



SANI+MATIC

Y-Strainer Operation and Installation Instructions

Application

Y-Strainers are typically installed on the discharge side of pumps to prevent large particles from clogging or damaging downstream equipment such as spray balls, nozzles, valves and more.

Maximum Operating Pressure Ratings (system pressure)

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

150 psi @ 250 °F (300 psi @ 70 °F) for 4" body

75 psi @ 250 °F (150 psi @ 70 °F) for 6" body

Maximum Recommended Flow and Pressure Drop

Table 1

| Fitting Size | Body OD | Face-to-Face Dimension | Max. Flow (gpm) | Approx. Clean Pressure Drop (psi) ¹ | Max. Allowable Pressure Drop When Soiled Perforated/Wedgewire (psi) ² |
|--------------|---------|------------------------|-----------------|--|--|
| 1.5" | 4" | 10" | 70 | 3.2 | 20 / 50 |
| 2.0" | 4" | 11" | 130 | 3.3 | 20 / 50 |
| 2.5" | 4" | 12" | 205 | 3.4 | 20 / 50 |
| 3.0" | 4" | 14" | 300 | 4.8 | 20 / 50 |
| 4.0" | 6" | 17" | 450 | 5.1 | 20 / 50 |

¹ Using 70 °F water and 0.015" wedgewire insert

² Differential pressure at which strainer components may sustain damage

Safety Precautions

- 1) Do not exceed pressure rating of strainer assembly.
- 2) Do not loosen or remove any clamps while the strainer is under pressure.
- 3) Lockout supply pump(s) during cleaning to prevent accidental operation when strainer is open.
- 4) Use protective gloves when removing strainer element and clearing debris from element.
- 5) Use only Sani-Matic supplied replacement parts.



Installation and Operation

Y-strainers are designed for forward flow into the side inlet and out the end outlet. Perforated inserts are suitable for both forward and reverse flow. Wedgewire inserts or perforated inserts with mesh overlays are suitable **only for forward flow**.

Install Y-strainer for ease of access and insert removal. Use adequate piping supports to avoid overstressing strainer fittings. Add isolation valves downstream and/or upstream of the strainer to allow opening and manual cleaning of the insert without draining the entire line. Automatic valves installed with multiple strainers allow for the use of back-flushing to clear plugged strainers without disassembly. Back-flushing should not be performed with mesh overlay in place. Please contact Sani-Matic for recommended methods to clear strainers during operation.

As the Y-strainer becomes plugged with debris, differential pressure across the strainer increases. Monitor pressure drop during system operation using pressure gauges or sensors installed on both sides of the strainer. Maximum allowable soiled strainer pressure drops, and approximate clean pressure drops for each strainer size are listed in **Table 1**. A plugged strainer may completely block flow resulting in a strainer differential pressure equal to the dead-head pressure of the system pump, which could lead to damaged strainer components.

To clear a plugged strainer, refer to cleaning instructions listed on page 2.

Assembly

- 1) For perforated inserts with mesh overlays, slide the overlay over the top of the insert until it is approximately centered on the insert.
- 2) Install a sanitary gasket over the end of the strainer insert and slide into the housing.
- 3) Secure with a sanitary clamp, tightening the wing nut to 25 in. lb. torque.

Cleaning*

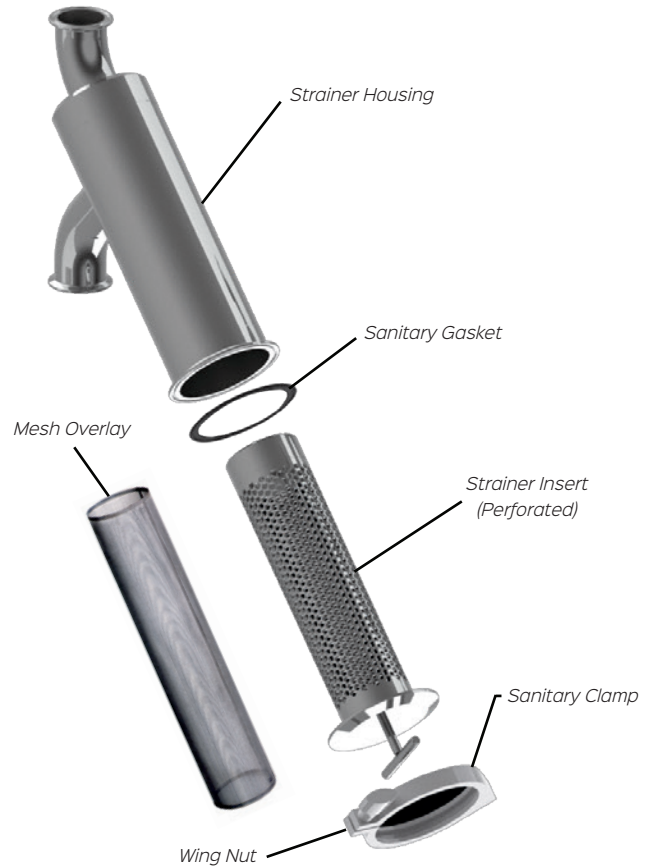
- 1) Turn off and lock out the system supply pump.
- 2) Ensure that all pressure has been relieved from the system the strainer is installed on.
- 3) Close any available blocking valves.
- 4) Disassemble the strainer by removing the end cap clamp and pulling the insert out. Remove mesh overlay, if present.
- 5) Use a hose to spray the insert off with water to remove loose debris.
- 6) Clean the insert using a clean-out-of-place (COP) parts washer or other automated system running at an adequate temperature, chemical concentration and amount of time to remove all soil residue. If automated cleaning is not available, manually clean soil residue off the insert using a scrub device, water source, chemical and gloves. Note that manual cleaning is not recognized under 3-A.
- 7) Rinse with appropriate water supply and inspect all parts for cleanliness and damage.
- 8) Reassemble the strainer as described above.

*Clean strainer insert per your plant standard operating procedure.

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.** Inspect for cuts, abrasions, tears, holes, deformity, or other visible damage. Replace as necessary.
- 3) **Insert.** Check for bent components, holes or other damage. Replace as necessary.
- 4) **Mesh Overlay (if applicable).** Inspect for tears or other damage. Replace as necessary.
 - Remove and clean strainer element at least once per shift.
 - 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 |
|--------------------------------------|---|
| Insert won't fit into housing | <ul style="list-style-type: none"> • Damaged insert |
| Particulate getting through strainer | <ul style="list-style-type: none"> • Incorrect insert selected for particulate size • Incorrect strainer material (perforated/wedgewire) selected for process • Damaged overlay • Damaged insert • Loose assembly |
| Strainer plugging frequently | <ul style="list-style-type: none"> • Insert mesh/perforation size too small for particulate size/quantity typically present in process • Insufficient CIP pre-rinses • Inadequate Preventive Maintenance cleaning of strainer insert |
| Metal particulates in strainer | <ul style="list-style-type: none"> • Damaged pump impeller • Damage to upstream process equipment • Inadequate flushing of new installation |



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