

Application

The Hygienic Angle Line Basket Strainer (ALB) can be used in process locations where particulates require removal from the process stream and where a high level of hygienic design is required. The strainer can be installed horizontally, vertically or at different angles as it is fully drainable in any orientation so long as the strainer insert handle side is at the high point. The ALB collects particulates in a similar manner to that of a basket strainer (strains inside out), so when the strainer insert is removed, the particulates will remain inside of the basket.



Operating Parameters

Table 1: Maximum Operating Pressures and Temperatures (13 MHHM clamp with wing nut tightened to 25 in. lb. of torque)			
ALB Connection Size (Body Size)	Max. Pressure @ 70 °F (PSI)	Max. Pressure @ 250 °F (PSI)	Max Allowable Pressure Drop @ 70°F (PSI)¹
1.5" - 3.0" TC (4.0" Body Size)	200	125	40

¹ Mesh underlay may sustain damage at pressure above max allowable pressure drop.

Assembly

The ALB component assembly contains 12 sub-components (depending on selected configuration):

1. Element Gasket
2. Sample Valve - Optional
3. Element O-Ring
4. Element Tri-Clamp
5. Element (Perforated)
6. End Cap X-Ring
7. End Cap
8. Pressure Gauges (Qty. 2) – Optional
9. Strainer Body (Upper)
10. Pressure Gauge Clamps (Qty. 2) - Optional
11. Pressure Gauge Gaskets (Qty. 2) - Optional
12. High Pressure Body Clamp
13. Sight Glass Gaskets (Qty. 2) - Optional
14. Sight Glass Window - Optional
15. Strainer Body (Lower)

The mesh underlay (if included) is first slid inside of the perforated element. The end cap is then fastened to the retaining ring (end of element) using the quarter turn latching nobs, turning the end cap in a clock-wise direction. The full element assembly is then slid inside of the body of the ALB strainer.

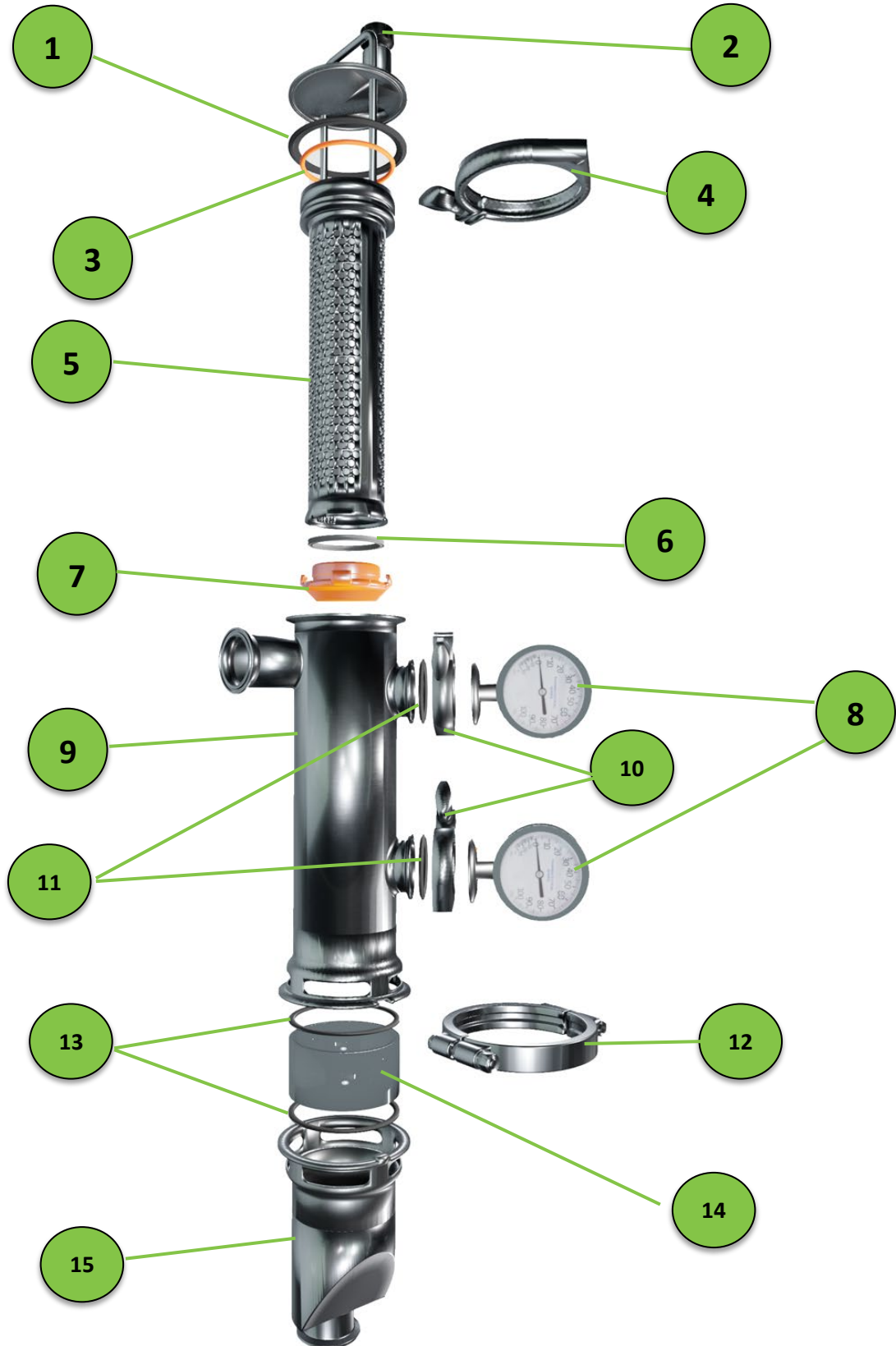


Figure 1: Exploded View

Installation & Operation

Reference the Hygienic ALB Strainer –Technical Datasheet (TD-0007) for Cv information to determine the pressure drops, along with dimensional information. As-built drawings for each strainer are also supplied with the turnover package.

The ALB strainer inlet configuration options are as shown:

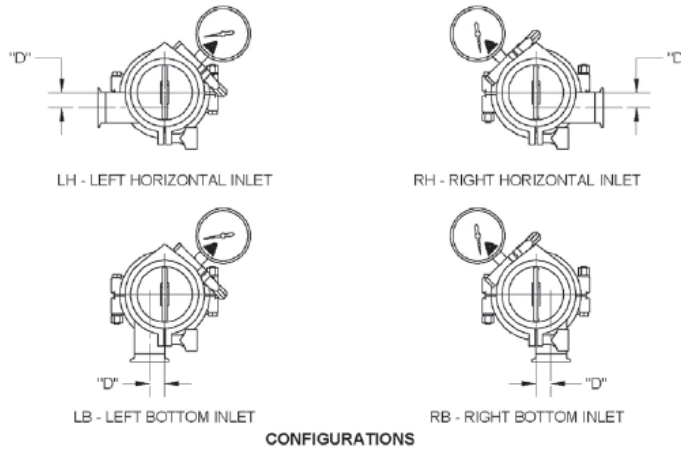


Figure 2: Inlet Configurations Hygienic ALB Strainer

ALB strainers are designed for flow into the side tangential connection and out of the end connection. The strainer can be installed vertically, horizontally or at an angle (45° - 90°) to ensure full drainability. Air is eliminated during operation due to the sweeping action of the liquid so long as the velocity is high enough to remove the air. Minimum recommended flow-rates for air removal are shown in table 2. Soils will be collected inside of the strainer element so soil particulates will be removed from the housing along with the element as it is removed from the housing.

It is recommended to support the strainer body through use of a hanger or other type of support structure within the process piping.

Table 2: Minimum Recommended Flow-Rates (Water at 70 °F, Minimum Flow-Rate to Eliminate Air from Housing)		
ALB Connection Size (Body Size)	Min. Flow-Rate (GPM) Horizontal Orientation	Min. Flow-Rate (GPM) Non- Horizontal Orientation
1.5" – 3.0" TC (4.0" Body Size)	30	45

The end cap must be tightly fitted into the end of the element prior to installing the element in the strainer housing. The end cap is designed to lock in place as long as the x-ring is installed. The end cap should feel secure after installation without any looseness to the assembly.

If twisting the end cap is overly difficult, apply water to the x-ring seal area to ease the twisting action.

Ensure the ALB strainer is installed for ease of access with plenty of space for full removal of the

perforated element insert. Use adequate piping supports to support the strainer so it does not move during production, and to ensure the clamp connections are not overly stressed. Isolation valves can be used upstream or downstream of the strainer to assist with element insert removal by reducing the amount of product/water that will spill out when opening the ALB strainer.

As the ALB strainer becomes plugged with debris, the differential pressure will increase. Typically, noticeable differential pressure increases occur once the strainer is more than 80% fouled. A fully soiled strainer that completely stops the flow will result in a pressure drop equal to that of the dead-head pressure of the supply pump which could damage strainer components. It's recommended to monitor the pressure and make a change once the pressure drop exceeds typical pressure drops. As noted in Table 1, the maximum allowable pressure drop is 40 psi.

Cleaning

The ALB strainer is a fully CIP'able component although it requires periodic inspection and manual cleaning of the element and mesh underlay (if included) to remove captured particulates. Manual cleaning and inspection is carried out by first removing the element from the body and removing the mesh underlay from the element if one is included. Cleaning of both the element and mesh underlay can be accomplished with a hose, soft brush or COP method (Cabinet Washer or Immersion Parts Washer). Once both the element and mesh underlay are visibly clean, the element and mesh underlay should be reinstalled for a full CIP cleaning.

Mesh underlays can also be treated as single-use components, where a new one is installed after use.

The facilities' Standard Operating Procedures (SOPs) should be followed regarding cleaning chemicals, temperatures, and other key cleaning TACT (Time, Action, Chemical, Temperature) parameters to be used.



Figure 3: Example Cleaning in COP Immersion Parts Washer

Maintenance

There are elastomeric seals that will require periodic replacement, and it's recommended to keep at least one spare mesh underlay (Table 4) as a spare part in case of damage. See below for the recommended spare parts list (Table 2), along with additional parts that can be ordered as needed (Table 3). Note that all part numbers are identical regardless of connection sizes. Standard EPDM gaskets or TUF-FLEX gaskets can be used for the 4" TC main body connection. The TUF-FLEX gasket helps with removal of the element as the Teflon eliminates the sticking that can occur at the clamp connection with a standard EPDM gasket.

Table 2: Recommend Spare Parts (RSP) List				
ALB Connection and Body Sizes	Description	Qty.	Sani-Matic Part Number	Exploded View Item # (See Figure 1)
1.5" to 3.0" TC (4.0" Body Size)	Gasket, 4.0" Connection Size, Tuf-Flex	1	046739	1
	Gasket, 4.0" Connection Size, EPDM	1	021031	1
	O-Ring, 4" Body Size, Teflon Encapsulated Silicone	1	024020	3
	X-Ring, End Cap, 3.0", EPDM	1	055341	6
	End Cap, 3.0", PEI	1	301132	7
	Seal Kit, Sight Glass, 2 Gaskets, FKM	1	055202	13

Table 3: Additional Spare Parts List				
ALB Connection and Body Sizes	Description	Qty.	Sani-Matic Part Number	Exploded View Item # (Figure 1)
1.5" to 3.0" TC (4.0" Body Size)	Sample Valve O-ring, Stem Seal (Process Contact)	1	056470	For 2
	Sample Valve O-ring, Plug/Handle Seal (Non-process Contact)	1	056471	For 2
	Clamp, 4.0" Connection Size	1	020225	4
	Pressure Gauge, 2.0" TC, Bottom Mount, 0-30 PSIG	1	056884	8
	Pressure Gauge, 2.0" TC, Bottom Mount, 0-60 PSIG	2	056885	8
	Pressure Gauge, 2.0" TC, Bottom Mount, 0-100 PSIG	2	056886	8
	Clamp, 2.0" Connection Size	2	020082	10
	Gasket, 2.0" Connection Size, EPDM	2	021028	11
	Clamp, High Pressure, SCH5 4.0" TC	1	056415	12
	Polycarbonate Window, Sight Glass, 4.0"	1	056124	14

Table 4: Mesh Underlay Part Numbers

ALB Connection and Body Sizes	Description	Sani-Matic Part Number
1.5" to 3.0" TC (4.0" Body Size)	20 Mesh, 316L, 2.83 X 11.50, Hem on ID	055196
	40 Mesh, 316L, 2.83 X 11.50, Hem on ID	055197
	60 Mesh, 316L, 2.83 X 11.50, Hem on ID	055198
	100 Mesh, 316L, 2.83 X 11.50, Hem on ID	055199

Troubleshooting

Table 5: Troubleshooting

Problems	Solutions
Pressure drop is too high	<ol style="list-style-type: none"> 1. Check Cv data to make sure the correct ALB strainer size was selected. Ensure that correction factors were used to account for viscosity differences between water and product being strained. 2. Disassemble the ALB strainer and check if the element is fouled with particulates. Typically, at 80% fouled, the pressure drop begins to increase.
Particulates are passing through strainer	<ol style="list-style-type: none"> 1. Ensure correct size element and mesh were selected depending on the particulate size. 2. Inspect strainer element and check for damage to mesh. Ensure all o-rings are in place. Ensure the end cap is staying in place. 3. Damaged mesh underlay. Replace with new.
End Cap Feels Loose	<ol style="list-style-type: none"> 1. Ensure End Cap X-Ring is installed. 2. Ensure no damage to element where end cap is installed. 3. Ensure no damage to X-Ring or End Cap – if so, replace.