

BELVEN STRAINERS

INSTALLATION- OPERATION- AND MAINTENANCE INSTRUCTIONS

Prior to installation, these instructions must be fully read and understood.

These instructions apply to the standard Belven strainers type BV55 and BV56.

These strainers are intended for liquids classified in group 2 described in the Pressure Equipment Directive 2014/68/EU (PED). In accordance with Article 4 paragraph 3 of this directive, these strainers are designed and manufactured in accordance with the rules of good craftsmanship (SEP) to ensure your safety during installation, operation and maintenance, provided that the limitations of use defined in the technical data sheets are respected and that the recommendations given in these instructions are applied. The strainers must be installed and operated in accordance with local requirements and regulations for industrial strainers and valves. Any violation of these regulations may be hazardous to health, the environment or the installation. Belven is not responsible for improper installation or operation of its strainers.

These instructions relate to the standard Y-strainers in our range.

More detailed instructions per type are available on request.

It is imperative that these instructions are available at the destination of the strainers. Controlling the distribution of these instructions, translated into the language of the end user (for European countries), is your responsibility.

1. Storage & Protection

The Belven strainers must be stored indoors at temperature between -10°C and 60°C in a dry, fireproof and weatherproof place that is well ventilated. The connections must be covered. Please do not store corrosive chemicals nearby.

Spare parts should be stored in their original packaging under the same conditions.

Avoid storage under direct sun exposure.

Do not stack strainers on top of each other, this may damage the coating.

After long-term storage, the strainer should be inspected and cleaned if necessary.

2. Cautions

For safety, respect the warnings below before installing, removing or disassembling the strainer:

- 1. The installation and use of the strainer must be performed by trained personnel.*
- 2. Verify that the process conditions are within the strainer's operation range.*
- 3. Before any installation or intervention, the piping must be depressurized, emptied and flushed.*
- 4. Use protective clothing to avoid injury.*
- 5. Clean the strainer and piping connections before installation.*
- 6. Never perform piping work in the proximity that may damage the strainer.*
- 7. Never loosen any flange bolt, cover bolt or plug when the strainer is in operation or under pressure.*

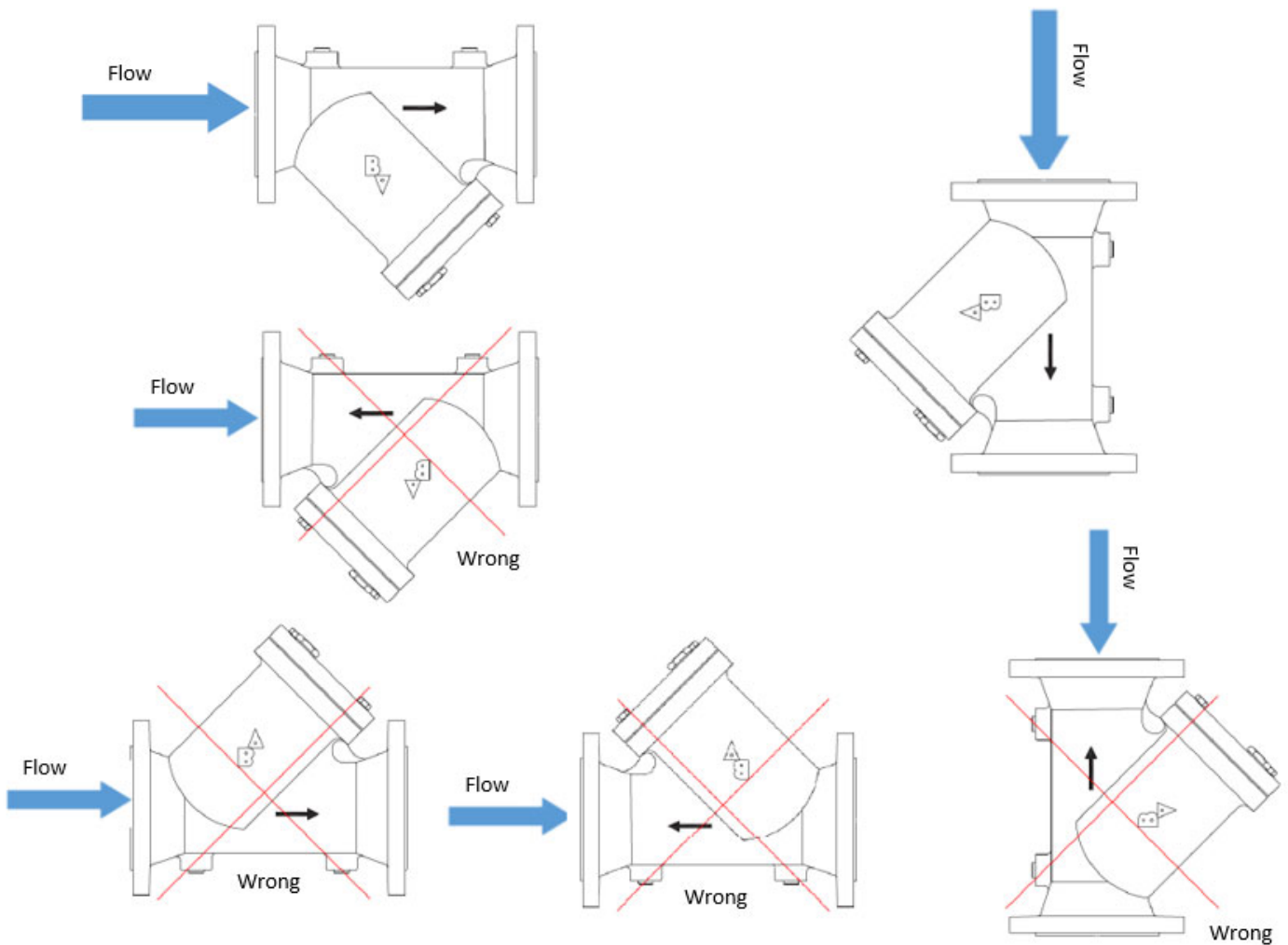
3. Installation

Before installing, ensure that the strainer is undamaged and clean.

Verify that the piping connections are cleaned, undamaged and correctly aligned [axial and radial]. We recommend installing an open/close valve before and after the strainer. This allows the strainer to be isolated from the pipeline for cleaning without having to drain the entire system.

The liquid should flow according to the arrow on the strainer.

The screen should always face downward so that the filtered material can be properly collected and removed.



A. BV55 : Y strainers with threaded ends

The brass Y-filters with female threaded connection ISO 228 are usually used in heating systems and water supplies in industrial or agricultural systems.

The maximum allowable temperature is 80°C.

The maximum allowable pressure is 16 bar.

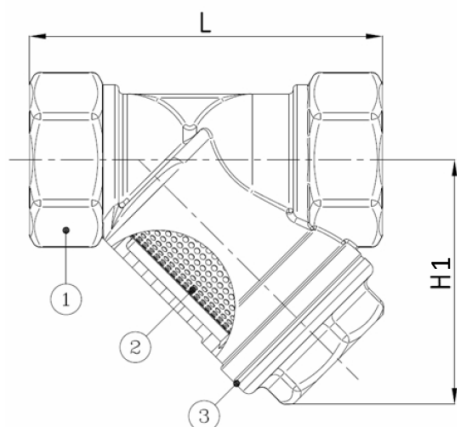
The BV55-1163-BSP has following standard screen perforation :

½" to 1" : 0.4 mm

1 1/4" up to and including 2" : 0.5 mm

Before installation, check that there is enough space to remove the screen from the strainer, taking the H1 dimension as extra space.

Below are the dimensions of the Belven strainer BV55-1163-BSP



DN/Inch	L	H1
DN15 (1/2")	58	40
DN20 (3/4")	70	50
DN25 (1")	87	60
DN32 (1 1/4")	96	68
DN40 (1 1/2")	106	75
DN50 (2")	126	90

Center the strainer between the pipes, install the appropriate threaded seal, and carefully tighten the strainer without creating tension.

Flush the system with water before commissioning. For a new installation, it is recommended to clean the strainer a few hours after start-up to remove typical residues that may be present in new piping. Always respect the maximum allowable pressures, also when pressure testing the installation. Any inappropriate operation can lead to damage and leakage.

The cap on the strainer is fitted with a Betaflex 71 seal. This material has the property of swelling when wet in order to provide a good seal. If tests are carried out with air and soapy water, bubbles may form at the level of the sealing cap because the seal is too dry and therefore not expanded.

B. BV56 : Y strainers with flanges

The cast iron Y strainers with flanges PN16 are usually used in heating systems and water supplies in industrial or agricultural systems.

The maximum allowable temperature is 110°C.

The maximum allowable pressure is 16 bar.

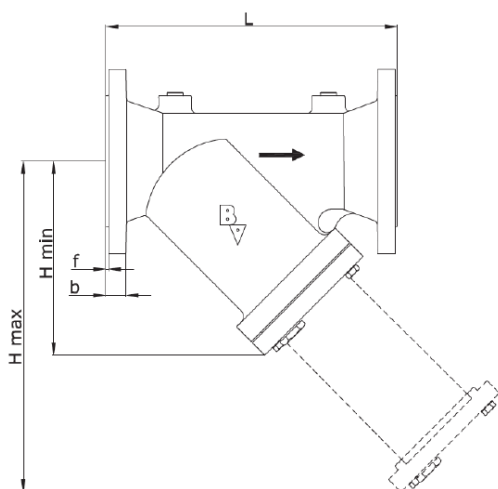
The BV56-2466/2360/2460/2363 strainers have following standard screen perforations :

DN50 up to and including DN125 : 1.1 mm

DN150 up to and including DN300 : 1.8 mm

Before installation, check that there is enough space to remove the screen from the filter.

The dimensions given below are for the Belven filters BV56-2466-PN16 and BV56-2360/2460-PN16 :

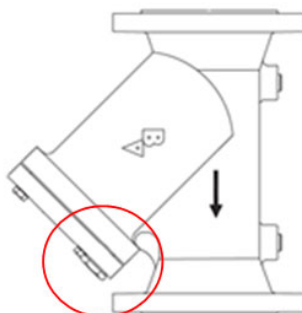
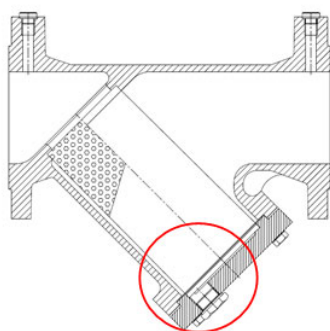


DN	L	H _{min}	H _{max}	b	f
050	230	130	220	23	3
065	290	177	310	20	3
080	310	197	345	22	3
100	350	228	395	24	3
125	400	264	450	26	3
150	480	327	580	26	3
200	600	390	650	30	3
250	730	541	910	32	3
300	850	638	1040	32	4

DN	050	065	080	100	125	150	200	250	300
Drain plug	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Pressure gauge connection	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"

The strainer is equipped with an eccentric drain plug.

By default, the cover of the BV56 is mounted so that when installed horizontally, the drain plug is in the lowest position. Note that when installed vertically, the cover must be rotated so that the drain plug is in the lowest position.



Center the strainer between the flanges and place the correct flange gasket between the flanges. Install the bolts with the nuts crosswise and tighten manually without fully tightening. Then tighten the bolts/nuts with a torque wrench crosswise to ensure a correct seal. The correct tightening torques are specified by the flange gasket supplier. The strainer should be installed without creating stresses (forces) in the piping. If necessary, support the piping to protect the strainer from excessive stress. Flush the system with water before commissioning. For a new installation, it is recommended to clean the strainer a few hours after start-up to remove typical residues that may be present in new piping. Always respect the maximum allowable pressures, also when pressure testing the installation. Any inappropriate operation can lead to damages and leakages.

4. Maintenance

The strainer must be cleaned periodically. This time interval depends on how dirty the process is and how fine the screen perforation is.

By measuring the pressure drop across the strainer, one can determine if the strainer needs to be cleaned.

In general, the pressure drop over a screen should not exceed 1 bar.

The BV56-2466 is equipped with ¼" pressure gauge connections as standard. By installing pressure gauges, the pressure drop over the strainer can be determined. The matching pressure gauges, with a range 0-6 bar or 0-10 bar, are available from stock at Belven and can be offered or supplied as an option.

During maintenance and cleaning work, the valves in front of and behind the strainer must be closed to prevent further flow of the medium and to establish a pressure-free system.

Make sure that the pipes are depressurized at the location where the strainer is installed. Have a collection bucket ready to collect the liquid residues and wear protective clothing.

A. BV55 : Y strainer with threaded ends

Carefully unscrew the drain plug to check that the lines are pressure free and to collect any liquid residue.

Pull the screen out of the body and clean the screen with water, a non-aggressive special cleaner or a brush. Dirt can be flushed from the outside to the inside of the screen.

Check the screen for possible damage. If the screen appears to be damaged, replace it. Only an undamaged screen may be used again after cleaning.

Check the seal of drain plug, only impeccable seals can be reused to ensure the tightness of the seal. Spare screens with the standard perforation and seals are available from Belven stock.

Carefully check that the body on which the screen rests is undamaged and clean and insert the screen back into the body.

Carefully open the stop valves and slowly increase the pressure in the pipe and check for leakages.

B. BV56 : Y strainer with flanges

Loosen the cover bolts crosswise to prevent the cover from tilting, remove the cover and collect the remaining fluids and debris. Pull the screen out of the body and clean the screen with water, a non-aggressive special cleaner or a brush. Dirt can be flushed from the outside to the inside of the screen. Always respect safety and protect the environment.

Check the screen for possible damage. If the screen appears to be damaged, replace it. Only an undamaged screen may be used again after cleaning.

Check and clean the cover and bolts, replace them if necessary.

Remove the seal from the cover, clean and inspect it. Only impeccable seals can be reused to ensure the tightness of the sealing.

Spare screens with the standard perforation and cover seals are available from Belven stock.

Carefully check that the body on which the screen rests is undamaged and clean. Insert the screen back into the body.

Make sure the screen is centered in the cover and not compressed when bolting the cover with the cover seal to the body.

Tighten the cover bolts crosswise with the following maximum permissible tightening torques :

DN50-DN65 : M10 - 26,9 Nm

DN80-DN300 : M12 - 46,9 Nm

Carefully open the stop valves and slowly increase the pressure in the line.

Check for leakage at the cover and drain plug, if no leakage occurs then the pressure in the line can be slowly increased to process conditions.

In case of questions or doubts contact your Belven representative for assistance.