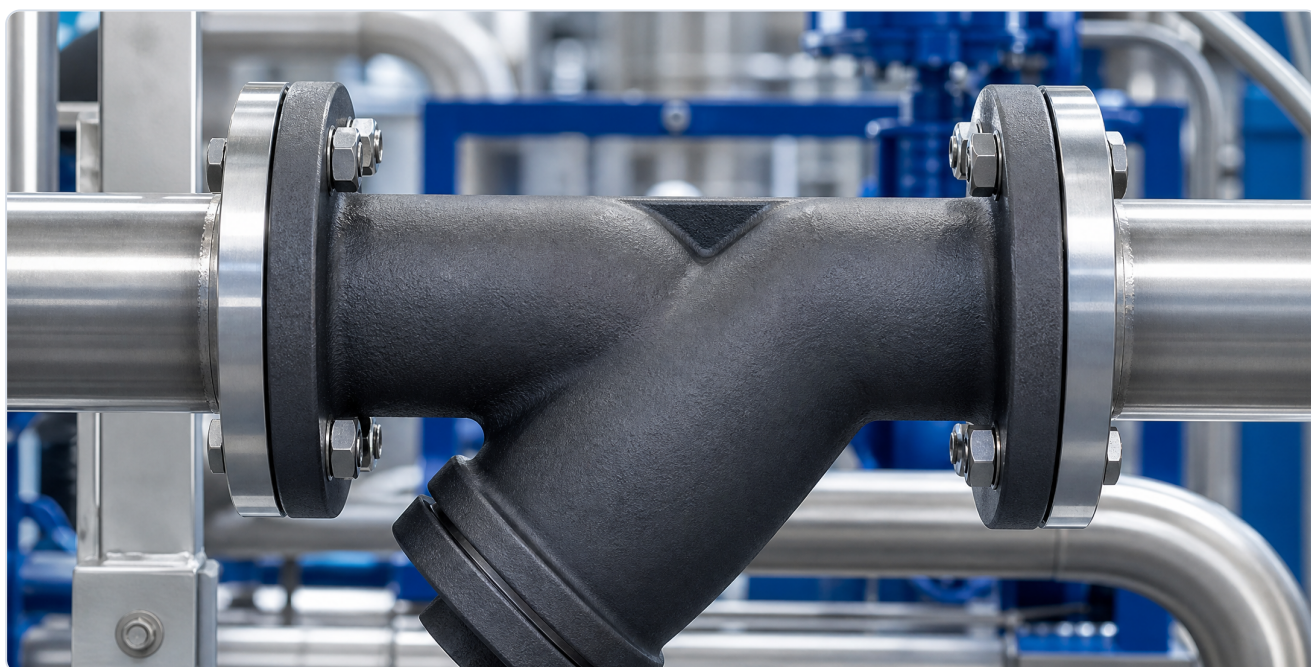


INSTALLATION, OPERATION & MAINTENANCE MANUAL

Y Strainers

Flanged & Threaded Y-Type Pipeline Strainers

Sizes DN 15 – DN 300 (½" – 12") | Class 125 / 150 / 300 | PN 16 / PN 40



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Prepared By	Globe United FZE — Engineering & Quality Department

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Revision History

Rev.	Date	Description of Change	Approved By
0	July 2026	Initial release	Engineering Manager

NOTE

This manual must be read in full and understood by all personnel responsible for the installation, operation, and maintenance of Globe United FZE Y strainers before any work is carried out. Retain this document for the service life of the equipment and ensure it remains available at the point of use.

1 Introduction & Scope

1.1 Purpose of this Manual

This Installation, Operation and Maintenance (IOM) manual provides comprehensive instructions for the safe receiving, storage, installation, commissioning, operation, monitoring, and maintenance of Y-type pipeline strainers supplied by **Globe United FZE**. It is intended for use by qualified piping engineers, installation contractors, commissioning teams, plant operators, and maintenance technicians. Adherence to the procedures described herein is essential to ensure reliable performance, to protect downstream equipment, and to maintain the validity of the product warranty.

1.2 Scope of Application

The instructions in this manual apply to the complete range of Globe United FZE Y strainers, including threaded (NPT/BSPT) units in sizes DN 15 to DN 50 (½" to 2") and flanged units in sizes DN 15 to DN 300 (½" to 12"), in cast iron, carbon steel (ASTM A216 WCB), stainless steel (ASTM A351 CF8M), and bronze body materials. The manual covers strainers used in liquid, gas, and steam services within the pressure and temperature limits stated on the product nameplate and in Section 4 of this document.

1.3 Related Documents and Standards

Globe United FZE Y strainers are designed, manufactured, and tested with reference to internationally recognized codes and standards. The table below lists the principal references applicable to this product range.

Standard	Application
ASME B16.34	Valves and pressure-containing components — pressure/temperature ratings
ASME B16.5	Pipe flanges and flanged fittings — flange dimensions and drilling
ASME B16.10	Face-to-face and end-to-end dimensions of valves and strainers
ASME B1.20.1 / ISO 7-1	Pipe threads for threaded end connections (NPT / BSPT)
EN 1092-1 / EN 1092-2	Flanges and their joints — PN-designated flanges
API 598	Valve inspection and testing (applied to strainer shell and seat testing)

1.4 Definitions of Safety Signal Words

Throughout this manual, the following signal words are used to identify hazards and important information. Personnel must understand these definitions before proceeding.

Signal Word	Meaning
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury, or in damage to the equipment or process.
NOTE	Indicates supplementary information important for correct installation, operation, or maintenance, but not related to personal hazard.

2 Safety Information

2.1 General Safety Requirements

Installation, operation, and maintenance of pipeline strainers involve work on pressurized systems that may contain hot, cold, toxic, flammable, or otherwise hazardous media. All work must be performed only by trained and qualified personnel who are familiar with the piping system, the process medium, and applicable site safety regulations. Local statutory requirements, plant permit-to-work systems, and lock-out/tag-out (LOTO) procedures take precedence over, and must be applied in conjunction with, the instructions in this manual.

WARNING — PRESSURIZED SYSTEM

Never loosen the cover, cap, drain plug, or any bolted joint while the strainer is under pressure. The strainer must be fully isolated, depressurized to atmospheric pressure, drained, and (where applicable) cooled before any joint is opened. Failure to observe this requirement can result in the sudden release of pressurized fluid, causing death or serious injury.

WARNING — KNOW YOUR PROCESS MEDIUM

Before performing any work, identify the process medium and review the applicable Safety Data Sheet (SDS). Where the medium is hazardous, toxic, corrosive, or flammable, drain and vent it to a safe, controlled location in accordance with site environmental and safety procedures. Wear the personal protective equipment (PPE) prescribed for the medium concerned.

CAUTION — HOT SURFACES

In steam, condensate, and hot fluid services, the strainer body and adjacent piping can reach temperatures well above 49 °C (120 °F) and cause severe burns. Allow the installation to cool before working on it, or use appropriate thermal PPE where work on hot equipment is unavoidable.

2.2 Personnel Qualification

Only personnel who have read and understood this manual, who are trained in the handling of pressurized piping components, and who are authorized by the plant operator may install, commission, operate, or maintain the strainer. Work on strainers in hazardous-area classified locations must additionally comply with the relevant area classification requirements.

2.3 Mechanical Handling

Large strainers are heavy, and their weight distribution is asymmetric due to the inclined screen chamber. Use certified lifting equipment of adequate capacity for strainers that cannot be safely handled manually, and never lift the unit by the drain plug, nameplate, or screen cover. Keep hands and fingers clear of flange faces during alignment and installation.

2.4 Limits of Use

The strainer must be used only within the pressure and temperature limits stamped on the body or nameplate, and only with media chemically compatible with the body, screen, and gasket materials. The strainer is a pressure-retaining

component and must not be modified, welded upon, or repaired by methods not approved in writing by Globe United FZE. Use of the strainer outside its stated limits voids the warranty and may create a dangerous condition.

NOTE

The strainer screen is not rated for the full body pressure differential. A completely blocked screen can be exposed to full line differential pressure and may collapse. Observe the differential-pressure limits and cleaning intervals defined in Sections 9 and 10.

3 Product Description & Principle of Operation

3.1 Function

A Y strainer is a mechanical device installed in a pipeline to remove insoluble solid particles — such as pipe scale, weld slag, rust, sand, and other debris — from a flowing liquid, gas, or steam medium by means of a perforated or wire-mesh screen. Its primary purpose is the protection of sensitive downstream equipment, including pumps, control valves, steam traps, heat exchangers, flow meters, spray nozzles, and instrumentation, from damage, erosion, and blockage caused by entrained solids. Depending on screen selection, Globe United FZE Y strainers retain particles from approximately 25 mm down to 50 microns (0.05 mm).

3.2 Principle of Operation

The strainer body is shaped in the form of the letter “Y”, with the screen chamber inclined at an angle to the main flow axis. The process medium enters the inlet connection and is directed into the open end of the cylindrical screen. Clean fluid passes radially through the screen perforations and continues to the outlet connection, while solid particles larger than the screen openings are retained inside the screen and accumulate in the lowest part of the screen pocket. Retained debris is periodically removed either by opening the blow-off connection under line pressure (blow-down) or by isolating the strainer and withdrawing the screen for manual cleaning.

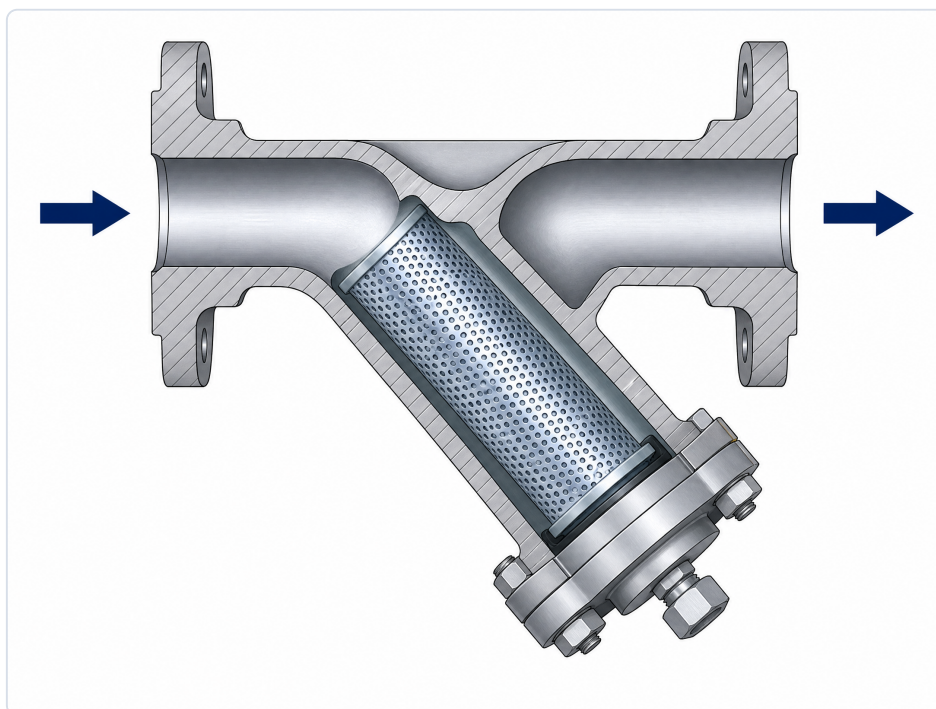


Figure 3-1 — Sectional view of a flanged Y strainer showing flow path through the screen. Flow enters at the left flange, passes through the perforated screen in the inclined pocket, and exits at the right flange. The bolted cover with gasket and blow-off plug closes the screen chamber.

3.3 Construction and Main Components

The principal components of the strainer are listed in the table below. Refer to Figure 3-1 for the general arrangement. Component materials for a specific unit are stated on the order acknowledgement and the product nameplate.

Item	Component	Description / Typical Materials
1	Body	Pressure-retaining casting with inlet, outlet, and inclined screen chamber. Cast iron (ASTM A126 B), carbon steel (ASTM A216 WCB), stainless steel (ASTM A351 CF8M), or bronze (ASTM B62).
2	Cover / Cap	Bolted cover (flanged designs) or threaded cap (smaller sizes) closing the screen chamber; same material family as body.
3	Screen	Cylindrical perforated sheet or wire-mesh element, stainless steel AISI 304 or AISI 316. Perforations from 0.5 mm to 3.0 mm; mesh linings from 20 to 300 mesh available.
4	Cover Gasket	Graphite, PTFE, or spiral-wound gasket sealing the cover-to-body joint, selected for service compatibility.
5	Cover Bolting	High-tensile studs and nuts (ASTM A193 B7 / A194 2H) or equivalent for bolted covers.
6	Blow-off / Drain Plug	Threaded plug (NPT) fitted to the cover, removable for drainage or for connection of a blow-down valve.
7	Nameplate	Stainless steel plate carrying model, size, rating, materials, and traceability information.

3.4 Screen Selection

Correct screen selection is critical to strainer performance. The screen opening should be marginally smaller than the smallest particle that must be prevented from reaching downstream equipment. An opening that is too large allows harmful debris to pass; an opening that is unnecessarily small increases pressure drop and cleaning frequency without functional benefit. As general guidance, perforated screens (0.8 mm to 3.0 mm openings) suit water, steam, and general industrial service, while mesh-lined screens (100 micron to 500 micron) suit fuel oils, lubricating systems, and fine-protection duties. Contact Globe United FZE for application-specific screen sizing assistance.

4 Technical Specifications

4.1 General Specifications

The table below provides a general overview of the Globe United FZE Y strainer product range. These values are indicative of the standard range only. The specifications applicable to each individual order — including materials, end connections, dimensions, screen construction, and design conditions — are defined in the **approved project datasheet** and the **approved General Arrangement Drawing (GAD)** issued for that order. In all cases, the approved datasheet and GAD take precedence over the general information given in this manual.

Parameter	Specification
Type	Y-pattern pipeline strainer, self-cleaning capable via blow-off connection
Size range — threaded	DN 15 – DN 50 (½" – 2"), NPT to ASME B1.20.1 or BSPT to ISO 7-1
Size range — flanged	DN 15 – DN 300 (½" – 12"), ASME B16.5 Class 125/150/300 or EN 1092 PN 16/PN 40
Body materials	Cast iron, carbon steel WCB, stainless steel CF8M, bronze
Screen materials	Stainless steel AISI 304 (standard), AISI 316 (optional), Monel on request
Screen open-area ratio	Minimum 3:1 (open screen area to pipe cross-sectional area) for standard screens
Testing	Hydrostatic shell test to 1.5 × rated CWP with reference to API 598
Marking	Body cast marking and stainless steel nameplate: size, class, material, heat code
Governing documents	Approved project datasheet and approved General Arrangement Drawing (GAD) for the specific order

NOTE

Always refer to the **approved datasheet** and **approved GAD** supplied with the order for the exact specifications of each unit. Where any discrepancy exists between this manual and the approved order documents, the approved datasheet and GAD govern.

4.2 Pressure / Temperature Ratings

The maximum allowable working pressure of the strainer decreases as the operating temperature increases. The table below summarizes **typical, indicative ratings** for standard body materials and is provided for general guidance only. Pressure/temperature ratings cannot be generalized for all cases: the actual ratings applicable to each unit depend on the specific body material, pressure class, end-connection standard, gasket selection, and service conditions defined at the time of order. The client must therefore refer to the **approved datasheet** and the **approved General Arrangement Drawing (GAD)** issued for the specific order, together with the values stamped on the unit nameplate, which always govern over the indicative values below.

Body Material / Class	Max. Pressure at 38 °C (100 °F)	Max. Temperature	Typical Services
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Cast iron, Class 125 flanged	13.8 bar (200 psi)	178 °C (353 °F)	Water, HVAC, low-pressure air
Bronze, threaded	27.6 bar (400 psi) WOG	208 °C (406 °F)	Potable water, seawater, air
Carbon steel WCB, Class 150	19.6 bar (285 psi)	425 °C (797 °F)	Steam, condensate, hydrocarbons
Carbon steel WCB, Class 300	51.1 bar (740 psi)	425 °C (797 °F)	High-pressure steam, process
Stainless steel CF8M, Class 150	19.0 bar (275 psi)	538 °C (1000 °F)	Chemicals, corrosive media

CAUTION

Ratings are for the pressure-retaining shell only. The screen differential-pressure limit (Section 9.2) applies independently and is significantly lower than the shell rating.

WARNING — REFER TO APPROVED ORDER DOCUMENTS

The ratings tabulated above are typical values for the standard product range and must not be applied to a specific installation without verification. Before installation or operation, confirm the design pressure and temperature limits of the supplied unit against the **approved datasheet**, the **approved GAD**, and the unit nameplate. Never operate the strainer outside the limits stated in the approved order documents. Contact Globe United FZE if these documents are not available or if any discrepancy is found.

4.3 Pre-Selection and Application Checks

Before installation, verify that the strainer as supplied is appropriate for the intended duty. The following factors must have been considered at the selection stage and should be re-confirmed on receipt: chemical compatibility of body, screen, and gasket materials with the medium; design pressure and temperature versus actual operating conditions, including transients; type of medium (liquid, gas, steam) and its viscosity; anticipated debris type, particle size, and dirt loading; required flow rate and acceptable clean pressure drop; and the physical space available for installation and for screen removal. If actual service conditions differ from those stated on the order, contact Globe United FZE before placing the unit in service.

5 Receiving, Handling & Storage

5.1 Receiving Inspection

On receipt of the shipment, inspect all packages against the delivery documentation and check each strainer for transit damage. Verify that the size, pressure class, body material, end-connection type, and screen specification stated on the nameplate correspond to the purchase order and to the intended service. Confirm that end protectors are in place, that flange faces and threads are undamaged, and that the drain plug is fitted. Report any shortage or damage to the carrier and to Globe United FZE within five working days of receipt.

5.2 Handling

Small strainers may be handled manually using good manual-handling practice. Strainers of DN 100 (4") and above should be lifted with slings of adequate rating passed around the body; never lift the unit by the cover, drain plug, or nameplate, and never insert lifting hooks into the flow bore, as this can damage machined surfaces and the screen seat. Protect flange gasket faces and threads from impact at all times.

5.3 Storage

If the strainer is not installed immediately, store it indoors in a clean, dry environment at a reasonably constant temperature, ideally in its original packaging with end protectors fitted. Do not store the unit directly on the ground or in locations exposed to rain, condensation, windblown sand, or corrosive atmospheres. For storage periods exceeding six months, place desiccant inside the package, inspect the unit periodically for corrosion, and rotate stainless steel screens away from contact with carbon steel surfaces to prevent contamination. Before installation after prolonged storage, remove the screen, inspect body interior and screen for corrosion or foreign matter, and clean as required.

Storage Condition	Requirement
Location	Indoors, off the ground, protected from weather and mechanical damage
Temperature	Stable, between 5 °C and 40 °C; avoid rapid cycling and condensation
Humidity	Relative humidity below 70 %; use desiccant for long-term storage
Protection	End covers fitted; flange faces and threads greased or protected
Long-term (> 6 months)	Periodic inspection every 3 months; re-preserve as necessary

6 Pre-Installation Requirements

6.1 System Design Checks

The strainer should be located upstream of, and as close as practicable to, the equipment it protects. When protecting a pump, the strainer must be installed on the **suction side** of the pump. If a strainer must exceptionally be installed on the discharge side, a safety relief device is required between the pump and the strainer to protect the pump and piping against overpressure in the event of screen blockage. Confirm that the piping design provides adequate support on both sides of the strainer, that the strainer is not used to bridge misaligned piping, and that thermal expansion of the line has been accommodated so that no excessive bending moments are transmitted to the strainer body.

6.2 Clearance for Maintenance

Provide sufficient clear space below and beside the screen chamber to allow removal of the cover and withdrawal of the screen without dismantling adjacent piping. As a minimum, allow a clearance equal to 1.5 times the overall screen length measured along the axis of the inclined chamber, plus working space for tools. Refer to the certified general-arrangement drawing for the specific dimension of each size.

6.3 Recommended Accessories

For effective condition monitoring and convenient maintenance, Globe United FZE recommends that the installation include the following provisions. Pressure gauges or a differential-pressure transmitter connected upstream and downstream of the strainer allow the state of screen fouling to be observed directly and cleaning to be scheduled on condition rather than on fixed intervals. A blow-down valve (ball or gate pattern) fitted to the blow-off connection permits rapid flushing of accumulated debris without removing the screen. Isolation valves upstream and downstream of the strainer permit safe maintenance without draining extended sections of the system.

6.4 Pipeline Cleanliness

Before installing the strainer, flush the upstream pipework to remove loose construction debris such as weld spatter, rod ends, scale, and sand. During the initial start-up of a new system, debris loading is typically many times higher than in normal operation; anticipate frequent screen inspection and cleaning during this period, or install a coarse commissioning screen where supplied.

NOTE

Remove the plastic end protectors and verify that the screen is correctly seated in its guides before the strainer is offered up to the pipeline. Do not remove protective covers until immediately before installation.

7 Installation

7.1 Orientation and Flow Direction

The strainer must be installed so that the flow arrow cast or marked on the body points in the direction of process flow. Reverse installation renders the screen ineffective and may cause debris to bypass the element or the screen to dislodge. In **horizontal pipelines**, the screen pocket (the inclined leg of the “Y”) must point vertically downward so that captured solids fall away from the flow stream and collect at the blow-off end; in horizontal steam or gas lines, the pocket may alternatively be oriented in the horizontal plane to prevent condensate accumulation, provided drainage is otherwise arranged. In **vertical pipelines**, the strainer may be installed only where the flow direction is downward, with the pocket inclined downward in the direction of flow. Do not install a standard Y strainer in a vertical line with upward flow, as retained debris will fall back out of the screen when flow stops.

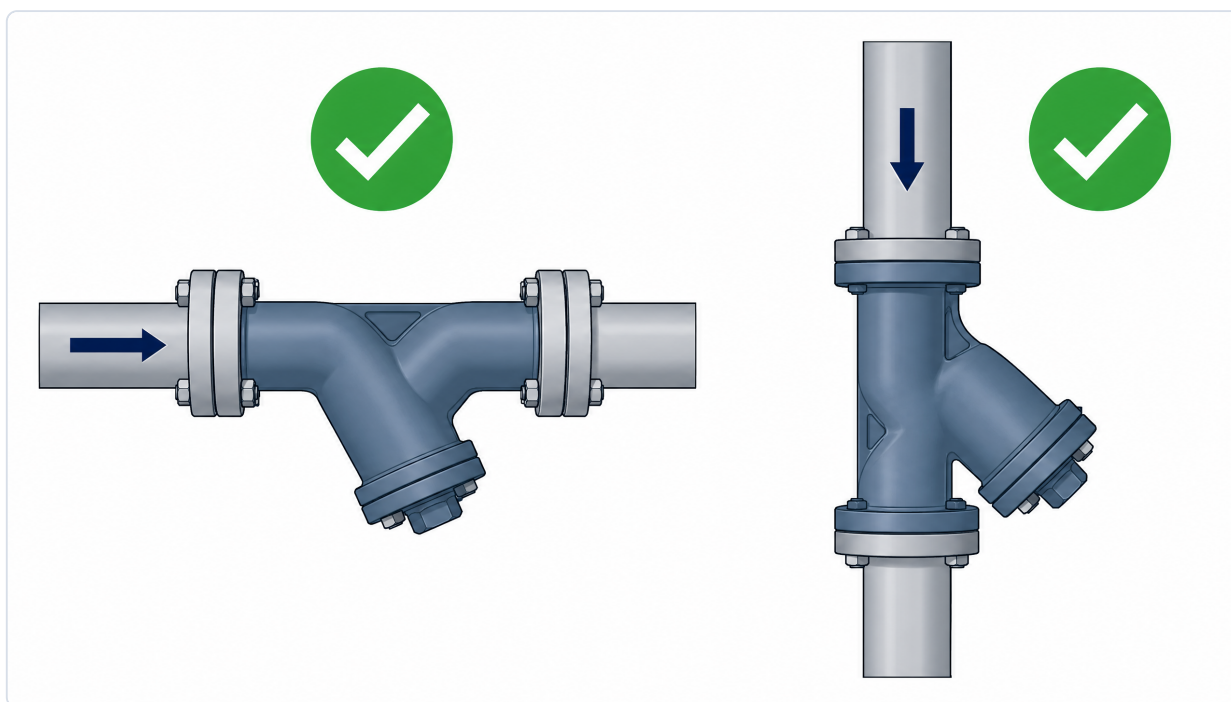


Figure 7-1 — Correct installation orientations. Left: horizontal pipeline with the screen pocket pointing straight down. Right: vertical pipeline with downward flow. In both cases the flow arrow on the body must match the actual flow direction.

7.2 Installation of Flanged Strainers

- 1 Confirm that the mating pipe flanges are of the same type, size, pressure rating, and facing as the strainer flanges (for example, raised face to raised face). Verify flange faces are clean, undamaged, and parallel, with correct bolt-hole alignment.
- 2 Spread the pipe flanges sufficiently to insert the strainer with a gap of approximately 6 mm ($\frac{1}{4}$ ") per joint for the gaskets, without forcing or springing the pipework. The pipeline must be supported independently on both sides of the strainer.
- 3 Position the strainer with the flow arrow in the direction of flow and the screen pocket oriented as required by Section 7.1. Insert new gaskets of a type and material suitable for the service; do not reuse old gaskets.
- 4 Insert bolts or studs of the correct size and grade, lubricate the threads, and make all fasteners finger-tight while checking gasket centration.

- 5 Tighten the bolting in a diametrically opposite (criss-cross) sequence, in at least three progressive passes, to the torque recommended by the gasket manufacturer for the flange size, class, and gasket type. Uneven or excessive tightening can crack cast flanges.
- 6 Where fitted, install pressure gauges or DP tapings upstream and downstream, and connect the blow-down valve and its discharge routing to a safe location.

7.3 Installation of Threaded Strainers

- 1 Verify that the pipe threads are of the same form (NPT or BSPT) as the strainer connections, and that they are clean, full-form, and free of burrs.
- 2 Apply a suitable pipe-thread sealant or PTFE tape to the **male** threads only, keeping the first two threads bare to prevent sealant entering the pipeline.
- 3 Thread the strainer onto the pipe and tighten using a wrench applied to the hexagonal or flat sections of the body adjacent to the joint being made — never across the body or on the screen cap. Tighten firmly but do not overtighten, as excessive torque can crack the body or distort the threads.
- 4 Orient the screen pocket downward (horizontal lines) before final tightening, taking care not to loosen the joint when adjusting orientation.

7.4 Post-Installation Checks

Before the line is pressurized, confirm that: the flow arrow corresponds to actual flow direction; all flange bolting is tightened to the specified torque; the drain plug or blow-down valve is fitted and closed; adequate clearance exists for screen removal; the pipeline is properly supported and no piping loads are imposed on the strainer; and any insulation applied leaves the cover joint and blow-off connection accessible for inspection.

WARNING

Do not use the strainer to pull misaligned piping into position. Piping loads transmitted through the strainer body can crack the casting or distort the cover joint, resulting in leakage or sudden failure under pressure.

8 Commissioning & Start-Up

8.1 Pre-Start Checks

Prior to initial start-up, verify that the installation checks of Section 7.4 have been completed, that the screen is installed and correctly seated (the strainer must never be operated without its screen), that the cover gasket is in good condition and the cover bolting evenly tightened, and that the blow-down valve, where fitted, is closed. Confirm that all personnel in the vicinity are aware that the line is about to be pressurized.

8.2 Start-Up Procedure

- 1 Slightly open the vent or blow-down valve to allow air to escape from the strainer body during filling (liquid systems).
- 2 Fully open the downstream (outlet) isolation valve.
- 3 Slowly open the upstream (inlet) isolation valve to approximately 25 % of travel and allow the system to fill and pressurize gradually. Gradual pressurization prevents hydraulic shock (water hammer), which can damage the screen and other line components.
- 4 When a steady stream of liquid free of air discharges from the vent/blow-down valve, close it.
- 5 Continue opening the inlet valve gradually to the position required for normal service flow.
- 6 Inspect the cover joint, end connections, and drain plug for leakage at operating pressure. Retighten only after isolating and depressurizing the strainer if leakage is observed at the cover.
- 7 Record the clean differential pressure across the strainer at normal flow; this value is the baseline for condition monitoring (Section 9).

CAUTION — STEAM SERVICE

In steam systems, admit steam slowly to allow gradual warm-up and drainage of condensate. Rapid admission of steam onto a cold strainer can cause thermal shock, condensation-induced water hammer, and damage to the screen and body.

8.3 Initial Operation Period

New or newly modified piping systems release substantial quantities of construction debris during their first hours and days of operation. During this period, monitor the differential pressure frequently and clean the screen as often as necessary; several cleanings in the first week of service are not unusual. Where a coarse commissioning screen was fitted for start-up, replace it with the specified service screen once the system has been flushed clean.

9 Operation & Monitoring

9.1 Normal Operation

In normal service the strainer requires no operator intervention: fluid passes continuously through the screen while debris accumulates in the screen pocket. The strainer must remain within its nameplate pressure and temperature limits at all times, including during start-up, shutdown, and process upsets. Avoid rapid cycling of upstream valves, which subjects the screen to repeated pressure surges.

9.2 Differential-Pressure Monitoring

As debris accumulates, the pressure drop across the strainer rises. The differential pressure (ΔP) between inlet and outlet gauges is therefore the primary indicator of screen condition. The clean baseline ΔP recorded at commissioning (Section 8.2) should be used as the reference. The screen must be cleaned when the differential pressure reaches **0.35–0.7 bar (5–10 psi)** above the clean baseline. Under no circumstances should the differential pressure across the screen be allowed to exceed **0.7 bar (10 psi)**, as beyond this level the screen may deform or collapse, discharging the accumulated debris into the downstream equipment the strainer is intended to protect.

Differential Pressure (above clean baseline)	Condition and Required Action
0 – 0.2 bar (0 – 3 psi)	Normal operation; routine observation only.
0.2 – 0.35 bar (3 – 5 psi)	Screen fouling in progress; plan blow-down or cleaning at next opportunity.
0.35 – 0.7 bar (5 – 10 psi)	Cleaning required; perform blow-down (Section 10.2) or screen removal and cleaning (Section 10.3) without delay.
> 0.7 bar (> 10 psi)	Screen at risk of collapse; take strainer out of service immediately and clean or replace the screen.

CAUTION

Strainer screens are not designed to withstand the full body-rated pressure as a differential load. A fully blocked screen sees the entire line differential pressure and can fail suddenly. Never defer cleaning once the ΔP limit is reached.

9.3 Routine Inspection

During routine plant patrols, visually check the strainer for leakage at the cover joint, drain plug, and end connections; listen for unusual noise indicating cavitation or flashing across a fouled screen; and record the differential pressure. Where no gauges are fitted, establish a fixed-interval cleaning schedule based on operating experience, beginning with weekly inspection in the first month of service and adjusting the interval according to the amount of debris found.

10 Maintenance

10.1 General

Maintenance of the Y strainer consists principally of periodic removal of accumulated debris, inspection of the screen and gasket, and replacement of worn components. Two cleaning methods are available: blow-down under line pressure through the blow-off connection, and manual cleaning following screen removal. All maintenance beyond blow-down requires the strainer to be isolated and depressurized.

WARNING — ISOLATION AND DEPRESSURIZATION

Before removing the cover, cap, or drain plug: close the upstream and downstream isolation valves and verify bubble-tight shut-off; relieve the trapped pressure completely to atmosphere through the blow-down or vent valve; drain the strainer body; and allow hot installations to cool below 49 °C (120 °F). Apply the site lock-out/tag-out procedure to all isolation valves. Serious injury or death can result from opening a pressurized strainer.

10.2 Blow-Down Cleaning (Under Line Pressure)

Where a blow-down valve is fitted to the blow-off connection and the medium may be safely discharged, the screen can be flushed without interrupting the process. Ensure the blow-down discharge is piped to a safe collection point compatible with the medium.

- 1 Confirm the blow-down discharge route is clear, safe, and appropriate for the medium (temperature, toxicity, flammability).
- 2 Open the blow-down valve slowly. Line pressure will flush accumulated debris out of the screen pocket through the blow-off connection.
- 3 Keep the valve open until the discharge runs clear, then close it.
- 4 Verify that the differential pressure has returned to the clean baseline value. If the ΔP remains elevated, the screen is clogged with adherent material and must be removed and cleaned manually in accordance with Section 10.3.

10.3 Screen Removal, Cleaning & Reassembly

- 1 Isolate, depressurize, drain, and cool the strainer as required by the Warning in Section 10.1.
- 2 Remove the cover bolting (bolted cover) or unscrew the cap (threaded cap) and withdraw the cover, taking care to support its weight on larger sizes.
- 3 Withdraw the screen from the screen chamber. If the screen is stuck, free it by gentle rocking; do not lever against the sealing faces.
- 4 Clean the screen promptly, before retained debris dries and hardens. Perforated screens may be cleaned with high-pressure water or compressed air directed from the clean side; mesh-lined screens must be cleaned gently to avoid damage to the fine mesh. For oil, fuel, or chemical services, use a compatible solvent. Never strike or bang the screen against a hard surface to dislodge debris.
- 5 Remove residual sludge and debris from the strainer body cavity and the screen seat.

- 6 Inspect the screen for holes, tears, distortion, corrosion, and erosion. A damaged screen no longer protects downstream equipment and must be replaced with a genuine Globe United FZE spare of identical specification.
- 7 Inspect the cover gasket and replace it if compressed, hardened, cracked, or otherwise damaged. Replacement of the gasket at every cover removal is recommended for critical services.
- 8 Reinstall the screen, ensuring that it seats squarely in the body locating registers at both ends and cannot be bypassed.
- 9 Refit the cover with its gasket and tighten the bolting evenly in a criss-cross pattern to the specified torque, or tighten the threaded cap firmly. Refit and tighten the drain plug where removed.
- 10 Close the blow-down valve, then return the strainer to service following the start-up procedure of Section 8.2, and check the cover joint for leakage at operating pressure.

10.4 Recommended Maintenance Schedule

Activity	Frequency	Reference
Record differential pressure / visual leak check	Weekly, or per plant patrol schedule	Section 9.3
Blow-down of screen pocket	On ΔP alarm, or monthly minimum	Section 10.2
Screen removal, inspection and manual cleaning	On ΔP alarm not cleared by blow-down; at least annually	Section 10.3
Cover gasket replacement	At every cover removal (recommended)	Section 10.3
Screen replacement	When damage or corrosion is found	Section 10.3
Bolting inspection / re-torque check	Annually, and after any thermal excursion	Section 7.2

NOTE

Cleaning frequency is highly application-dependent. Establish the optimum interval from operating experience during the first months of service, and review it whenever upstream conditions change (for example after pipework modifications or a change of fluid source).

11 Troubleshooting

The table below lists the most common operating problems, their probable causes, and the recommended corrective actions. If a problem persists after the actions listed have been taken, remove the strainer from service and contact Globe United FZE technical support with the nameplate details and a description of the operating conditions.

Symptom	Probable Cause	Corrective Action
Excessive pressure drop / reduced flow	Screen clogged with debris	Blow down (Section 10.2) or remove and clean the screen (Section 10.3).
	Screen mesh too fine for the actual dirt loading	Review screen selection with Globe United FZE; fit a coarser element if downstream protection permits.
	Strainer undersized for flow / viscosity	Verify sizing against actual flow rate and viscosity; upsize if necessary.
Debris found downstream of strainer	Screen damaged, collapsed, or corroded	Replace the screen; investigate the cause (excess ΔP , corrosion, incompatible material).

	Screen not seated correctly / bypassing	Reinstall the screen squarely in its registers; verify correct screen length and diameter for the body.
Leakage at cover joint	Gasket damaged, aged, or incorrectly seated	Isolate and depressurize; replace the gasket; check sealing faces for damage.
	Cover bolting unevenly or insufficiently tightened	Isolate and depressurize; retighten evenly in criss-cross sequence to the specified torque.
Leakage at drain plug	Plug loose or sealant failed	Isolate and depressurize; remove, reseal, and refit the plug.
Leakage at body / casting	Casting damage from piping loads, freezing, or water hammer	Take strainer out of service immediately; do not repair by welding; replace the unit and eliminate the root cause.

Water hammer / banging noise in steam line	Condensate accumulation in screen pocket oriented downward in steam service	Re-orient the pocket to the horizontal plane for steam mains, or provide a condensate drain from the blow-off connection.
Screen requires cleaning too frequently	High upstream dirt load; system never fully flushed	Flush the upstream system; consider a coarser primary screen upstream, an automatic blow-down arrangement, or a larger strainer with greater dirt-holding capacity.

12 Spare Parts & Ordering Information

12.1 Recommended Spares

To minimize downtime, Globe United FZE recommends holding the following spares for each strainer size and type in service: one spare screen of the installed specification and one cover gasket per unit for normal duty, increasing to two screens and a set of gaskets for continuous-process or high dirt-load applications. Only genuine Globe United FZE spare parts should be used; parts of unverified origin may not match the required material, fit, or filtration rating and will void the warranty.

12.2 Information Required When Ordering

To ensure the correct parts are supplied, quote the following information from the product nameplate and your records with every spare-parts enquiry or order: the strainer model/figure number and size; the body material and pressure class; the screen specification (perforation or mesh size and material); the service medium and its working pressure and temperature; and the original Globe United FZE sales-order or serial number where available.

Spare Part	Typical Replacement Interval	Remarks
Screen element	On damage; typically 2–5 years	State perforation/mesh size and material when ordering.
Cover gasket	At every cover removal	State gasket material and service medium.
Drain / blow-off plug	On damage	State thread size and material.
Cover bolting	On corrosion or damage	Replace as complete sets only.

13 Warranty & Limitation of Liability

Globe United FZE warrants its Y strainers to be free from defects in materials and workmanship for a period of **eighteen (18) months from the date of shipment or twelve (12) months from the date of installation, whichever occurs first**, when the product is stored, installed, operated, and maintained in accordance with this manual. The warranty is limited to the repair or replacement, at Globe United FZE's option, of products found by Globe United FZE to be defective, and excludes consequential losses, removal and reinstallation costs, and normal wear items such as gaskets and screens subjected to service wear.

This warranty is void where the product has been operated outside its nameplate ratings; used with media incompatible with its materials of construction; modified, welded, or repaired without written authorization; fitted with non-genuine parts; or damaged by water hammer, freezing, piping loads, or inadequate maintenance. Claims must be notified in writing to Globe United FZE promptly upon discovery of the alleged defect, quoting the nameplate details and full particulars of the operating conditions. Nothing in this section affects statutory rights that cannot be excluded by law.

14 Contact Information

For technical support, application engineering assistance, spare parts, and all other enquiries relating to this product, please contact:

GLOBE UNITED FZE	
Address	SAIF Zone, Sharjah, United Arab Emirates
Telephone	+971 50 330 1384
Email	info@globeunitedae.com
Website	www.globeunitedae.com

When contacting Globe United FZE about a specific unit, please have the nameplate information (model, size, class, materials, serial number) and a description of the service conditions available. This will enable our engineers to respond quickly and accurately.

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