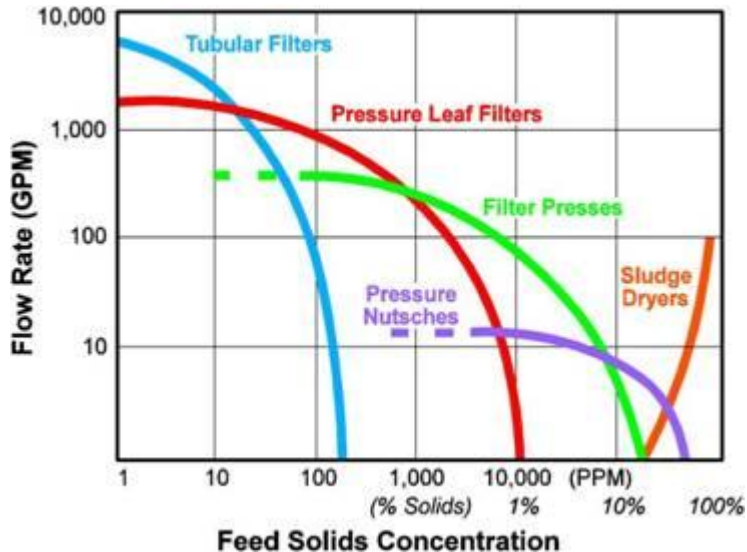


### Durco Filters Biodiesel / Biofuel Dry Washing Filter Presses Allow:



- **Cost-Effective Biodiesel Filtration & Other Dry Washing Process Filtration With High Flow Rate Or Intermittent Flow Rate Requirements 1M-10Mgal/yr**
- **Pneumatic / Hydraulic Operation Without Electrical Service For Explosion-Proof Biodiesel Processing**
- **Highly Reliable, Low Maintenance, Simple Operation With Minimal Operator Training Requirement**
- **Specialized Long-Life Biodiesel Filter Plate Media For Use Up To 170°F**

### Durco Filters EP Sidebar Biodiesel Filter Press Guide



1. EP Filter Press Construction
2. EP Filter Press Operation
3. EP Filter Plate Shifting Sequence
4. Durco Filters Biodiesel Filter Plates
5. EP Filter Press Features & Benefits
6. EP Filter Press Options
7. Durco Industrial Filtration Products

**Cost-Effective & Environmentally Responsible Filtration For Large-Scale Biodiesel / Biofuel, or WVO Processing**

#### More Information Online:

[Durco Filters Biodiesel Filter Presses](#)

[Durco Filters Biodiesel Dry Washing Systems](#)

[Durco Filters Biodiesel Dry Washing Pressure Leaf Filters](#)

Ascension Industries has purchased & owns all records, drawings, bills of materials and support data for existing: Duriron (DURCO), Aquacare, FSD Filter Presses, Pressure Leaf Filters & Pressure Nutsches, Tubular Filters & Enviro-Dri Sludge Dryers. Ascension is the only authorized supplier of certified DURCO OEM Filters & Filter Parts.

## 1. EP Sidebar Biodiesel Filter Press Construction

*Durco Filters EP Sidebar Biodiesel Filter Press Is Designed & Engineered For Maximum Durability & Optimum Functional Service In Large-Scale (1 – 10 Million Gal/Yr) Biodiesel / Biofuel Or WVO Dry Washing & Filtration Operations*

### Durco Filters Sidebar Biodiesel Filter Press Has The Following Basic Components:

- **Structural Frame** - Structural Steel Frame built to operate at feed pressures up to **100 psi** (225 psi available)
- **Stainless Steel Side Bar Caps** - These caps prevent excessive wear during shifting and lifting of filter plates.
- **Hydraulic Open/Closure System** - Standard Pneumatic/Oil hydraulic closure system is self compensating.
- **Special Biodiesel Filter Plates** - Lightweight, reinforced polypropylene filter plates are specifically developed for biodiesel plant operation. A wide range of filter plates are also available for other dry washing operations and a broad variety of other industrial filtration applications
- **Plate Shifting Mechanism (Optional)** - Overhead/single point pickup plate shifting mechanism. Pneumatic plate shifting device is activated by the unique Durco **Shifter Rod Assembly** (Up to 1000 mm size presses). Electric hydraulic plate shifting mechanism uses a handheld pendant for 1200 mm and 1500 mm presses.

### Consider The Following When Specifying Your Filter Press:

**Capacity Requirements** (Contact **Durco Filters** for sizing assistance)

**Feed Pressure Requirements** 100 psi (225 psi available)

**Plate Shifting Requirements** (Manual or Semi-Automatic)

**Method of Cake Disposal** (Hoppers, Drums or Conveyors)

**Future Capacity Requirements** 1- 10M gal/yr

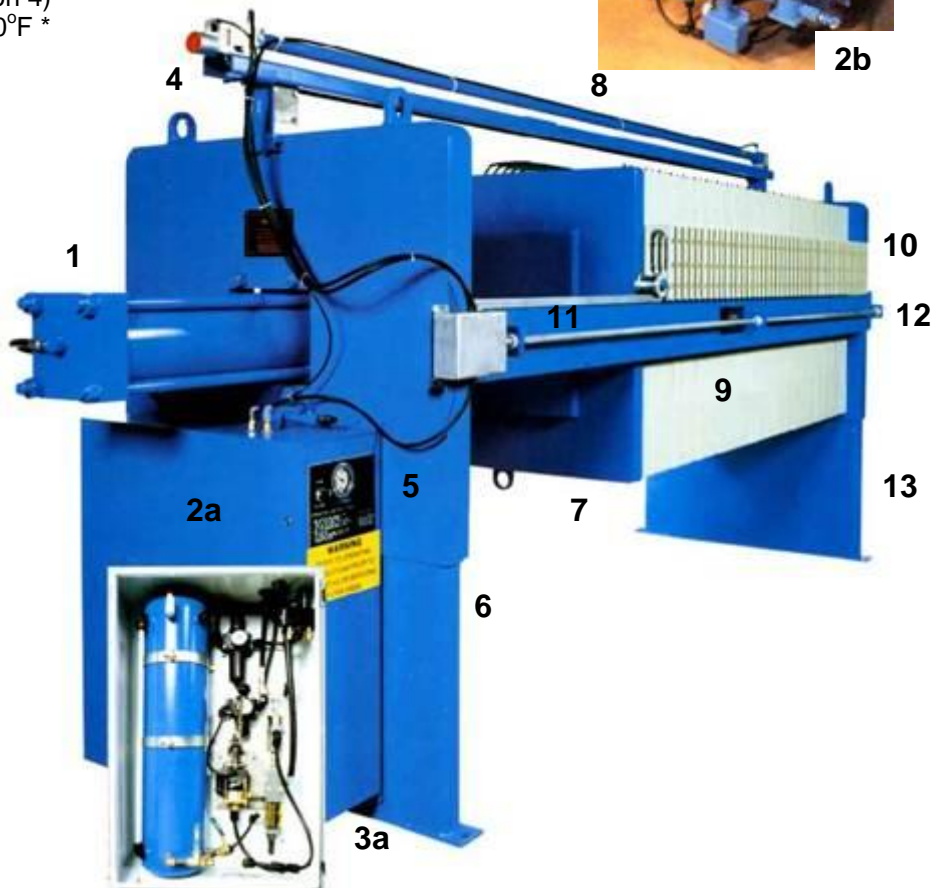
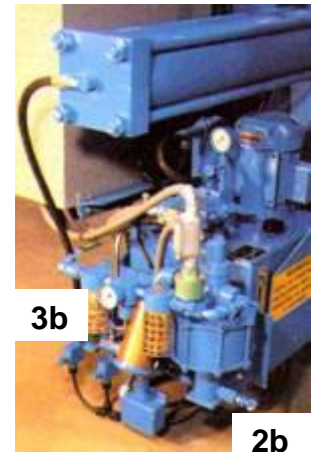
**Type of Filter Plates Needed** (See Section 4)

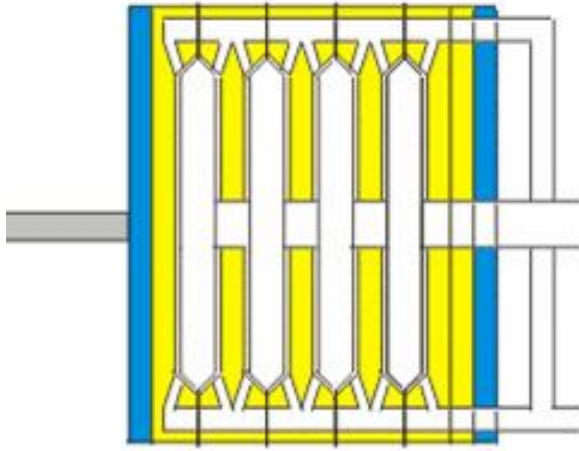
**Biodiesel Process Temperatures** To 170°F \*

1. Cylinder (Ram)
- 2a. Hydraulic Enclosure (630 -1000 mm)
- 2b. Hydraulic Base Plate Mount (1200 - 1500 mm)
- 3a. Hydraulic/Pneumatic Closure System (630 - 1000 mm)
- 3b. Hydraulic/Electric/Pneumatic Closure System (1200 - 1500 mm)
4. Lifting Lugs
5. Controls
6. Ram Head
7. Movable Head
8. Optional Overhead Shifter
9. Plate Stack
10. Plate Handles
11. Side Bar
12. Optional Overhead Shifter Control
13. Fixed Head

### Higher Volume Or Automated Biodiesel / Biofuel Plant

\* The **Durco QP Overhead Filter Press** is designed for higher biodiesel process volumes or automated dry washing and filtration applications





### Durco Filters EP Sidebar Biodiesel Filter Press Standard Sequence Of Operation

#### Typical Filter Press Filtering Operation (See Animated Schematic Online)

- (A) The plate stack is pressurized by a hydraulic ram closure system that extends the movable head to the plate stack. The movable head and the fixed head form the boundaries of the plate stack. As pressure builds on the plate stack, plates come together to form chambers.
- (B) Dry-washed Biodiesel, containing suspended solids, is then pumped into the feed inlet to fill each chamber of the filter press.
- (C) As the feed enters each chamber, the liquid passes through the filter cloth to channels in the filter plate. This clarified biodiesel then exits through the discharge ports of the filter plate.
- (D) Suspended dry-wash solids are captured on the surface of the filter cloths. As the solids build, they provide a medium for further filtration.
- (E) With pressure exerted by the feed pump, solids displace liquid in the chamber. Eventually, a filter cake is formed.
- (F) When maximum pressure is reached, the filter press is vented and the movable head is retracted from the filter plates.
- (G) Filter plates are then separated to allow formed filter cakes to fall into an appropriate cake handling system. Separation of the filter plates can be accomplished either manually or by using an optional semi-automatic plate shifting mechanism.

### Semi-Automatic Plate Shifting Provides Improved Safety and Operation

- (A) Unique plate shifting mechanism provides convenient and safe cake discharge from the biodiesel filter press.
- (B) Overhead plate shifting mechanism allows single point pickup at the top center of the filter plate. This swing-free, overhead design increases operator safety.
- (C) The pneumatically operated shifter pawl assembly is controlled by a shifter rod positioned horizontally along the length of the filter press. This allows the operator to move freely along the length of the filter press without being restricted by a hand-held pendant controller.
- (D) (Not shown) A reversing hydraulic motor operates a center chain driven, single point pick-up pawl on 1200 mm presses and larger. Shifter action is a push button control and powered by the main electro/pneumatic power pack.

### Unique Durco Filters Shifter Control ►

The shifter rod operates the shifter assembly.

The assembly can be moved left or right as required.

Releasing the shifter rod stops movement instantly and leaves the rod in a neutral, idle position, thus increasing operator safety.



### 3. EP Sidebar Biodiesel Filter Press Filter Plate Shifting Sequence

**Durco Filters EP Sidebar Filter Press - Filter Plate Shifting Sequence:**



**1**  
Rest Position: Shifter Pawl is in the locked and ready position at the Ram Head of the filter press



**2**  
Shifter Rod is moved slightly in the direction of the first plate causing the shifter assembly to move accordingly.



**3**  
Shifter Pawl moves up and over the first plate handle. Operator returns the shifter rod to the neutral position as the pawl drops behind the first plate handle.



**4**  
The pawl direction is reversed allowing it to engage the plate and move it to the Ram Head end of the press. Repeat steps 2 through 4 until all filter plates have been shifted.



**5**  
Once all filter plates have been shifted, the shifter pawl assembly is moved toward the end stop located at the frontal piping end of the filter press.



**6**  
As the Shifter Assembly contacts the end stop, the pawl lifts up into the assembly in an unlocked position.



**7**  
The assembly is returned to the opposite end of the filter press by moving the shifter rod toward the Ram Head end of the press.

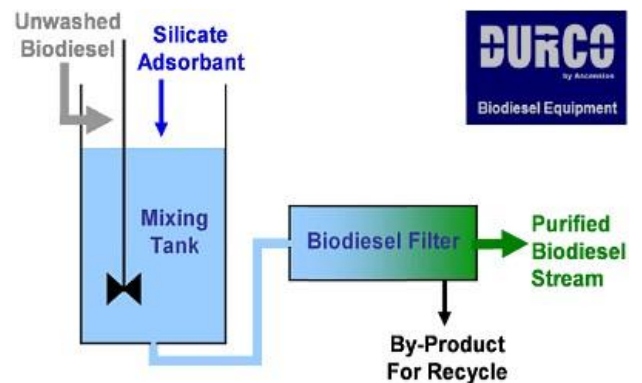


**8**  
As the Shifter Assembly contacts the end stop, the pawl drops back down into the locked position.

### Other Downloadable Biodiesel Dry Washing Resources:

[Durco Filters Biodiesel Dry Washing Systems](#)  
[Durco Filters Biodiesel Pressure-Leaf-Filters](#)

*To Find Out More About Durco Filters Biodiesel Filter Press Discharge Options, Or For Help Selecting Your Optimum System For Biodiesel Dry Washing & Filtering, Please Contact Durco Filters Applications Engineering*  
**Call: 7 16-693-9381 ext.217**  
**or e-mail [filterengineering@asmfab.com](mailto:filterengineering@asmfab.com)**



## 4. EP Sidebar Biodiesel Filter Press Filter Plates

### Available Filter Plates

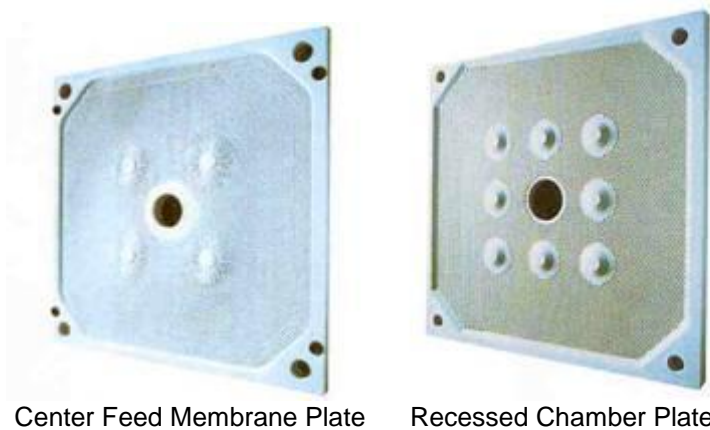
#### Biodiesel Process Styles

1. Biodiesel Compatible Recessed Plates \*
2. Caulked & Gasketed For Biodiesel Service\*  
(See image on right)

#### Available Materials

1. Polypropylene - lightweight, methyl-ester resistant
2. Reinforced Polypropylene - biodiesel resistant, higher temperature
3. Aluminum & Alloy – High Temperature (>170F) Biodiesel Process

- Center Feed and Corner Feed Biodiesel Filter Plates Are Available:



Center Feed Membrane Plate

Recessed Chamber Plate



**Durco Filters**  
Caulked & Gasketed  
Biodiesel Filter Plates

### Filter Cloth

(Porosity - Typical Range - 0.1 to 400 CFM)

#### Types

#### Materials

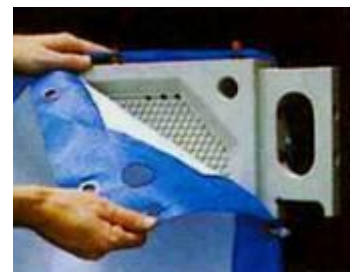
#### Weaves

Multi-Filament  
Multi-Mono-Filament  
Mono-Filament

Polypropylene  
Polyester (high temperature service)

Plain  
Sateen  
Double  
Basket  
Needled  
Knit

Laminated  
Twill  
Oxford  
Broken  
Tripled  
Honeycomb



**Durco Filters**  
Biodiesel Filter Cloth

*To Find Out More About Durco Filters Biodiesel Filter Press Plates  
Or Optimum Filter Cloth Media Selection For Your Biodiesel Dry Washing & Filtering Systems  
Please Contact Durco Filters Applications Engineering  
Call: 716-693-9381 ext.217 or e-mail [filterengineering@asmfab.com](mailto:filterengineering@asmfab.com)*

## 5. EP Sidebar Biodiesel Filter Press Features & Benefits

### FEATURES

- Manual Hydraulic Closure System
- Pneumatic Hydraulic Closure System
- Compact Design
- Factory Assembled
- Enclosed Control Cabinet
- Multiple Feed Pressures Up To 100 psi
- Expandable Capacity
- Semi-Automatic Filter Plate Shifter (Optional)
- Complete Systems

### BENEFITS

- For Applications Where Utilities Are Not Readily Available
- Ideal For Explosion-Proof Biodiesel Requirements
- For Limited Space Or Portable Applications
- Low Installation Cost
- Easy Maintenance
- Multiple Solutions For Multiple Problems
- Low Cost Future Production Capacity
- Improved Safety and Operation
- Single Source Supply

## 6. EP Sidebar Biodiesel Filter Press: Available Options

- **Cake Chutes**
- **Bomb-bay Door Style Drip Trays**
- **Skids**
  - Including Portable Skids With Pumps, Tanks, Piping...
- **Platforms**
- **Cake Disposal Systems**
  - Drum, Hopper, Dumpster, Truck, Conveyor
- **Piping And Valves**
- **Process Automation**
- **Pumps, Tanks, Auxiliary Equipment**
- **Biodiesel Dry Wash Mixing Systems**
- [Durco QP Overhead Filter Press Models Available](#)  
For High Volume (>10M gal/yr) Biodiesel Production



## 7. Durco Filters Industrial Filtration Product Lines

[Pressure Leaf Filters](#)

[Tubular Backwashing Filters](#)

[Pressure Nutsches](#)

[Filter Presses](#)

[Sludge Dryers](#)