



## Application

The Magnetic Trap Strainer assembly is designed for use with Sani-Matic 4" body size Angle-Line Strainers, standard flow direction, connection sizes 1.5"-3.0". The magnetic trap strainer assembly is installed inline to capture metal particles from the process stream as well as strain process particles such as seeds, pulp, and more.

This Operation and Installation Instructions document is for the Magnetic Trap Strainer assembly only. For the full Angle-Line Strainer body and element instructions, please reference the Angle-Line Strainer Operation and Installation Instructions document (DM-0003.1).

## Maximum Operating Pressure Ratings (system pressure)

100 psi @ 220 °F for 4" body size.

## Maximum Recommended Flow and Pressure Drop

Table 1

Connection Size	Body Size	Face- to-Face Dimension	Max. Flow (gpm)	Approx. Clean Pressure Drop (psi) <sup>1</sup>
1.5"	4"	20 3/4"	100	4.0

<sup>1</sup> Using 70 °F water and 1/4" perforated element

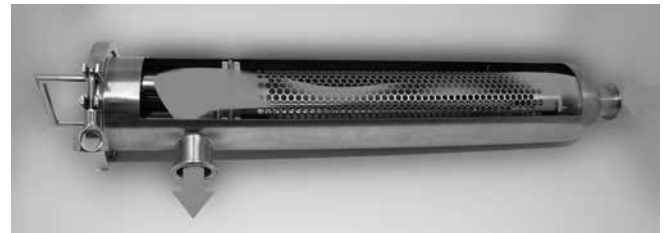
## Safety Precautions

- 1) The magnetic rating range is 9,500 – 11,500 gauss. Working with metal tools next to the magnetic trap may pinch hands, and the magnets may be harmful to ID wearers and people with pacemakers.
- 2) Do not exceed pressure rating of strainer assembly.
- 3) Do not loosen or remove any clamps while the strainer is under pressure.
- 4) Lockout supply pump(s) during cleaning to prevent accidental operation when strainer is open.
- 5) Use protective gloves when removing strainer element and clearing debris from element.
- 6) Use only Sani-Matic supplied replacement parts.



## Installation and Operation

The Magnetic Trap Strainer assemblies are placed in 4" body size Angle-Line Strainers and intended for standard flow processes (the process flows through the end-inlet and exits through the side-outlet).



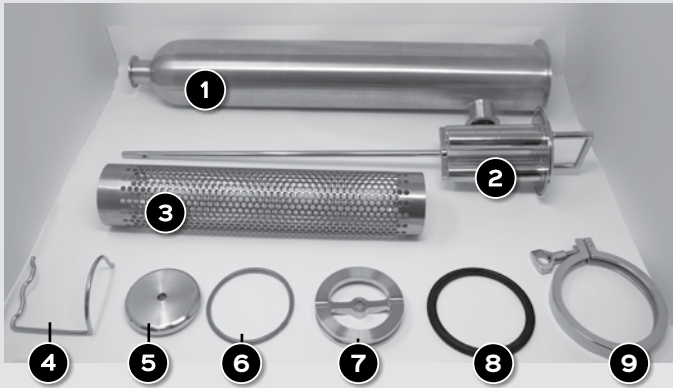
Standard Flow (End-Inlet) 4" Angle-Line Strainer with Magnetic Trap Strainer Element Frame Assembly.

Perforated and wedgewire elements are suitable with standard flow processes, as are perforated elements with mesh overlays.

For the full Angle-Line Strainer body and element installation instructions, please reference the Angle-Line Strainer Operation and Installation Instructions document (DM-0003.1).

# Assembly

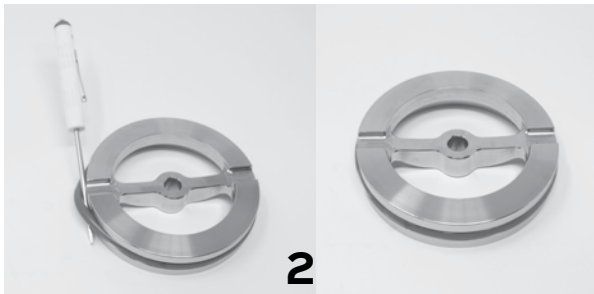
All pieces shown below must be present for a functional full Magnetic Trap Strainer Assembly.



- 1 4" Strainer Body
- 2 Magnetic Trap Strainer Element Frame
- 3 Element (photo shows a 1/4" Perforated Element)
- 4 4" Standard Flow Retaining Clip
- 5 End Plug
- 6 Teflon Encapsulated O-ring
- 7 4" O-ring Retainer
- 8 EPDM Gasket
- 9 Tri-Clamp

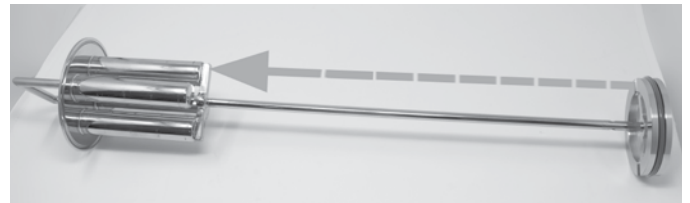
## Steps 1-2

Place Teflon Encapsulated O-ring onto 4" O-ring Retainer. Use an O-ring spoon tip seal tool if needed to get the O-ring on and off of the retainer.



## Step 3

Place the O-ring Retainer on the bottom of the Magnetic Trap Strainer Element Frame's post and slide it to the base of the magnetic trap.

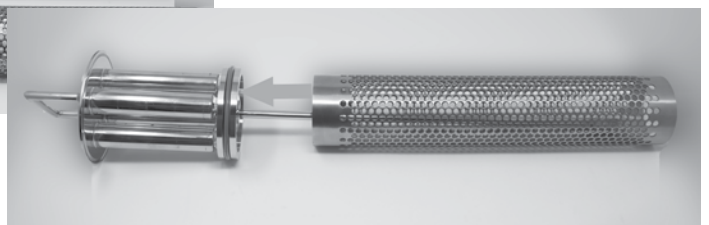


Ensure the O-ring Retainer placement bar at the base of Magnetic Trap fits into the grooves on the 4" O-ring Retainer.



## Steps 4

Take the Element of your choice (photo shows a 1/4" perforated Element) and slide it up the post of the Magnetic Trap Strainer Element Frame and fit it into the 4" O-ring Retainer.



## Steps 5

Place the Strainer End Plug onto the Magnetic Trap Strainer Element Frame's Post by sliding it through the End Plug's hole. The Element rests on the recessed ridge of the End Plug.



## Step 6

Insert the end of the Retaining Clip into the Magnetic Trap Strainer Element Frame's post hole.



Once the Retaining Clip is resting in the center bend of the clip, wrap the clip around the Element.



## Step 7

Place the Gasket over the end of the Magnetic Trap Strainer Element Frame Assembly and push it to the top of the assembly to rest against the Magnetic Trap's cap.



## Step 8

Place the assembled Magnetic Trap Strainer Assembly into the body of the 4" Angle-Line Strainer with the End Plug and Retaining Clip entering first.



*NOTE: We are using a 4" Angle-Line Strainer Body Size with a cut-away as a demonstration piece to show how the Magnetic Trap Strainer Assembly is placed within the Strainer Body.*

## Step 9

Ensure there is a tight fit where the Magnetic Trap Strainer Element Frame, Gasket, and Angle-Line Strainer body meet.



Place 4" tri-clamp around the gasket, cap, and strainer body.



Fit the 4" tri-clamp to ensure complete closure. Move the threaded wing nut into place and tighten to 25 in. lb. of torque.



See the full Angle-Line Strainer Operation and Installation Instructions document (DM-0003.1) for final process installation instructions.

## 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 Magnetic Trap Strainer Element out. Remove mesh overlay, if present.
- 5) Use a hose to spray the Perforated or Wedgewire Element off with water to remove loose food process debris. Water will not loosen and remove metal fines from the magnets.
- 6) The magnets within the Magnetic Trap are susceptible to shattering if handled without caution. DO NOT bang the Magnetic Trap Strainer Element Frame to loosen metal debris. The metal will not loosen and the magnets are likely to lose efficacy from rough handling. Instead, use a rag or dry wipe tissues to wipe down and pinch off the fine metal particulates from the four Magnetic Trap tubes.
- 7) Once the metal debris is removed from the magnets, the Magnetic Trap Strainer Element Frame may be placed in the 4" strainer body and clamped to be cleaned in place. If cleaning out of place, we recommend washing the Magnetic Trap Strainer Element Frame by hand using gloves, adequate temperature, chemical concentration, action, and time to remove all soil residue. Manual cleaning ensures care is taken to protect the magnets from breaking.
- 8) Rinse with appropriate water supply and inspect all parts for cleanliness and damage.
- 9) Reassemble the strainer as described above.

\*Clean strainer element 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 Magnetic Trap Strainer Element Frame Assembly. Remove as necessary.
- 2) **Gaskets and O-rings.** 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) **Mesh Overlay (if applicable).** Inspect for tears or other damage. Replace as necessary.
- 5) **Magnetic Trap.**
  - Remove and clean Magnetic Trap Strainer Element and Element Frame at least once per shift.
  - Evaluate magnets for bent/misaligned magnet tubes.
  - Evaluate magnet tubes for surface finish damage/cracks.
  - More frequent removal and cleaning may be required with heavier and more viscous soils. (Contact a Sani-Matic Sales Specialist for suggestions on CIPing more tenacious soils.)
  - Perform annual gauss reading efficacy testing.
  - Periodically inspect and clean downstream spray balls and nozzles to remove any debris not captured by the strainer.



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