



# MICROPURE® FILTRATION

## **PDF-602 Mini Steam Filter**

- Assembly of Parts
- Spare Parts List
- Spare Parts Kit Breakdown
- Instructions
- Technical Information
- Drawing



<b>Housing Assembly List for PDF-602,PDF-604,PDF-606 &amp; PDF-0608 Mini Filters</b>			
Diagram #	Item Number	Description	Quantity
A	HSG-Top-65	Housing Top with DN 65 Tri-Clamp fitting. Height 7 inch	1
B	HSG-Nut-65	DN 65 mm Tri-Clamp	1
C	GSKT-65EPDM	DN 65 Tri-Clamp Gasket in black EPDM	1
D	HSG-Bot-65	Housing Bottom with DN 65 Tri-Clamp Fitting. Height 2 inches	1
E	Pipe Seal	Gasket for ensuring Proper Sealing of Pipe to mating pipe. This is to be provided by the customer depending on the pipe connection	1
F+G	CDK-ALL	1 Valve Condensate Drain Kit. Each Valve includes two threaded connections and Viton seals for use in between valves and housing base	1

<b>Spare Parts List for 0602 Element. 60 mm diameter with 2 layers</b>			
Diagram #	Item Number	Description	Quantity
1	TP-60	60 mm Tail Plate	1
2	Nut,13 mm	13 mm Hex Nut	2
3	Rod, 2 Layer	M8 Threaded Rod for 2 layer element	1
4	FMS-06-003	60 mm 3 micron Stainless Media	2
5	DI-60	60 mm Support Disc with interior Holes	1
6	DO-60	60 mm Support Disc with Exterior Holes	0
7	HP-60-100-BSPP	60 mm Head Piece with 1 inch BSPP threaded connection	1
8	Oring-1EPDM	1" EPDM Black O-ring	1
9	HSP-100	1" Spacer Plate for 60 mm Head piece	1
10	Compression Spring	75 KG compression spring	1
11	Washer, 13 mm	13 mm SS washer	1
12	Nut, Lock 13 mm	13 mm Locking nut with Nylon insert	1

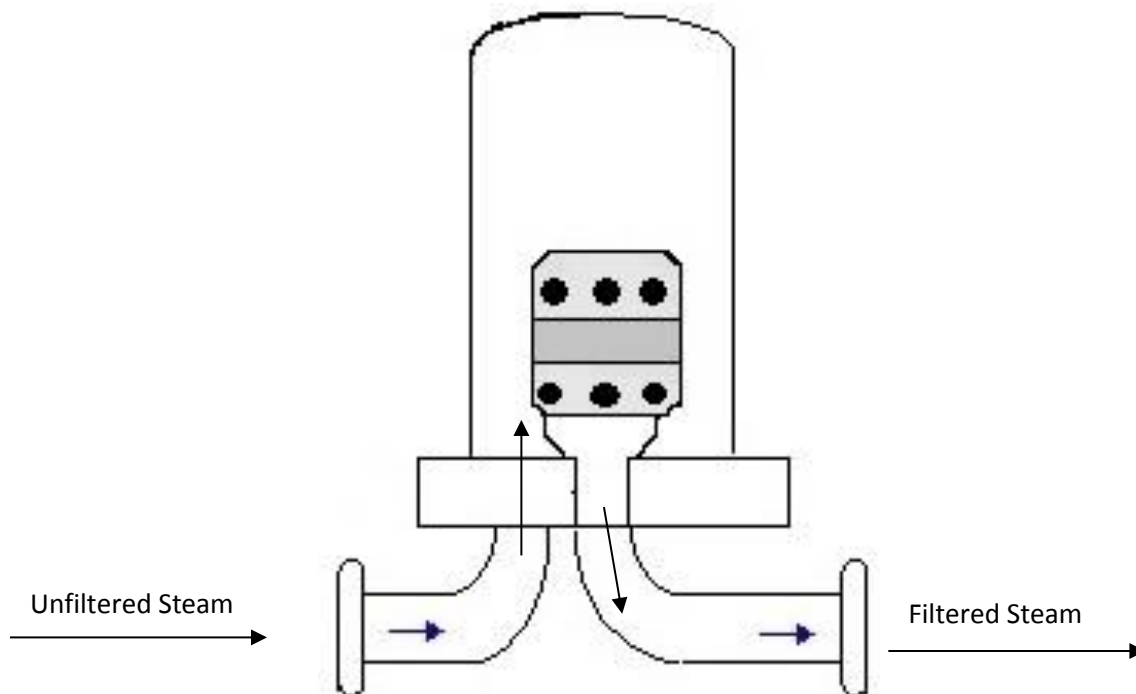
## SPK-Mini Details

Diagram #	Item Number	Description	Quantity
2	Nut,13 mm	13 mm Hex Nut	4
8	Oring-1EPDM	1" EPDM Black O-ring	2
10	Compression Spring	75 KG compression spring	2
11	Washer, 13 mm	13 mm SS washer	4
12	Nut, Lock 13 mm	13 mm Locking nut with Nylon insert	4
C	GSKT-HSG-65EPDM	DN 65 Tri-Clamp Gasket in black EPDM	2

## Start-Up Instructions

1. Install the filter in the pipeline. Flow is possible in either direction due to the bidirectional media. It is recommended to install the filter so that flow is out to in. The filter is recommended to be installed vertically, but it can be installed in any orientation.
2. The complete filter includes the filter housing, segmented filter element, filter membranes (FMS-06-003) and drain hole plug. A single valve condensate drain kit is an optional accessory for the port on the base of the filter. This should match the picture on page 2.
3. A single valve condensate drain kit is an optional accessory for the port on the base of the filter. The drain valve assembly consists of a Viton sealed washer and valve assembly.
4. Verify that all connections are tightened before flow into the filter is started. The wing nut on the Tri-Clamp that surrounds the filter housing must be tight to prevent leakage.

## Flow Diagram



## Changing Membranes

- 1) The filter membranes should be changed if they appear damaged or when plugged with contaminants. Membranes can handle 150 sterilizations or cleanings prior to change.
- 2) To measure contamination level, the first step is to measure the pressure drop across the filter. Compare the readings from the pressure gauge in the filter housing to another pressure gauge downstream or from input pressure. The difference is the pressure drop. Change to filter membranes at or before the differential reaches four times the initial pressure drop.
- 3) To check for condition, inspect the filter membranes visually before sterilization to determine the amount of contamination present and to confirm that there are no tears or holes. This is particularly important if steam sterilizing in-place.
- 4) To change the filter membranes, follow the instructions attached.

## Change Procedure

- 1.) Place correct number of Stainless Steel membranes in a stack on the work surface.
- 2.) Stack endplate, headplate, and correct number of **outer hole** disks and correct number of **inner hole** disks in the following order:
  - a. Move headplate to the side by itself.
  - b. Alternate the inner hole and outer hole disks upside down in a stack beginning with the inner hole disk, followed by an outer holed disk until stack is complete. Place endplate on top of stack. Inner and outer hole disks should alternate in the stack. Stack should match picture in flow diagram or element assembly page.
  - c. Have one (1) tension rod, one (1) washer, one (1)-locking nut, two-(2) standard nuts and EPDM element O-rings on hand ready to secure disk stack.

## Filter Element Assembly

- 1) Start with endplate and tension rod. Place one (1) standard 13mm nut on rod at short threaded end. Insert element pin into one hole on endplate to stabilize. Screw tension rod into opening provided on the endplate. Tighten rod and nut to the point so there is no movement of any parts.
- 2) Remove one membrane from stack and slide over the tension rod, placing it on top of the inner hole disk.
- 3) Remove the top disk from the stack (inner hole disk), slide over the tension rod and place on top of the membrane.
- 4) Remove one membrane from stack and slide over the tension rod, placing it on top of the inner hole disk.
- 5) Remove the next disk from the stack (outer hole disk), slide over the tension rod and place on top of the membrane.
- 6) Repeat steps 2-5 until all disks and membranes have been used. A membrane will be the last item stacked on the segmented element.
- 7) Slide headplate and spacer over tension rod and place on the top membrane.
- 8) Take the spring and slide it over the tension rod on top of the spring.
- 9) Take the washer and slide it over the tension rod on top of the spring.
- 10) Take the standard 13mm nut and screw onto the tension rod. Continue to tighten the nut against the washer until the spring is completely compressed.
- 11) Take the 13mm locking nut and screw it onto the tension rod until it is snug against the standard nut.
- 12) Check the O-rings for breaks or tears. If there are breaks or tears present, replace with new O-ring. Use an accepted food grade lubricant for ease of insertion and protection of the O-ring.

**Note:** The membranes can be used in either direction

### Tool Required:

- a. 13mm combination open/box straight wrench or
- b. 13mm deep socket for some filter configurations.

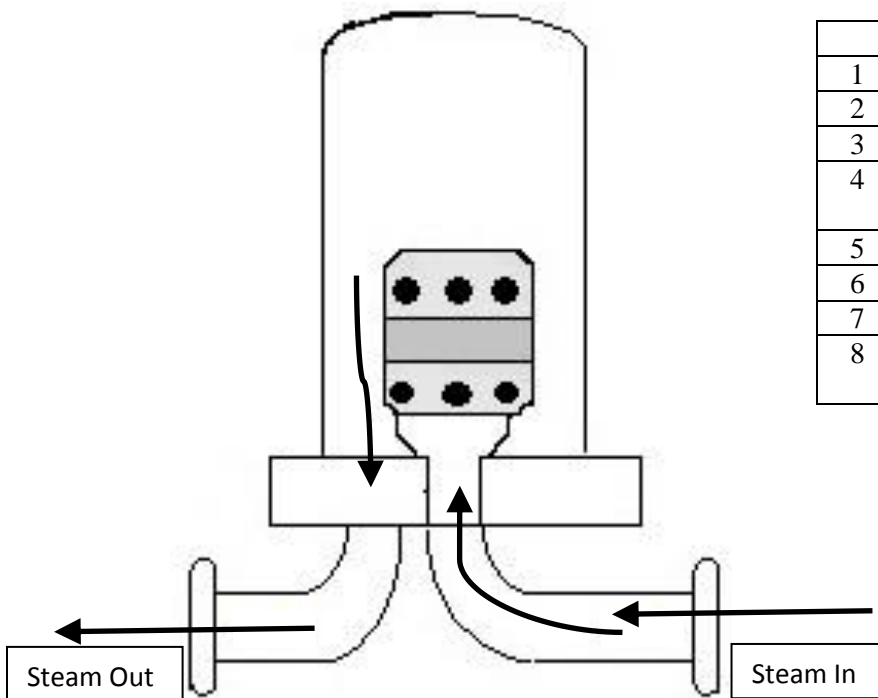


## POINTS TO REMEMBER

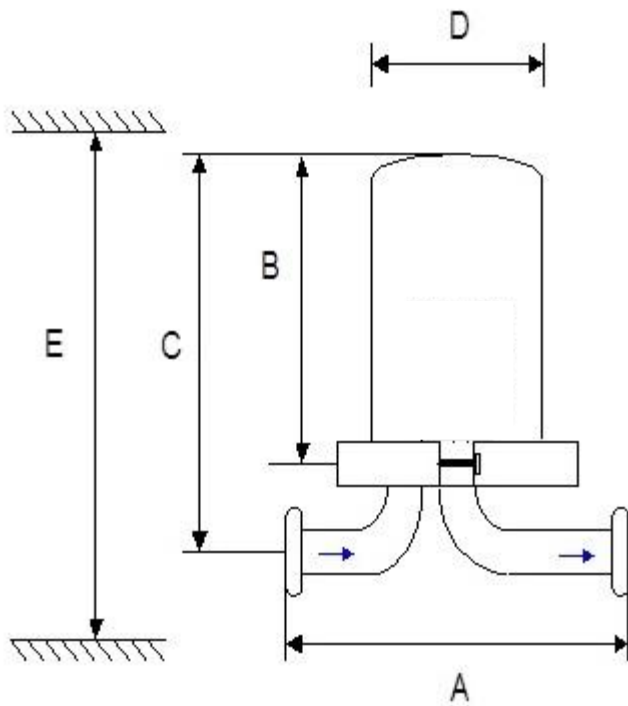
- 1) Inner hole and outer hole disks **MUST** be placed in an alternating order for correct functioning of the segmented element.
- 2) The spring must be completely compressed to insure sealing of the cartridge.
- 3) Once the segmented cartridge is assembled to satisfactions, it **MUST** be sterilized before using in the process.
- 4) Filter membranes operate in a parallel manner. Incoming air will pass through one membrane for filtering before entering the sterile chamber.

## STERILIZATION METHODS – FOR STAINLESS STEEL MEDIA

Back flush in place or remove and sonically clean. It is recommended to wear gloves while handling the element during and after the cleaning process. Below is a diagram and explanation for Black flushing the unit in place.



<b>Backflush Cleaning Procedure</b>	
1	Open Valve at base of housing.
2	Slowly start steam flow as diagram shows
3	Close Valve when no condensate appears
4	Start timer and hold pressure and temperature for 20-30 minutes
5	Shut off Backflush steam source
6	Turn on Forward steam flow
7	Open Valve to release condensate
8	When condensate is no longer appearing, close valve



Dimensions - Inches		Dimensions - Inches		
A	B	C	D	E
5.5	7	9	3	14"



Photo of PDF-602 without housing



Photo of PDF-602 element expanded to show woven stainless



Photo of Steam Filter Housing with 1/2 NPT Connections. Flow through housing is bidirectional, so you can install the filter in any orientation.



Picture of Drain Port on base of housing. A single drain valve or plug can be installed. Recommendation