

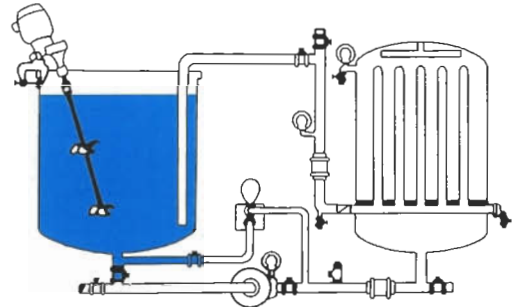
## The Typical Filtration Process

# FUNDAMENTALS OF OPERATION

Pressure-leaf filters, in either vertical or horizontal arrangement, provide excellent removal of suspended solids from a liquid. The slurry is introduced to the tank under pressure and is forced through the filter elements. Suspended solids are retained on the filter media. The clarified liquid flows to the interior of the leaf and is discharged to process. Solids are removed from the filter leaves and the unit is ready for another cycle. Even multiple filtering stations are normally a one-man operation.

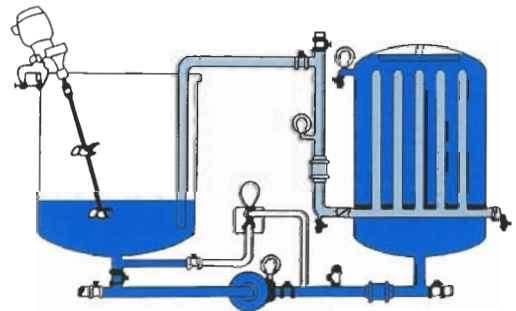
### Precoat preparation

A filteraid (3 to 15 lbs. per 100 sq. ft of filter area) is added to the precoat tank filled with clear liquid or filter process liquid. The slurry is agitated until thoroughly mixed (5-10 minutes).



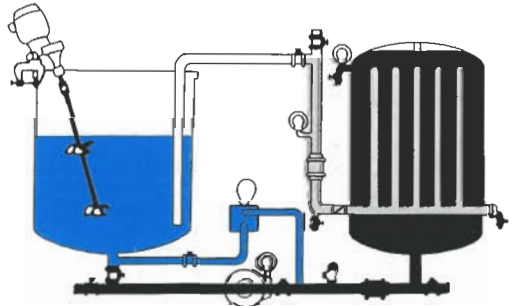
### Precoating

The slurry is now recirculated through the filter after venting all air. This will deposit a uniform layer of precoat (filter-aid) on each filter leaf. The preferred flow rate of liquid during precoating is 30 to 60 gal. per sq. ft. per hour for aqueous solutions.



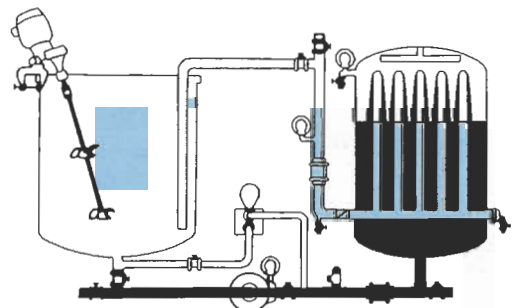
### Filtering

The unfiltered process liquid is pumped to the filter. The filtrate is directed to process or storage and filtration continued until a full cake ( $\frac{3}{4}$ " to  $1\frac{1}{2}$ " ) is formed or flow diminishes. If the solids are slimy in nature, it might be necessary to inject a filteraid slurry into the main feed line by means of a proportioning pump. This is a common practice called "body feeding."



### Draining and/or Blowdown

When the filter is ready for cleaning, the unfiltered "heel" in the tank is simply allowed to drain from the tank with the cake or is blown back to the feed tank by air pressure. Releasing some air through the leaves also serves to keep the cake in place for "dry cake" discharge.



### Cleaning

Drain valves are opened and the cake is washed from the leaves by means of water jets. This flushing action can be accomplished by a built-in sluicing header, air or steam pressure, or manual hosing. Mechanical vibration is used for "dry cake" discharge.

