

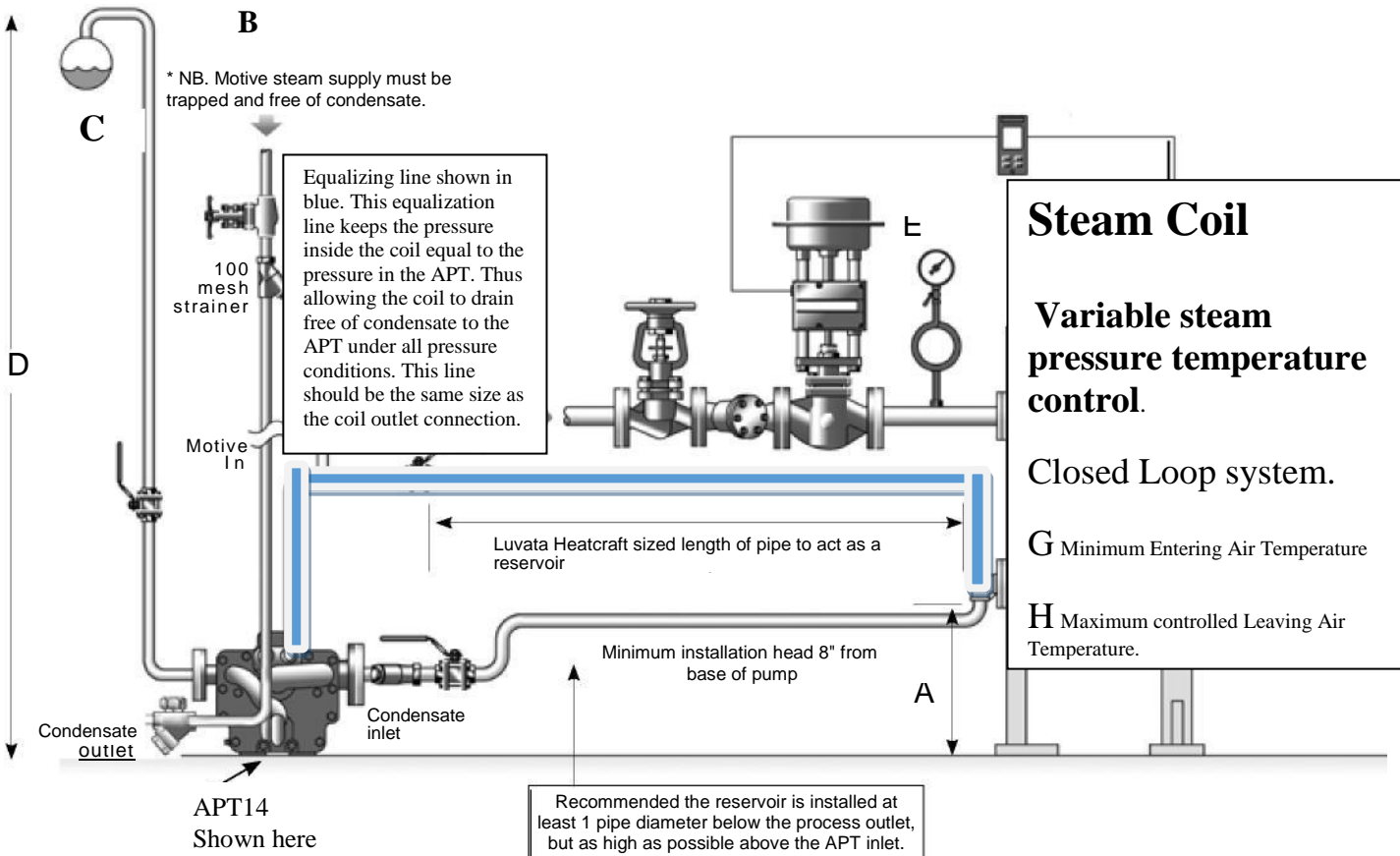
Steam Coil with Automatic Pump Trap for drainage of condensate under all conditions. Eliminate Steam Stall once and for all.

The result is a coil package which delivers accurate temperature control while preventing flooding (Coil drains free of condensate, even under a vacuum) Thereby preventing freezing, water-hammer and corrosion.

Your Luvata Heatcraft agent will ensure that the APT is accurately matched to your process and will provide you with a detailed sizing chart, tailored to your specific application.

Alternatively arrange a visit for your local Luvata Heatcraft representative who can provide detailed APT sizing information for all your specific needs.

To help us size the APT for your application simply provide us with the following information: -



Recommended Installation

- | | |
|--|-------|
| A Installation head available from the base of the pump to the centerline of the heat exchanger / process condensate outlet. | ft |
| B Motive steam pressure available to power the pump trap. | psig |
| C Pressure in the condensate return system. | psig |
| D Height of condensate return from floor level. | ft |
| E Heat exchanger full load operating pressure. | psig |
| F Maximum steam condensate load in (Consult Luvata Heatcraft Coil Calc sizing software for load in Lb/Hr | lb/hr |
| G Minimum Entering Air Temperature (consult Luvata Heatcraft Coil Calc software for EAT data. | Deg F |
| H Maximum controlled Leaving Air Temperature (consult Luvata Heatcraft Coil Calc software for data) | Deg F |

Determine the steam load in Lb/Hr. from the Luvata Heatcraft Coil Calc software, then use the APT selection guidelines shown here to size the APT

How to Select & Size

From the inlet pressure, back pressure and filling head conditions given below, select the APT size which meets the capacity requirement of the application.

For GPM, multiply the capacities below by 0.002.

For kg/h, multiply the capacities below by 0.454.

* Back pressure is the lift height (D) in feet x 0.433 plus psig in return line, (C), plus piping friction in psig.

Examples:

- Steam Condensate load (F) 750 lb/h
- Steam pressure available for operating APT (B) 100 psig
- Vertical lift from APT to the return piping (D) 50 feet
- Pressure in the return piping (piping friction negligible) (C) 50 psig
- Filling head available from base of APT (A) 8 inches
- System pressure (E) 150 psig

Solution:

1. Calculate "C + D", the total lift or back pressure, against which the condensate must be pumped. = (50 x 0.433) + 50 = 72 psig
2. From capacity table, with 100 psig inlet pressure and 72 psig back pressure, choose a APT14 which has a capacity of 1,695 lb/h.

Note:

The capacity charts shown below are applicable for the specific conditions only. Any variance in system conditions A, B, C, D, or E will alter the capacities shown, and hence these figures can be used as a rough guide only. Your local Luvata Heatcraft agent will provide detailed APT sizing information for steam coils conditions.

APT10-4.5		65 Psi Motive Steam (B)					
		0 Psi Back Pressure (C+D)		25 Psi Back Pressure (C+D)		58 Psi Back Pressure (C+D)	
Installation Head (A) inches	System Pressure (E) psig	Pumping Capacities lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h
39	65		2231		1974		1306
30			2229		1970		1293
20			1937		1937		1277
16			1620		1620		1271
12			1223		1223		1223
8			607		607		607
39	50		2088		1757		930
30			2085		1751		901
20			1937		1745		847
16			1620		1620		809
12			1223		1223		744
8			607		607		542
39	35		1909		1414		832
30			1905		1403		806
20			1900		1390		755
16			1620		1385		719
12			1223		1223		658
8			607		607		471
39	20		1164	1425			665
30			1657	1342			643
20			1649	1197			601
16			1620	1104			572
12			1223	957			521
8			607	592			369
39	0	1163		971			327
30		1088		900			316
20		961		780			297
16		879		706			282
12		754		594			258
8			547	339			183

APT14		200 Psi Motive Steam (B)						100 Psi Motive Steam (B)						30 Psi Motive Steam (B)				
		Pressure (C+D)		Pressure (C+D)		Pressure (C+D)		Pressure (C+D)		0 Psi Back Pressure (C+D)		72 Psi Back Pressure (C+D)		0 Psi Back Pressure (C+D)		30 Psi Back Pressure (C+D)		
Installation Head (A) inches	System Pressure (E) psig	Pumping Capacities lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacities lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacities lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	
39	200		10021		9561		8592		10021		9561		8592		10021		9561	
30			8491		8491		8491		8491		8491		8491		8491		8491	
20			6375		6374		6374		6374		6374		6374		6374		6374	
16			5296		5296		5296		5296		5296		5296		5296		5296	
12			3932		3932		3932		3932		3932		3932		3932		3932	
8			1695		1695		1695		1695		1695		1695		1695		1695	
39	150		9120		8386		7135		9120		8386		7137		9120		8386	
30			8491		8378		7126		8491		8378		7126		8491		8378	
20			6375		6374		6374		6374		6374		6374		6374		6374	
16			5296		5296		5296		5296		5296		5296		5296		5296	
12			3932		3932		3932		3932		3932		3932		3932		3932	
8			1695		1695		1695		1695		1695		1695		1695		1695	
39	75		7034		5820	3075		7034		5820	2694		7034		5820		5820	
30			7022		5804	2844		7022		5804	2569		7022		5804		5804	
20			6374		5786	2490		6374		5786	2345		6374		5786		5786	
16			5296		5296	2272		5296		5296		2200		5296		5296		5296
12			3932		3932		2165		3932		3932		2165		3932		3932	
8			1695		1695		1695		1695		1695		1695		1695		1695	
39	30		5018	2419		2104		5018	2626	1974		5018	1553		5018	1553		
30			4998	2248		1955		4998	2475	1875		4998	1406		4998	1406		
20			4975	1695		1707		4975	2215	1700		4975	1205		4975	1205		
16			4966	1792		1557		4966	2050	1587		4966	1107		4966	1107		
12			3932	1534		1332		3932	1795	1408		3932	992		3932	992		
8			1695	941		815		1695	1160	941		1695	850		1695	850		
39	0		1553	1223		1066		1763	1425	1112		1915						
30			1406	1136		990		1657	1337	1050		1835						
20				994		865		1478	1189	944		1692						
16		1220		908		790		1366	1097	877		1598						
12		1119		992		780		1196	958	773		1445						
8				850		487		423		620	513		1026					

APT Selection & Sizing

Capacities APT14HC

Installation Head (A) Inches	System Pressure (E)	200 Psi Motive Steam (B)				100 Psi Motive Steam (B)				30 Psi Motive Steam (B)			
		0 Psi Back Pressure (C+D)		30 Psi Back Pressure (C+D)		0 Psi Back Pressure (C+D)		30 Psi Back Pressure (C+D)		0 Psi Back Pressure (C+D)		30 Psi Back Pressure (C+D)	
		Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h	Pumping Capacity lb/h	Trapping Capacity lb/h
3	20	1021	381	832	1021	381	832	1021	381	832	1021	381	832
3	30	891	381	832	891	381	832	891	381	832	891	381	832
3	40	634	634	634	634	634	634	634	634	634	634	634	634
3	50	535	535	535	535	535	535	535	535	535	535	535	535
3	60	332	332	332	332	332	332	332	332	332	332	332	332
3	80	135	135	135	135	135	135	135	135	135	135	135	135
3	100	940	886	717	940	886	717	940	886	717	940	886	717
3	120	891	886	717	891	886	717	891	886	717	891	886	717
3	140	634	634	634	634	634	634	634	634	634	634	634	634
3	160	535	535	535	535	535	535	535	535	535	535	535	535
3	180	332	332	332	332	332	332	332	332	332	332	332	332
3	200	135	135	135	135	135	135	135	135	135	135	135	135
3	220	1034	886	686	1034	886	686	1034	886	686	1034	886	686
3	240	1022	886	589	1022	886	589	1022	886	589	1022	886	589
3	260	634	634	575	634	634	575	634	634	575	634	634	575
3	280	535	535	483	535	535	483	535	535	483	535	535	483
3	300	332	332	215	332	332	215	332	332	215	332	332	215
3	320	135	135	135	135	135	135	135	135	135	135	135	135
3	340	508	501	333	508	501	333	508	501	333	508	501	333
3	360	448	441	333	448	441	333	448	441	333	448	441	333
3	380	440	441	305	440	441	305	440	441	305	440	441	305
3	400	446	446	245	446	446	245	446	446	245	446	446	245
3	420	332	332	240	332	332	240	332	332	240	332	332	240
3	440	135	135	175	135	135	175	135	135	175	135	135	175
3	460	135	135	135	135	135	135	135	135	135	135	135	135
3	480	135	135	135	135	135	135	135	135	135	135	135	135
3	500	135	135	135	135	135	135	135	135	135	135	135	135
3	520	135	135	135	135	135	135	135	135	135	135	135	135
3	540	135	135	135	135	135	135	135	135	135	135	135	135
3	560	135	135	135	135	135	135	135	135	135	135	135	135
3	580	135	135	135	135	135	135	135	135	135	135	135	135
3	600	135	135	135	135	135	135	135	135	135	135	135	135
3	620	135	135	135	135	135	135	135	135	135	135	135	135
3	640	135	135	135	135	135	135	135	135	135	135	135	135
3	660	135	135	135	135	135	135	135	135	135	135	135	135
3	680	135	135	135	135	135	135	135	135	135	135	135	135
3	700	135	135	135	135	135	135	135	135	135	135	135	135
3	720	135	135	135	135	135	135	135	135	135	135	135	135
3	740	135	135	135	135	135	135	135	135	135	135	135	135
3	760	135	135	135	135	135	135	135	135	135	135	135	135
3	780	135	135	135	135	135	135	135	135	135	135	135	135
3	800	135	135	135	135	135	135	135	135	135	135	135	135
3	820	135	135	135	135	135	135	135	135	135	135	135	135
3	840	135	135	135	135	135	135	135	135	135	135	135	135
3	860	135	135	135	135	135	135	135	135	135	135	135	135
3	880	135	135	135	135	135	135	135	135	135	135	135	135
3	900	135	135	135	135	135	135	135	135	135	135	135	135
3	920	135	135	135	135	135	135	135	135	135	135	135	135
3	940	135	135	135	135	135	135	135	135	135	135	135	135
3	960	135	135	135	135	135	135	135	135	135	135	135	135
3	980	135	135	135	135	135	135	135	135	135	135	135	135
3	1000	135	135	135	135	135	135	135	135	135	135	135	135

A=DISTANCE FROM FLOOR THE RESERVOIR PIPE
 B=MOTIVE STEAM PRESSURE
 C=SYSTEM BACK PRESSURE
 D=VERTICAL LIFT TO CONDENSATE RETURN MAIN
 E=PROCESS OPERATING PRESSURE