

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.18 Automatic Air Vent		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0340	1-1/2" NPT inlet, 250 psi	Q-5	12	1.333	Ea.	1,150	84.50		1,234.50	1,375

23 21 20.42 Expansion Joints

0010 EXPANSION JOINTS

0100	Bellows type, neoprene cover, flanged spool									
0140	6" face to face, 1-1/4" diameter	1 Stpi	11	.727	Ea.	345	51		396	455
0160	1-1/2" diameter	"	10.60	.755		345	53		398	460
0180	2" diameter	Q-5	13.30	1.203		350	76		426	500
0190	2-1/2" diameter		12.40	1.290		365	81.50		446.50	520
0200	3" diameter		11.40	1.404		405	89		494	585
0480	10" face to face, 2" diameter		13	1.231		505	78		583	670
0500	2-1/2" diameter		12	1.333		530	84.50		614.50	710
0520	3" diameter		11	1.455		540	92		632	730
0540	4" diameter		8	2		615	127		742	870
0560	5" diameter		7	2.286		735	145		880	1,025
0580	6" diameter	↓	6	2.667	↓	760	169		929	1,075

23 21 20.46 Expansion Tanks

0010 EXPANSION TANKS

1507	Underground fuel-oil storage tanks, see Section 23 13 13									
1512	Tank leak detection systems, see Section 28 33 33.50									
2000	Steel, liquid expansion, ASME, painted, 15 gallon capacity	Q-5	17	.941	Ea.	935	59.50		994.50	1,125
2020	24 gallon capacity		14	1.143		765	72.50		837.50	950
2040	30 gallon capacity		12	1.333		1,125	84.50		1,209.50	1,350
2060	40 gallon capacity	↓	10	1.600	↓	1,300	101		1,401	1,575
2080	60 gallon capacity	Q-5	8	2	Ea.	1,550	127		1,677	1,925
2100	80 gallon capacity		7	2.286		1,675	145		1,820	2,075
2120	100 gallon capacity		6	2.667		2,275	169		2,444	2,750
3000	Steel ASME expansion, rubber diaphragm, 19 gal. cap. accept.		12	1.333		3,550	84.50		3,634.50	4,025
3020	31 gallon capacity		8	2		3,950	127		4,077	4,550
3040	61 gallon capacity		6	2.667		5,925	169		6,094	6,775
3080	119 gallon capacity		4	4		5,975	253		6,228	6,950
3100	158 gallon capacity		3.80	4.211		8,325	267		8,592	9,550
3140	317 gallon capacity		2.80	5.714		12,500	360		12,860	14,300
3180	528 gallon capacity	↓	2.40	6.667	↓	20,400	420		20,820	23,000

23 21 20.58 Hydronic Heating Control Valves

0010 HYDRONIC HEATING CONTROL VALVES

0050	Hot water, nonelectric, thermostatic									
0100	Radiator supply, 1/2" diameter	1 Stpi	24	.333	Ea.	37	23.50		60.50	75.50
0120	3/4" diameter		20	.400		41.50	28		69.50	87.50
0140	1" diameter		19	.421		121	29.50		150.50	177
0160	1-1/4" diameter	↓	15	.533	↓	104	37.50		141.50	171
0500	For low pressure steam, add					25%				

23 21 20.70 Steam Traps

0010 STEAM TRAPS

0030	Cast iron body, threaded									
0040	Inverted bucket									
0050	1/2" pipe size	1 Stpi	12	.667	Ea.	170	47		217	257
0070	3/4" pipe size		10	.800		296	56.50		352.50	410
0100	1" pipe size		9	.889		455	62.50		517.50	595
0120	1-1/4" pipe size	↓	8	1	↓	690	70.50		760.50	865
1000	Float & thermostatic, 15 psi									
1010	3/4" pipe size	1 Stpi	16	.500	Ea.	202	35		237	275
1020	1" pipe size	↓	15	.533	↓	194	37.50		231.50	270