Instructions and Operations Manual for Inline, Side Entry, Side Outlet & Dual Strainers



Read and understand this manual prior to installing, operating or servicing this equipment.

The Right Connection®

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Safety Information

Do's and Don'ts

- Do read and understand these instructions before installing or using the strainer.
- Do use Dixon spare parts when replacing any components of the strainer.
- Do Not attempt to service the strainer while under pressure.
- Do Not place the strainer in an application where the service ratings are exceeded.
- Do Not attempt to modify the strainer assembly as it may compromise the integrity of the assembly and will void all warranties.

Safety Precautions When Installing Strainer

- Do relieve product line pressure before attempting to install strainer assembly.
- Do check the distance between the clamp ferrules to assure there is proper clearance for the strainer assembly.
- Do Not install a damaged filter or strainer.
- Do Not install strainer between damaged clamp ferrules.
- Do Not install strainer between tubing that is significantly out of alignment.

Safety Precautions When Strainer is in Operation

- Do monitor the strainer assembly for any signs of leaks.
- Do check all clamp assemblies often to ensure that they have not loosened from any excessive vibration.
- Do check the pressure on either side of the strainer to monitor for any possible blockages.
- Do Not attempt to loosen any clamp assemblies while the strainer is in operation.
- Do Not attempt to perform any type of service or adjustment to the strainer during operation.

Safety Precautions When Servicing the Strainer

- Do drain piping run as much as possible.
- Do vent line to relieve any pressure.
- Do secure necessary lifting equipment to strainer assembly if necessary.
- Do remove line clamps first before removing strainer body clamp.
- Do use caution and wear protective clothing if strainer has been used in applications using acids or other chemicals that may be harmful.

Care of Stainless Steel

The stainless steel components in Dixon Sanitary equipment are machined, welded and assembled by skilled craftsmen using manufacturing methods that preserve the corrosion-resistant quality of the stainless steel.

Retention of corrosion-resistant qualities under processing conditions requires regular attention to the precautions listed below.

1. Regularly check all electrical devices connected to the equipment for stray currents caused by improper grounding, damaged insulation or other defects. Corrosion: Pitting often occurs when stray currents come in contact with moist stainless steel.
2. Never leave rubber mats, fittings, wrenches, etc. in contact with stainless steel. Corrosion: Pitting or galvanic action. Objects retard complete drying, preventing air from reforming the protective oxide film. Galvanic corrosion occurs when two dissimilar metals touch when wet.
3. Immediately rinse equipment after use with warm water until the rinse water is clear. Clean the equipment (manual or CIP) as soon as possible after rinsing. Corrosion: discoloration, deposits, pitting. Product deposits often cause pitting beneath the particles.
4. Use only recommended cleaning compounds. Purchase chemicals from reputable and responsible chemical manufacturers familiar with stainless steel processing equipment, they continuously check the effects of their products on stainless steel.
5. Use cleaning chemicals exactly as specified by the manufacturer. Do not use excessive concentrations, temperatures or exposure times. Corrosion: Pitting, discoloration, stress cracks. Permanent damage often occurs from excessive chemical concentrations, temperatures or exposure times.
6. For manual cleaning, use only soft non-metallic brushes, sponges or pads. Brush with the grain on polished surfaces, avoid scratching the surface. Corrosion: Pitting, scratches. Metal brushes or sponges will scratch the surface and promote corrosion over a period of time. Metal particles allowed to remain on a stainless steel surface will cause pitting.
7. Use chemical bactericides exactly as prescribed by the chemical manufacturer in concurrence with local health authority. Use the lowest permissible concentration, temperature and exposure time possible. Flush immediately after bacterial treatment. In no case should the solution be in contact with stainless steel more then 20 minutes. Corrosion: Protective film destroyed. Chlorine and other halogen bactericides can destroy the protective film. A few degrees increase in temperature greatly increases chemical activity and accelerates corrosion.
8. Regularly inspect the joints in pipelines. Be sure all connections are tight fitting without binding. Corrosion: Crevice corrosion. Small crevices caused by improperly seated gaskets will promote crevice corrosion. Stainless steel under stress will develop stress cracking especially in the presence of bactericides containing chlorine.
9. Regularly inspect equipment for surface corrosion (i.e. pitting deposits, stress cracks, etc.). If deposit or color corrosion is detected, remove it immediately using mild scouring powder and detergents. Rinse thoroughly and allow to air dry. Review production and cleaning procedures to determine the cause. Note: If corrosion is not removed, the protective film cannot be restored and corrosion will continue at an accelerated rate.

Technical Specifications

Specifications:

Model	Maximum Pressure (PSI)	Maximum Differential Pressure (PSI)	Maximum Temperature
BSCCQ1	290 PSI at 70°F 175 PSI at 210°F	Single Strainer - 50 PSI Overscreen - 25 PSI Filter - 10 PSI	250°F
BSCCQ2			
BSCCQ3			
BSCCQ4			
BSCCS1			
BSCCS2			

Materials:

- Product wetted steel parts: AISI 316L Stainless Steel
- Product wetted elastomers: Buna (Standard)
- Optional wetted elastomers: FKM
- Non-Wetted components: CF8
- Finish: 32 Ra on product contact surfaces

Strainer Back Up Tubes:

- Full flow coarse strainer tubes
- 1/4" perforations standard
- 1/8” perforations available

Filters:

- Full flow filters
- Micron rating from 40 to 800 (others available upon request)
- Polyester, Cotton cheesecloth, and Nylon mesh filter material available

Mesh Over Screens:

- Full flow fine and medium over screens (not 3A compliant)
- Square mesh 20 to 100

Connections:

- Clamp (Standard)
- Bevel Seat, I-Line, and Weld ends available

Sizes:

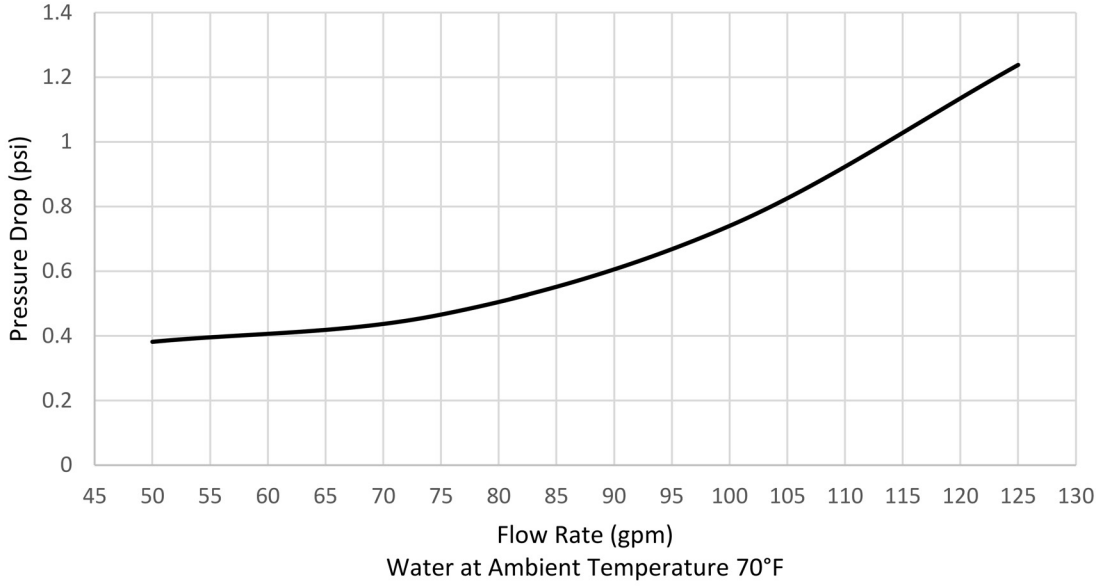
- 1" to 3"

Types:

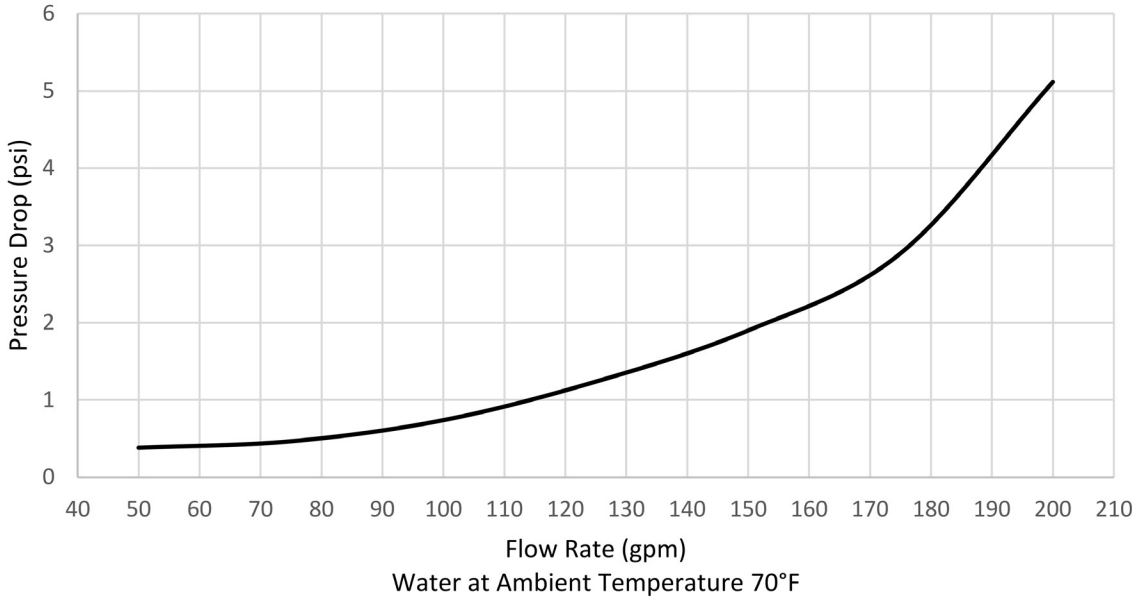
- Inline
  - Short
  - Long
- Side Entry
  - Long
- Side Outlet
  - Long

Technical Specifications

Pressure Drop Chart - Short Strainers



Pressure Drop Chart - Long Strainers



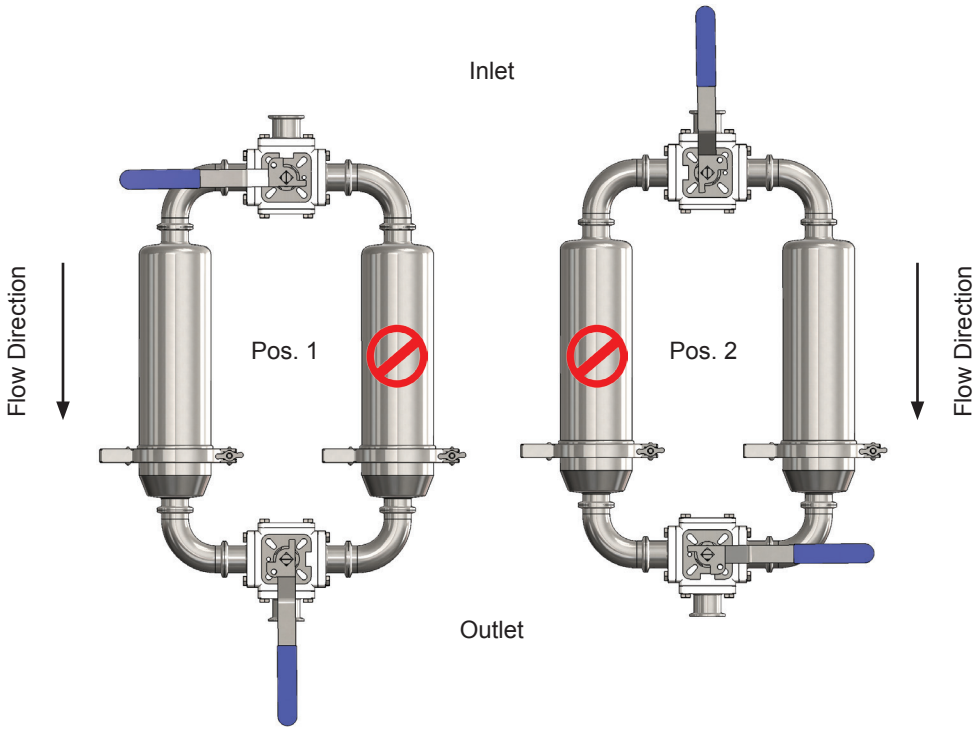
Installation & Start Up

Inline, Side Entry and Side Outlet

1. Be sure adequate line supports exist to prevent stress on fittings and strainer body.
2. Install supports approximately every ten feet on either side of the strainer assembly.
3. All Dixon strainer assemblies operate in any position. However, to maintain 3A certification, the unit must be installed in the vertical position.
4. Ensure that the strainer assembly is in the proper orientation so that the inlet and outlet are configured according to the markings on the strainer body.
5. Align the filter, strainer and gaskets such that they are centered with the clamp ferrule faces.
6. Clamp ends must be parallel in all planes and on center line. CAUTION: Failure to ensure line ends are centered and parallel in all planes, could result in leaking from the valve or strainer assembly.
7. Tighten all standard clamp assemblies to 25 in-lbs and high pressure bolted clamps to 20 ft-lbs.
8. Once strainer assembly is installed, cycle water through the unit to ensure there are no leaks from any of the connection points.

Dual Strainers

1. When installing a dual strainer assembly with ball or butterfly valves, install supports on both sides of the valves as close to the connections as possible.
2. Before starting product flow through the dual strainer unit, ensure that the valves are in the correct position. On manual ball valves, check the flow path machined in the valve stem to ensure that the valves are positioned so that product is only flowing through a single strainer at any one time. For actuated valves, check the indicator beacon located on top of the actuator.
3. For proper flow direction and orientation, please refer to the following diagram.



4. Install supports approximately every ten feet on either side of the strainer assembly.
5. All Dixon strainer assemblies operate in any position. However, to maintain 3A certification, the unit must be installed in the vertical position.
6. Ensure that the strainer assembly is in the proper orientation so that the inlet and outlet are configured according to the markings on the strainer body.
7. Align the filter, strainer and gaskets such that they are centered with the clamp ferrule faces.
8. Clamp ends must be parallel in all planes and on center line. CAUTION: Failure to ensure line ends are centered and parallel in all planes, could result in leaking from the valve or strainer assembly.
9. Tighten all standard clamp assemblies to 25 in-lbs and high pressure bolted clamps to 20 ft-lbs.
10. Once strainer assembly is installed, cycle water through the unit to ensure there are no leaks from any of the connection points.

General Maintenance

1. WARNING: Prior to loosening the ferrule clamps, be sure to drain piping as much as possible to prevent injury.

2. Vent line to relieve any pressure that could potentially be built up in the strainer housing.

3. Loosen clamps to decompress valve gasket seals.

4. Secure any necessary lifting equipment required to remove the strainer from the line.

5. Completely remove clamps from the strainer ends and remove the unit from between the clamp ferrules.

6. Check all wetted components for any sign of damage that could have resulted from large particulate or water hammer.

7. For dual strainer units, inspect valves for any signs of damage and replace wetted components as necessary. Refer to Dixon ball and butterfly manuals for instructions.

8. Remove and replace as necessary the filter bag or mesh over screen.

9. The strainer back up tube should not need to be replaced unless significant damage has occurred as a result of abnormally harsh media.

Changing Filter Media

1. When installing a filter sock or over screen, save the original packaging. This will aid in identifying your filter media type when reordering.
2. Relieve all pressure inside the system and make certain the filtration system is drained of all liquid.
3. Refer to the disassembly section of the manual for procedures on removing the back-up tube and filter bag or over screen assembly.
4. If you are using a filter bag (8), remove retaining rings (9) from either end of the strainer back-up tube (4). Check the retaining rings for any sign of wear or damage, and replace as necessary.
5. If you are using an over screen (7), slide the over screen off of the strainer back-up tube (4) and clean or replace as necessary.
6. Insert a new filter bag (8) or over screen (7) over the strainer back-up tube (4). If using a filter bag, insert the retainer rings (9) inside each end of the strainer back-up tube to hold the filter bag in place.
7. Refer to the Assembly section of the manual for reassembly of the strainer unit.

Inline

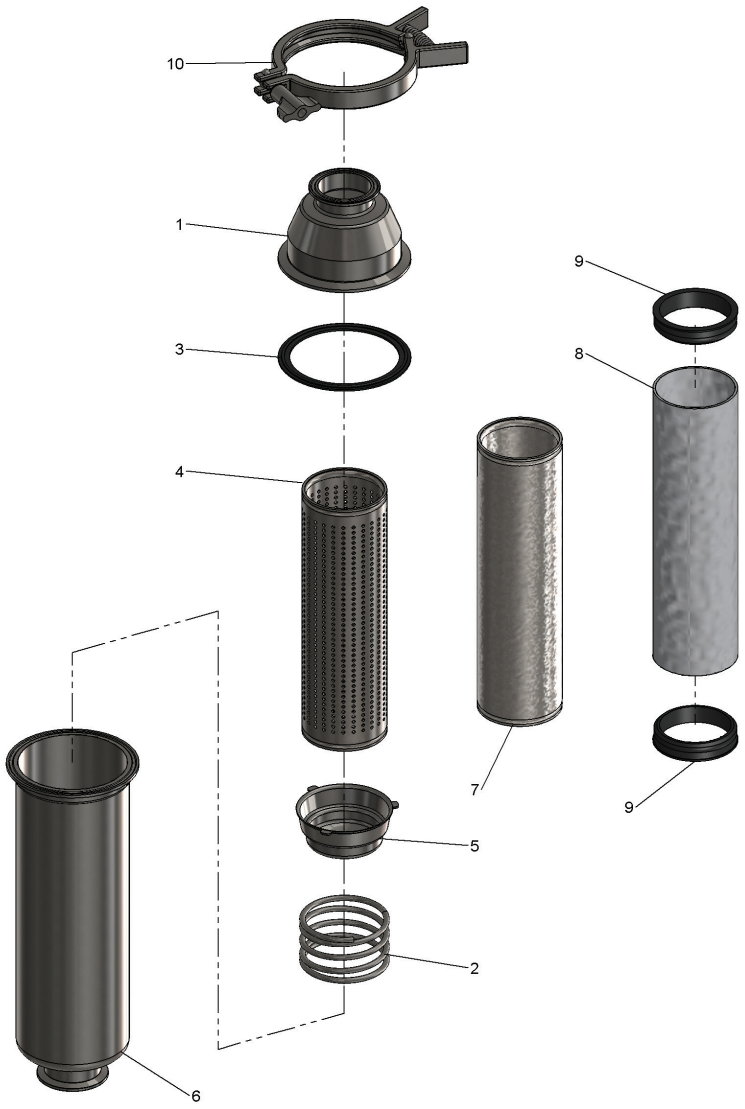
Disassembly

1. Remove the clamp (10) and lift off the outlet assembly (1). Note: Apply pressure to the outlet assembly when you remove the clamp, as the spring (2) will force the outlet assembly away from the body (6) when the clamp is removed.
2. Remove the gasket (3) and inspect it for damage or wear.
3. Remove the spring (2) and the distributor cap (5).
4. Remove the back-up tube (4) and the filter bag (8) or mesh over screen (7).
5. Change the mesh over screen (7) or filter bag (8) if necessary. Refer to Changing The Filter Media section of the manual for specific instructions.

Assembly

1. Ensure that the filter media is in place on the strainer back-up tube (4). Refer to the Changing The Filter Media section of the manual for specific instructions.
2. Place the gasket (3) on the outlet assembly (1).
3. Place the strainer back up tube (4) in the outlet assembly (1).
4. Press the distributor cap (5) onto the strainer back-up tube (4).
5. Press the spring (2) onto the outside diameter of the distributor cap.
6. Press the strainer inlet (6) over the entire assembly and compress it to the outlet assembly (1).
7. Attach and tighten the squeeze clamp (10) to 25 in-lbs.

Inline
Bill of Materials



Item #	Description	1" Part #	1½" Part #	2" Part #	2½" Part #	3" Part #	Material	Qty
1	Strainer End Cap (Short)	BS-01-R100	BS-01-R150	BS-01-R200	BS-01-R250	BS-01-R300	316L	1
	Strainer End Cap (Long)	--	BS-01-R151	BS-01-R201	--	BS-01-R301		1
2	Strainer Spring	BS-02-R100-200		BS-02-R250-300	BS-02-R250-300			1
3	Gasket	40MP-U400		40MPV-U400	40MPV-U400		Buna	1
4	Back-Up Tube ⅛" Perforations (Short)	BS-1418-R100200		BS-1418-R250300	BS-1418-R250300		316L	1
	Back-Up Tube ⅛" Perforations (Long)	BS-2418-R100200		BS-2418-R250300	BS-2418-R250300			1
	Back-Up Tube ¼" Perforations (Short)	BS1425-R100200		BS-1425-R250300	BS-1425-R250300			1
	Back-Up Tube ¼" Perforations (Long)	BS-2425-R100200		BS-2425-R250300	BS-2425-R250300			1
5	Distributor Cap	BS-05-R100-200		BS-05-R250-300	BS-05-R250-300			1
6	Strainer Inlet (Short)	BS-16-R100	BS-16-R150	BS-16-R200	BS-16-R250	BS-16-R300		1
	Strainer Inlet (Long)	--	BS-26-R150	BS-26-R200	--	BS-26-R300		1
7	Mesh Over Screen (Short/Long)	Contact Dixon Sanitary For Options					--	1
8	Filter Bag (Short/Long)	Contact Dixon Sanitary For Options					--	1
9	Retaining Ring	BS-09-U100-200			BS-09-U250-300		Buna	2
10	Squeeze Clamp	13MHHM-Q400			13MHHMV-Q400		CF8	1

Side Entry

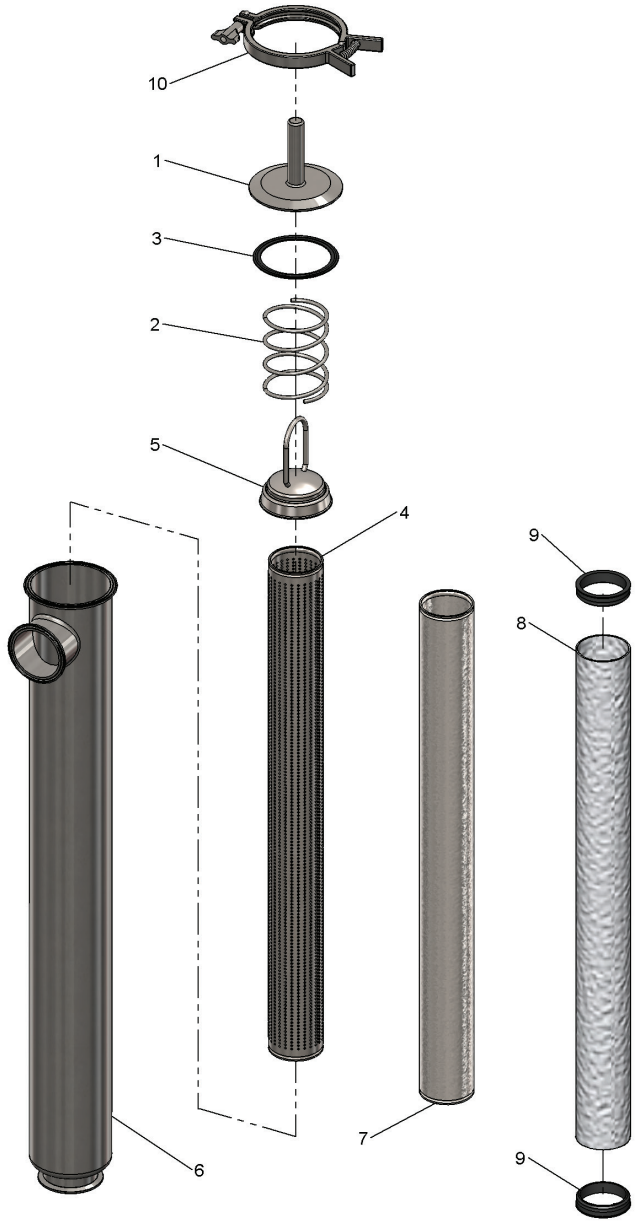
Disassembly

1. Remove the clamp (10) and lift off the end cap with handle (1).
2. Remove the gasket (3) and inspect it for damage or wear.
3. Remove the spring (2) and the distributor cap (5).
4. Remove the back-up tube (4) the filter bag (8) or the mesh over screen (7).
5. Change the mesh over screen (7) or filter bag (8) if necessary. Refer to Changing The Filter Media section of the manual for specific instructions.

Assembly

1. Ensure that the filter media is in place on the strainer back-up tube (4). Refer to the Changing The Filter Media section of the manual for specific instructions.
2. Insert the strainer back-up tube (4) inside the strainer body (6) ensuring that the bottom of the back-up tube is seated firmly against the bottom of the strainer body.
3. Insert the distributor cap (5) inside the strainer body (6) ensuring that the cap is seated firmly against the top of the strainer back-up tube (4). Note: The opening on the handle of the distributor cap should be facing the opening of the inlet port so that the port is not blocked.
4. Insert the spring (2) inside the strainer body (6) ensuring that the spring is seated firmly against the ridge on the distributor cap (5).
5. Place the gasket (3) on the strainer body (6).
6. Compress the end cap with handle (1) onto the strainer body (6) and attach and tighten the squeeze clamp (10) to 25 in-lbs.

Side Entry
Bill of Materials



Item #	Description	1½" Part #	2" Part #	3" Part #	Material	Qty
1	End Cap With Handle	BS-31-R100-200		BS-31-R250-300	316L	1
2	Strainer Spring	BS-32-R100-200		BS-32-R250-300		1
3	Gasket	40MP-U400		40MPV-U400	Buna	1
4	Back-Up Tube ⅛" Perforations	BS-1418-R100200		BS-2418-R250300	316L	1
	Back-Up Tube ¼" Perforations	BS-1425-R100200		BS-2425-R250300		1
5	Distributor Cap	BS-35-R100-200		BS-35-R250-300		1
6	Strainer Body	BS-36-R150	BS-36-R200	BS-36-R300		1
7	Mesh Over Screen	Contact Dixon Sanitary For Options			--	1
8	Filter Bag	Contact Dixon Sanitary For Options			--	1
9	Retaining Ring	BS-09-U100-200		BS-09-U250-300	Buna	2
10	Squeeze Clamp	13MHHM-Q400		13MHHV-Q400	CF8	1

Side Outlet

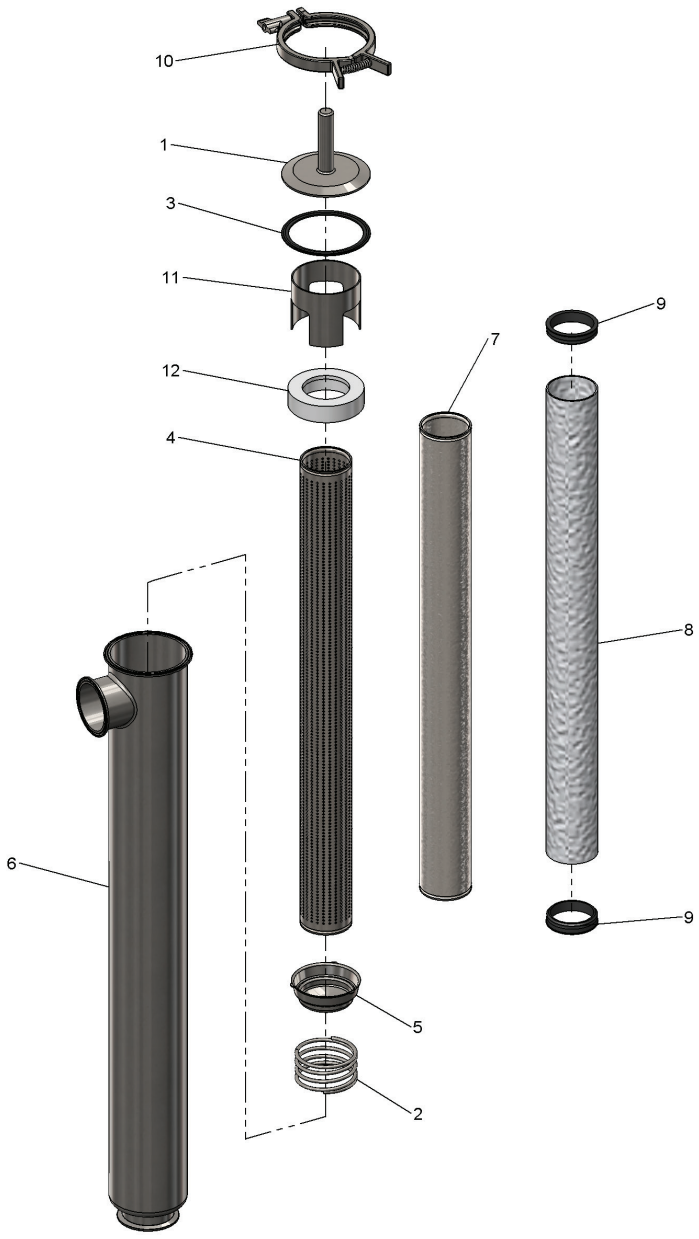
Disassembly

1. Remove the clamp (10) and lift off the end cap with handle (1).
2. Remove the gasket (3) and inspect it for damage or wear.
3. Remove the stand-off tube (11) and the PTFE retainer ring (12).
4. Remove the back-up tube (4) and the filter bag (8) or mesh over screen (7).
5. Change the mesh over screen (7) or filter bag (8) if necessary. Refer to Changing The Filter Media section of the manual for specific instructions.

Assembly

1. Ensure that the filter media is in place on the strainer back-up tube (4). Refer to the Changing The Filter Media section of the manual for specific instructions.
2. Place the distributor cap (5) on the strainer back-up tube (4) ensuring that the cap is seated firmly against the back-up tube.
3. Place the spring (2) on the distributor cap (5) making sure that the spring is seated firmly on the ridge of the cap.
4. Insert the back-up tube (4), distributor cap (5), and spring (2) assembly into the strainer body (6).
5. Press the PTFE retainer ring (12) firmly into place on top of the back-up tube assembly.
6. Place the stand-off tube (11) inside the strainer body (6) with the three legs facing toward the retainer ring (12).
7. Place the gasket (3) on the strainer body (6).
8. Compress the end cap with handle (1) onto the strainer body and attach and tighten the squeeze clamp (10) to 25 in-lbs.

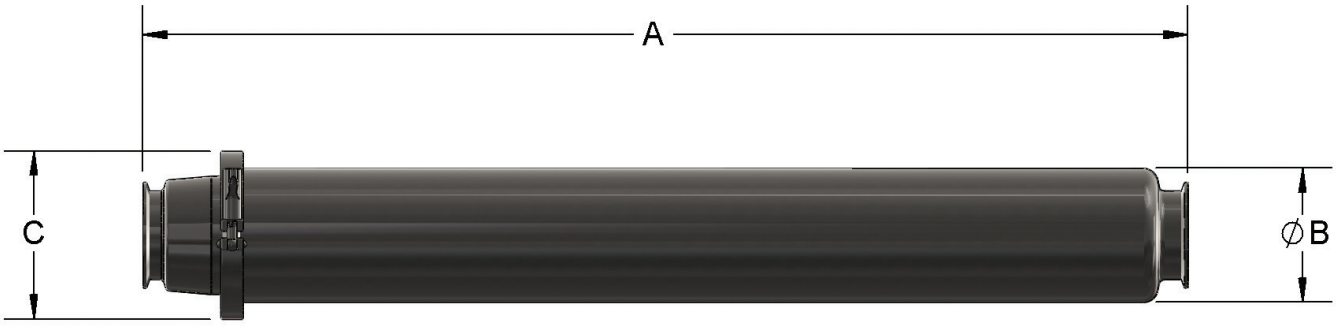
Side Outlet
Bill of Materials



Item #	Description	1½" Part #	2" Part #	3" Part #	Material	Qty
1	End Cap With Handle	BS-31-R100-200		BS-31-R250-300	316L	1
2	Strainer Spring	BS-02-R100-200		BS-02-R250-300		1
3	Gasket	40MP-U400		40MPV-U400	Buna	1
4	Back-Up Tube ⅛" Perforations	BS-1418-R100200		BS-2418-R250300	316L	1
	Back-Up Tube ¼" Perforations	BS-1425-R100200		BS-2425-R250300		1
5	Distributor Cap	BS-05-R100-200		BS-05-R250-300		1
6	Strainer Body	BS-36-R150	BS-36-R200	BS-36-R300		1
7	Mesh Over Screen	Contact Dixon Sanitary For Options			--	1
8	Filter Bag	Contact Dixon Sanitary For Options			--	1
9	Retaining Ring	BS-09-U100-200		BS-09-U250-300	Buna	2
10	Squeeze Clamp	13MHHM-Q400		13MHHV-Q400	CF8	1
11	Stand-Off Tube	BS-411-R100-200		BS-411-R250-300	316L	1
12	Retainer Ring	BS-412-R100-200		BS-412-R250-300	PTFE	1

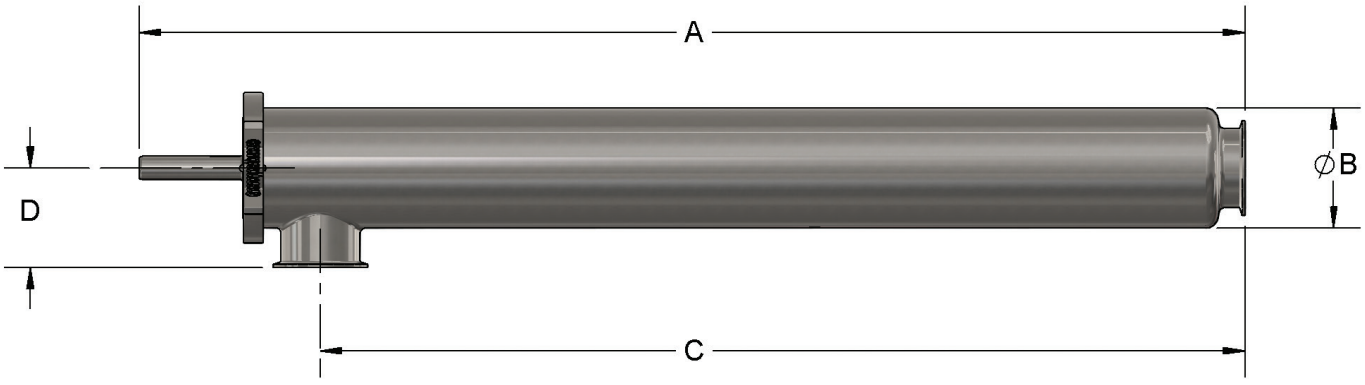
Dimensions

Short and Long Inline



Size	A Short	A Long	B	C
1"	15.75	--	4.00	5.10
1½"	15.75	35.38	4.00	5.10
2"	15.75	35.38	4.00	5.10
2½"	15.75	--	4.50	5.70
3"	15.75	35.38	4.50	5.70

Side Entry and Side Outlet



Size	A	B	C	D
1½"	41.90	4.00	35.00	3.50
2"	41.90	4.00	35.00	3.50
3"	41.90	4.50	35.00	3.75

Limited Warranty

DIXON VALVE AND COUPLING COMPANY (herein called "Dixon") warrants the products described herein, and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. It's sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted, or may require a minimum quantity for ordering.

Dixon™, founded in 1916, is a premier manufacturer and supplier of hose couplings, valves, dry-disconnects, swivels, and other fluid transfer and control products. The company's global reach includes a wide range of products for numerous industries including petroleum exploration, refining, transportation, chemical processing, food & beverage, steel, fire protection, construction, mining and manufacturing. Dixon™'s strategic objective is to create solutions that make products safer, leak-free, longer lasting, and always available.

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