range from 12" to 30"*

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## Options

Star Filters offers a number of options with which filters can be customized to meet special needs:

- ✱ **304, 316, or 316L stainless steel stands and heads** are sanitary and corrosion-resistant
- ✱ **Extra-long stands** allow for future expansion
- ✱ **Narrow frames** when minimal liquid or sludge retention is required
- ✱ **Four ports** (on square filters) permit variations of inlets and outlets which is necessary for “thorough cake wash”
- ✱ **Extra-wide frames** for large sludge (cake) capacity
- ✱ **Plates and frames** for heating or cooling
- ✱ **Center dividers** permit two-stage filtration
- ✱ **Blank dividers** reduce filter capacity for small batches
- ✱ **Safety covers** and **side shields** recommended for all hot oil applications
- ✱ **Hydraulic closure system**
- ✱ **Inverter** for varying flow rates

## Filter Media

Star Filter Sheets are available from stock and in standard grades for round and square Star Filter Presses. Drapeover sheets are also available for the polypropylene plate and frame.

Our media is manufactured in accordance with FDA guidelines. Several grades are also FDA approved for food contact (acceptable for filtration of liquids for human consumption) for use in meat and poultry plants.

Star Filter Media is capable of withstanding temperatures up to 375° F.

## Specialty Media

Star has three media grades for special applications:

- ✱ Carbon Comet contains activated carbon and is available in 2 and 8 micron retention (nominal) rating sheets.
- ✱ Star Filter Pads combine diatomaceous earth depth filtration with electrokinetic properties for sub-micron filtration.
- ✱ Easy Earth has diatomaceous earth impregnated into a paper sheet. It has excellent temperature resistance, high flow rates, and may eliminate the need to precoat in some applications.

Some grades are available from stock for competitive makes of plate and frame filters.

*Please request literature, code SFM-2 for more information on Star media.*

# Round Model Filter Press Specifications

## 12" Diameter Filters

| No. of Discs | Filtering Area (sq. ft.) | Sludge Capacity 1" Frames (cu. ft.) | Sludge Capacity 1 1/2" Frames (cu. ft.) | Sludge Capacity 2" Frames (cu. ft.) | Sludge Capacity 3" Frames (cu. ft.) |
|--------------|--------------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|
| 4            | 2.64                     | 0.18                                | 0.21                                    | 0.24                                | 0.36                                |
| 6            | 3.95                     | 0.24                                | 0.30                                    | 0.36                                | 0.54                                |
| 10           | 6.59                     | 0.36                                | 0.48                                    | 0.60                                | 0.90                                |
| 14           | 9.23                     | 0.48                                | 0.66                                    | 0.84                                | 1.26                                |
| 20           | 13.19                    | 0.66                                | 0.93                                    | 1.20                                | 1.80                                |
| 30           | 19.79                    | 0.96                                | 1.38                                    | 1.80                                | 2.70                                |

## 18" Diameter Filters

| No. of Discs | Filtering Area (sq. ft.) | Sludge Capacity 1" Frames (cu. ft.) | Sludge Capacity 1 1/2" Frames (cu. ft.) | Sludge Capacity 2" Frames (cu. ft.) | Sludge Capacity 3" Frames (cu. ft.) |
|--------------|--------------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|
| 12           | 18.91                    | 0.94                                | 1.24                                    | 1.62                                | 2.43                                |
| 20           | 31.52                    | 1.48                                | 2.09                                    | 2.70                                | 4.05                                |
| 30           | 47.28                    | 2.16                                | 3.10                                    | 4.05                                | 6.08                                |
| 40           | 63.05                    | 2.83                                | 4.12                                    | 5.40                                | 8.11                                |
| 50           | 78.81                    | 3.51                                | 5.13                                    | 6.76                                | 10.14                               |
| 60           | 94.57                    | 4.19                                | 6.14                                    | 8.12                                | 12.17                               |

## 24" Diameter Filters

| No. of Discs | Filtering Area (sq. ft.) | Sludge Capacity 1" Frames (cu. ft.) | Sludge Capacity 1 1/2" Frames (cu. ft.) | Sludge Capacity 2" Frames (cu. ft.) | Sludge Capacity 3" Frames (cu. ft.) |
|--------------|--------------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|
| 30           | 82.83                    | 3.84                                | 5.52                                    | 7.20                                | 10.80                               |
| 40           | 110.40                   | 5.04                                | 7.32                                    | 9.60                                | 14.40                               |
| 50           | 138.05                   | 6.24                                | 9.12                                    | 12.00                               | 18.00                               |
| 60           | 165.66                   | 7.44                                | 10.92                                   | 14.40                               | 21.60                               |
| 70           | 193.28                   | 8.64                                | 12.72                                   | 16.80                               | 25.20                               |
| 80           | 220.89                   | 9.84                                | 14.52                                   | 19.20                               | 28.80                               |

## 30" Diameter Filters

| No. of Discs | Filtering Area (sq. ft.) | Sludge Capacity 1" Frames (cu. ft.) | Sludge Capacity 1 1/2" Frames (cu. ft.) | Sludge Capacity 2" Frames (cu. ft.) | Sludge Capacity 3" Frames (cu. ft.) |
|--------------|--------------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|
| 30           | 128.27                   | 5.76                                | 8.28                                    | 10.69                               | 16.20                               |
| 40           | 171.03                   | 7.56                                | 10.98                                   | 14.25                               | 21.60                               |
| 50           | 213.79                   | 9.36                                | 13.68                                   | 17.81                               | 27.00                               |
| 60           | 256.55                   | 11.16                               | 16.38                                   | 21.38                               | 32.40                               |
| 70           | 299.31                   | 12.96                               | 19.08                                   | 24.94                               | 37.80                               |
| 80           | 342.07                   | 14.76                               | 21.78                                   | 28.50                               | 43.20                               |

**NOTE:** To obtain square inches of filtering area, multiply by 144.  
To obtain cubic inches of sludge/cake capacity, multiply by 1728.

Please contact factory for specific information on larger models and flow rates.

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## Other Star Products

### Star Bench Top Plate and Frame Filter

#### Features

- Filtering area = 43.29 in.<sup>2</sup>
- Sludge capacity = 13.53 in.<sup>3</sup>
- 316 SS construction
- Open-design sludge frames
- Stainless steel drip pan
- Pressure gauge
- Manual bypass loop arrangement



*For more information request literature, code SBT-1.*

### Oil Treatment System

#### Benefits

- Lowers oil replacement costs
- Decreases disposal costs
- Improves condition of oil
- Produces high quality, reusable cooking oil
- Reduces free fatty acids and polar compounds



*For more information request literature, code OTS-3.*

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## 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 has now 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 Filter Products, request the following literature:

Star PolyPress (SPP-4)  
Star Products for the Wine Industry (SWP-1)  
Star Compact Polishing Wine Filter (SWF-2)  
Star Depth-Style Filter Media (SMP-1)  
Star Industrial Storage Tanks (SST-1)  
Star 20-cm Filter (SSF-1)



*Star Filters PolyPress*

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.*



**The Hilliard Corporation**  
100 West Fourth Street  
Elmira, New York 14902-1504  
Phone: 607-733-7121  
Fax: 607-733-0928  
E-mail: [hilliard@hilliardcorp.com](mailto:hilliard@hilliardcorp.com)  
<http://www.starfilters.com>

**Your Local Representative:**