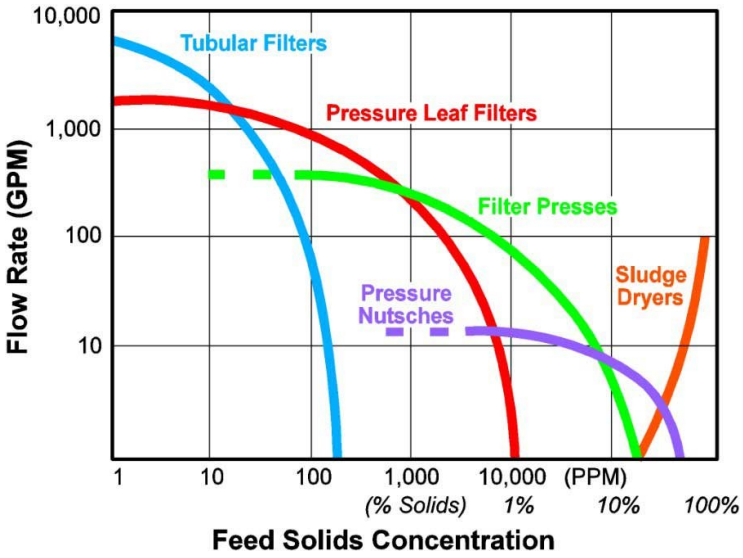
Durco QP Filter Press 'Dewatering' Systems
product guide

Durco QP Overhead Filter Press Systems Are Designed For:



- ***Ultra-Reliable Industrial Batch Filtration Application With High Flow Rate Requirements***
- ***'Dewatering' Of Aqueous Or Other Sludge/Slurry Process Streams With 3-30wt% Solids Loadings***
- ***Supreme Durability With Low Maintenance Operation In The Most Demanding Applications***
- ***A Wide Range Of Filter Plate Media To Support Your Specific Application***

Durco Also Supplies A Line Of Highly Efficient Enviro-Dri Sludge Dryers

Durco QP Overhead Filter Press Guide:

1. **QP Overhead Filter Press: Efficient Performance For Filtration Versatility**
2. **QP Overhead Filter Press: Features**
3. **QP Filter Press: Low Maintenance, Long Life, Polypropylene Filter Elements**
4. **QP Overhead Filter Press: Corrosive Environment Package**
5. **QP Filter Press: Specifications**
6. **Durco Industrial Filtration Products**

More Information on the Ultra-Reliable Durco QP Overhead Filter Presses Online
More Information On The Cost Effective Durco EP Sidebar Filter Presses Online
Download A Printable Durco EP Sidebar Filter Press PDF Document

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.

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1. QP Overhead Filter Press: Efficient Performance For Filtration Versatility

The Durco 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.

Before you decide which filter press is best suited to your needs, examine the numerous outstanding features of the Durco QP Filter Press.

SIMPLE OPERATION

To begin with, the Durco QP Filter Press is the most operator friendly press on the market today.

With emphasis on safety, the overhead design allows the operator open and 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 possible cake fouling. This allows accessibility for faster operation and ease of maintenance.

STRUCTURE

In 1979, Durco was the first manufacturer to introduce a four-bar design 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 Durco QP Filter Press with its cross dimensional stability and low profile design, has developed into a highly 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 Durco QP Filter Press is seen in its unique spacer design, allowing for future expansion of press capacity.

◄ HYDRAULIC DRIP TRAYS

Bomb-bay type drip trays are provided to collect normal cloth wicking during the filtration process, and wash water during bag cleaning. The trays can also be modified to function as cake chutes directing press cakes into conveyors, hoppers, or dryers during the discharge cycle. Drip trays are available in several materials to meet various process conditions. Optional drip troughs can be installed by Durco to collect the liquid from the drip tray.

DURCO ENVIRO-DRI SLUDGE DRYER ►

For discharging wastes, the Durco QP Filter Press four-bar structure easily accommodates conveyors, hoppers or dryers such as Durco's steam operated Enviro-Dri Sludge Dryer.

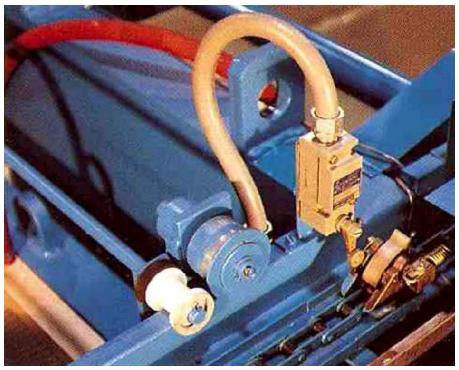
Enviro-dri is a competitively priced unit which uses steam heat to reduce sludge volume by 50-70% making it the most energy efficient, cost effective dryer available.

More Information On The Durco Enviro-Dri Sludge Dryer Online

2. QP Overhead Filter Press: Features

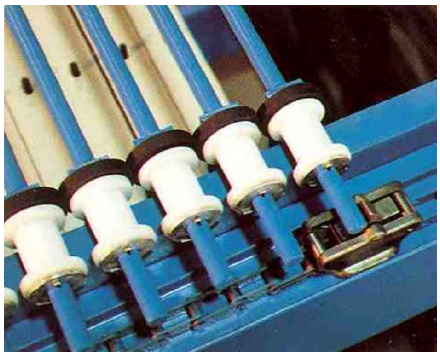
OVERHEAD PLATE SHIFTER

The Durco QP Filter Press plate shifting mechanism is comprised of dual shifter mechanisms on a common drive shaft driven by a hydraulic motor which is powered by the main hydraulic power pack. The plate shifter is available in either a semi-automatic style where the shifter motion is controlled by an operator, or a fully automatic style controlled by a Programmable Logic Controller. Both designs are compatible with NEMA 4 and 7 ratings.

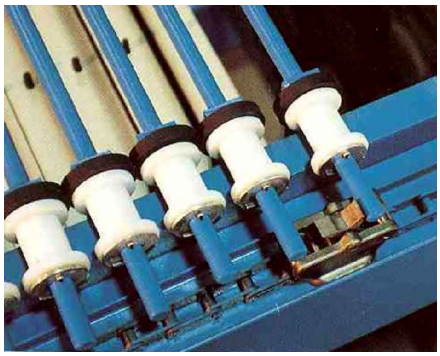


OVERHEAD PLATE SUSPENSION

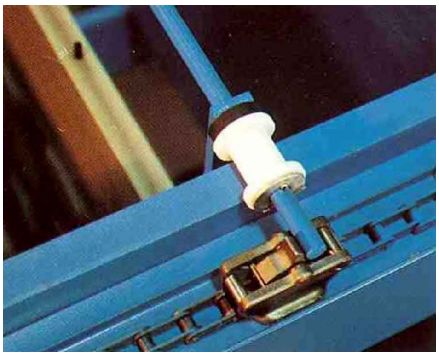
The overhead plate hangers of the Durco QP Filter Press provide unobstructed access to the active plate area to allow for plate cleaning or the changing of filter cloths. The hangers are epoxy coated for corrosion resistance and are equipped with specially designed non-metallic wheels and bumpers to assure proper plate shifting.



As the mechanism passes under each plate handle, the shifting mechanism slightly lifts each plate which provides a shearing action between the filter cake and cloth in turn aiding in cake discharge.



The travel direction of the shifter is then reversed which causes the single direction rotating mechanism to engage the handle.



The plate is transferred a predetermined distance and the cake is discharged.

DURCO QP OVERHEAD FILTER PRESS CONTROL SYSTEMS

Advanced electronic controls permit easy push button control of both mechanical and process functions.

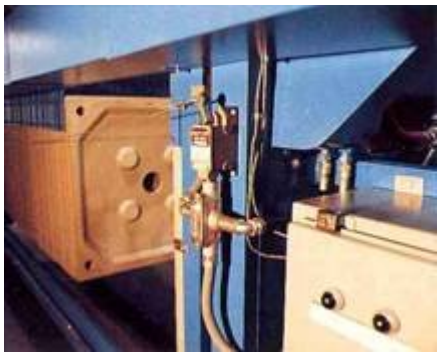
FOR SEMI-AUTOMATIC FILTER PRESS UNITS

Controls are hard wired and the shifter is operated by a pendant which allows the operator to monitor cake discharge as the plates are shifted.

FOR AUTOMATIC FILTER PRESS UNITS

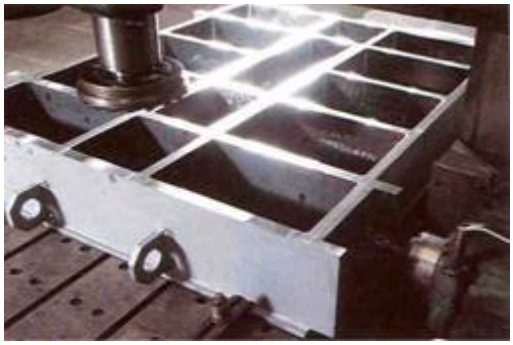
A Programmable Logic Controller (PLC) manages shifter operation and process control.

In situations where the filter press is integrated with other process equipment, Durco's staff of automation engineers can design a custom control system with expanded capabilities such as process valving, feed and discharge components, or to communicate with a distributive control system (DCS). Controls are available in all NEMA ratings and are agency approved.



START / STOP PULL CORD

Simple, but effective, lanyards are available to start and stop automatic shifters or to provide kill switch capability during ram extension. Within easy operator reach, lanyards can be installed on either or both sides of the press.



DURCO FABRICATION
TOUGH, TRUE, AND PRECISE

The Durco QP Filter Press is precision fabricated and machined for high performance without bypass. For example, the four sidebars of each unit are machined together to assure matched dimensions and the faces of each head are machined flat to obtain exact dimensions on the "box" structure. This provides even distribution of hydraulic pressure to minimize cloth wicking.

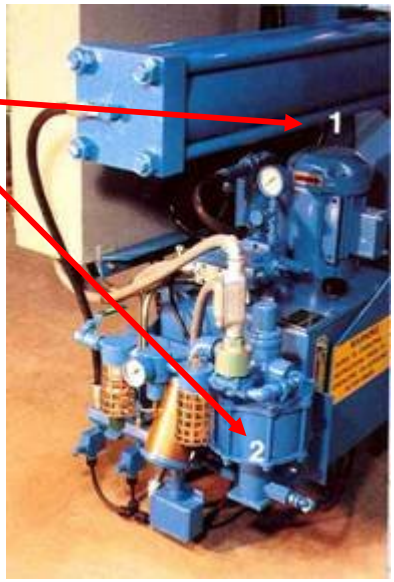
The use of fabricated rather than cast heads provides flexibility in accommodating auxiliary equipment such as drip trays, cake chutes, conveyors, etc.

Fabrication also provides required structural strength with less weight, resulting in less costly support structures in permanent installations and more capacity for permitted weight in mobile units.

Designs are available for pressure ratings of 100 or 225 psi.

DURCO ENERGY EFFICIENT CLOSURE ►

The standard electro-pneumatic hydraulic system provides continuous high pressure closing force with minimum energy consumption. A high volume electric pump (no.1, see photo) provides rapid forward and reverse ram motion and powers the shifter. Once the ram is fully closed, a high ratio pneumatic booster pump (no.2, see photo) takes over for the electric pump to provide the high pressure sealing force required during filtration. The system is designed to compensate for expansion or contraction of the plate stack, maintaining proper sealing force. This system provides high performance at a low cost. Optional all electric or all pneumatic systems are available.



◄ DURCO PIPING SYSTEMS

Durco QP Filter 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 blow down are available.

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3. QP Filter Press: Low Maintenance, Long Life, Polypropylene Filter Elements

FILTER CLOTH INSTALLATION

Durco OEM polypropylene filter elements provide excellent corrosion resistance in a wide variety of applications.

Chamber plate filter cloths are made in an H configuration and are easy to install. Simply roll up one side of the filter cloth and pull it through the center hole in the filter plate (see far left photo).

Drape the cloth over the plate and secure the grommets to the cloth dogs or tie them together thereby keeping the cloth over the full surface of the filter plate.

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

DURCO OEM RECESSED CHAMBER PLATES

are molded for cake thicknesses from 3/4" (20mm) to 2" (50mm) 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.

DURCO OEM GASKETED RECESSED CHAMBER 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 bag with a sewn-in-place caulking rope.

DURCO OEM MEMBRANE CHAMBER 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 chamber 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.***

Membrane plates are available in center or corner feed design, with fixed or detachable membranes, and with internal or external squeeze ports. The filter can be configured with all membrane plates or with a mixed pack where membrane plates are alternated with recess flush plates to reduce costs.

Recessed Chamber Plate

Gasketed Chamber Plate

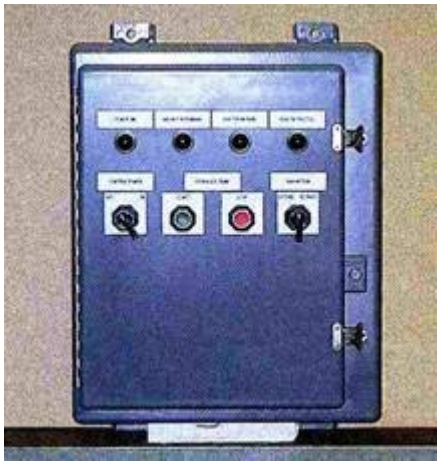
Center Feed Membrane Plate

Corner Feed Membrane Plate

4. QP Overhead Filter Press: Corrosive Environment Package

Protective Ram Boots

Fiberglass Control Panel (NEMA 4X)



Automatic Chain Oilers

The Durco QP Overhead Filter Press Dewatering System is available with optional features designed to optimize performance in corrosive environments. The package includes:

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 to keep dirt out of the ram seals.

FIBERGLASS CONTROL PANELS These panels provide trouble free service and can be equipped with an instrument air or inert gas purge to protect internal components and instrumentation.

AUTOMATIC 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 (not shown) The 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 (not shown) 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.

◄ DURCO HYDRAULIC DRIP TRAYS

Bomb-bay style drip trays constructed with corrosion resistant materials collect normal cloth wicking during filtration and can also be modified by Durco to serve as cake chutes during cake discharge.

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5. QP Filter Press: Specifications

CAPACITY FINDER

$$\text{Filter Press Volume Required (feet}^3\text{)} = \frac{\text{Volume of Material to be Filtered (gallons)} \times \text{Wt. of Product Liquid W (8.34 lbs. per gal. x sp. gr.)} \times \text{A: \% by Weight Solid in Product Liquid (total suspended Solids)}}{\text{B: Assumed or Known \% Solids In Filter Cakes} \times \text{C: Wet Cake Density In Filter Press (lb. feet}^3\text{)}}$$

A. Determined by standard method tests for filterable dried residue at 103 C
B. For metal hydroxides an assumption of 30% may be valid
C. For metal hydroxides an assumption of 75lbs/ft^3 may be valid

DATA FINDER				
BASE WIDTH	45”	53”	62”	75”
BASE HEIGHT	67”	80”	92”	116”
BASE LENGTH	126”	168”	215”	297”
ADD LENGTH PER CHAMBER	2.3”	2.42”	2.5”	2.58”
CHAMBER FINDER				
Ft^3 PER CHAMBER	.505	.848	1.184	1.828
RANGE FINDER				
125 ► 250Ft^3	-	-	-	68-137*
41 Ft^3 ► 101 Ft^3	-	-	35-85*	-
21 ► 40 Ft^3	-	25-47*	-	-
9 ► 20 Ft^3	18-40*	-	-	-
3 ► 8 Ft^3	-	-	-	-
0.5 ► 2 Ft^3	N/A	N/A	N/A	N/A
QUADRA PRESS	**QP 800**	**QP 1000**	**QP 1200**	**QP 1450**

All data presented for 32mm cakes, Optional cake thickness from 15-50mm available for specific applications.
* Minimum-Maximum number of chambers for cubic capacity range listed above.

6. Durco Industrial Filtration Product Lines

Pressure Leaf Filters | Tubular Backwashing Filters | Pressure Nutsches
Filter Presses | Sludge Dryers

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