PUMPLETTER
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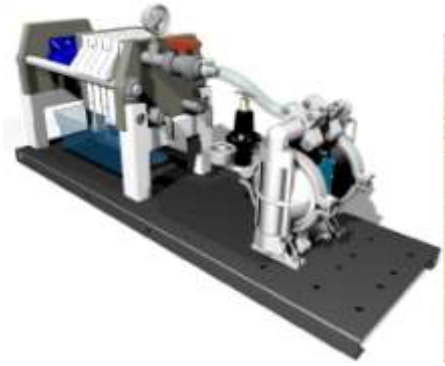


# AODD Pumps for Filter Press Feed Application

**PRODUCT TYPE AND ENVIRONMENT MUST BE CONSIDERED WHEN CHOOSING THE PROPER PUMP**

Designed specifically for use in Filter Press Application. With few components and a simple compact design. Neoflux pumps are easy and quick to maintain, keeping your service costs and process down time to a minimum.

The ***nfp Series*** pumps for Filter-Press feeding are a very compact unit that can be installed directly near the Filter-Press. The design and function allows the user a straightforward pressing of slurries.

A Filter Press is very basic, but very effective & important in a lot of process applications and Neoflux pumps play a major role for many of Filter-Press users.

A filter press is used for separating solids from liquid slurries. This is known as compressed cake. Neoflux pumps can handle a vast range of products and product viscosities making them ideal for Filter Press application. A Filter Press consists of a series of horizontally arranged vertical filter plates, each covered with paper, felt medium or synthetic woven material. A mechanical structure (skeleton) is used to support the filter plates and a closure mechanism provides the required force on the sealing faces of the plates to counteract the applied force of filtration (squeezing). The presses work on what is known as feed pressure or squeeze pressure. This reduces the liquid content in waste slurries or the solid content in industry processes.

One of the main benefits of Neoflux AODDPs is that the maximum pump pressure will never exceed air inlet pressure and a consistent pumping rate can be maintained even under fluctuating pressure head conditions.

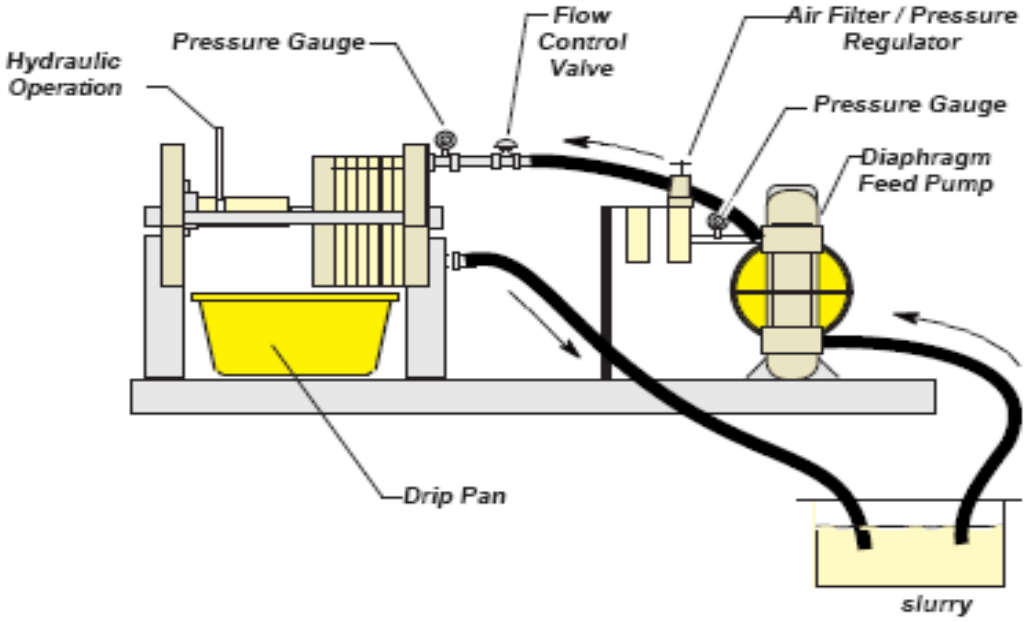
Neoflux AODDPs are also extremely versatile in handling the different flow and pressure which will differ continuously with this application, another reason they are so ideal.

Filter Press systems often become blocked due to the viscosities of the liquid being pumped, causing the pump to run dry. Neoflux AODDPs have the capability to run dry indefinitely without causing any damage to the pump and they are also completely Self-Priming from a Dry-Start on suction lifts.

Because of their simple design, Neoflux pumps have no Shaft-Seals or Packing Glands which can wear and require frequent maintenance. With no rotor, impellers, gears, vanes or pistons to wear out, the user can be confident that pumping efficiency will not deteriorate over time.

The customer has had the same Neoflux pumps on their Filter Presses for the last five years and has only just requested a replacement for one of four at the plant. The pumps play a huge role at very little cost in the customer's business.

## A Typical Filter Press Layout




Companies use a Neoflux diaphragm pump to charge a filter press with Brine Water oil/sludge or Acidic Fluids.

When first charging the Filter Press with the AODD pump, the filter screens are clean and product flow is exceptionally fast. Because of the reciprocating design of the pump, product flow is pulsating. The pulsating flow produces pressure spikes which continuously cleans filter screens.

## FILTER PRESS PROCESS AT A GLANCE:

Filter Presses are designed to separate solids from liquid and dewater the solids to a "dry filter cake". Typical filter cake dryness ranges from 20 to 85 % dry solids varying with the material filtered. For typical metal hydroxide sludges the filter press will produce a 30 to 40% dry solids cake. In terms of volume reduction for metal hydroxide sludges a filter press will typically reduce the under-flow (sludge) volume from a gravity clarifier by a factor of 20 to 1.

The press is prepared for operation by tightly clamping the filter plates together using the manual hydraulic pump. Once the press is closed the feed pump **(typically an Air Operated Double Diaphragm Pump)** is turned on, forcing the slurry or sludge into the filter chamber. Under pressure the particles are uniformly deposited on the filter cloths. The initial deposited layer of solids becomes the filtering media. As operation continues the deposited solids layer continues to build forming the filter cake. The filtrate passes through the filter cloths and is channeled to the discharge ports. As the filter press cycle continues the filtrate clarity will gradually improve until a clear effluent is produced. As the filter cake continues to build the Air Operated Diaphragm Pump will continue to slow. A predetermined pump rate decrease indicates that the press is full.

## General Filter Press FAQ's

**1. How do I know when the filter press is full?**

The AODD pump will get to 30 second to one minute intervals between thrusts, indicating that pressure has increased due to solids building up inside the press cavities. This is your signal that the press is full.

**2. What is involved in routine filter press maintenance?**

Cloths cleaning, Dumping, Check hoses & Connections.

**3. When do the cloths need to be cleaned or replaced?**

The filter cake will begin to become wet, slimy and not as dry. This is your indicator that the cloths need to be cleaned. (See # 5 for cleaning info). If you have already cleaned your cloths and your process has not changed but you are still getting slimy filter cake, it may be time to replace your cloths. Cloth life varies from installation to installation and depends on such variables as frequency of cycles, proper cleaning and maintenance and the type of sludge that is generated. Generally speaking for most installations cloths can last up to 6 months at the most.

**4. Will I need to replace the plates?**

Plates generally last years unless they become cracked, broken or warped. It is good practice to examine the plates during press cleaning and dumping.

**5. How long is the cycle time?**

Cycle time is dependent on solids loading and can take anywhere from 2 to 4 hours on average. (Closer to four hours for typical metal hydroxide waste)

## AODD Pump Selection Guide for Filter Press Application:

It depends on your process, but general guidelines are as follows:

- **What Size of AODD Pump do I need for the press?**

➢ **Up to 5 cu. ft.** - 1" Air Operated Diaphragm Pump
➢ **5 to 15 cu. ft.** - 1½" Air Operated Diaphragm Pump
➢ **15 to 25 cu. ft.** - 2" Air Operated Diaphragm Pump
➢ **25 to 50 cu. ft.** - 3" Air Operated Diaphragm Pump
➢ **50 cu. ft. and above** - Multiple Pumps

- **How do I size the compressor for the Press Feed & Air Blow?**

➢ A 1" AODD pump should have a 5 hp Compressor.
➢ A 1½" AODD pump should have a 10 hp Compressor.
➢ A 2" AODD pump should have a 12-15 hp Compressor.
➢ A 3" AODD pump should have a 20 hp Compressor.

For Further Information, Please visit *www.neoflux.in* Or Contact

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