



# Armstrong® PT-400 Series Vertical Steel Pump Trap



The Armstrong PT-400 Series Vertical Pump Trap is the low maintenance, non-electric solution to move condensate or other liquids from low points, low pressures or vacuum spaces to an area of higher elevation or pressure. Condensate can be returned at temperatures well above the 200°F (93°C) limit of conventional electric condensate pumps without the headaches of leaking seals or cavitation problems.

## Features

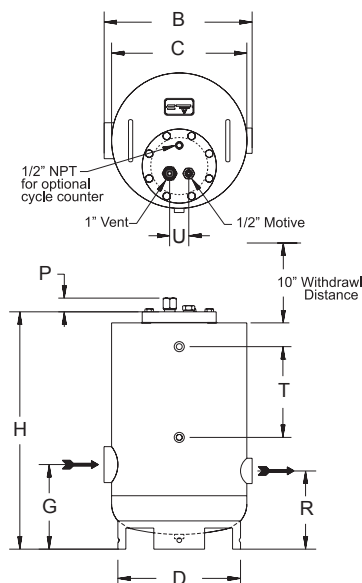
- Economical non-electric operation. Uses inexpensive steam, air or inert gas.
- Low-maintenance operation. No leaking seals, impeller or motor problems means lower maintenance. No NPSH issues.
- Lower installation costs. Single trade required for installation and maintenance.
- Peace of mind. Standard unit is intrinsically safe.
- Durable construction. ASME code-stamped carbon steel body vessel.
- Corrosion resistance. Internals are all stainless steel for corrosion resistance and long life.
- Heavy-duty springs. Springs are made from long-lasting Inconel X-750.
- Efficiency. A closed loop means no motive or flash steam is lost. All valuable Btu's are captured and returned to the system.
- Safety. The pump can be used in flooded pits without fear of electrocution or circuit breaker defaults.
- Externally removable/replaceable seats. Seats can be replaced or cleaned without removing the mechanism assembly.

## Options

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

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

For a fully detailed certified drawing, refer to CDF #1004.



PT-400 Pumping Trap Physical Data

Model Number	PT-404, PT-406, PT-408 and PT-412			
	in		mm	
"B"	17-1/2		445	
"C"	16		406	
"D"	14-1/2		368	
"G"	10		254	
"H"	28		711	
"P"	1-5/8		41	
"R"	9-1/4		235	
"T"	12		305	
"U"	2-1/4		57	
Weight, lb (kg)	166 (75)			
Number of Body/Cap Bolts	8			
Model Number	PT-404	PT-406	PT-408	PT-412
Check Valve Conn., in (mm)	1 (25)	1-1/2 (40)	2 (50)	3 (75)
Bronze Check Valves, lb (kg)	4 (2)	9 (4)	16 (7)	29 (13)
Stainless Steel Check Valves, lb (kg)	4 (2)	9 (4)	15 (7)	38 (17)

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit [armstronginternational.com](http://armstronginternational.com) for up-to-date information.

# PT-400 Series Vertical Steel Pump Trap



Condensate Recovery Equipment

PT-400 Pumping Trap Connection Sizes								
Model	Vertical Steel							
	PT-404		PT-406		PT-408		PT-412	
	in	mm	in	mm	in	mm	in	mm
Inlet Connection	1	25	1-1/2	40	2	50	3	80
Outlet Connection	1	25	1-1/2	40	2	50	2	50
Motive Pressure Connection	1/2	15	1/2	15	1/2	15	1/2	15
Vent Connection	1	25	1	25	1	25	1	25
Gauge Glass Connection	1/2	15	1/2	15	1/2	15	1/2	15

NOTES: Optional flanged connections available. Consult factory. Inlet/outlet socketweld connections available. Consult factory.

PT-400 Pumping Trap Capacities																			
Motive Pressure		Total Lift or Back Pressure		PT-404 (12" Fill Head) 1" x 1"				PT-406 (12" Fill Head) 1-1/2" x 1-1/2"				PT-408 (12" Fill Head) 2" x 2"				PT-412 (12" Fill Head) 3" x 2"			
				Steam Motive		Air Motive		Steam Motive		Air Motive		Steam Motive		Air Motive		Steam Motive		Air Motive	
				psig	bar	psig	bar	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15	1.0	5	0.34	1,900	862	2,250	1,021	3,100	1,406	3,350	1,520	4,500	2,041	4,850	2,200	7,500	3,402	8,100	3,674
25	1.7			2,500	1,134	2,650	1,202	4,600	2,086	4,875	2,211	6,600	2,994	7,000	3,175	11,000	4,990	11,650	5,284
50	3.5			3,100	1,406	3,225	1,463	4,900	2,222	5,100	2,313	7,100	3,220	7,375	3,345	11,700	5,307	12,150	5,511
75	5			3,400	1,542	3,500	1,588	5,200	2,359	5,300	2,404	7,200	3,266	7,400	3,357	12,000	5,443	12,350	5,602
100	7			3,500	1,588	*	*	5,400	2,449	*	*	7,300	3,311	*	*	12,100	5,488	*	*
125	8.5	3,600	1,633	*	*	5,500	2,495	*	*	7,400	3,357	*	*	12,200	5,534	*	*		
25	1.7	15	1	2,200	999	2,525	1,145	3,500	1,588	4,025	1,826	5,400	2,449	6,200	2,812	7,200	3,266	8,275	3,753
50	3.5			2,600	1,179	2,800	1,270	4,100	1,860	4,425	2,007	6,300	2,857	6,800	3,084	10,400	4,717	11,250	5,103
75	5			2,800	1,270	2,950	1,338	4,400	1,996	4,750	2,155	6,500	2,948	6,900	3,130	10,800	4,899	11,450	5,194
100	7			3,100	1,406	*	*	4,800	2,177	*	*	6,700	3,039	*	*	11,000	4,990	*	*
125	8.5			3,200	1,451	*	*	4,900	2,222	*	*	6,800	3,084	*	*	11,200	5,080	*	*
35	2.5	25	1.5	2,000	907	2,350	1,066	2,900	1,315	3,425	1,554	4,200	1,905	4,950	2,245	6,900	3,130	8,150	3,697
50	3.5			2,400	1,088	2,675	1,213	4,000	1,814	4,500	2,041	5,800	2,631	6,400	2,903	9,700	4,400	10,850	4,921
75	5			2,600	1,179	2,800	1,270	4,300	1,950	4,550	2,064	6,000	2,721	6,500	2,948	10,000	4,536	10,900	4,944
100	7			2,800	1,270	*	*	4,700	2,132	*	*	6,100	2,767	*	*	10,200	4,626	*	*
125	8.5			2,900	1,315	*	*	4,800	2,171	*	*	6,400	2,903	*	*	10,400	4,717	*	*
50	3.5	40	2.75	1,900	862	2,350	1,066	3,300	1,451	4,050	1,837	4,350	1,973	5,350	2,427	5,800	2,631	7,125	3,232
60	4			2,200	999	2,600	1,179	3,600	1,633	4,250	1,927	5,100	2,313	6,000	2,722	6,900	3,130	8,150	3,697
75	5			2,400	1,088	2,675	1,213	4,000	1,814	4,475	2,030	5,700	2,585	6,375	2,892	7,600	3,447	8,500	3,856
100	7			2,500	1,135	*	*	4,200	1,905	*	*	6,000	2,721	*	*	8,100	3,674	*	*
125	8.5			2,700	1,225	*	*	4,500	2,041	*	*	6,200	2,612	*	*	8,500	3,856	*	*
70	4.5	60	4	1,800	816	2,400	1,088	3,200	1,451	4,300	1,950	3,800	1,724	5,050	2,291	5,000	2,268	6,650	3,016
75	5			2,000	907	2,450	1,111	3,500	1,588	4,650	2,109	4,100	1,859	5,175	2,347	5,400	2,450	6,900	3,130
100	7			2,300	1,233	*	*	3,700	1,678	*	*	4,500	2,041	*	*	6,000	2,722	*	*
125	8.5			2,400	1,088	*	*	3,800	1,724	*	*	4,800	2,177	*	*	6,400	2,903	*	*

NOTES: Published capacities are based on the use of external check valves supplied by Armstrong. Fill head measured from drain point to top of pump cap. See figures on page 234. Although motive pressures are shown at high pressure differentials (difference between motive inlet pressure and total lift or back pressure), it is preferable to use a motive pressure of 10 - 15 psig (0.65 - 1 bar) above discharge (outlet) pressure. This ensures longevity of economical (bronze) check valves and reduces both venting time and temperature differential (on steam). If a higher differential is used, stainless steel check valves are recommended.

\*Consult factory.

PT-400 Series Pumping Trap Materials	
Name of Part	Series PT-400*
Body and Cap	Fabricated steel 150 psi ASME Sec. VIII design "U" stamped
Cap Gasket	Graphoil
Bolts	SA-449 steel
Nuts	None
Inlet Valve Assembly	Stainless steel
Vent Valve Assembly	Stainless steel
Valve Assembly Washers	Zinc-plated steel
Plug	Steel
Mechanism Assembly	Stainless steel
Springs	Inconel X-750

\*Series PT-400 is available in all stainless steel. Consult factory.

PT-400 Capacity Conversion Factors for Other Fill Heads										
Fill Head	in	mm	in	mm	in	mm	in	mm	in	mm
	0	0	6	152	12	305	24	610	36	914
Model	PT-404	0.7	0.85	1.0	1.3	1.4				
	PT-406	0.7	0.85	1.0	1.2	1.35				
	PT-408	0.7	0.85	1.0	1.2	1.35				
	PT-412	0.7	0.85	1.0	1.08	1.2				

NOTES: Fill head is measured from drain point to top of cap. See figures on page 234.

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