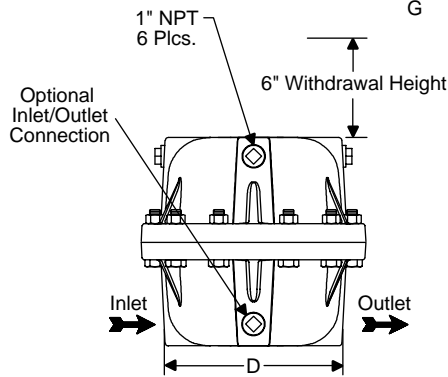
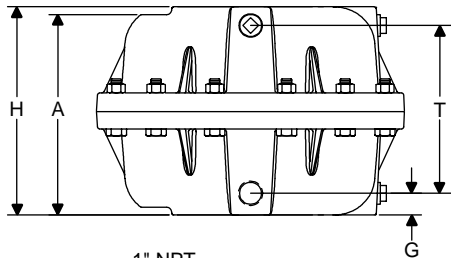
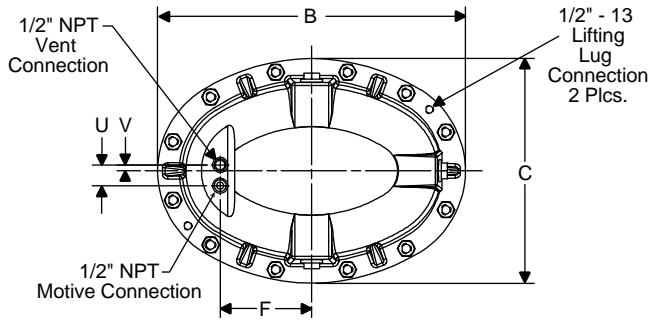




Armstrong® PT-104 Series Mini Pump Trap

Condensate Recovery Equipment



The patented Armstrong PT-104 Mini Pump Trap is the smallest non-electric solution that can move condensate or other liquids from lower to higher points and from lower to higher pressures. Condensate can be returned at temperatures well above the 210°F (99°C) limit of conventional electric centrifugal pumps without the headaches of leaking seals or cavitation problems. The PT-104 Mini Pump Trap is the small solution for a big problem.

Features

- Non-electric—Operates using inexpensive steam, air or inert gas
- Low maintenance—No leaking seals, impeller or motor problems, reducing maintenance and downtime
- Small and compact—Low profile body fits in tight space requirements while allowing minimal fill head
- Reduced installation cost—Single trade required for installation and maintenance
- Explosion proof—Standard unit intrinsically safe
- All stainless steel internals—Corrosion resistant with long service life
- Long-lasting Inconel X-750 springs

For a fully detailed certified drawing, refer to CDF #1028.

PT-104 Mini Pump Trap Physical Data		
Symbol	in	mm
"A"	12	305
"B"	18-1/2	470
"C"	13-1/2	343
"D"	10-3/4	272
"F"	5-1/2	140
"G"	1-5/16	33
"H"	12-1/2	317
"U"	1-1/4	32
"V"	3/8	9
"T"	10-1/16	256
Weight lb (kg)	140 (64)	
Bronze Check Valves lb (kg)	4 (2)	
Stainless Steel Check Valve lb (kg)		
Maximum Operating Pressure	100 psig (7 bar)	
Maximum Allowable Pressure (vessel design)	150 psig @ 450°F (10 bar @ 232°C)	

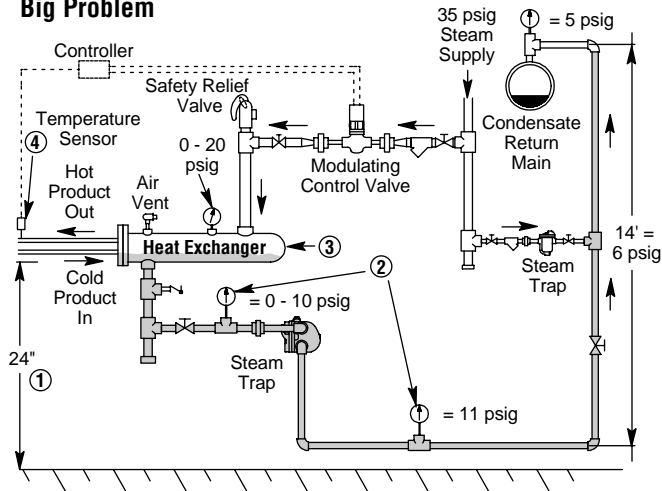
PT-104 Mini Pump Trap Materials	
Name of Part	Material
Body and Cap	Cast iron ASTM A48 Cl.30
Vent/Inlet Valves	Stainless steel
Mechanism Assembly	Stainless steel
Spring	Inconel X-750
Gasket	Compressed non-asbestos
Bolts	SA 449
Nuts	ASTM A194 Gr.2H
Plug	Cast iron

PT-104 Mini Pump Trap Connection Sizes			
Connection	Type	in	mm
Inlet	NPT	1	25
Outlet		1	25
Vent		1/2	15
Motive Pressure		1/2	15
Optional Gauge Glass		1	25
Optional Cycle Counter		1	25

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

PT-104 Series Mini Pump Trap

Big Problem



Big Problem = Maintenance Headache!

1. Space constraints—Heat exchanger equipment being low to the floor.
2. No condensate drainage—Back pressure exceeds system pressure.
3. Heat exchanger equipment floods, causing equipment damage from:
 - Water hammer—Steam and condensate occupying the same space
 - Corrosion—Non-condensable gases are reabsorbed into the condensate, forming carbonic acid
4. Production loss—Due to inaccurate temperature control.

Options

Use of external check valves required for operation of pumping trap.

- Inlet Swing Check Valve
NPT Bronze ASTM B 22
Teflon® Disc
Class 150 (Minimum)
- Outlet Lift Check Valve
NPT Bronze ASTM B 62
Teflon Disc
Class 150 (Minimum)
- In-line Check Valves
Stainless Steel Non-Slam Check Valves
- Bronze Gauge Glass Assembly
- Armored Steel Gauge Glass Assembly
- Removable Insulation Jacket
- Digital Cycle Counter

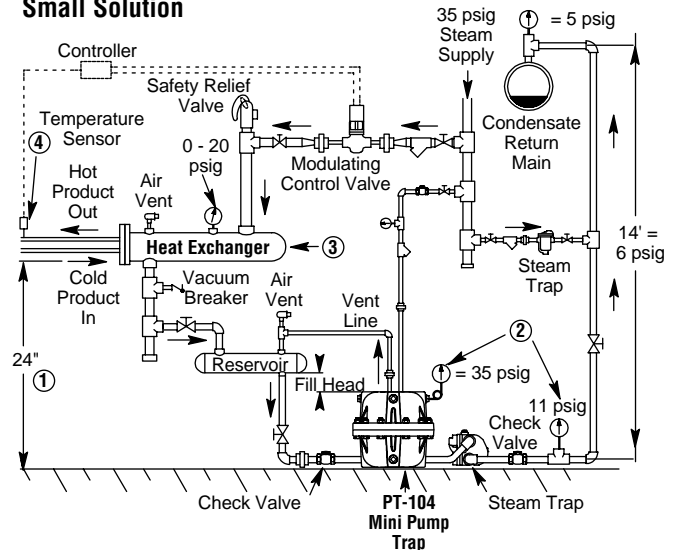
Capacity Conversion Factors for Other Filling Heads

	Filling Head				
	in	0	6	12	* 24 or greater
	mm	0	150	305	* 620 or greater
PT-104 Mini Pump Trap		0.7	1.0	1.2	* Consult factory

*Discharge per cycle typically 2.0 gallons for PT-104.

NOTE: Fill head measured from drain to top of cap. See figures on page CRE-25.

Small Solution



Small Solution = Long, trouble-free service life for heat exchanger equipment due to condensate and non-condensable gas evacuation.

1. Small and compact—PT-104 Mini Pump Trap fits in tight spaces.
2. Condensate drainage—Motive pressure to PT-104 Mini Pump Trap provides enough pressure to lift condensate to return lines.
3. Heat exchanger is free and clear of condensate due to proper drainage, provided by the PT-104 Mini Pump Trap.
4. Accurate temperature control providing less product loss.

Condensate Recovery Equipment

PT-104 Mini Pump Trap Capacities

Motive Pressure		Total Lift or Back Pressure		Filling Head 6" (152 mm) Liquid Specific Gravity .09 - 1.0			
				Steam		Air	
psig	bar	psig	bar	lb/hr	kg/hr	lb/hr	kg/hr
15	1.0	5	0.34	1,125	510	2,100	952
25	1.7			1,300	590	2,200	998
50	3.5			1,550	703	2,275	1,032
75	5.0			1,650	748	2,300	1,043
100	7.0			1,400	635	2,350	1,066
25	1.7	15	1.0	650	295	1,900	862
50	3.5			700	363	2,050	930
75	5.0			750	317	2,100	952
100	7.0			800	340	2,150	975
35	2.5	25	1.5	400	181	1,800	816
50	3.5			450	204	1,935	878
75	5.0			500	227	2,050	930
100	7.0			550	249	2,075	941
50	3.5	40	3.0	250	113	1,620	735
75	5.0			300	136	1,850	823
100	7.0			350	159	1,950	884

NOTE: Published capacities are based on the use of external check valves supplied by Armstrong. Fill head measured from drain point to top of pump case. See figures on page CRE-25.