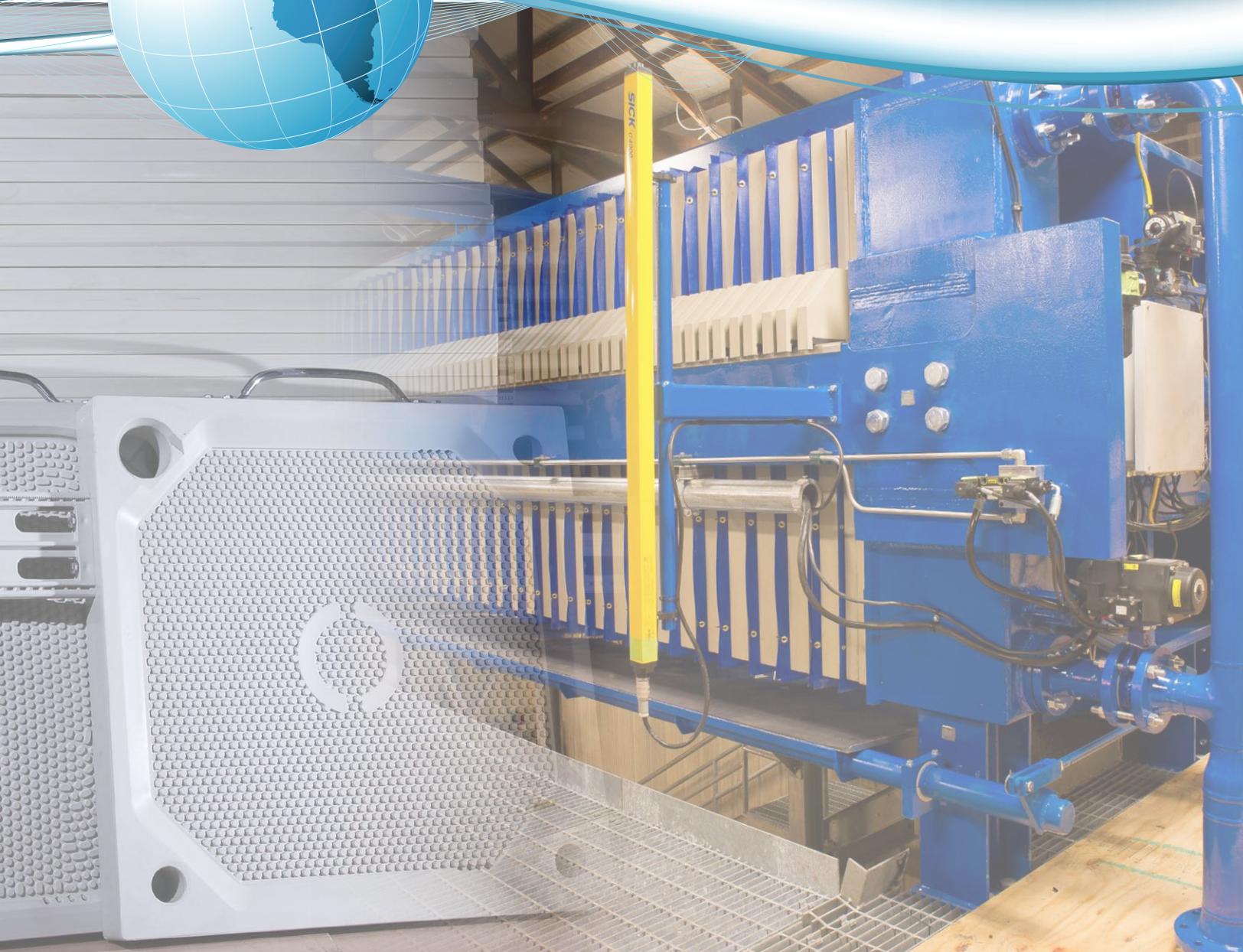


# BURCO FILTERS™

by Ascension Industries

Proven, Trusted Solutions™

## Filter Presses



# Proven Liquid-Solid Separation Equipment

"We at ASCENSION INDUSTRIES take pride and satisfaction in continuing the 130+ years of DURCO/ENZINGER quality, workmanship, innovation, and traditions. "PROVEN, TRUSTED SOLUTIONS" is more than a legacy, it is the commitment and motivation we live by and eagerly share with our customers."

- Jack Kopczynski, President

## EP Sidebar Filter Press

### Efficient Performance for Filtration Versatility

**Durco Filters** EP Presses are built to withstand routine handling of various industrial sludges and process solid/liquid slurries. The construction is comprised of the following basic components:

**Structural Frame** - Structural steel frame built to operate at feed pressures up to 225 psi (16 bar).

**Stainless Steel Side Bar Caps** - These caps prevent excessive wear during shifting and lifting of filter plates.

**Hydraulic Open/Closure System** - Standard system comprised of pneumatic/oil hydraulic closure system which is **self-compensating**.

**Filter Plates** - Lightweight, chemically resistant polypropylene filter plates are used in all standard EP Filter Presses. Kynar and Nylon filter plates are also available for special chemical and temperature specific applications.

**Plate Shifting Mechanism (Optional)** - Overhead/single point pick-up plate shifting mechanism. Pneumatic plate shifting device is activated by our unique **Shifter Rod Assembly** (up to 1000 mm size presses). Electric hydraulic plate shifting mechanism uses a handheld pendant for 1200 mm and larger presses.

Consider the following when specifying your EP Press:

- Capacity requirements (contact us for sizing assistance)
- Feed pressure requirements 100 psi (6.9 bar) or 225 psi (15.5 bar)
- Plate shifting requirements (manual, semi or fully automatic)
- Method of cake disposal (hoppers, drums or conveyors)
- Future capacity requirements, and type of filter plates needed



### Features

- Compact Design**
- Pneumatic Hydraulic Closure System**
- Manual Hydraulic Closure System**
- Factory Assembled**
- Enclosed Control Cabinet**
- Multiple Feed Pressure up to 225 psi**
- Expandable Capacity**
- Fully or Semi-Automatic Filter Plate Shifter**
- Complete Systems**

### Benefits

- For limited space or portable applications
- Ideal for explosion-proof requirements
- For applications where utilities are not readily available
- Low installation cost
- Easy maintenance and safe operations
- Solutions for multiple problems
- Low cost future production capacity
- Improved safety and operation
- Single source supply

# Trusted Solutions for Every Filter Application

## QP Overhead Filter Press

### Longlasting Endurance for Heavy Industrial Use

The **Durco Filters** QP (Quadra Press) Overhead Filter Press is specifically designed for high efficiency liquid/solid separation. It is widely used by the chemical process, mining, food processing, petroleum, and hazardous waste treatment industries where cost-effective solutions for severe duty, corrosive, continuous use, and high performance applications are imperative.

The QP Filter Press is the most operator-friendly press on the market today. With emphasis on safety, the overhead plate-shifting design allows the operator-free access to the cakes, plate stack, and filter cloths. All moving parts such as the plate-shifting mechanism are located above and out of the way of the operator and possible cake fouling. This allows safe accessibility for faster operation and ease of maintenance.

In 1979, **Durco Filters** was the first manufacturer to introduce a four-bar fabricated press with an overhead plate shifting mechanism. This unique box skeleton frame permits high-performance filtration without bypass at higher operating pressures.

Today the QP Filter Press with its cross dimensional stability and low profile design, has developed into the most versatile, heavy-duty, precision work-horse making it the top choice for mobile and permanently installed dewatering applications.

Another aspect of the versatility of the QP Filter Press is seen in its unique spacer design, allowing for future expansion of press capacity. Before you decide which filter press is best suited to your needs, examine the numerous outstanding features and benefits of the **Durco Filters** QP Filter Press.



### Features

**Fabricated Box Frame Design**

**Design Pressure from 100 to 225 psi  
Overhead Plate Shifter**

**Self-Compensating Electro-Pneumatic  
Hydraulics**

**Membrane Press Plates**

**O-ring Liner Pipes**

### Benefits

- Maximum stability and strength
- Easy to use with discharge conveyors, chutes, and drip trays
- Maximum cake dryness and application flexibility
- Minimizes mechanism fouling or corrosion
- Fully exposes filter plates for inspection and cloth replacement
- Safe operation
- Self aligning non-metallic rollers ensure plate stack alignment
- Energy efficient, stock replacement components
- Low downtime during press operating and closing
- Reduced cycle time
- Provides higher processing rates
- Improves cake washing efficiency
- Greater liquid removal than standard plates
- Leak free operation
- Prevents wetting of carbon steel parts by the process fluid

# Proven Liquid-Solid Separation Equipment

## Filter Press Options

**Hydraulic Drip Trays** - Bomb-bay style drip trays constructed with corrosion resistant materials collect normal cloth wicking during filtration and can also serve as cake chutes during cake discharge.

**Fiberglass Control Panels** - These panels provide trouble-free service and can be equipped with an instrument air purge or inert gas purge to protect internal components and instrumentation.

**Automatic Shifter-Chain Oilers** - Dual units provide lubrication to both shifter chains each time the shifter operates. This provides continuous chain maintenance and maximum shifter life in extreme environments.

**Air Purged Hydraulics** - The filter press hydraulic system is provided with an instrument air purge on the hydraulic reservoir to prevent influx and condensation of corrosive fumes that may result in internal corrosion of the system.

**Cake Deflectors** - Stainless Steel or non-metallic cake deflectors are mounted on the top of each lower sidebar. Deflectors direct the cake toward the cake chute and serve as a splash and corrosion barrier for the lower sidebars. Deflectors can be removable or permanently installed.

**Ram Boots** - These flexible elastomeric sleeves cover the exposed portion of the cylinder and can be equipped with an instrument air purge to prevent pitting of the cylinder and keep dirt out of the ram seals.



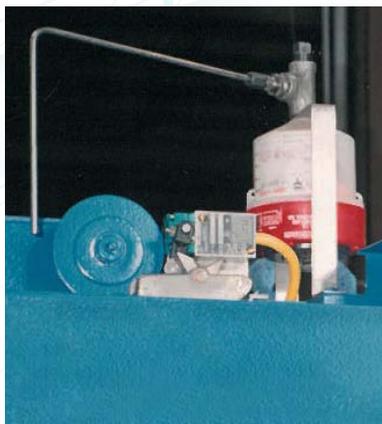
### Durco Filters Piping Systems

Durco Filters presses are available with optional piping systems mounted on the unit to meet application and operation needs, thus reducing the number of field connections required. Various materials of construction, manual or automated valves, and configurations to accommodate cake washing, core blow, and air blowdown are available.

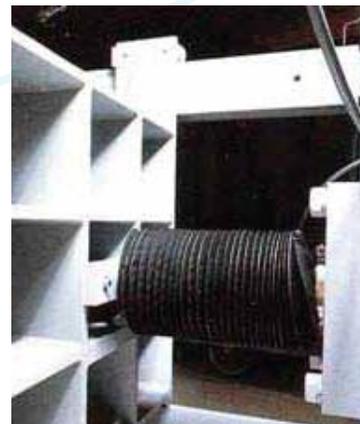
Fiberglass Control Panel (NEMA 4X)



Automatic Shifter-Chain Oilers



Protective Ram Boots



# Trusted Solutions for Every Filter Application

## Plate Options

Your local **Durco Filters** representative can recommend the size, type, and arrangement of filter plates best suited to your specific application from the following basic types:

### Recessed Plates

Recessed plates are molded for cake thicknesses from 3/4" (20 mm) to 2" (50 mm) and to operate at either 100 or 225 psi feed pressure at ambient temperatures. The pipped or ribbed drainage surface aids uniform cake formation, washing, and precoating while the beveled edges aid cake release when the plates are separated.

### Caulked and Gasketed Plates

Caulked and gasketed plates are the choice where leak-free operation is required due to highly corrosive or toxic liquids. O-ring type gaskets in grooves around the recess and filtrate ports prevent leaks or bypass. A second groove, inside the gasket groove, accommodates a special cloth with a sewn-in-place caulking rope.

### Membrane Plates

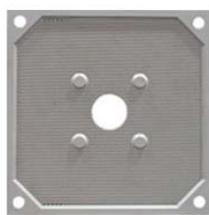
Membrane plates are one of the newest developments in filtration technology. In membrane plates, the recessed surfaces are polypropylene or elastomeric diaphragms.

After the slurry is pumped into the chamber formed by the plates during the filter feed cycle, inflation pressure up to 225 psi is applied behind the membrane to squeeze additional liquid from the cake.

Membrane plates offer **advantages** over standard recessed plates in greatly reduced cycle times (therefore greater throughput), exceptional cake-washing capability, ability to handle inconsistent slurries, and reduced need for pretreatment.

### Plate and Frame

The Plate and frame chamber design has been around for many years. The polypropylene materials are separated into 2 sections: 1 plate and 1 frame. Each part makes up one full chamber in the filter press. This plate and frame design is ideal with the use of paper or cloth as the filter medium. Frame thickness can be changed to accommodate applications from 3/4" (20 mm) to 2" (50 mm) cake thickness.



Recessed Plate



Caulked and Gasketed Plate



Membrane Plate



Plate and Frame

### Materials of Construction

**Nylon** - Chemically-resistant material

**Polypropylene** - Lightweight, chemically resistant (standard)

**Kynar** - Chemically resistant and broader temperature range than polypropylene and nylon

**Metals** - Aluminum, stainless steel, and steam heated

### Filter Cloth

#### Types

Caulked and Gasketed  
Drape-over  
Paper  
Non-Gasketed - Cloth Neck  
Non-Gasketed - EPDM Neck

#### Materials

Polypropylene  
Polyester  
Nylon  
Teflon

#### Filter Cloth Rating

Available from 1 micron to wide open

# Proven Liquid-Solid Separation Equipment

## Filtration & Automation

### Filtration

The basic objective in solid/liquid separation is efficient particulate removal. There are a number of methods of achieving this, one method being the filter press.

The ability of a specific liquid containing suspended solids to filter through a septum for the removal of solids is called filterability. Factors which affect filterability include: pressure, temperature, cake compressibility, specific case resistance and fluid viscosity.

The solids are deposited on both faces of the filter plates as the plates squeeze together. The two faces of each plate, therefore, comprise the effective filtration area.

Due to the variety of applications, laboratory and/or “on-site” pilot testing are advisable. We have many pilot filters and a complete laboratory to thoroughly analyze process fluids and test for filterability.



### Automation & Controls

With the increasing trend toward automation of process equipment, we can equip any **Durco Filters** unit with an automated system to suit your needs. The range of industries to which we supply systems includes brewing, winemaking, chemical, food, juices, metallurgical, petrochemical, mining, and waste treatment. Our automated systems are designed for each specific requirement and may be semi-automatic or fully-automatic.

The semi-automatic system has a central control panel where the sequence steps are activated by the operator. The various pump drives, agitator drives, valves, etc., are automatically operated to the required mode for the process step.

Fully-automated systems are designed to the degree of sophistication required by the customer. Programmable Logic Controllers (PLC's) are used to ensure that the required process steps are carried out automatically. Level controls, pressure differential switches, limit switches, etc., provide signals to initiate the sequencing device. Flow rate and turbidity can be monitored.

Various options are available such as main panel graphics, Human Machine Interface (HMI), manual overrides, alarms, remote terminal boxes, station wiring, etc. While **Durco Filters** has standardized on certain manufacturers equipment, we will supply equipment specified by customers to enable them to standardize within their plant.

Completely piped, wired, and skid mounted systems are available to ensure minimum installation time. We provide installation supervision, start-up services, and instructions to plant operators in the functioning and maintenance of the system, in all languages worldwide.



# Trusted Solutions for Every Filter Application

## Product Overview

### Pressure Leaf Filter



Typical Applications: Mining, Molten Sulfur, Specialty Chemical, Biofuel, Amine, Pharmaceuticals, Chlor-Alkali, Brewery and Winery, Edible Oils, Sugar, Juice

### Filter Press



Typical Applications: Mining, Chemical, Industrial Waste Water, Pigments, Salt Precipitation, Environmental

### Pressure Nutsche



Typical Applications: Pharmaceuticals, Specialty Chemicals, Pilot Studies, Small Batch Products

### Sludge Dryer



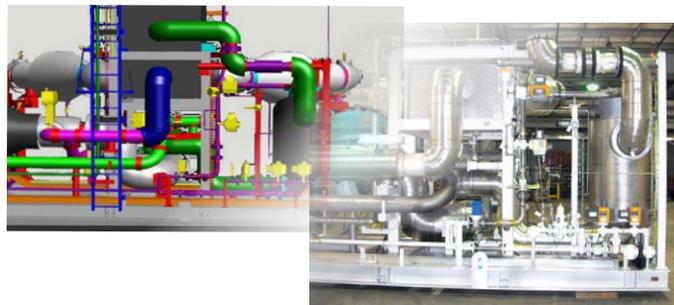
Typical Applications: Inorganic Metal Hydroxide, Uranium Drying, Hazardous Waste

### Tubular Backwashing Filter



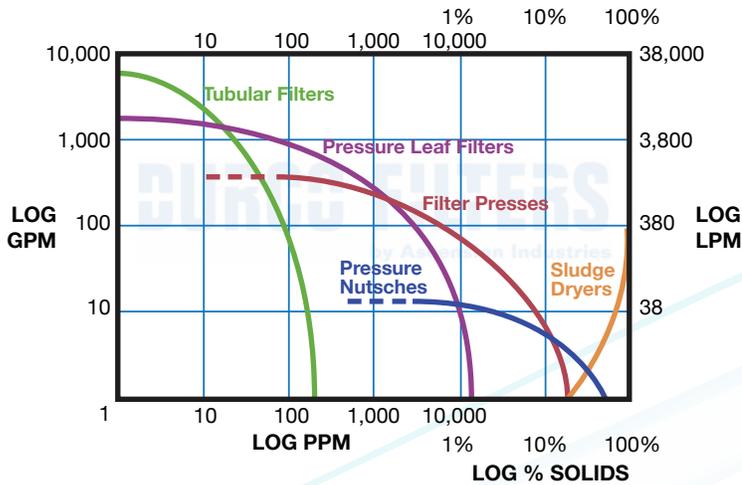
Typical Applications: Pulp and Paper, Water, Amine, Specialty Chemical, Mining, Cooling Tower, Petrochemical, Food & Beverage, Corn Syrup, RO Protection

### Complete Process Solutions



Ascension Industries offers a full range of capabilities from design to turnkey manufacturing with extensive experience in skid-mounted process systems, machine assemblies, and more.

## Applications & Services



**Tubular Filters** - For applications <220 ppm for biological solids, upwards of 525 ppm for granular solids, high flow rates

**Pressure Leaf Filters** - Up to 3% solids for easily filtered materials

**Pressure Nutsches** - Great for piloting, specialty applications, and when the ability to interrupt flow is desired

**Filter Presses** - For dewatering slurries

**Sludge Dryers** - Typically used in conjunction with filter presses, reduces cake weight, and volume

### Lab Testing

**Durco Filters** Application Engineers test customer samples to help ensure that our equipment meets the needs of your application. Our lab will determine the optimum set of equipment parameters for each application including: equipment type, sizing, filter media, flow rates, and filter aid requirements.

### Parts

We also carry and manufacture a complete line of **Durco Filters** spare and replacement parts for all of our filtration systems and products. We stock many parts and can provide 24-hour delivery in emergency situations. Please inquire about:

- Pressure leaf filter leaves
- Tubular filter bags, and screens
- O-rings, gaskets, and filter elements
- Sluicers, valves, and controls
- Filter press plates and cloths

### Pilot Testing

For new or difficult applications, pilot testing on or off-site is recommended. **Durco Filters** pilot test units confirm feed rates, filter media, filter aids, and other filtration factors supporting optimal operation.

### Field Service

**Durco Filters** Field Service travels the world to keep filtration systems performing at peak efficiency. Services offered include:

- System startup
- Customer training
- Preventive and maintenance contracts
- Installation supervision
- Emergency repair and service
- Equipment upgrades and refurbishments

ASME Section VIII, China Code (SQL-AQSIQ), European- PED (97/23/EC) | ISO9001:2008

**DURCO FILTERS™**  
by Ascension Industries

Continuing the tradition of over 130 years of **Durco Filters™** quality and innovation, as well as custom turnkey systems, Ascension Industries is your provider of **Proven, Trusted Solutions.**

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