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Basket Strainer Operation and Installation Instructions

Application

Basket Strainers are typically installed on the discharge side of pumps to collect incidental debris and/or product components from a process stream. The basket should be removed and cleaned a minimum of once per shift. More frequent removal and cleaning may be required with heavy product loads.

Maximum Operating Pressure Ratings (system pressure)

As assembled with 13MHHM clamp with wing nut tightened to 25 in. lb. of torque:

100 psi max, 200 °F max, liquid service only for the housing
50 psi differential for the insert

Note that filter bags placed inside of the basket on perforated units may have internal differential pressure ratings much lower than the basket and housing. Consult the filter bag manufacturer for specific bag ratings. High differential pressures can easily damage or rupture filter bags.



Installation

Basket strainers are designed for flow in one direction. The proper orientation results in the soils being collected on the inside of the strainer basket. Basket strainers are supplied only as 'Side-Inlet' flow, as indicated by the arrow on the side of the housing.

Strainers should be installed with the housing in a vertical orientation. The piping should be adequately supported so that the piping does not place excessive stress on the strainer fittings. If the strainers are to be installed with the housing in a horizontal orientation, the strainer basket must be supplied with support bars to hold the strainer basket concentric with the housing when it is assembled.

To monitor plugging of the strainer during operation, pressure gauges may be installed on both sides of the strainer to measure differential pressure. When the strainer has been cleaned, it will have the minimum differential pressure at the operating flow rate. If the strainer starts to get plugged, this can be detected by an increase in the differential pressure.

In addition, electronic signals from differential pressure sensors may be included to automatically detect and alarm the control system.

Valves may also be added downstream and / or upstream of the strainer to allow opening and manual cleaning of the basket without draining the entire line.

Safety Precautions

- 1) Do not exceed pressure rating of the housing or the basket.
- 2) Do not loosen or remove any cover swing bolts while the strainer is under pressure.
- 3) Do not attempt to pull wires or debris from the strainer basket with bare hands. Wires and metal shards can be extremely sharp.
- 4) Do not run bare hands over the strainer basket. Small wires or metal shards caught in the strainer may not be readily visible and may be extremely sharp.
- 5) Do not replace any strainer components with parts not supplied for the strainer by Sani-Matic.
- 6) Lockout supply pumps during cleaning to prevent accidental operation when the strainer is open.

Assembly

BASKET ASSEMBLY

- 1) Install the O-ring on the basket, by sliding it over the basket and into the O-ring groove. Do not use sharp tools, as these will damage the O-ring.
- 2) Grease the O-ring with Food Grade lubricant containing no mineral oils.
- 3) For perforated baskets with bag filters, slide the bag into the inside of the basket until the bag ring is seated in the basket ring.
- 4) Place the media positioning ring on top of the bag ring with the notches at approximately 90 degrees to the handle.
- 5) Place the ends of the locking latch (wire clip) into the notches on the media positioning ring, and snap the locking latch under the basket handle into the notch provided on the bottom side of the basket handle.
- 6) Place the basket assembly into the housing and slide down into the strainer housing until the O-ring slips into the seat and the basket handle is far inside the housing so that the cover may be closed.

NOTE: For rubber O-rings - apply food grade lubricant to O-ring prior to sliding the basket into the strainer housing.

INSTALLATION OF BASKET INTO HOUSING

- 1) Place the cover O-ring in the O-ring groove on the top of the body ring. Note on horizontally mounted units this may require extra care to insure that the o-ring does not fall out of the groove.
- 2) Place the basket assembly into the housing and slide down into the strainer housing until the O-ring slips into the seat. The basket handle must be inside of the housing so that the cover may be closed.
- 3) Close the cover and watch for interference between the cover and basket handle.
- 4) Rotate the cover swing bolts into position and spin the hand knobs to clamp down the cover. Hand tighten only

NOTE: For rubber O-rings - apply food grade sanitary lubricant to the cover O-ring prior to closing the cover on the strainer housing.



Operation

The strainer is a passive device that is designed to catch particulates larger than the openings in the basket. Note that flat particulates may fit through Wedgewire slots, allowing larger particulates to pass through.

If the strainer gets plugged with debris or particulates, the flow rate through the strainer may drop, and the differential pressure will increase. If the strainer gets completely plugged, flow may be completely blocked, and the strainer differential pressure will equal the maximum discharge pressure of the pump (dead headed).

To clear a plugged strainer, turn off and lock out the supply pump, and close any shut-off valves installed for this purpose. Remove the basket, clean, and reinstall.

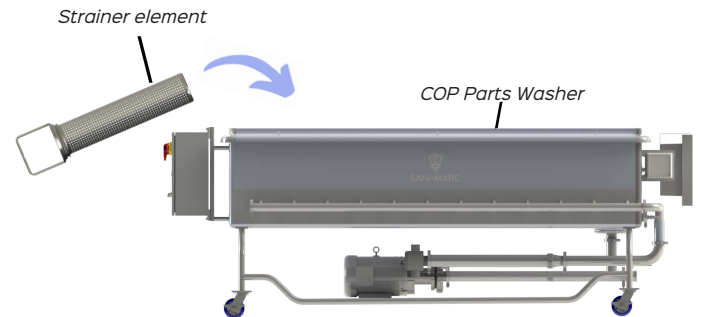


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Cleaning

BASKET ASSEMBLY

- 1) Check the system to determine if there is any pressure on the strainer, and relieve pressure using system valves or the bleed valve located on the cover of the strainer.
- 2) Loosen the swing bolts and disengage from the cover.
- 3) Open the cover.
- 4) Grasp the basket handle and pull slightly off-center to loosen the o-ring.
- 5) Pull the basket out of the housing.
- 6) Spray the basket off with water to remove loose debris.
- 7) Remove the cover and element o-rings and place them and the strainer basket element into a COP tank and run the system at an adequate temperature and chemical concentration for the required time to remove all soil residues.
- 8) Rinse with appropriate water supply and inspect all parts for cleanliness and damage.
- 9) Reassemble the strainer as described above.



Maintenance

During normal disassembly, cleaning, and reassembly, inspect the strainer for the following:

- 1) **Soil.** Inspect for soil particulates or foreign matter caught in the insert. Remove as necessary.
- 2) **Gasket/O-Ring.** Inspect for cuts, abrasions, tears, holes, deformity, or other visible damage. Replace as necessary.
- 3) **Element.** Check for bent components, holes or other damage. Replace as necessary.
- 4) **Filter Bag (if applicable).** Inspect for tears or other damage. Replace as necessary.
 - The locking latch clip should snap under the handle and hold the media ring firmly in place.
 - More frequent removal and cleaning may be required with heavier soils.
 - Periodically inspect and clean downstream spray balls and nozzles to remove any debris not captured by the strainer.

Troubleshooting

Table 2

Problem	Possible Causes
Basket won't slide into housing	a. O-ring is not greased b. Handle is bent c. Basket is bent or damaged
Particulate getting through strainer	a. Perforation or wedgewire too large for particulates b. Damaged bag filter c. Damaged basket d. Damaged O-ring
Strainer plugging frequently	a. Perforated or wedgewire too small for particulates b. Insufficient CIP pre-rinses c. Inadequate manual prep rinsing
Metal particulates in strainer	a. Damaged pump impeller b. Damage to upstream process equipment c. Inadequate flushing of new installation
Cover gasket leaking	a. swing bolt knobs not tight b. cover O-ring damaged c. operating pressure too high d. cover damaged or warped



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