

INSTALLATION AND OPERATION MANUAL

Strainer

Fire Protection Products

YS-300-FF | YS-300-FG | YS-300-GG

Mechanical Services & HVAC Products

F73Y16 | F73Y25 | F73B16 | F73B25 |
V73Y16

This manual is also available online.



SAFETY PRECAUTIONS



Caution



Read and understand carefully this document prior attempting to install Fivalco® products. Failure to follow these instructions could cause severe injury, product and/or property damage.



Installation, maintenance and replacement of Fivalco® products must be implemented by an experienced, well trained installer. Wear safety glasses, helmet, hand and foot protection during installation.



The owner is responsible for maintaining the system in proper operation condition.



Fivalco shall not be held responsible for any incidents arising from improper installation, operation and maintenance work. The responsibility for this must rest with the installer and user.



Disclaimer

This manual serves as a general guideline and reference to the installers and users. Every effort has been made to ensure the information contained in this manual is accurate at the time of publication. Fivalco Limited assumes no responsibility or liability for any errors and/or misinterpretation of the information. Contact your local vendor, distributor or Fivalco Limited for detail technical data and specification of each model, and if any additional information is required. We reserve the right to alter this manual without notice.

“THE QUALITY GOES IN BEFORE OUR NAME GOES ON”



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STRAINER

1 GENERAL

Strainer is a device installed in a pipeline system for mechanically removing unwanted debris by means of a perforated screen or wire mesh straining element. They are used in pipelines to protect expensive and critical downstream equipment such as pumps, meters, cooling / heating coils, control valves, steam traps, regulators and other process equipment.

Strainers can be classified as Y-Type and T-Type or Basket Type, according to their body configuration. Y-Strainer has the advantage of being able to be installed in either a horizontal or vertical position. In both cases, the screening element must be pointing downward of the strainer body so that the entrapped material can properly collect in it.

T-Strainer or Basket Type strainer can only be installed in horizontal pipelines, and for larger, heavier basket strainers, the base of the strainer needs to be supported.

Y-strainer usually has a lower dirt holding capacity than basket type strainers, which means that they require more frequent cleaning.

2 UNLOADING & TRANSPORTATION

A vital consideration in handling strainers should be avoid damaging or scratching the coating protection. Ensure that there are no heavy load and sharp objects are applied to the strainers.

All strainers should be unloaded carefully. Each strainer should be carefully lowered from the truck to the ground; it should not be dropped. In the case of larger strainers, forklifts or slings around the body of the strainer or under the skids should be used for unloading. Only hoists and slings with adequate load capacity to handle the weight of the strainer should be used. Failure to carefully follow these recommendations is likely to result in damage to the strainer.

3 STORAGE

Whenever practical, strainers should be stored indoors under dry, cool conditions, away from corrosive or otherwise chemically active atmosphere. If outside storage is required, means should be provided to protect the operating mechanism from weather elements.

4 INSPECTION PRIOR TO INSTALLATION

Strainers should be inspected at the time of receipt for damage in shipment. The initial inspection should be to verify compliance with specifications, type of end connections, etc. Inspection personnel should look for dent or cracked parts, loose bolt, missing parts and accessories, and any other evidence of mishandling during shipment.

5 INSTALLATION

At the jobsite prior to installation, each strainer should be visually inspected and any foreign material in the interior of the strainer should be removed.

Before being installed, the strainer needs to be cleaned so as to eliminate the dust caused during the transportation and storage. The strainer's cover should be removed and inspect the interior for any loose or foreign materials that may have trapped in the screen during transportation. After inspection, ensure sealing surfaces are clean prior to reinstalling the gasket / O-ring and cover. Make sure the gasket / O-ring is seated correctly before tightening the cover bolts. Confirm the type of connection and standard before starting the installation work.

A strainer should always be installed ahead of pumps and other expensive, downstream equipment to help ensure proper protection and trouble-free operation. This even holds true for "clean lines" to protect against pipe scale and accidentally introduced items such as gaskets or tools.

Before placing the strainer into place, support the existing pipeline with pipe supports near the inlet and outlet connections.

Y-Strainer can be installed in either a horizontal or vertical pipe line depending on its application. Every strainer has an arrow marked on the body to shows the flow direction of the media. Please make sure the installation of the strainer is following the direction of the arrow.

The installer shall provide sufficient space for strainers for easy installation, operation, maintenance, inspection and replacement.

The strainer screen is manually cleaned by shutting down the line and removing the strainer cap. For applications with heavier dirt loading, strainers can be fitted with a blow-off / drain plug connection that permits the screen to be cleaned at a higher frequency without removing it from the strainer body.

During installation, it is essential to ensure an accurate centering between flanges and in a well aligned position so that the stress would not be acting on the strainer body. Inspect all sealing surfaces to ensure gasket surfaces are free of defects (no nicks or cuts).

To provide for easier maintenance, the strainer should be located where the drain plug can be removed. Additionally, ensure the drain or blow-off is located at the lowest position when installed. If installed in the vertical position, the wye side of the strainer must be pointing downward. If there is any space constraint on the installation on horizontal pipe line, where the drain plug and cover not able to directly facing downward, turning the strainer clockwise or counter clockwise is possible, within and not more than 45 degree from the right angle downward. Ensure there is ample space at the wye side of the strainer for screen removal.

After installation and before pressurization of the system, the installation should be inspected for adequate tightness to prevent leakage. Proper inspection at this time will minimize the possibility of leaks after pressurization of the piping system.

On completion of the installation, strainer location, size, make, type, date of installation, and other information deemed pertinent should be entered on permanent records.

Mounting Position of a Strainer

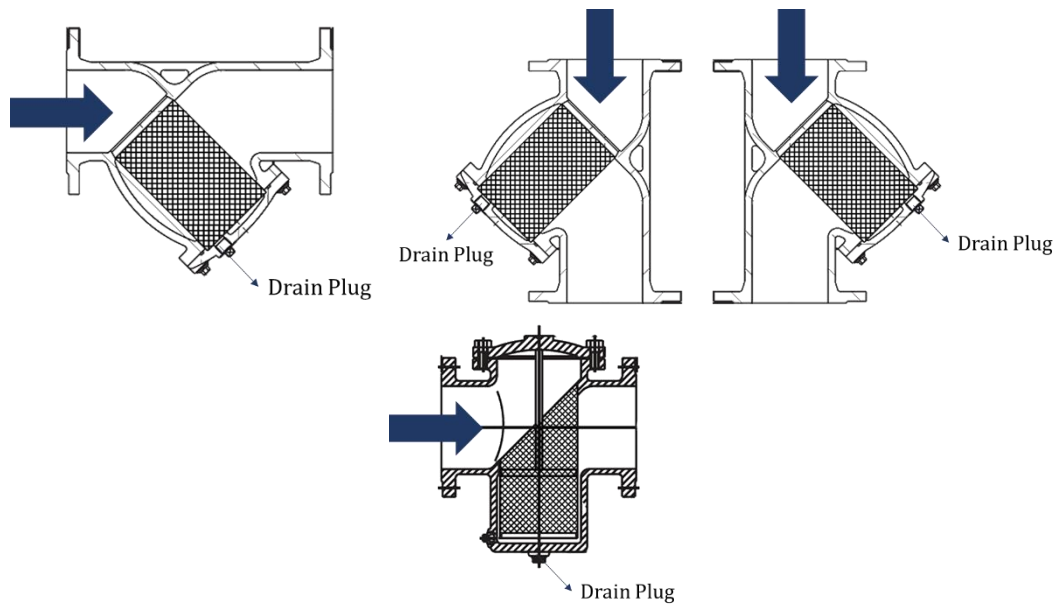


Figure 1: Mounting position of a strainer. The drain plug of the strainer should be at the lowest position.

Bolts must be tightening in a crosswise pattern (see figure 2). Installer should ensure that the flanges are well aligned and an even pressure on the gasket surface is applied.

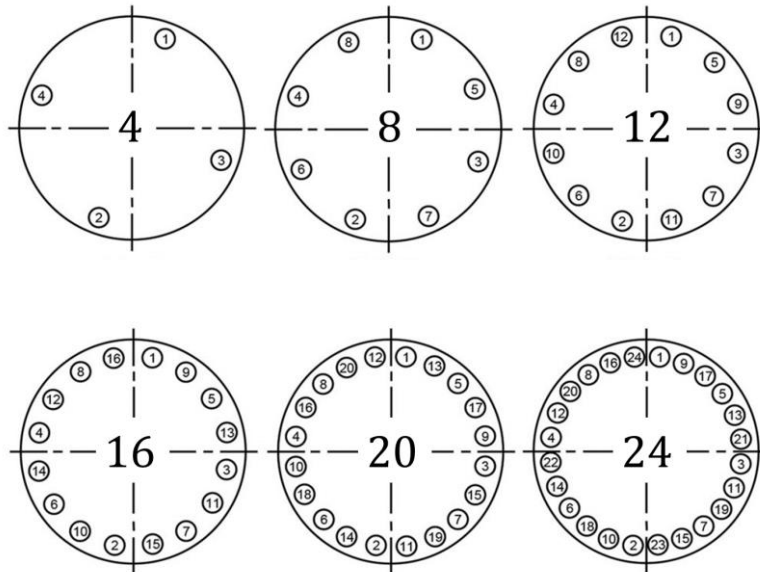


Figure 2: Crosswise pattern for tightening or loosening bolts.

6 OPERATION OF STRAINER

During normal use, the screen 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 clean or replace the screen. It is not advisable to let the differential pressure increase beyond 10 psi. For maximum efficiency, to determine when the screen needs to be replaced is to install pressure gauges on the inlet and outlet side of the Strainer. The maximum acceptable pressure drop across the strainer will indicate when the screen needs to be replaced. Screen size and construction determine the maximum pressure drop a strainer screen can withstand.

7 MAINTENANCE

If the strainer is installed according to our standard procedures, it is maintenance free.

The pressure differential across the strainer should be checked periodically to determine if the screen needs to be cleaned or replaced. If the pressure differential goes unchecked and the screen becomes completely clogged, the screen will break and require replacing.

Before removing the strainer's cover, ensure that the media that is flowing in the pipeline is known and any special handling precautions are understood. The pressure inside the vessel must be reduced to atmospheric via suction or venting. Failure to do so may result in serious bodily injury. Once the pressure is relieved, remove the cover so that the screen can be removed for cleaning. Avoid banging or hitting the screen to remove stubborn debris. It is recommended to use high pressure water or air stream to clean the screen for perforated screen. If the strainer is used for fuel, oil or other chemicals, solvent may be required.

For every 4-5 years, we recommend that you carry out a routine check of the strainer for leaks at the sealing surface or the gasket. All seals will in the course of time be influenced by air and sunshine, frequent and careful checks can reveal leaks.

8 WARNINGS

The working pressure, temperature, suitable media of strainers must be accord with the regulation of the illumination, or that maybe dangerous.

Prior to any maintenance work that requires disassembly make sure that the pressurized line involved is isolated, depressurized and drained before starting any disassembly. Failure to do so may result in sudden pressure release and subsequent severe injury or death.

If the pressure exceed regulation, the strainer maybe leak and the body maybe explode of craze.

If the temperature is too high, the material maybe invalidation and the valve may be broken.

If the media does not accord with the regulation of the illumination, it may rot the body or break the gasket / O-ring, the body may corrode and craze, the media may be leaked.



WARRANTY STATEMENT

Fivalco's products are designed, engineered and manufactured within its specification of intended use, under the highest quality control possible. Commitment on quality and performance is always at the top of our agenda.

Fivalco warrants that for a period of thirty-six (36) months following delivery, the Fivalco products will perform in accordance with published specifications, and will be free from defects in material or workmanship provided that the products are stored and installed in accordance with recommendations in our catalogues.

Fivalco's obligation shall be to replace any product found to be defective in design, material or workmanship during the warranty period. Fivalco shall not be obligated to refund the purchase price and other liabilities on monetary compensation, nor shall it be obligated to pay for any labor or costs associated with the removal of the defective products or the reinstallation of those products. No warranty coverage will be provided for products that have been altered and / or used for a purpose other than that for which they were designed or installed contrary to Fivalco's guidelines.

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