

Installation and Replacement of

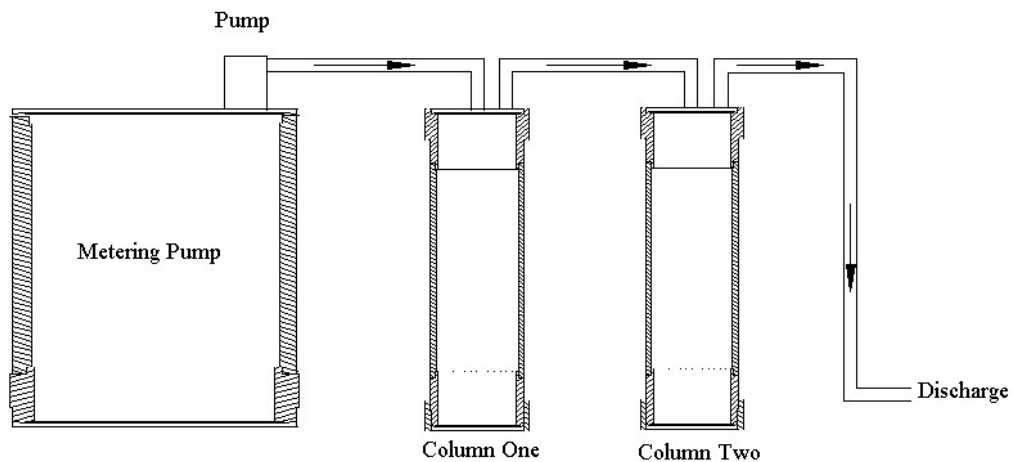


PF-16T Silver Recovery Columns

Your new *Pureflow* column represents the latest in column technology. It is designed for high capacity, ultra-low silver discharge and ease-of-use. This makes *Pureflow* columns the best in their class. ECS Refining is proud to offer a product that will provide convenient and dependable service.

SETUP:

It is important that your column system is setup properly. Failure to properly setup your *Pureflow* silver treatment system may cause poor results or equipment failure. Figure One shows the proper setup for *Pureflow* columns; two *Pureflow* columns connected in series to a metering station.



For maximum effectiveness, the Metering Pump is calibrated to 1.0 gallons per hour (60 to 66 ml/min.) or less. Higher flow rates may reduce effectiveness, cause an increase in discharge silver concentrations, and over pressure the Columns. To prevent over pressurization of the columns, a pressure actuated diverter valve set to open at a pressure between 17 & 20 psig, should be installed in the tubing between the pump and the first Pureflow column. The discharge from the diversion outlet of the valve should be directed to the pump station reservoir.

NEW INSTALLATIONS¹:

Before operating the *Pureflow* silver treatment system, assembly is required. Each column has an input ½” NPT female thread near the center of the column and an output ½” NPT female thread at the edge of the column top.

- The two barbed ½ “NPT male connectors need to be connected to both NPT female threads (be sure to use Teflon tape).
- Once the columns have connectors, they need to be attached to the metering pump using 5/8” tubing.
- Start by connecting the tubing from the Metering Pump to the ½” NPT male connection near the CENTER (It is labeled “IN”) of the first column’s Top, Column One (with a hose clamp).
- 5/8” Tubing should be connected to the exit at the edge of Column One’s Top (the top is labeled “OUT”) and then connected to the second column (Column Two) near the center of the Top (use hose clamps).
- 5/8” Tubing should be connected to the exit at the edge of Column two’s top (the top is labeled “OUT”) and then connected to the drain for discharge to the local sewer.
- The Metering Pump may now be turned on.

REPLACEMENT INSTALLATIONS:

Replacing a column in an existing system is the most common column operation. Once it is determined that a column needs to be replaced, **ONLY COLUMN ONE IS REPLACED**. Column One is the column directly connected to the Metering Pump.

REMOVE COLUMN ONE

- To change this column, the connectors need to be removed.
- **TURN OFF the Metering Pump**, then start by removing the top tubing (undo the hose clamp) and connector on Column One. Perform this operation carefully to avoid spilling photochemical solution. Crimping the tubing and attaching the ½ inch NPT plug as soon as possible will minimize spillage.
- Once the top “IN” plug is attached, repeat for the “OUT” fitting.

RINSE COLUMN ONE

- Pump water through the column that has been removed, collecting the rinse water and processing it through the silver recovery system after the column change has been completed. The column must be flushed at least three times to comply with environmental regulations.
- **Draining** the column using the provided drain port is optional. **See separate instructions.**
- Column One is now ready to ship to ECS Refining. Put the column into the plastic bag, seal and send to:

ECS Refining
705 Reed Street
Santa Clara, CA 95050

¹ Use new tubing, connectors, valves, and fittings for installation and replacement of columns;

MOVE COLUMN TWO INTO THE COLUMN ONE POSITION

- Remove discharge tubing (see Figure One) from Column Two (tubing only, leave NPT fitting in place)
- Physically move Column Two into the same position as Column One
- Prepare to remove tubing from the “IN” port of the column and replace it with the tubing from the Metering Pump. Only loosen the hose clamp on Column Two before placing the tubing from the Metering Pump on the “IN” fitting on Column two. Pull the tubing off of Column Two and replace it with the tubing from the Metering Pump. Tighten the hose clamp.
- Column Two is now Column One. Take the tubing just removed and connect it to the “OUT” on the top of the new Column One. You are now ready to add a new Column Two.

Once Column Two is moved onto the Column One position, the new column is attached at the end of the Silver Treatment System. The new column will be Column Two.

ADD A NEW COLUMN TWO

- To attach the new column, take the two barbed ½ “ NPT male connectors from the “old column” (or better new connectors) and connect to both NPT female threads (be sure to use Teflon tape).
- The tubing connected to the “OUT” at the top of Column One is then connected to the second column (Column Two) “IN” fitting near the center of the top (use hose clamps).
- Tubing should be connected to the “OUT” at the edge of the top of Column Two and then connected to the drain for discharge to the local sewer (see Figure One).

Column replacement is now finished and the Metering Pump can be returned to service.