PILOT TEST FILTER PRESS No. 2

OPERATION AND
SERVICE GUIDE
O-1510A
JULY 1991

PRICE CODE NO. 43-0810

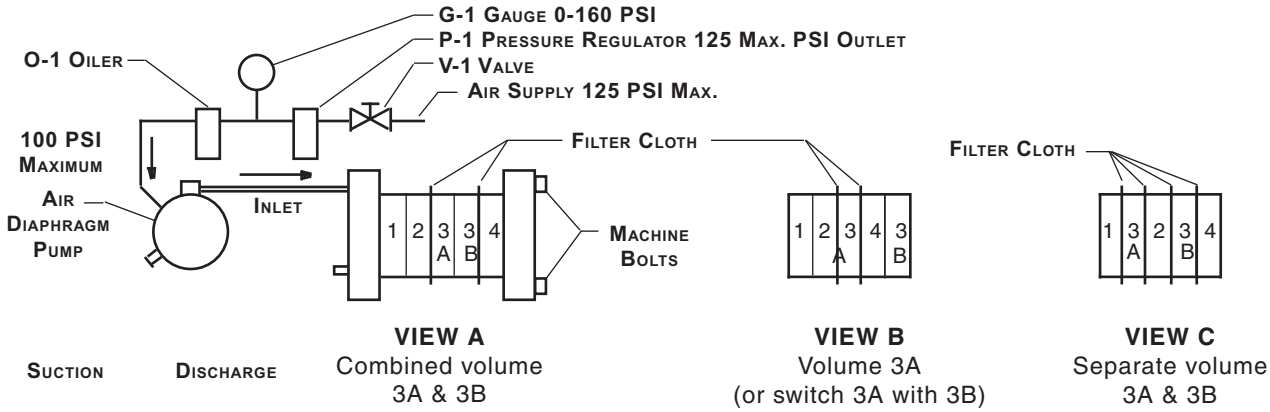
NOTE: The press should be operated on 5 to 100 gallon batches of solution having a near neutral pH. Solution should contain sludge/solids in concentrated form.

SAFETY PRECAUTIONS

1. Operating personnel should always wear protective clothing, face mask or goggles, apron and gloves.
2. Ensure that all fittings to connections are tight.
3. Read all operating instructions thoroughly before start up.
4. Contact factory for clarification if not fully understood.

INSTALLATION

1. The press is shipped completely assembled in a reuseable crate. Remove lug bolts from side of crate and lift up crate lid.
2. Remove assembly from crate platform.
3. Install suction hose and discharge hose.
4. Close valve V-1.



VIEW A
Combined volume
3A & 3B

VIEW B
Volume 3A
(or switch 3A with 3B)

VIEW C
Separate volume
3A & 3B

PRE START-UP

1. Loosen two bottom machine bolts.
2. Loosen and remove two top machine bolts.
3. Remove and inspect plates 2, 3A, 3B and 4. Plate 3A will hold 23 cu. in. and plate 3B will hold 28 cu. in. of solids. They may be used singly or in combination to hold 51 cu. in. of solids.
4. Filter cloth must be installed on outside of plate 3A and/or 3B as shown in sketch with holes in cloth carefully aligned to holes in plate.
5. Plates must be installed in order shown with numbers facing same direction exactly as shown above. If plate 3A or 3B is not to be used, then position it as a spacer after plate 4 (as shown in View B).
6. Insert plates in frame, replace two top machine bolts and securely tighten all bolts.
7. Insert suction hose in slurry mixture. Direct discharge hose to empty, clean container.

START-UP

1. Connect air supply (125 PSI maximum) to air line coupler connector at Valve V-1 (which remains closed for the present).
2. Note pressure limitation of air regulator, gauge and diaphragm pump.
3. Lower pressure setting of Pressure Regulator P-1 by turning top control knob counterclockwise.
4. Slowly open Valve V-1. Slowly increase pressure to diaphragm pump by adjusting P-1 clockwise.
5. Diaphragm pump will begin to flow liquid into filter press. Flow rate can be controlled by regulating P-1 and V-1.
6. As sludge collects in plate 3A or 3B the pump flow rate will decrease. To obtain maximum solids density and dry cake, adjust P-1 to 80 to 100 PSI reading on Gauge G-1.
7. At this time, flow from outlet hose will be minimal. Allow unit to operate for several minutes at near zero flow to obtain maximum cake density and dryness.
8. At completion of test, close V-1 and disconnect air supply coupler. Slowly open V-1 to vent.
9. Disassemble and inspect cake in frame 3A and 3B.

TEST PROCEDURE & EVALUATION - Refer to Page 2.

CLEAN-UP

1. Reconnect air supply, insert suction hose in clean water and recirculate water through pump and press to
flush cake from inlet hose between pump and press.
2. Wipe clean, replace all items in proper order, recrate and return to **SERFILCO.**

SUGGESTED TEST PROCEDURE & EVALUATION

1. Select enough uniform sample to run several tests.
2. Retain raw sample in a small closed container. This will be used to determine the initial solids content.
3. Preset* the air pressure to 80 PSI.
4. Record the starting time.
5. Discharge into a separate container and record the flow at 15, 20 and 25 minutes.
6. At 30 minutes record the discharge flow and discontinue the test.
7. Record the cake volume and filtrate volume.
8. Retain a sample of the filter cake in a closed container. This sample will be used to determine dry solids content.
9. The above procedure should be repeated several times to deter mine reliability or to determine the affect of different time intervals or operating pressure.

DATA

Start time _____

Flow rate at 15 minutes _____

Flow rate at 20 minutes _____

Flow rate at 25 minutes _____

Final flow rate _____

End time _____

Cake volume _____

Filtrate volume _____

CALCULATIONS

$$\% \text{ Reduction} = 100 \times \left(1 - \frac{\text{Cake volume}}{\text{Cake volume + Filtrate Volume}}\right)$$

Refer to Serfilco Product Bulletin F-705 for calculating required size of Filter Press.

SUGGESTED TESTING BY LABORATORY

Initial solids content of raw sample.

Cake solids content of sludge sample.

* It may be advisable to run one sample to become familiar with the test procedure.