STEAM Filters

Filter Cartridges

Steam is an often neglected part of a process, regarded as an add on to a customers liquid or gas filtration needs.

It has however, large specific applications in its own right and should be treated with the same level of importance as air, gas and liquid systems if long filter lifetimes and system cost effectiveness are to be achieved.

The quality of steam used within the food and dairy industries has been raised higher on the agenda in an ever increasing number of companies. Minimum acceptable standards are now being quoted on a more regular basis with particular reference to 'culinary grade' steam. Steam serves several purposes in the food & beverage industry. It is critical that this steam is of a high quality to ensure effective and continuous operation of the process.

Features

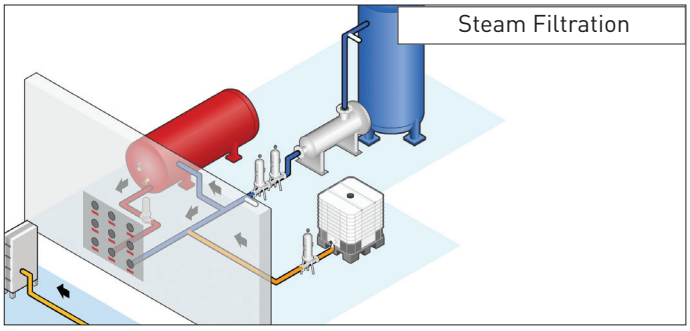
- Robust all welded 316L stainless steel construction
- 'JUMBO' filter configuration ensures maximum utilization of pipework capacity
- Available in culinary grade 1 micron absolute

Benefits

- Long service life under extreme conditions
- Reduced operational cost
- Assures performance to 3A standard

Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



STEAM FILTERS

Which Filter for Which Application ?

Process Steam

- Direct from boiler
- No direct contact with product being manufactured

Applications

- General heating
- Steam jackets
- Bio waste kill systems

Cartridges

- Required if steam is used to sterilize liquid and gas cartridge filters
- Selection dependant on flow parameters

Sintered 25 µm
(Selection Criteria)

Use for relatively low flow rates

Pleated 5 µm
(Selection Criteria)

High flow rate and dirt holding capacity

Culinary Steam (3A Standard 609-03)

- 95% retention of >2 micron particles in the liquid phase
- Manufactured from 300 series stainless steel
- Any additives to the boiler feed should conform to CFR Title 21, Chapter 1, Part 173, Section 173.310

Applications

- Used in direct contact with food
- Direct contact with food processing equipment and HVAC systems

Cartridges

- Selection dependant on flow parameters

Sintered 1 µm
(Selection Criteria)

Use for relatively low flow rates

Culinary 1 µm
(Selection Criteria)

Used to maximize steam capacity of pipe

JUMBO Filters
(Selection Criteria)

Highest available capacity

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STEAM Filters
Filter Cartridges

Specifications - PLEATED

Materials of Construction

- Filtration Media: 316L Stainless Steel
- Inner Support Core: 316L Stainless Steel
- Outer Support Cage: 316L Stainless Steel
- End Caps: 316L Stainless Steel
- Standard o-rings/gaskets: EPDM *(standard)*
  Silicone and Viton
  (options available)

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 2 barg (29.00 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Effective Filtration Area (EFA)

10˝ (250 mm) 0.15 m^2 (1.61 ft^2)

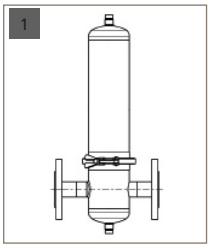
Housing Materials of Construction

- Material: 316L Stainless Steel
- Surface Finish
  - Single Internal: Electropolished Ra 0.8
  - Single External: Mechanical Polish (Commercial Bright)
  - Jumbo Internal: Upstream - Beadblast Outlet Assembly - Linished 180 grit
  - Jumbo External: Beadblast
- Vent / Drain
  - Single / Jumbo: $^1/_4$˝ BSPP Female Thread
- Seal Material: EPDM Aseptic Seal

Housing Design Pressure and Temperature

Single: 16 barg (232 psig) @ 200 °C (392 °F)

Jumbo: 7 barg (101 psig) @ 170 °C (338 °F)



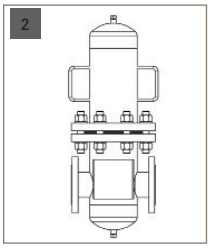


Figure	Housing Code	Connection Size	Capacity Kg / hr @ 1 barg <100 mbar or 40 m / sec	Overall Height	Replacement Filter Code
1	HBAHP01KY	1.5˝ (38.1 mm)	150	14.8˝ (376 mm)	ZCHS-K-...C
1	HBAHP011C	2˝ (50.8 mm)	280	20.7˝ (526 mm)	ZCHS-1-....C
2	VISCE-01J-D	3˝ (50.8 mm)	750	30.0˝ (763 mm)	ZCHS-J-...3
2	VISCE-01J-E	4˝ (101.6 mm)	1300	35.2˝ (895 mm)	ZCHS-J-...4
2	VISCE-03J-G	6˝ (152.4 mm)	2300	41.2˝ (1049 mm)	3 x ZCHS-J...3
2	VISCE-03J-H	8˝ (203.2 mm)	3750	48.7˝ (1237 mm)	3 x ZCHS-J-...4

Note: For efficient steam distribution it is recommended that steam velocities are restricted to 25 m / sec^{-1}. For more information on the HBA range, please contact Parker domnick hunter.

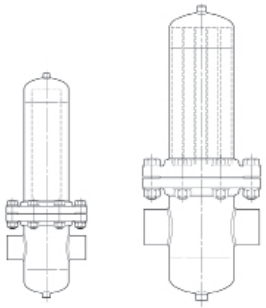
Correction Factors

To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor below to find the equivalent flow @ 1 barg (14.50 psig).

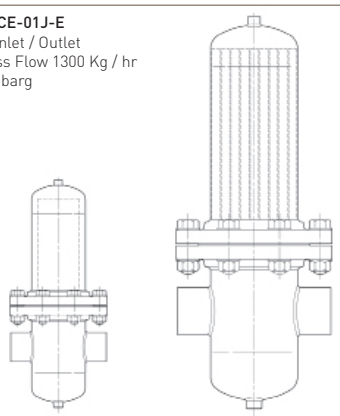
Steam Pressure	0	1	2	3	4	5	6	7	8	9	10
Correction Factor	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5

Table showing the relative system size difference between pleated cartridges left and sintered cartridges right.

VISCE-01J-D
3˝ Inlet / Outlet
Mass Flow 780 Kg / hr
@ 1 barg



VISCE-01J-E
4˝ Inlet / Outlet
Mass Flow 1300 Kg / hr
@ 1 barg



STEAM FILTERS

Specifications - SINTERED

Materials of Construction

- Filtration Media: Sintered Stainless Steel (316L)
- End Caps: Stainless Steel (316L)
- Standard o-rings/gaskets: EPDM *(standard)* Silicone and Viton *(options available)*

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 5 barg (72.51 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Housing Materials of Construction

- Material: 316L Stainless Steel
- Surface Finish
  - Internal: Electropolished Ra 0.8
  - External: Mechanical Polish (Commercial Bright)
- Vent / Drain: $^{1}/_{4}$" BSPP Female Thread (Supplied with Plug)
- Seal Material: EPDM Aseptic Seal

Housing Design Pressure and Temperature

16 barg (232 psig) @ 200 °C (392 °F)

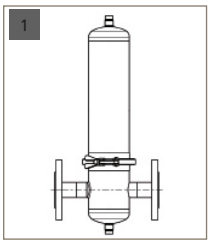


Figure	Housing Code	Connection Size	Capacity Kg / hr @ 1 barg <100 mbar or 40 m / sec 1 µm	25 µm	Overall Height	Replacement Filter Code
1	HBAHP01KY	1.5" (38.1 mm)	21	45	14.8" (376 mm)	ZCSSK-...C
1	HBAHP011C	2" (50.8 mm)	40	160	20.7" (526 mm)	ZCSS1-....C
1	HBAHP012C	2" (50.8 mm)	82	280	30.5" (776 mm)	ZCSS2-....C

Note: For efficient steam distribution it is recommended that steam velocities are restricted to 25 m / sec^{-1}. For more information on the HBA range, please contact Parker domnick hunter.

Correction Factors

To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor below to find the equivalent flow @ 1 barg (14.50 psig).

Steam Pressure	0	1	2	3	4	5	6	7	8	9	10
Correction Factor	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5

Ordering Information

SINTERED

ZCSS □ - □ □

Code	Length (Nominal)	
B	2.5"	(65 mm)
A	5"	(125 mm)
K	5"	(125 mm)
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)
4	40"	(1000 mm)

All cartridges supplied as single items

Code	Nominal Micron Rating Steam
001	1.0 µm (Culinary)
025	25.0 µm

Code	Endcap (10")
B	dh DOE
C	226 Bayonet

Code	Endcap (Demi)
T	TRUESEAL
Z	Demi A & B Std

PLEATED

ZCHS - □ - □ □

Code	Length (Nominal)	
B	2.5"	(65 mm)
A	5"	(125 mm)
K	5"	(125 mm)
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)
J	JUMBO	

All cartridges supplied as single items

Code	Nominal Micron Rating Steam
001	1.0 µm (Culinary)
005	5.0 µm

Code	Endcap (10")
B	dh DOE
C	226 Bayonet
3	3" JUMBO
4	4" JUMBO

Code	Endcap (Demi)
T	TRUESEAL
Z	Demi A & B Std

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Specifications - SINTERED retrofit cartridges

Materials of Construction

- Filtration Media: Sintered Stainless Steel (316L)
- End Caps: Stainless Steel (316L)
- Standard o-rings/gaskets: EPDM *(standard)* Silicone and Viton *(options available)*

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 5 barg (72.51 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Ordering Information

SINTERED retrofit cartridges

Z □ □ □ □

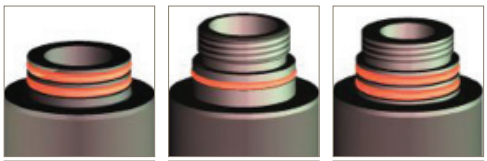
Code	Length (Nominal)
P	1 micron
S	25 micron

All cartridges supplied as single items

Code	Length (Nominal)	
02	2"	(65 mm)
03	3"	(125 mm)
04	4"	(125 mm)
05	5"	(250 mm)
07	7"	(500 mm)
10	10"	(750 mm)
15	15"	(750 mm)
20	20"	(750 mm)
30	30"	(750 mm)

Code	Diameter (Nominal)
05	1"
10	1"
20	2"
25	2.5"
30	3"
50	5"

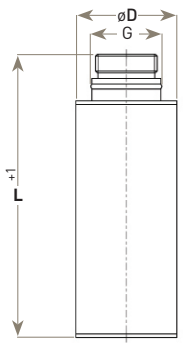
Code	Endcap 10"
UP	2 x o-ring
UR	1 x o-ring & thread
UI	2 x o-ring & thread



Code UP | Code UR | Code UI

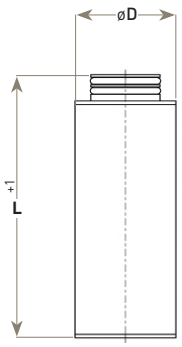
Description	L	D
ZP/ZS 0310 UR	88	40
ZP/ZS 0315 UR	88	40
ZP/ZS 0415 UR	124	40
ZP/ZS 0425 UR	125	54
ZP/ZS 0525 UR	152	54
ZP/ZS 0530 UR	148	76
ZP/ZS 1030 UR	269	76
ZP/ZS 1530 UR	405	76
ZP/ZS 2030 UR	532	76
ZP/ZS 3030 UR	784	76
ZP/ZS 3050 UR	774	130

Diagram



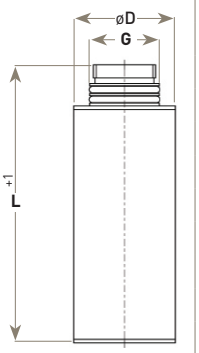
Description	L	D
ZP/ZS 0210 UP	-	
ZP/ZS 0310 UP	86	35
ZP/ZS 0305 UP	-	-
ZP/ZS 0410 UP	114	35
ZP/ZS 0420 UP	117	40
ZP/ZS 0520 UP	141	40
ZP/ZS 0525 UP	141	54
ZP/ZS 0725 UP	193	54
ZP/ZS 0730 UP	196	76
ZP/ZS 1030 UP	269	76
ZP/ZS 1530 UP	396	76
ZP/ZS 2030 UP	523	76
ZP/ZS 3030 UP	775	76
ZP/ZS 3050 UP	775	76

Diagram



Description	L	D
ZP/ZS 0205 UI	75	35
ZP/ZS 0210 UI	93	35
ZP/ZS 0305 UI	89	35
ZP/ZS 0310 UI	93	35
ZP/ZS 0410 UI	121	35
ZP/ZS 0420 UI	127	40
ZP/ZS 0520 UI	151	40
ZP/ZS 0525 UI	151	54
ZP/ZS 0725 UI	203	54
ZP/ZS 0730 UI	206	76
ZP/ZS 1030 UI	279	76
ZP/ZS 1530 UI	406	76
ZP/ZS 2030 UI	533	76
ZP/ZS 3030 UI	785	76
ZP/ZS 3050 UI	785	130

Diagram



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