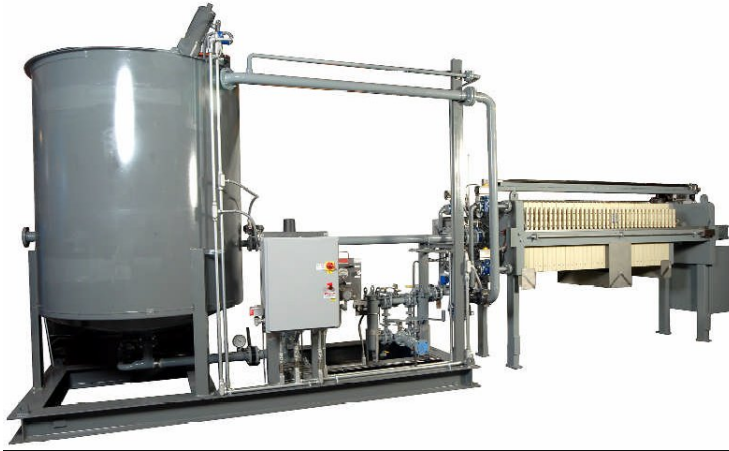


Durco Biodiesel Dry Washing Systems Provide:



*Above – 1 Million gal/yr Biodiesel Dry Washing System
Typical Durco Biodiesel Dry Washing Systems Feature
The Durco Sidebar Biodiesel Filter Press.
Contact Durco Biodiesel Equipment To Find The
Optimum Technology For Your Biodiesel Plant
Below – 4 Million gal/yr Biodiesel Dry Washing System*

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

Durco Biodiesel Dry Washing Systems Guide:



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

Durco Biodiesel Equipment Offers A Range Of Dry Washing & Filtration Systems That May Be Optimized For Peak Performance In Any Biodiesel Processing Plant. Each System Deployed Is Custom Designed For The Most Cost-Effective & Efficient Operation:

[More Information On Durco Biodiesel Dry Washing Systems Online](#)

[More Information On Durco Biodiesel Filter Presses Online](#)

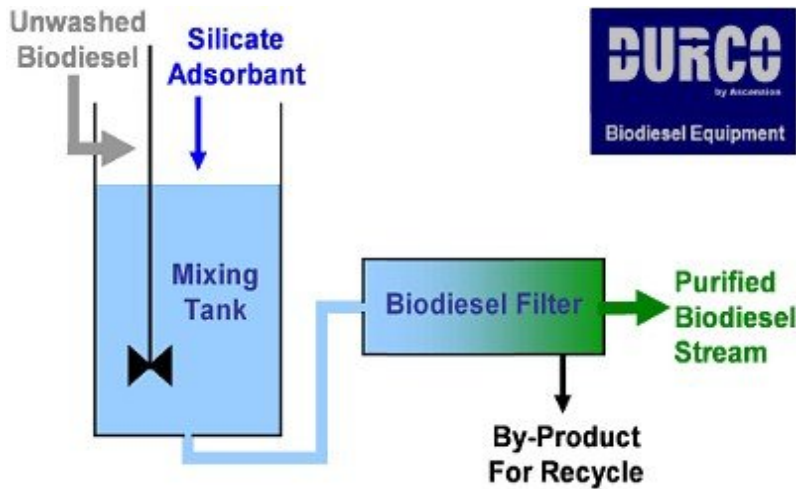
[More Information On Durco Biodiesel Dry Washing Pressure Leaf Filters Online](#)

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. Durco Biodiesel Dry Washing Process Overview

Biodiesel Equipment

The **Durco Dry Washing System** employs a small footprint **2 Step Process** to quickly and 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 Or Automated Biodiesel Dry Washing & Filtration

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

***Durco 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 product specifications. For example, performance trials comparing Bleaching clays, Trisyl, Magnesol, or other treatment methods can be implemented using **Durco Biodiesel Pilot Testing Facilities**.

Additionally, **Durco 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 Filtration Pilot Testing Facilities Or Laboratory Testing Facilities For Biodiesel Dry Washing & Filtering Please Contact Filter Engineering At Durco Applications Engineering: Call 716-693-9381 ext.216 or e-mail filterengineering@asmfab.com



2. Durco Biodiesel Dry Washing System Features & Benefits

Biodiesel Equipment

Durco Biodiesel Dry Wash Mixing Station Features

The **Durco Biodiesel Dry Wash Mixing Station** is available with mixing tank capacity ranging up to 3,000 gallons. It utilizes **Durco Biodiesel Equipments'** proprietary new **mixing and injection manifold system** to maximize shear blending while minimizing splashing of biodiesel 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 biodiesel plant process parameters, contamination level, and Your biodiesel purity & clarity specifications.

The **Durco Modular Design Philosophy** enables the **Durco 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. It is 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 Biodiesel Dry Washing And Filtration Systems are available as complete turnkey packages. Individual filter units can also be integrated into existing biodiesel production, or indeed any general silicate (ex. [Magnesol](#) or [Trisyl Silica](#)) filtering plant. Stand-alone Biodiesel Filter Units are available with choice of 2 filtration technologies:

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

Durco also offers a range of **OEM Biodiesel Dry Wash Filter Parts & Accessories**

Durco Biodiesel Dry Wash Mixing Station Benefits

Durco 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 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** filtration technology, Your biodiesel or vegetable oil dry washing filtering system can be configured to handle a wide range of flow rates. Batch or continuous production operations can both be supported.

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

For Durco Dry Washing Equipment Sales Call: **716-693-9381 ext.216**
For Biodiesel Filtration Laboratory & Pilot-Scale Testing Call: **ext.216**
Durco OEM Biodiesel Filter Equipment & Parts Call **ext.231**

3. Durco Biodiesel Filter Press Units

Durco Sidebar Biodiesel Filter Press:



Durco Sidebar Biodiesel Filter Presses:

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

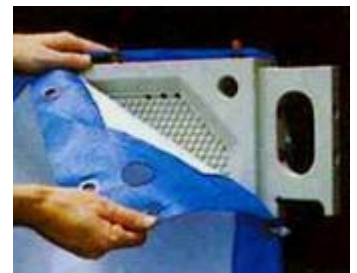
More Details Online: [Advantages Of Durco Biodiesel Filter Presses](#)
[Durco Biodiesel Filter Press Downloadable PDF File](#)

Very High Volume Biodiesel Plant

*For very high volume biodiesel production (10 Million gal/yr plus), or for fully automated dry washing and filtration applications, the [Durco QP Overhead Filter Press](#) is recommended as the preferred biodiesel filter press technology.

4. Durco Biodiesel Filter Press Plates

Available Filter Plates	
Biodiesel Process Styles	Available Materials
<ol style="list-style-type: none"> 1. Biodiesel Compatible Recessed Plates * 2. Caulked & Gasketed For Biodiesel Service* (See image on right) 	<ol style="list-style-type: none"> 1. Polypropylene - lightweight, methyl-ester resistant 2. Reinforced Polypropylene - biodiesel resistant, higher temperature 3. Aluminum & Alloy – High Temperature (>170F) biodiesel process
<ul style="list-style-type: none"> • Center Feed and Corner Feed Biodiesel Filter Plates Are Available: 	



5. Durco Biodiesel Pressure Leaf Filter Units

Fully Automatic High Performance Biodiesel Filtration Systems

Also Suitable For High Temperature Process Streams >170°F

Durco Biodiesel / Dry Washing Pressure Leaf Filters, with dry cake discharge, are available in a range of sizes and configurations. Every **Durco Pressure Leaf Filter** is custom-optimized for peak performance in the specific biodiesel plant that it is commissioned for. **Durco** offers **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 dry wash filtration, allow full process automation and are suitable for large volume plant.

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.

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 Biodiesel Pressure Leaf Filters](#)
[Durco Biodiesel Pressure Leaf Filter PDF Brochure](#)

Durco Biodiesel Pressure Leaf Filter Advantages

- **Durco Biodiesel Pressure Leaf Filter Systems** may be fully automated
- **Durco 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 Biodiesel Pressure Leaf Filters** offer sub-micron particulate retention for the highest biodiesel clarity
- **Permanent Metal Screen Filters** remove the necessity for replacing filter cloths
- The most efficient biodiesel purification possible can be achieved using **steam jacketed** or **insulated** pressure leaf filters to maintain high biodiesel process temperatures
- **Durco Biodiesel Pressure Leaf Filters** offer lower maintenance costs than Biodiesel Filter Press Systems
- The **Durco Biodiesel Pressure Leaf Filter Vessel** is easily confined from plant atmosphere for service
- **Durco Vertical Biodiesel Pressure Leaf Filter Vessels** have a small footprint - minimizing process area

6. Durco Industrial Filtration Product Lines

[Pressure Leaf Filters](#)

[Tubular Backwashing Filters](#)

[Pressure Nutsches](#)

[Filter Presses](#)

[Sludge Dryers](#)