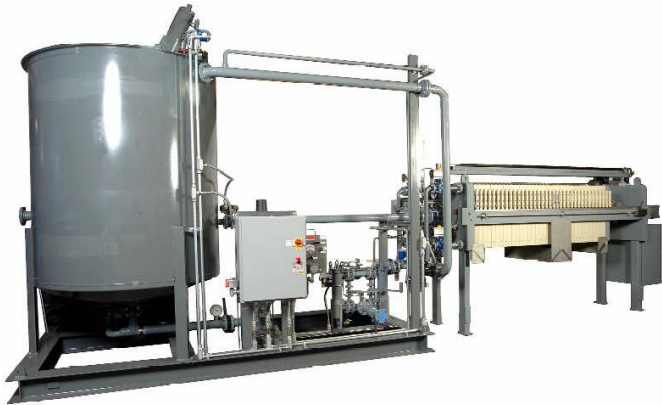


Durco Filters Biodiesel / Biofuel / WVO Dry Washing Systems:



- **Cost-Effective Biodiesel / Biofuel / WVO Clarification With Low Operating Costs**
- **Choice Of Filtration Technologies With Explosion-Proof Pneumatic / Hydraulic & Automation Options**
- **Highly Reliable, Low Maintenance, Simple Operation With Minimal Operator Training**
- **High Quality (ASTM-D6571) Biodiesel In Reduced Process Time With Environmentally Friendly By-Products & No Hazardous Waste***

<< Durco Filters 1M gal/yr Biodiesel Dry Washing System

Durco Filters Dry Washing & Filtration Systems Are Designed & Engineered For Large-Scale Biodiesel / Biofuel, Or WVO Processes >1M gal/yr Plus



Durco Filters Biofuels Dry Washing Systems Guide:

1. Durco Filters Biodiesel Dry Washing & Filtration Process Overview
2. Durco Filters Dry Washing & Filtration System Features & Benefits
3. Biodiesel / Biofuel / WVO Filter Presses
4. Biodiesel / Biofuel / WVO Filter Plates
5. Biodiesel / Biofuel / WVO Pressure Leaf Filters
6. Durco Filters Industrial Filtration Products

<< Durco Filters 4M gal/yr Biodiesel Dry Washing System

Durco Filters Biodiesel Equipment

Durco Filters Biodiesel Equipment Includes A Range Of Dry Washing & Filtration Systems Designed & Engineered For Peak Performance In Large-Scale Biodiesel / Biofuel / WVO Processing Plant. Your System Will Be Custom Optimized For The Most Cost-Effective & Efficient Operation In Your Specific Process.

More Information Online:

[Durco Filters Large-Scale Biodiesel / Biofuel Dry Washing Systems](#)

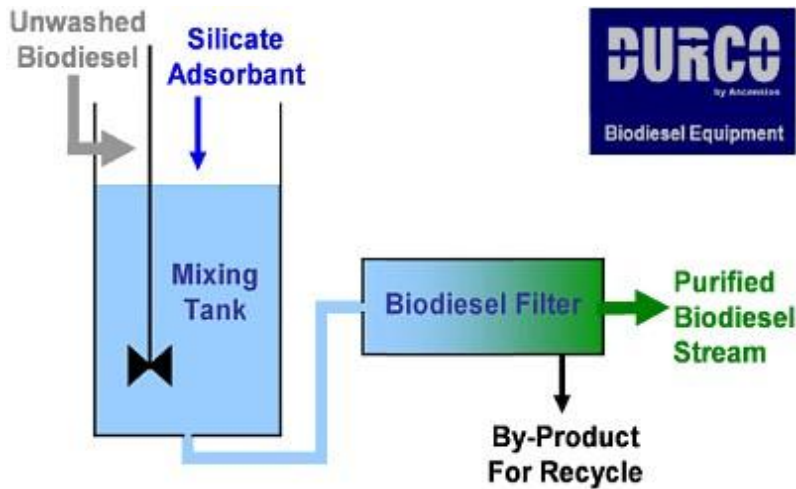
[Durco Filters Large-Scale Biodiesel / Biofuel Filter Presses](#)

[Durco Filters Large-Scale Biodiesel / Biofuel 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. Biodiesel Dry Washing Process Overview

The **Durco Filters Dry Washing System** employs a small footprint **2 Step Process** to quickly & cost-effectively separate contaminants away from the purified biodiesel product:



Durco Dry Washing Process Schematic

Step 1 – Dry Washing:

- Add (typically about 2%) finely divided silicate adsorbant powder to Your transesterified biodiesel process stream
- Thoroughly blend the biphasic biodiesel / particulate mixture in the Durco high shear mixing tank
- Contaminants are rapidly adsorbed onto the high surface area of the silicate particulate
- The Dry Washing Process is now complete, but the contaminant loaded particulate remains within the biodiesel stream

Step 2 - Filtration:

- The Dry Washed biodiesel / particulate suspension is now sent to the most appropriate biodiesel filter for separation
- Particles down to 1 micron in size are removed producing high quality biodiesel for end use and resaleable, environmentally friendly, byproduct for animal feed, fertilizer...

Manual, Semi-Automated, Or Fully Automated Biodiesel Dry Washing & Filtration

The **Durco Filters Dry Washing System** can be deployed as a manual, semi-automatic, or fully automatic process:

- Manual or automatic options for dry feed of silicate adsorbent into the mixer
- Manual or automatic options for filtration

Custom Biodiesel / Biofuel / WVO Dry Washing & Filtration Systems

In order for You to achieve the highest quality of refined biodiesel Your installation requires an optimum combination of:

- Temperature
- Concentration
- Agitation
- Washing
- Filtration Equipment

Every **Durco Filters Dry Washing System** is custom designed and engineered for optimum performance in the specific biodiesel installation for which it is commissioned.

***Durco Filters Biodiesel Dry Washing & Filtration Pilot Testing Facilities** are available for You to perform evaluation trials at Your specific facility in Your specific process to validate equipment & product specifications. For example, performance trials comparing Bleaching clays, Trisyl, Magnesol, or other treatment methods can be implemented using **Durco Filters Biodiesel Pilot Testing Facilities**.

Additionally, **Durco Filters Biofuel Filtration Engineers** and **Durco Filtration Laboratory Testing Facilities** are available to help You design and install the absolute optimum Dry Washing & Filtration System for Your Biodiesel Plant within Your budget.

To Find Out More About Durco Filters Pilot Testing Facilities Or Laboratory Testing Facilities For Biodiesel Dry Washing & Filtering Please Contact Filter Engineering At Durco Filters Applications Engineering. Call: 716-693-9381 ext.217 or e-mail filterengineering@asmfab.com

Durco Filters Biodiesel Dry Wash Mixing Station Features

The **Durco Filters Biodiesel Dry Wash Mixing Station** is available with mixing tank capacity ranging up to 3,000 gallons. It utilizes **Durco Filters'** proprietary new **biodiesel / biofuel / wvo mixing and injection manifold system** to maximize shear blending while minimizing splashing of biodiesel / biofuel within the vessel.

Dry Wash Purification Efficacy is a function of magnesium silicate adsorbant concentration, shear blending efficiency, biodiesel temperature, and total contact time.

Required Dry Wash Mixing Cycle Time is typically in the range from 15 to 30 minutes plus, depending upon various plant process parameters, contamination level, and Your biodiesel / biofuel / wvo purity & clarity specifications.

The **Durco Filters Modular Design Philosophy** enables the **Durco Filters Biodiesel Dry Wash Mixing Station** to be supplied with a variety of configurations and options, each customized for optimum service in any specific biodiesel plant. Available with tank capacities up to 3,000 (US) gallons, with manual, semi-automatic, or fully automatic control:

Optional Silicate Feed Modules include:

- Manual powder loading stations
- Automatic dry feeder stations
- Bulk bag unloading stations

Process Flow Valving Options include:

- Manually operated valve module
- PLC Actuated valve module
- Actuation & Control via Your existing plant distributive control system

Durco Filters Biodiesel / Biofuel / WVO Dry Washing And Filtration Systems are available as complete turnkey packages. Individual filter units can also be integrated into existing production, or indeed any general silicate (ex. [Magnesol](#) or [Trisyl Silica](#)) filtering plant. Stand-alone Biodiesel / Biofuel / WVO Filter Units are available with choice of 2 filtration technologies:

- **Durco Filters Biodiesel Filter Presses** – Sidebar Filter Press & Overhead Filter Press Models are available
- **Durco Filters Biodiesel Pressure Leaf Filters** – Horizontal & Vertical Pressure Leaf Vessels are available

Durco Filters also offers a range of **OEM Biodiesel / Biofuel / WVO Dry Wash Filter Parts & Accessories**

Durco Filters Biodiesel Dry Wash Mixing Station Benefits

Durco Filters Biodiesel Dry Washing & Filtration Systems supersede traditional water washing or bubble washing equipment to achieve highly efficient separation of transesterified biodiesel into purified fuel product (capable of meeting or exceeding ASTM-D6571 requirements*) and recyclable by-product.

Durco Filters Biodiesel Dry Washing & Filtration Systems reduce overall biodiesel production time and cost because they can eliminate the need for an oil/water emulsion separation stage or a drying stage. This also significantly reduces biodiesel plant start-up and operating costs by eliminating the capital and maintenance associated with the traditional washing equipment. Additionally, these highly efficient and more environmentally friendly biodiesel processing systems have no water effluent waste streams, which are normally hazardous by-products of traditional biodiesel washing and drying techniques.

By choosing the optimum **Durco Filters** filtration technology, Your biodiesel / biofuel or vegetable oil dry washing filter system can be configured to handle a wide range of flow rates. Batch or continuous production can both be supported.

Consult a **Durco Filters** filtration engineer to arrange testing and analysis of your biodiesel / biofuel process stream and determine the best technology for your biodiesel plant:

For Durco Filters Dry Washing Equipment Sales Call: 716-693-9381 ext.217
For Biodiesel / Biofuel Filtration Laboratory & Pilot-Scale Testing Call: ext.217
Durco Filters OEM Biodiesel Filter Equipment & Parts Call ext.207

3. Biodiesel Filter Press Units

Filters Sidebar Biodiesel Filter Press



Sidebar Biodiesel / Biofuel Filter Presses:

- **For 1-10Mgal/yr Biodiesel Plant***
- **Cost-Effective Filtration With Low Capital & Operational Costs**
- **Low-Lead Time To Production**
- **Efficient Biodiesel / Biofuel / WVO Filtration For Streams With Solids Loadings From 0.1 - 3 wt%**
- **Temperatures Up To 170°F**

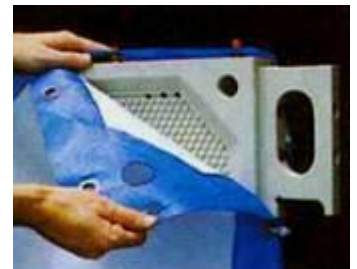
More Details Online: [Advantages Of Durco Filters Biodiesel / Biofuel Filter Presses](#)
[Durco Filters Biodiesel / Biofuel Filter Press Downloadable PDF File](#)

High Volume Biodiesel / Biofuel / WVO Plant

*[Durco Filters QP Overhead Biodiesel Filter Press](#) is designed for high volume biodiesel production (10 Million gal/yr plus), or for automated dry washing & filtration applications. For *Fully Automated Plant* or *Enhanced Washing (>170°F)*, [Durco Filters Pressure Leaf Filter Technology](#) (see page 5) is Your optimum choice.

4. Biodiesel / Biofuel Filter Press Plates

Available Filter Plates	
Biodiesel Process Styles	Available Materials
<ol style="list-style-type: none"> Biodiesel Compatible Recessed Plates * Caulked & Gasketed For Biodiesel Service* (See image on right) 	<ol style="list-style-type: none"> Polypropylene - lightweight, methyl-ester resistant Reinforced Polypropylene - biodiesel resistant, higher temperature Aluminum & Alloy – High Temperature (>170F) biodiesel process
<ul style="list-style-type: none"> • Center Feed and Corner Feed Biodiesel Filter Plates Are Available: 	



5. Biodiesel Pressure Leaf Filter Units

Fully Automatic Biodiesel Filtration Systems For Enhanced Washing >170°F

Durco Filters Biodiesel / Dry Washing Pressure Leaf Filters, with dry cake discharge, are available in a range of sizes & configurations. Your **Pressure Leaf Filter** will be custom-optimized for peak performance in Your specific biodiesel / biofuel plant. **Durco Filters** offer **2 Pressure Leaf Filter Technologies**, each available in a range of sizes:



Durco DHC Model (Horizontal Vessel, Dry Cake Discharge) Pressure Leaf Filters, for biodiesel / biofuel dry wash filtration, allow full process automation and are suitable for large volume plant (>10M gal/yr)

Horizontal Pressure Leaf Filters offer the highest filtration area, for increased biodiesel production flow rates, compared to Vertical Pressure Leaf Filters



Durco DV Model (Vertical Vessel, Dry Cake Discharge) Pressure Leaf Filters, for biodiesel dry wash filtration, also allow full process automation and are suitable for large volume production (>6M gal/yr).

These cleverly designed Vertical Pressure Leaf Filters impose a much smaller process footprint compared to Horizontal Pressure Leaf Filters. The leaves are cleaned using a high frequency vibrator specifically designed for optimum cake discharge in the biodiesel dry washing process.

Options include a cone bottom discharge or quick-opening bottom hatch, tailings leaf for extended recovery, and external discharge manifold to reduce cake build-up.

More Details Online: [Durco Filters Biodiesel Pressure Leaf Filters](#)
[Durco Filters Biodiesel Pressure Leaf Filter PDF](#)

Durco Filters Biodiesel Pressure Leaf Filter Advantages

- **Durco Filters Biodiesel Pressure Leaf Filter Systems** may be fully automated
- **Durco Filters Biodiesel Pressure Leaf Filters** offer very easy cleaning (the filter cake is automatically vibrated out of all leaves at a single time, eliminating manpower for cleaning plates)
- **Durco Filters Biodiesel Pressure Leaf Filters** offer sub-micron retention for ultimate biodiesel clarity
- **Durco Filters Permanent Metal Screen Filters** remove the necessity for replacing filter cloths
- **Durco Filters steam jacketed or insulated Pressure Leaf Filters** maintain high biodiesel process temperatures to attain the most efficient biodiesel / biofuel purification possible in Your process
- **Durco Filters Biodiesel Pressure Leaf Filters** offer lower maintenance costs than Filter Press Systems
- **Durco Filters Biodiesel Pressure Leaf Filter Vessel** is easily confined from plant atmosphere for service
- **Durco Filters Vertical Biodiesel Pressure Leaf Filters** have a small footprint - minimizing process area

6. Durco Filters Industrial Filtration Product Lines

[Pressure Leaf Filters](#)

[Tubular Backwashing Filters](#)

[Pressure Nutsches](#)

[Filter Presses](#)

[Sludge Dryers](#)