

23 65 Cooling Towers

23 65 13 – Forced-Draft Cooling Towers

23 65 13.10 Forced-Draft Type Cooling Towers		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5120	120 ton	Q-6	1.20	20	Ea.	17,500	1,325		18,825	21,200
5140	140 ton		1	24		17,800	1,575		19,375	22,000
5160	160 ton		.80	30		19,200	1,975		21,175	24,100
5180	180 ton		.65	36.923		22,500	2,425		24,925	28,400
5251	600 ton		.16	150		82,500	9,850		92,350	105,000
5252	1,000 ton	↓	.10	250	↓	137,500	16,400		153,900	175,500
5300	For stainless steel support structure, add					30%				
5360	For higher capacities, use multiples of each size									
6000	Stainless steel									
6010	Induced draft, crossflow, horizontal, belt drive									
6100	57 ton	Q-6	1.50	16	Ea.	29,000	1,050		30,050	33,500
6120	91 ton		.99	24.242		35,600	1,600		37,200	41,600
6140	111 ton		.43	55.814		53,500	3,675		57,175	64,500
6160	126 ton	↓	.22	109	↓	55,500	7,175		62,675	71,500

23 73 Indoor Central-Station Air-Handling Units

23 73 13 – Modular Indoor Central-Station Air-Handling Units

23 73 13.10 Air-Handling Units

0010	AIR-HANDLING UNITS, Built-Up									
0100	With cooling/heating coil section, filters, mixing box									
0880	Single zone, horizontal/vertical									
0890	Constant volume									
0900	1,600 CFM	Q-5	1.20	13.333	Ea.	5,650	845		6,495	7,450
0920	5,000 CFM	Q-6	1.40	17.143		16,400	1,125		17,525	19,700
0940	11,500 CFM	"	1	24	↓	40,900	1,575		42,475	47,400
0970	22,000 CFM	Q-6	.60	40	Ea.	82,500	2,625		85,125	94,500
1000	40,000 CFM	"	.30	80	"	105,000	5,250		110,250	123,500

23 73 39 – Indoor, Direct Gas-Fired Heating and Ventilating Units

23 73 39.10 Make-Up Air Unit

0010	MAKE-UP AIR UNIT									
0020	Indoor suspension, natural/LP gas, direct fired,									
0032	standard control. For flue see Section 23 51 23.10									
0040	70°F temperature rise, MBH is input									
0100	75 MBH input	Q-6	3.60	6.667	Ea.	4,000	440		4,440	5,050
0160	150 MBH input		3	8		5,500	525		6,025	6,825
0220	225 MBH input		2.40	10		6,175	655		6,830	7,775
0300	400 MBH input	↓	1.60	15		15,300	985		16,285	18,300
0600	For discharge louver assembly, add					5%				
0700	For filters, add					10%				
0800	For air shut-off damper section, add				↓	30%				