

SOPT

Steam Operated Pumping Trap

Description

SOPT is a steam operated pumping trap with flanged connections. This innovative product is capable of working in trapping or pumping mode automatically, depending on the process conditions. The unit is operated by steam & is used to remove condensate from the process plant under all operating conditions including vacuum / stall.

Size & Connection

Model	Condensate inlet	Condensate outlet	Motive steam inlet	Steam Exhaust
SOPT	2" (Class 150)	1 1/2" (Class 150)	1/2" Screwed NPT	1" Screwed NPT

Limiting conditions

Sizes: 2" X 1 1/2"

Max. Operating Pressure: 203 psi g @ 388.4 °F

Max. Operating Temperature: 185.6 psi g @ 572 °F

Discharge per cycle: 29.7 pounds per stroke

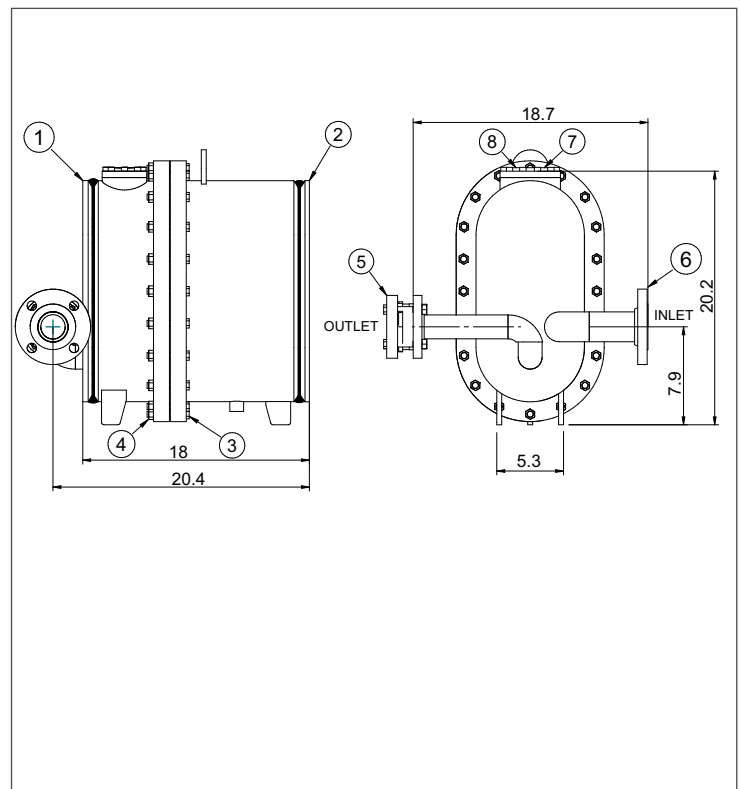
Minimum Required installation head from the base of SOPT is : 17.7 inches

Max. Cold hydraulic test pressure : 348 psi g

Max. Back Pressure 72.5 psi g

Material of construction

SR.NO	DESCRIPTION	MATERIAL
1	SOPT BODY	ASTM 516 Gr.70
2	SOPT COVER	ASTM 516 Gr70
3	M12 HEX BOLT	ASTM A193 B7
4	M12 HEX NUT	ASTM A194 2H
5	1 1/2" FMDCV	Stainless Steel
6	2" #150 FLANGE	ASTM A 105
7	1/2" STEAM INLET (SCREWED NPT)	Stainless Steel
8	1" STEAM EXHAUST (SCREWED NPT)	Stainless Steel



TRAPPING CAPACITY CHART

DIFFERENTIAL PRESSURE (psi g)	CAPACITY (lbs/hr)
29	14321
43.5	17125.5
58	17409.9
65.2	16878.5
87	15935
101.5	15972
116	16819
130.5	19345.5

How to specify-

Example: Steam Operated Pumping Trap- 050FABSOPT-QAN

Available Spares-

SR.NO.	DESCRIPTION	PART CODE NO.
1	SOPT mechanism assembly kit	SPARE-050FABSOPT-MKIT
2	Inlet valve seat assembly kit	SPARE-050FABSOPT-IVKIT
3	Exhaust valve head assembly kit	SPARE-050FABSOPT-EVKIT
4	Gasket kit	SPARE-050FABSOPT-GKIT
5	Trap valve head assembly kit	SPARE-050FABSOPT-TVHKIT
6	Trap seat assembly kit	SPARE-050FABSOPT-TSKIT
7	Trap valve & trap seat kit	SPARE-050FABSOPT-TVTSKIT
8	Inlet check valve assembly kit	SPARE-050FABSOPT-ICVKIT
9	Float assembly kit	SPARE-050FABSOPT-FKIT

How to order -

Always order spares by using the description given in column headed " Available Spares" of User Manual for this product.

(For Installation Head 17.7 inch)

Motive Pressure (psig)	Back Pressure (psig)	Capacity (lbs/hr)
29	7.25	3619
43.5	14.5	2846
58	7.25	3489
58	14.5	2960
58	21.75	2371
58	29	2157
72.5	7.25	3200
72.5	14.5	2971
72.5	21.75	2390
72.5	29	2334
72.5	36.25	1833
72.5	43.5	1711
87	14.5	2820
87	29	2294
101.5	14.5	2799
101.5	29	2241
116	14.5	2582
116	29	2214
130.5	14.5	2412
130.5	29	2248
145	14.5	2314
145	29	2110
159.5	14.5	2299
159.5	29	2011
174	14.5	2112
174	29	1845
188.5	14.5	2085
188.5	29	1846
203	14.5	2004
203	29	1808

Note

Pumping capacities Shown in above chart are for condensate temperature of 194° F
For higher back pressures contact factory



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SOPT-LH

Steam Operated Pumping Trap - Low Head

Description

SOPT-LH is a steam operated pumping trap with flanged connections. This innovative product is capable of working in trapping or pumping mode automatically, depending on the process conditions. The unit is operated by steam and is used to remove condensate from the process plant under all operating conditions including vacuum/stall.

Size and Connection

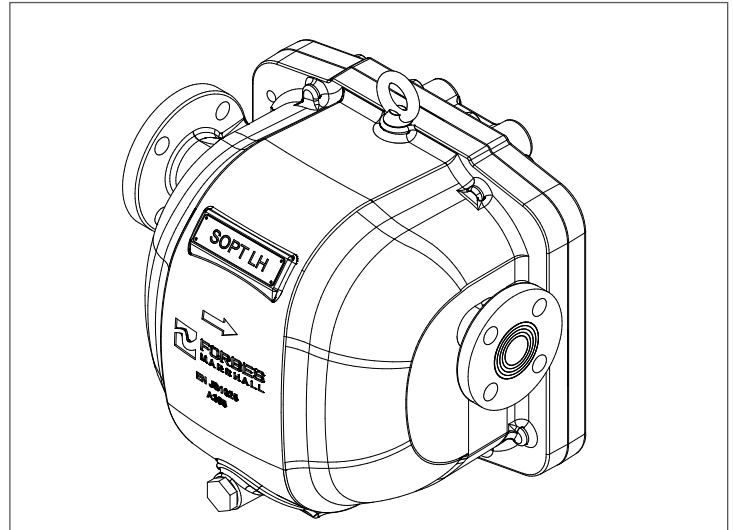
Model	Condensate inlet	Condensate outlet	Motive steam inlet	Steam Exhaust
SOPT-LH	1 1/2" (Class 150)	1" (Class 150)	1/2" Screwed BSPT/NPT/BSP	1/2" Screwed BSPT/NPT/BSP

Limiting Conditions

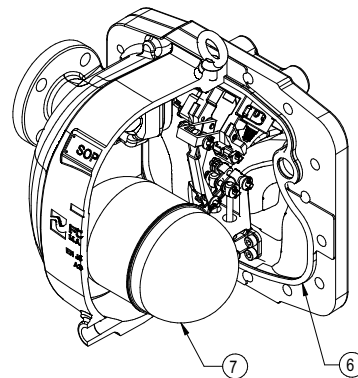
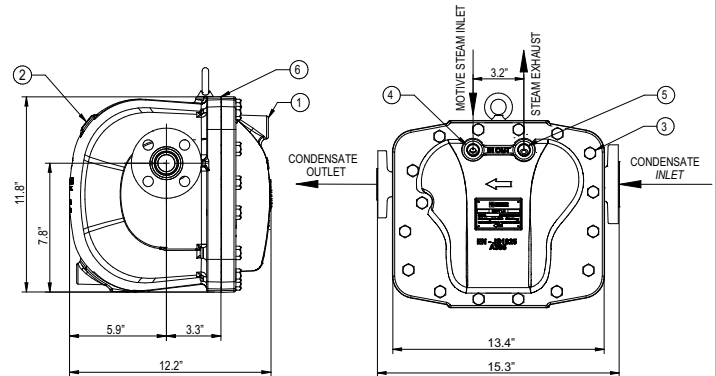
Sizes	1 1/2" X 1"
Body design Conditions	Class 150
Max. Operating Pressure	200 psi g @388.4°F
Max. Operating Temperature	185 psi g @572°F
Min. Operating Temperature	14°F
Discharge per cycle	1.24 US gallons per strokes
Min. Required installation head from the base of SOPT-LH	7.9"
Max. Cold hydraulic test pressure	348 psi g
Max. Total Back Pressure	72.5 psi g

Materials

Sr.No	Description	Material
1	SOPT-LH BASE	SG Iron ASTM A395
2	SOPT-LH COVER	SG Iron ASTM A395
3	HEX HEAD SCREW M12	ASTM A193 B7
4	15NB MOTIVE STEAM INLET (SCREWED)	SG Iron ASTM A395
5	15NB STEAM EXHAUST (SCREWED)	SG Iron ASTM A395
6	MAIN FLANGE GASKET	GRAPHITE
7	INTERNAL MECHANISM	STAINLESS STEEL



Dimensions (Inch)



Note : Approximate dry weight = 105.8 Pounds

Pumping Capacity Chart (For Installation Head 19.7 Inch)		
Motive Pressure (psi g)	Total Back Pressure (psi g)	Capacity (lbs/hr)
29	7.25	1546.6
43.5	7.25	1630.2
43.5	14.5	1496
43.5	29	1247.4
58	7.25	1705
58	14.5	1603.8
58	29	1408
58	43.5	1075.8
72.5	7.25	1843.6
72.5	14.5	1566.4
72.5	29	1273.8
72.5	43.5	1047.2
72.5	58	1047.2
87	7.25	1509.2
87	14.5	1370.6
87	29	1247.4
87	43.5	1080.2
87	58	851.4
87	72	613.8
101.5	7.25	1683
101.5	14.5	1425.6
101.5	29	1397
101.5	43.5	1245.2
101.5	58	1016.4
101.5	72	884.4
116	7.25	1465.2
116	14.5	1328.8
116	29	1133
116	43.5	992.2
116	58	1029.6
116	72	917.4
130.5	7.25	1443.2
130.5	14.5	1390.4
130.5	29	1223.2
130.5	43.5	1093.4
130.5	58	1005.4
130.5	72	941.6
145	7.25	1313.4
145	14.5	1251.8
145	29	1080.2
145	43.5	935
145	58	869
145	72	855.8
159.5	7.25	1056
159.5	14.5	1161.6
159.5	29	998.8
159.5	43.5	847
159.5	58	666.6
159.5	72	627
174	7.25	1201.2
174	14.5	1205.6
174	29	950.4
174	43.5	858
174	58	730.4
174	72	699.6
188.5	7.25	1007.6
188.5	14.5	787.6
188.5	29	726
188.5	43.5	684.2
188.5	58	651.2
188.5	72	611.6
200	7.25	963.6
200	14.5	930.6
200	29	818.4
200	43.5	704
200	58	730.4
200	72	624.8

Note

Pumping capacities shown in above chart are for condensate temperature of 194° F
 For higher back pressures & different filling heads contact Forbes Marshall.
 Max trapping capacity at 200 psi g differential pressure is 9920 Pounds/hr.
 For filling heads other than 19.7” please contact Forbes Marshall.

How to specify

Example: Steam Operated Pumping Trap Low Head
 040SOPT-LH-FPS-QBN

Available Spares

Sr.No	Description	Part Code No.
1	Mechanism assembly kit	SPARE-040SOPT-LH-MKIT
2	Inlet valve seat assembly kit	SPARE-040SOPT-LH-IVKIT
3	Exhaust valve head assembly kit	SPARE-040SOPT-LH-EVKIT
4	Gasket kit	SPARE-040SOPT-LH-GKIT
5	Support bracket assembly kit	SPARE-040SOPT-LH-SBKIT
6	Trap seat assembly kit	SPARE-040SOPT-LH-TSKIT
7	Inlet check valve assembly kit	SPARE-040SOPT-LH-ICVKIT
8	Float assembly kit	SPARE-040SOPT-LH-FKIT

How to order

Always order spares by using the description given in column headed “ Available Spares” of User Manual for this product.



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