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STRAINER INSTRUCTIONS

Rev. 03/21/07

(End Inlet Angle Line Strainer with clamp removed)

GENERAL:

Strainers are typically installed on the discharge side of pumps to prevent solids from clogging spray balls, spray nozzles, or processing equipment. The strainer element should be removed and cleaned a minimum of once per shift. More frequent removal and cleaning may be required with heavy soils. Spray balls and nozzles should be periodically inspected and cleaned to remove any debris not captured by the strainer.

Pressure Ratings: All styles of Sani-Matic strainers depicted in this literature have a maximum nominal rating of 250psi @ 70 degrees F (150psi @ 225) for the housing and a maximum (outside-in) pressure differential of 125psi @ 70 degrees F for the insert. Note that mesh overlays on perforated strainers have no internal differential pressure rating. Internal pressures can easily damage or rupture mesh overlays.

SAFETY PRECAUTIONS:

1) Do not exceed the pressure rating of the strainer housing or insert.
2) Do not loosen or remove any clamps while the strainer is under pressure.
3) Do not attempt to pull wires or debris from the strainer insert with bare hands. Wires and metal shards can be extremely sharp.
4) Do not run bare hands over the strainer insert. 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.

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INSTALLATION:

Strainers are designed for flow in one direction. The proper orientation allows the soils to be collected on the outside of the strainer insert for ease of cleaning.

Angle-Line strainers are supplied either for ‘End-Inlet’ or ‘Side-Inlet’ flow, as indicated by the arrow on the side of the housing.

Straight-Line strainers are supplied with the inlet flow to be in the unclamped end of the strainer, and the exit flow out the clamped end as depicted below.

End Inlet	
Side Inlet	
Straight-Line	

Strainers should be installed for ease of access and removal of the insert. The piping should be adequately supported so that the piping does not place excessive stress on the strainer fittings.

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.

If cleaning of the strainer might be necessary during operation, multiple strainers may be installed with automatic valves to back-flush plugged strainers to clear them. For recommendations of methods to clear strainers during operation, contact Sani-Matic.

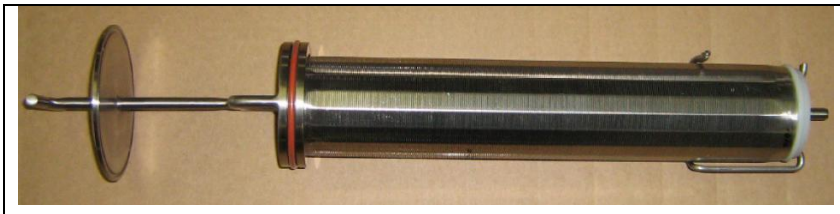
Valves may also be added downstream and / or upstream of the strainer to allow opening and manual cleaning of the insert without draining the entire line.

ASSEMBLY:

End Inlet Strainer Assembly:

1) To install the Teflon encapsulated O-ring, heat the O-ring in hot water, and slide it over the retainer and into the O-ring groove. Do not use sharp tools, as these will damage the O-ring.
2) Slide the insert over the center rod and seat it into the O-ring retainer.
3) For perforated inserts with mesh overlays, slide the overlay over the top of the insert until it is approximately centered on the insert.
4) Slide the plastic end cap over the rod, so that the notch in the end cap fits over the insert.
5) Route the clip through the hole in the insert rod, and clip down and around the insert. The insert should be held securely in place.
6) Install a sanitary gasket over the end of the strainer and slide the insert into the strainer housing.
7) Secure with a sanitary clamp.

   NOTE: For rubber O-rings only - apply food grade lubricant to O-ring prior to sliding the insert into the strainer housing. Teflon O-rings do not require lubricant.

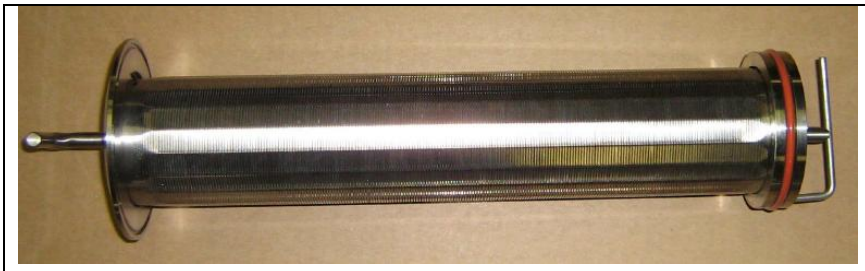


End Inlet Strainer Insert – Assembled

Side Inlet Strainer Assembly:

1) To install the Teflon encapsulated O-ring, heat the O-ring in hot water, and slide it over the retainer and into the O-ring groove. Do not use sharp tools, as these will damage the O-ring.
2) Slide the insert over the center rod and seat it into the cutout area in the endcap.
3) For perforated inserts with mesh overlays, slide the overlay over the top of the insert until it is approximately centered on the insert.
4) Slide the O-ring retainer over the rod, so that the notch in the retainer over the insert.
5) Route the bent portion of the clip through the hole in the insert rod, and snap the straight portion of the clip over the notch in the insert rod. The insert should be held securely in place
6) Install a sanitary gasket over the end of the strainer and slide the insert into place.
7) Secure with a sanitary clamp.

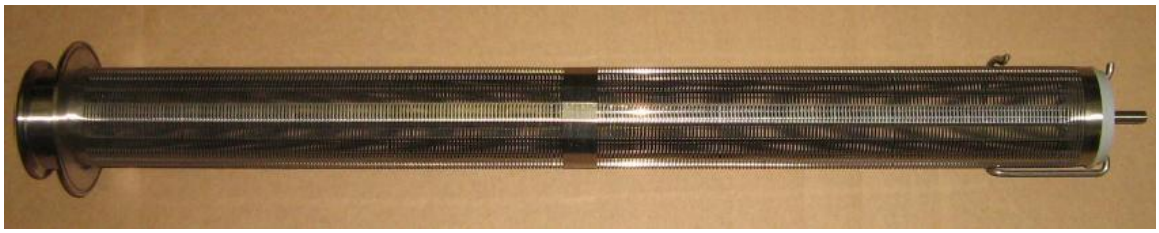
NOTE: Teflon encapsulated O-rings do not require lubricant. For rubber O-rings only - apply food grade lubricant to O-ring prior to sliding the insert into the strainer housing. Rubber o-rings may be replaced with Teflon from the parts list.



Side Inlet Strainer Insert - Assembled

Straight Line Strainer Assembly:

1) Slide the insert over the center frame rod and seat it into cutout groove in the endcap.
2) For perforated inserts with mesh overlays, slide the overlay over the top of the insert until it is approximately centered on the insert.
3) Slide the plastic end cap over the rod, so that the notch in the end cap fits over the insert. The insert should be held securely in place.
4) Route the clip through the hole in the insert rod, and clip down and around the insert.
5) Install a sanitary gasket over the end of the strainer and slide the insert into place.
6) Secure with a sanitary clamp.



Straight Line Strainer Insert - Assembled

OPERATION:

The strainer is a passive device that is designed to catch particulates larger than the openings in the insert. 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 the completely blocked, and the strainer differential pressure will equal the maximum discharge pressure of the pump (dead-headed).

To clear a plugged strainer (for systems not equipped to back-flush automatically), turn off and lock out the supply pump, and close any shut-off valves installed for this purpose. Remove the strainer insert and clean it to remove debris. Rinse the strainer insert clean and re-install to resume operation.

CLEANING:

To clean the strainer:

1) Ensure that all pressure has been relieved from the strainer.
2) Disassemble the strainer by removing the end cap clamp, pulling the element out, and removing the internal clips.
3) With a hose, spray the insert off with water to remove loose debris.
4) Place the insert into a COP tank and run the system at an adequate temperature and chemical concentration for the required time to remove all soil residues.
5) Rinse with appropriate water supply and inspect all parts for cleanliness and damage.
6) Reassemble the strainer as described above.

MAINTENANCE:

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

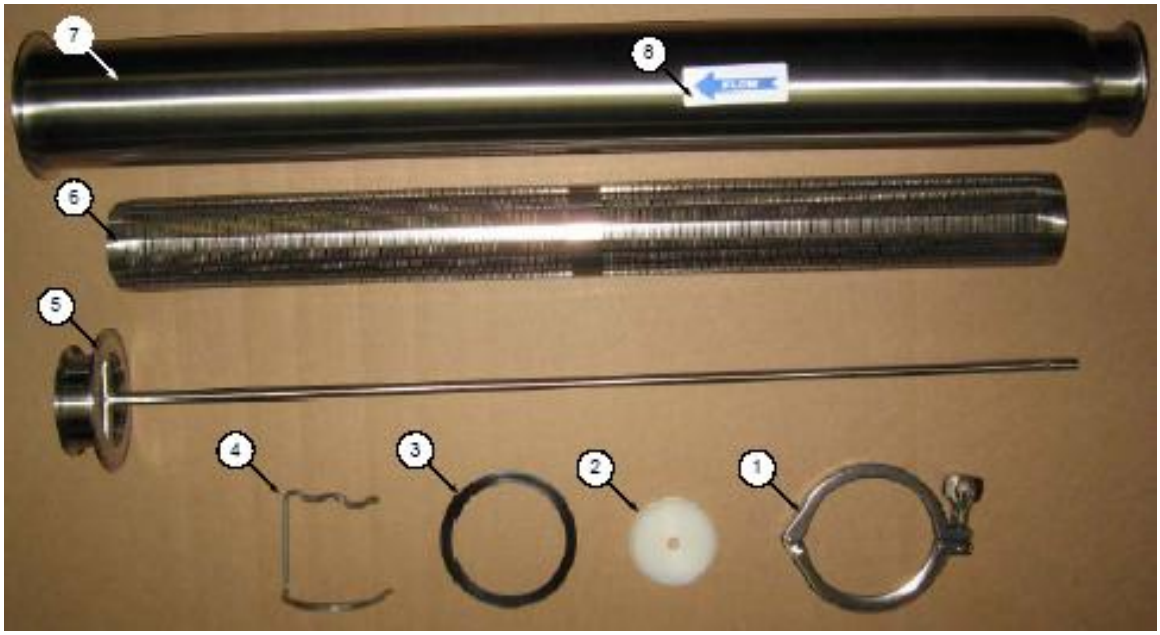
1) End Plug: Check for cracks, wear, or damage. Plug should seat properly in the insert.
2) Wraparound Clip (End-Inlet): The clip should snap around the insert to hold the plastic end cap firmly in place.
3) "R" Shaped Clip (Side-Inlet): The clip should snap into the notch on the end of the frame rod and hold the O-ring end cap firmly in place.
4) Inspect the strainer for soil particulates or foreign matter caught in the insert. Remove as necessary.
5) O-Ring: Inspect for cuts, abrasions, tears, holes, deformity, or other visible damage. Replace as necessary.
6) Frame: If the strainer will not fit together securely, check the frame and clips for bent components. Replace as necessary.
7) Inspect the insert for bent ends – replace as necessary.

TROUBLESHOOTING:

Problem / Possible Solutions:

1) Strainer won't go together tightly
    a. Pin is bent
    b. Frame is bent
    c. End cap is damaged
2) Particulates getting through strainer
    a. Wrong size insert for particulates
    b. Damaged overlay
    c. Damaged insert
    d. Loose assembly (refer to (1) above)
3) Strainer plugging frequently
    a. Too tight insert for particulates
    b. Insufficient CIP pre-rinses
    c. Inadequate manual prep rinsing
4) Metal particulates in strainer
    a. Damaged pump impeller
    b. Damage to upstream process equipment
    c. Inadequate flushing of new installation

SPARE PARTS:

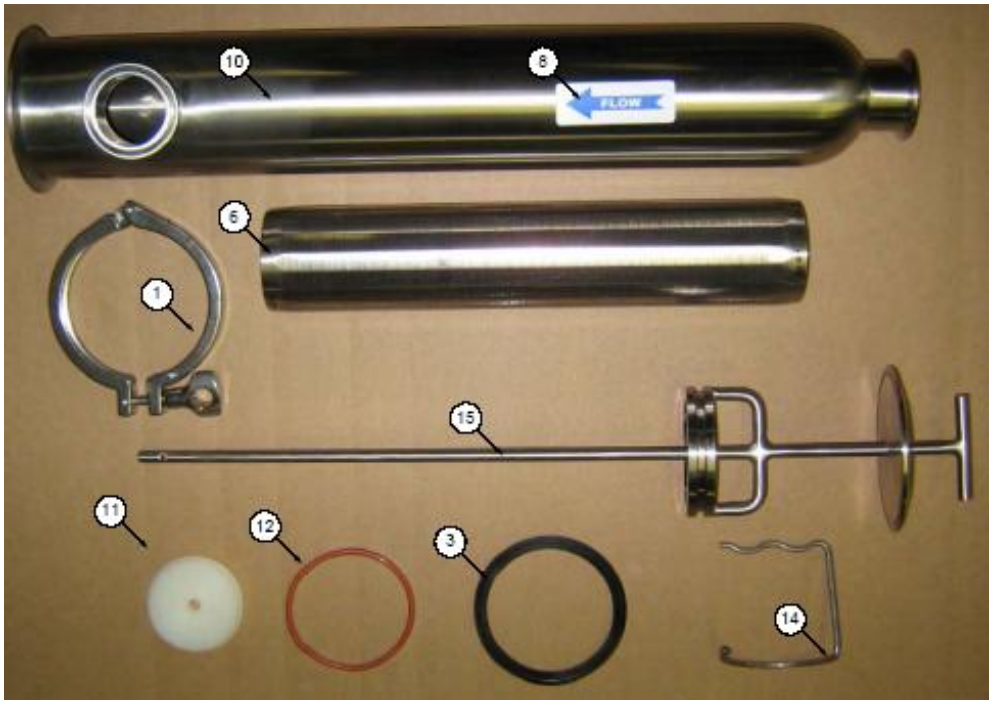


Straight Line

STRAIGHT LINE PARTS		
Item #	**Description**	**Part #**
1	Clamp, 4”, T/C	020225
2	End plug	720419
3	Gasket, 4”, T/C	020226
4	Clip, Standard Flow, 4”	740295
5	Frame, Straight Line Strainer	Call Sani-Matic
6	Strainer insert	Call Sani-Matic
7	Strainer body	Call Sani-Matic
8	Label – Left Flow Arrow	020970

Side Inlet

SIDE INLET STRAINER PARTS		
Item #	**Description**	**Part #**
1	Clamp, 4”, T/C	020225
3	Gasket, 4”, T/C	020226
6	Strainer insert	Call Sani-Matic
7	Strainer frame – Angle Line, Reverse Flow	Call Sani-Matic
9	Clip – Reverse Flow Strainer	720408
10	Strainer Body	Call Sani-Matic
11	O-Ring Retainer – Reverse Flow	720582
12	O-Ring – Teflon Encapsulated	024020
13	Label – Right Flow Arrow	020971



End Inlet

END INLET STRAINER PARTS		
Item #	**Description**	**Part #**
1	Clamp, 4”, T/C	020225
3	Gasket, 4”, T/C	020226
6	Strainer insert	Call Sani-Matic
8	Label – Left Flow Arrow	020970
10	Strainer Body	Call Sani-Matic
11	End Plug, Strainer	720419
12	O-Ring – Teflon Encapsulated	024020
14	Clip – Standard Flow	740295
15	Frame – Standard Flow	Call Sani-Matic