

TEMPORARY STRAINERS

INSTALLATION, OPERATION AND MAINTENANCE

INDEX:

1 - SAFETY INFORMATION	2
2.0 - INSTALLATION	
2.1 - <i>Pre-installation checklist</i>	
2.2 - <i>Installation</i>	
3 - OPERATION	
4.0 - MAINTENANCE	
4.1 – <i>Strainer removal</i>	
4.2 – <i>Spare part list</i>	
5 - ATTACH. A – BOLTING TORQUE SEQUENCE	

1 - SAFETY INFORMATION

The following general safety information should be taken into account in addition to the specific warnings and cautions specified in this manual. They are recommended precautions that must be understood and applied during operation and maintenance of the equipment covered in this I.O.M.



To avoid injury, never attempt disassembly while there are pressures either upstream or downstream. Even when replacing gaskets, caution is necessary to avoid possible injury. Disassemble with caution in the event all pressures are not relieved.



To prevent strainer bending, damage, inefficient operation, or early maintenance problems, support piping on each side of the strainer.



- A strainer is a mechanism containing fluids under pressure and consequently should be handled with appropriate care.
- Strainer surface temperature may be dangerously too hot or too cold for skin contact.
- Upon disassembly, attention should be paid to the possibility of releasing dangerous and or ignitable accumulated fluids.
- Ensure adequate ventilation is available for service.

This manual provides instructions for storing, general servicing, installation and removal of temporary strainers.

Trust Valves refuses any liability for damage to people, property or plant as well as loss of production and loss of income under any circumstances but especially if caused by incorrect installation or utilization of the valve or if the valve installed is not fit for intended purpose. It is the sole responsibility of the user to ensure the valve type and materials are correctly specified.

A Startup Strainer is installed into a pipeline system to remove unwanted debris from the pipeline flow. In contrast to other strainers, Temporary (Startup) Strainers are temporary strainers used in pipelines during system startup. Startup Strainers are not designed to be permanent and must be replaced after system startup is completed. Straining of the pipeline flow is accomplished via a perforated or mesh lined screen. In general, the size of the screen perforation should be slightly smaller than the smallest debris particle to be removed. If the screen perforation is undersized, the screen may require excessive cleaning. Consequently, if the screen perforation is oversized, unwanted debris may be permitted to flow through the pipeline; possibly damaging downstream equipment.

2.0 - INSTALLATION



Temporary Strainers should only be used during startup operations. They are not designed for long-term service and should be replaced with a permanent strainer after startup operations are completed.

2.1 – PRE-INSTALLATION CHECKLIST

- Ensure Working conditions (pressure and temperature) are within the specified capacity of the product being installed. Please refer to the Engineering Specification Sheet for each Temporary Strainer model to determine these values.
- Make sure that the construction material of the Temporary Strainer is chemically compatible with the media flowing in the pipeline.
- Inspect sealing surfaces that they are clean and smooth (no nicks or cuts). The pipeline should also be checked for proper alignment.

2.2 - INSTALLATION

Step 1:

Temporary Strainers must be positioned in the pipeline ahead of the equipment requiring protection. If the equipment requiring protection is a pump, the Startup Strainer must be placed on the suction side of the pump.

Step 2:

Before placing the Temporary Strainer into place, support the existing pipeline with pipe supports on either side of the Temporary Strainer.

Step 3:

Place the Temporary Strainer into the pipeline, ensuring that the mesh lined side of the Temporary Strainer is facing in the direction of the pipeline flow. For large or heavy Temporary Strainers, the appropriate material handling equipment should be used to lift the Temporary Strainer into place.

Step 4:

If there is a downstream valve on the outlet side of the Temporary Strainer, make sure that the tip of the Temporary Strainer does not interfere with the opening and closing of the disc, ball, or stem of the valve. This is illustrated in Figure 3.

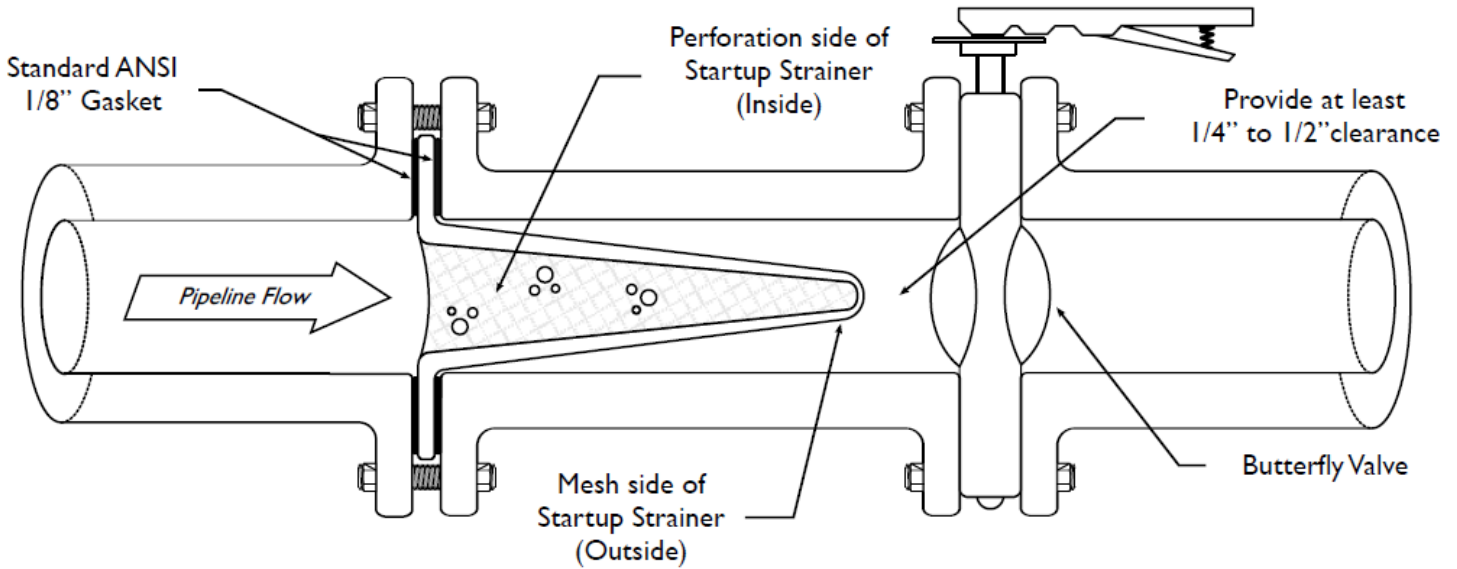


Fig. 3: Simplified Drawing of an Installed Startup Strainer

Step 5:

Install a standard, ANSI (1/8" thick) flange gasket between the Temporary Strainer and the pipeline flanges, on both sides. Install lubricated flange bolts and hand tighten. Make sure the Temporary Strainer is centered between the mating flanges. Flange bolts should then be tightened, using a star or crisscross pattern to evenly load the bolts, in accordance with established piping standards. Refer to Attach. A.

3 – OPERATIONS

Once proper installation has been successfully completed, start the system gradually, at start up as well as after shut down. This eliminates sudden shock to the strainer and other equipment in the line.



With piping systems that contain fluids other than water or when the working temperature is above 50°C (122°F), fluid must be drained to safe area, away from the operator. Operators should always be fitted with appropriate protective equipment when venting is performed.

Start-up Procedure:

1. Remove air from the pipeline by opening a blow-down valve or other vent near the Temporary Strainer.
2. Start the piping system by opening the outlet valve nearest the Temporary Strainer's outlet first. Then gradually open the inlet valve nearest the Temporary Strainer's inlet, approximately 25% of normal operational flow. It is important to start the system gradually to avoid displacing or damaging the Temporary Strainer.
3. Continue to open the inlet valve until the desired service flow has been reached.
4. Close blow-down valve or other open pipeline vent.

4.0 – MAINTENANCE

Temporary Strainers are designed to provide trouble-free service and seldom require maintenance. The pressure differential across the strainer should be checked periodically to determine when the Temporary Strainer should be removed.



Before removing the Temporary Strainer from the pipeline, the pressure inside the pipeline near the strainer must be reduced to atmospheric via suction or venting. Failure to do so may result in serious bodily injury.



Before removing the Temporary Strainer from the pipeline, ensure that the media that is flowing in the pipeline is known and any special handling precautions are understood. Please review the Material Safety Data Sheet (MSDS) for that specific fluid.

4.1 – STRAINER REMOVAL

During normal use, the strainer will become clogged with foreign matter, causing the differential pressure to increase. Once the differential pressure has increased to an unacceptable value, typically by 5 psi to 10 psi, it is time to remove the strainer. It is not advisable to let the differential pressure increase by 20 psi. This may cause the screen to fail and possibly damage downstream equipment.

A convenient and safe way to determine when the strainer needs to be removed is to install pressure gauges on the inlet and outlet sides of the Temporary Strainer. The maximum acceptable pressure drop across the Temporary Strainer will indicate when it should be removed. Strainer size and construction determine the maximum pressure drop a Temporary Strainer screen can withstand. Please consult factory for exact pressure ratings.

Follow these steps to remove strainer from pipe:

Step 1:

To remove the Temporary Strainer from the pipeline, first isolate the Temporary Strainer by closing the inlet and outlet valve connections on either side of the Temporary Strainer.

Step 2:

Open vent or drain plug, near the Temporary Strainer, to drain fluid and relieve pipeline pressure. Drain the system as much as possible.

Step 3:

Once pressure is relieved and fluid is drained, loosen the flange bolts.

Step 4:

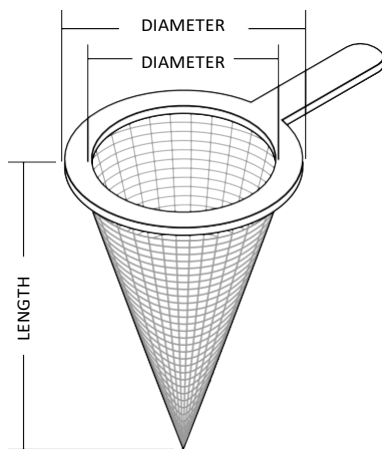
Remove flange gaskets.

Step 5:

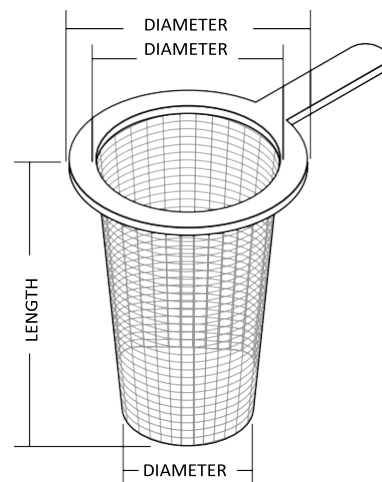
Remove Temporary Strainer from pipeline and replace with a permanent type strainer.

4.2 – SPARE PARTS LIST

Temporary Strainers are designed for temporary service. As such, there are no spare parts. Once the piping system has completed startup operations, the Temporary Strainer must be replaced with a permanent type strainer.



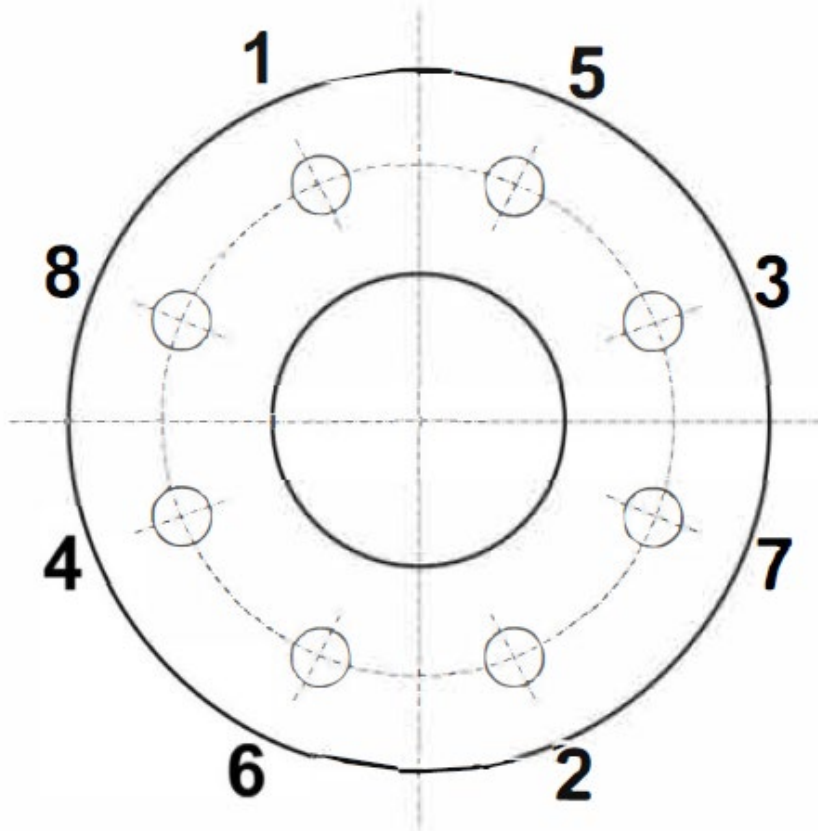
Cone Temporary Strainer



Truncated Cone Temporary Strainer



5 – ATTACH. A



Bolting torque sequence: 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8