PENNANT INTERNATIONAL CORP.

PT21

Inverted Bucket Steam Traps

DESCRIPTION:

Inverted bucket steam trap with all stainless steel internals. Best suited for equipment drains with medium to heavy condensate loads. Intermittent operation.

FEATURES:

The inverted bucket arrangement operates on the density difference between steam and water, giving a cyclic operation for discharge of the accumulated condensate.

High condensate handling capacities even at low pressures, permit the use of small trap sizes to suit many applications.

The valve and valve seat are hardened by a special induction hardening process to withstand continuous, prolonged operation.

Perfect shut-off, no steam loss.

SIZES: ½", ¾", 1", 1½"

CONNECTIONS: Screwed (NPT)

LIMITING CONDITIONS:

Max. pressure rating :	250 psig
Max. temperature rating :	428 ºF
Maximum operating back pressure at the outlet should not exceed 90% of the inlet pressure.	
Minimum diff. pressure for satisfactory operation :	1.5 psi

INSTALLATION:

The trap must be fitted vertically, with the inlet from the bottom and the outlet at the top. Correct vertical fitment is essential for easy movement of the bucket. Care must be taken to ensure that the trap level is below the level of the equipment to be drained. The bypass arrangement should be above the level of the trap.

Fitment of a strainer before the trap inlet is recommended to prevent entry of dirt / foreign particles into the trap. Full-port isolation valves should be fitted before and after the trap, to be used when the trap has to be opened for maintenance.

MAINTENANCE:

This product has to be removed from the line for maintenance. It is recommended that the trap be opened periodically and the internals inspected for wear, damage, and dirt. All worn or damaged parts should be replaced with new spares. A new internal kit comprising of the valve pin, valve seat, bracket and lever should be replaced as a set. The bucket vent hole should be cleaned.

IMPORTANT:

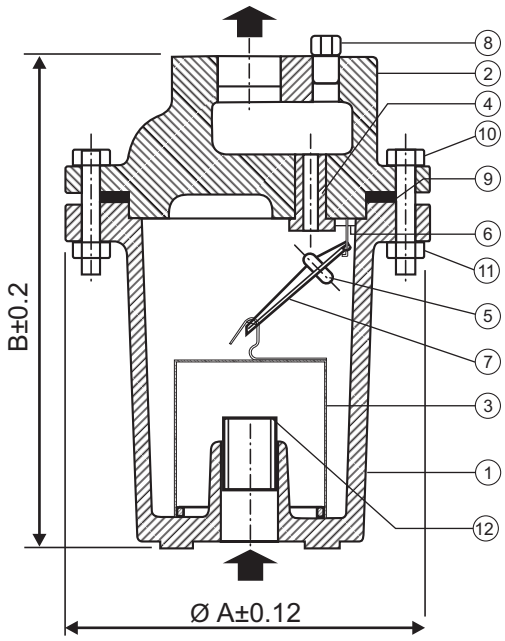
Ensure that the trap is primed by opening the inlet valve only a crack, at commissioning, allowing water to fill the trap before the steam enters. The inlet valve should be opened fully only after the trap is filled with water.

The trap should be installed as close as possible to the equipment to be drained. For new pipelines, ensure that the lines are properly flushed, prior to fitting the trap.

MATERIAL:

No.	PART	MATERIAL	Qty. in Nos.
1.	BODY	Cast Iron	01
2.	COVER	Cast Iron	01
3.	BUCKET ASSLY.	AISI 304 with CS / CI Reinforcing Ring	01
4.	VALVE SEAT (Hardened)	AISI 410/ 420	01
5.	VALVE PIN (Hardened)	AISI 410/ 420	01
6.	BRACKET	AISI 304	01
7.	LEVER	AISI 304	01
8.	PLUG	Carbon Steel	01
9.	GASKET	Non Asbestos	01
10.	BOLT	ASTM A193 Gr. B7	*
11.	NUT	ASTM A194 Gr. 2H	*
12.	PIPE	Carbon Steel	01

Note: All internal screws are AISI 304
* Sizes upto 1" - 6 Nos., 1.5" - 8 Nos.



DIMENSIONS: (approx.) in inches.

MODEL	SIZE	Ø A	B	Weight (lbs)
PT21-15	½"	4.53	6.10	8.15
PT21-20	¾"	4.53	6.69	9.25
PT21-25	1"	7.32	11.10	35.20
PT21-40	1½"	8.39	11.81	41.80

AVAILABLE SPARES:

Spare Kit: Valve Pin, Valve Seat, Bracket & Lever Assly.,
(Operating diff. press. should be specified.)

Bucket assly., Gasket.

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Discharge Capacity Chart for Inverted Bucket Traps

ACTUAL CONTINUOUS DISCHARGE CAPACITY OF TRAPS IN POUNDS OF HOT CONDENSATE PER HOUR

Model	Valve Size	DIFFERENTIAL PRESSURE psi																		
		4	7	15	30	43	57	70	85	100	115	128	142	156	170	185	199	213	228	250
		DISCHARGE CAPACITY																		
	3/32"	176	220	270	340	396	440	480	506	550	575	594	616	638	660	682	693	726	748	770
	7/64"	220	253	315	405	451	528	570	605	638	675	715	748	792	825	847	-----	-----	-----	-----
PT21-15	1/8"	286	319	430	540	627	704	745	792	825	860	-----	-----	-----	-----	-----	-----	-----	-----	-----
	5/32"	330	407	520	655	748	814	875	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	3/16"	440	594	795	940	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	1/4"	550	748	900	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	7/64"	220	264	365	485	572	638	710	770	836	885	935	990	1034	1055	1078	1100	1122	1144	1165
	1/8"	275	319	420	565	660	748	830	902	990	1060	1100	1144	1188	1235	1276	-----	-----	-----	-----
PT21-20	5/32"	330	407	570	725	880	1034	1135	1276	1364	1460	1540	-----	-----	-----	-----	-----	-----	-----	-----
	3/16"	506	682	935	1150	1320	1474	1575	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	1/4"	660	836	1135	1545	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	3/16"	660	836	1035	1415	1738	2046	2340	2640	2970	3265	3520	3795	4070	4315	4620	4840	5060	5280	5510
	7/32"	880	1122	1600	2130	2530	2915	3325	3740	4125	4480	4840	5170	5390	5505	-----	-----	-----	-----	-----
	1/4"	1100	1408	2010	2715	3190	3740	4250	4840	5060	5295	5500	-----	-----	-----	-----	-----	-----	-----	-----
PT21-25	9/32"	1364	1848	2625	3620	4290	5060	5470	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	5/16"	1980	2640	3395	4610	5280	5720	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	3/8"	2860	3410	4290	5660	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	1/2"	4840	5390	6270	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	1/4"	990	1210	1740	2245	2530	2750	2955	3245	3465	3700	3905	4125	4400	4635	4840	5060	5280	5500	5730
	9/32"	1320	1628	2130	2810	3190	3630	3935	4400	4730	5085	5390	5665	5885	6175	6380	6600	6820	-----	-----
	5/16"	1760	2068	2595	3280	3850	4400	4810	5280	5610	6070	6380	6820	7040	7275	-----	-----	-----	-----	-----
PT21-40	11/32"	1980	2365	2930	3720	4290	4950	5560	6270	6820	7510	7920	-----	-----	-------	-----	-----	-------	-----	-----
	3/8"	2200	2585	3275	4185	4950	5720	6330	7150	7700	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	7/16"	2640	3190	4070	5425	6380	7260	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	9/16"	3300	4400	5780	6710	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	3/4"	5280	6160	7165	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Guidelines on use of Capacity Chart

- Go to the differential pressure column corresponding to or slightly higher than, but not less than the operating differential pressure at which the trap is to be used. Move vertically downwards and select a suitable model and valve size.
- The selected capacity should be equal to or higher than the condensate load after including a safety factor of 2 to 3. Oversizing is not recommended.
- Example - Operating conditions = I) Inlet press. 57 psig II) Back press. 7 psig III) Condensate load 440 lbs/hr. IV) Safety factor 2.
  Model Selected: PT21-20 • Valve Size : 5/32" • Capacity 1034 lbs/hr @ a diff. press. of 57 psi.