

# 23 82 Convection Heating and Cooling Units

## 23 82 39 – Unit Heaters

### 23 82 39.16 Propeller Unit Heaters

		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
4366	620 MBH (460 V)	Q-6	1.30	18.462	Ea.	4,350	1,200		5,550	6,600
4370	960 MBH (460 V)	▼	1.10	21.818	▼	8,300	1,425		9,725	11,300

# 23 83 Radiant Heating Units

## 23 83 16 – Radiant-Heating Hydronic Piping

### 23 83 16.10 Radiant Floor Heating

#### 0010 RADIANT FLOOR HEATING

0100	Tubing, PEX (cross-linked polyethylene)									
0110	Oxygen barrier type for systems with ferrous materials									
0120	1/2"	Q-5	800	.020	L.F.	1.09	1.27		2.36	3.09
0130	3/4"	▼	535	.030	▼	1.54	1.89		3.43	4.51
0140	1"	▼	400	.040	▼	2.41	2.53		4.94	6.45
0200	Non barrier type for ferrous free systems									
0210	1/2"	Q-5	800	.020	L.F.	.60	1.27		1.87	2.55
0220	3/4"	Q-5	535	.030	L.F.	1.10	1.89		2.99	4.03
0230	1"	"	400	.040	"	1.88	2.53		4.41	5.85
1000	Manifolds									
1110	Brass									
1120	With supply and return valves, flow meter, thermometer,									
1122	auto air vent and drain/fill valve.									
1130	1", 2 circuit	Q-5	14	1.143	Ea.	355	72.50		427.50	500
1140	1", 3 circuit	▼	13.50	1.185	▼	405	75		480	555
1150	1", 4 circuit	▼	13	1.231	▼	440	78		518	595
1154	1", 5 circuit	▼	12.50	1.280	▼	520	81		601	695
1158	1", 6 circuit	▼	12	1.333	▼	570	84.50		654.50	750
1162	1", 7 circuit	▼	11.50	1.391	▼	620	88		708	815
1166	1", 8 circuit	▼	11	1.455	▼	690	92		782	890
1172	1", 9 circuit	▼	10.50	1.524	▼	740	96.50		836.50	960
1174	1", 10 circuit	▼	10	1.600	▼	795	101		896	1,025
1178	1", 11 circuit	▼	9.50	1.684	▼	830	107		937	1,075
1182	1", 12 circuit	▼	9	1.778	▼	915	113		1,028	1,175
1610	Copper manifold header (cut to size)									
1620	1" header, 12 circuit 1/2" sweat outlets	Q-5	3.33	4.805	Ea.	128	305		433	595
1630	1-1/4" header, 12 circuit 1/2" sweat outlets	▼	3.20	5	▼	148	315		463	635
1640	1-1/4" header, 12 circuit 3/4" sweat outlets	▼	3	5.333	▼	160	340		500	680
1650	1-1/2" header, 12 circuit 3/4" sweat outlets	▼	3.10	5.161	▼	192	325		517	695
1660	2" header, 12 circuit 3/4" sweat outlets	▼	2.90	5.517	▼	282	350		632	830
3000	Valves									
3110	Thermostatic zone valve actuator with end switch	Q-5	40	.400	Ea.	53	25.50		78.50	96
3114	Thermostatic zone valve actuator	"	36	.444	"	100	28		128	152
3120	Motorized straight zone valve with operator complete									
3130	3/4"	Q-5	35	.457	Ea.	164	29		193	223
3140	1"	▼	32	.500	▼	177	31.50		208.50	242
3150	1-1/4"	▼	29.60	.541	▼	226	34		260	299
3500	4 way mixing valve, manual, brass									
3530	1"	Q-5	13.30	1.203	Ea.	234	76		310	370
3540	1-1/4"	▼	11.40	1.404	▼	254	89		343	410
3550	1-1/2"	▼	11	1.455	▼	325	92		417	490
3560	2"	▼	10.60	1.509	▼	460	95.50		555.50	650
3800	Mixing valve motor, 4 way for valves, 1" and 1-1/4"	▼	34	.471	▼	385	30		415	470
3810	Mixing valve motor, 4 way for valves, 1-1/2" and 2"	▼	30	.533	▼	445	34		479	540