

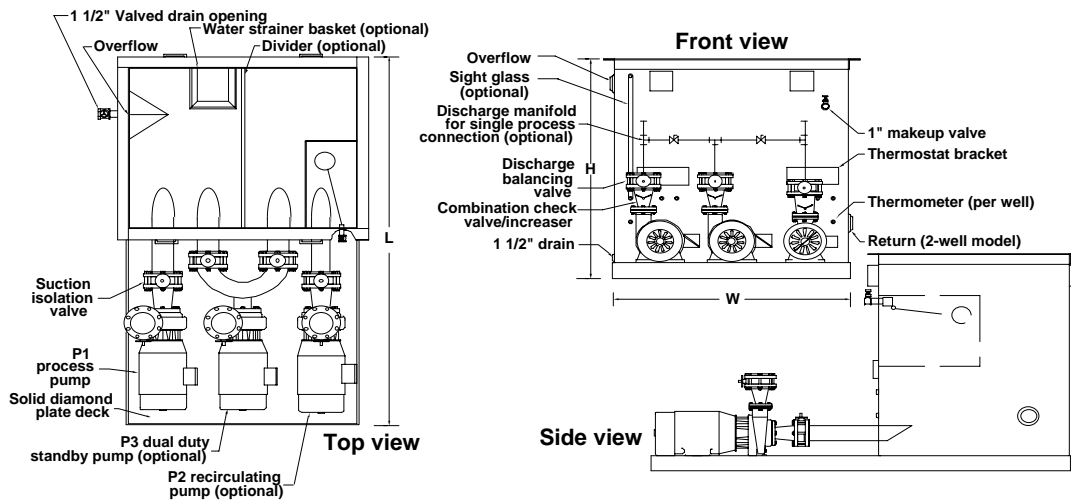
**Brief Description**

**Application**

All pump tank systems come standard with:

- Centrifugal close-coupled pump, featuring cast iron impellers with 230/ or 460/3/60 ODP motor; other voltages and motor designs are available
- Tank, sides, bottom, and baffles are **stainless steel**
- Tanks come with stainless steel basket on process return
- Lug-mount butterfly valves
- Standard hardware includes thermometer (s), pump pressure gauge (s), drain valve
- Full-size pump trim for maximum efficiency; includes isolation, throttling, and check valves
- Automatic level control makeup valve
- Solid diamond-plate pump ledge
- 1 year warranty on parts

All pumps are close-coupled centrifugal types and include a compound pressure gauge and ODP-type motors. TEFC motors are available as an option. Trim is full size, including butterfly valve (and reducer if necessary) on the suction side, combination increaser/check valve, and butterfly valve on the discharge side.



Pump horsepower ①	1.5	3	5	7.5	10	15	20	25	30	40	50	50	
Amp draw 460/3/60	2.6	4.8	7.6	11	14	21	27	34	40	52	65	77	
Shipping wt. (lbs.) ②	P1	-	9.5	115	125	165	180	300	310	400	465	710	730
	P2	60	90	115	275	320	425	510	630	670	-	-	-

① To convert to kW, multiply by **0.746**.

② To convert to shipping Kg, multiply by **0.454** and round up to the next whole number.

**American Standards**

Trim size (inches)	2"	2.5"	3"	4"	6"	8"
Maximum flow (gpm)	50	90	160	320	900	2,000
Shipping weight (lbs.)	25	35	50	75	120	165

**Metric Standards**

Trim size (mm) ①	51 mm	64 mm	76 mm	102 mm	152 mm	203 mm
Maximum flow (lpm)	189	340	624	1,211	3,406	7,570
Shipping weight	12	16	23	35	55	75

### American Standards

Model number	Maximum tower tons <sup>Ⓞ</sup>		Capacity gallons		Maximum pumps/ ledge	Return water connections inches NPT	Dimensions inches			Tank weight (less pumps) pounds	
	Single well	dual well	Overflow	Operating			L	W	H	Shipping	Operating
T150 (D)	27	16	135	100	3	3	72	36	40	600	1,800
PT400 (D)	78	48	390	350	3	5	95	56	64	500	3,500
T500 (D)	96	60	480	360	3	4	102	48	52	2,000	6,000
T700 (D)	144	90	720	540	4	4	114	72	52	2,600	8,600
T1100 (D)	215	134	1,075	825	4	6	114	72	77	3,400	12,400
T1600 (D)	323	200	1,615	1,240	4	6	138	72	77	4,000	17,500
T2000 (D)	408	255	2,040	1,565	5	6	150	92	78	5,000	22,100
T2700 (D)	540	337	2,700	2,065	6	6	150	120	78	6,000	28,500
T3700 (D)	733	458	3,665	2,830	6	6	162	120	90	7,000	37,600
T5100 (D)	1,026	641	5,130	3,960	7	8	162	168	92	7,800	50,700

Ⓞ Calculated for **cooling tower water**, based on three (3) gpm per ton and towers being within 25 feet of the tank.

### Metric Standards

Model number	Maximum tower tons <sup>Ⓞ</sup>		Capacity liters		Maximum pumps/ ledge	Return water connections mm dia.	Dimensions cm			Tank weight (less pumps) pounds	
	Single well	dual well	Overflow	Operating			L	W	H	Shipping	Operating
T150 (D)	102,200	63,900	511	378	3	76 mm	183	91	102	273	817
PT400 (D)	295,200	184,500	1,476	1,325	3	127 mm	241	142	162	227	1,588
T500 (D)	363,400	227,100	1,817	1,362	3	102 mm	259	122	132	908	2,722
T700 (D)	545,000	340,600	2,725	2,044	4	102 mm	289	183	132	1,180	3,901
T1100 (D)	813,800	508,600	4,069	3,122	4	152 mm	289	183	195	1,543	5,625
T1600 (D)	1,222,600	764,100	6,113	4,693	4	152 mm	350	183	195	1,815	7,938
T2000 (D)	1,544,200	965,100	7,721	5,923	5	152 mm	381	234	198	2,268	10,025
T2700 (D)	2,043,800	1,277,400	10,219	7,816	6	152 mm	381	305	198	2,722	12,928
T3700 (D)	2,774,400	1,734,000	13,872	10,711	6	152 mm	411	305	229	3,176	17,056
T5100 (D)	3,883,400	2,427,100	19,417	14,988	7	203 mm	411	427	234	3,539	22,998

Ⓞ In Kcal/hr, calculated for **cooling tower water**, based on three (3) lpm per 1,000 kcal/hr and towers being within eight (8) meters of the tank.

### Capacities

Capacity		Nominal flow		Trim size		Process Pump		Recirculating pump	
Nominal refrigeration, Tower water tons	Kcal/hr	gallons	liters	In. NPT	mm dia	hp	kW	hp	kW
20	75,600	60	227	2.5"	64 mm	5	3.73	3	2.24
30	113,400	90	341	2.5"	64 mm	7.5	5.59	3	2.24
40	151,200	120	454	3"	76 mm	7.5	5.59	5	3.73
50	189,000	150	568	3"	64 mm	10	7.50	5	3.73
60	226,800	180	682	4"	64 mm	10	7.50	5	3.73
75	283,500	225	852	4"	102 mm	15	11.19	7.5	5.59
80	302,400	240	909	4"	102 mm	15	11.19	7.5	5.59
100	378,000	300	1,135	4"	102 mm	20	14.91	7.5	5.59
125	472,500	375	1,419	6"	152 mm	20	14.91	10	7.50
150	567,000	450	1,703	6"	152 mm	25	18.64	10	7.50
175	661,500	525	1,987	6"	152 mm	30	22.37	15	11.19
200	756,000	600	2,271	6"	152 mm	30	22.37	15	11.19
250	945,000	750	2,839	6"	152 mm	40	29.93	20	14.91
300	1,134,000	900	3,406	6"	152 mm	50	37.29	20	14.91

### Cooling Tower Water Pump Tank System Sizing Considerations

In sizing a cooling tower pump tank, allow enough volume to avoid unacceptable levels of turbulence and enough volume for drawdown. **Drawdown** is the amount of water that is pumped out of the tank on startup before water begins to return from the towers. Standard tank sizes in this specification allow two (2) gallons per ton (two [2] *liters per 1,000 kcal/hr*) for drawdown and towers located within twenty-five (25) feet (eight [8] m) of the tank.

If towers are more than twenty-five (25) feet (eight [8] m) from the tank, **add more tank volume based on the table below.**

System size		Additional tank volume	
tons	Kcal/hr	gallons per foot over 25 feet	liters per meter over 8 meters
1– 100	3,780 – 378,000	8.8	109.3
101– 300	378,001– 1,134,000	16.4	203.7
301– 600	1,134,001 – 2,268,000	26.8	332.8

To reduce turbulence when the system is in operation, allow one (1) gallon of tank volume or each gpm (one [1] liter of tank volume for each lpm) entering the tank.

#### Sizing Examples American Standards

A 100-ton cooling tower is being located 50 feet from the pump tank. **What minimum volume should the tank have for a *single-well tank* and for a *dual-well tank*?**

*Single well:* Volume = Drawdown volume + Operating volume + Distance correction  
 = 2 gals./ton x 100 tons + 1 gal./gpm x 300 gpm + (50-25 ) feet x 8.8 gal./foot  
 = 200 + 300 + 220  
 = 720 gallons required

**Result: Select a T700 model pump tank.**

*Dual well:* Volume = Drawdown volume + Operating volume + Distance correction  
 = 2 gals./ton x 100 tons + 1 gal./gpm x 600 gpm + (50-25) feet x 8.8 gal./foot  
 = 200 + 600 + 220  
 = 1,020 gallons required

**Result: Select a T1100D model pump tank.**

Simplifying formulas where standard flow, 3 gpm per ton, is used are:

Single well volume = 5x Tons + Distance correction

Dual well volume = 8x Tons + Distance correction

**Standard tank selections are based on the formulas listed above, where the distance correction is zero (0), meaning that the towers are within twenty-five feet (25') of the tank.**

#### Metric Standards

A 378,000-Kcal/hr cooling tower is being located 15 *meters* from the pump tank. **What minimum volume should the tank have for a *single-well tank* and for a *dual-well tank*?**

*Single-well:* Volume = Drawdown volume + Operating volume + Distance correction  
 = 2 *liters* per 1,000 Kcal/hr x 378 (1,000 Kcal/hr) + 1 *liter/lpm* x 1,134 lpm + (15 - 8) meters x 109.3 liters/meter  
 = 756 + 1,134 + 765  
 = 2,655 *liters* required

**Result: Select a T700 model pump tank.**

*Dual well:* Volume = Drawdown volume + Operating volume + Distance correction  
 = 2 *liters* per 1,000 Kcal/hr x 378 (1,000 Kcal/hr) + 1 *liter/lpm* x 2,268 + (15 - 8) meters x 1009.3 liters/meter  
 = 3,789 liters required

**Result: Select a T1100 model pump tank.**

Simplifying formulas where the standard flow, 3 lpm per 1,000 Kcal/hr, is used are:

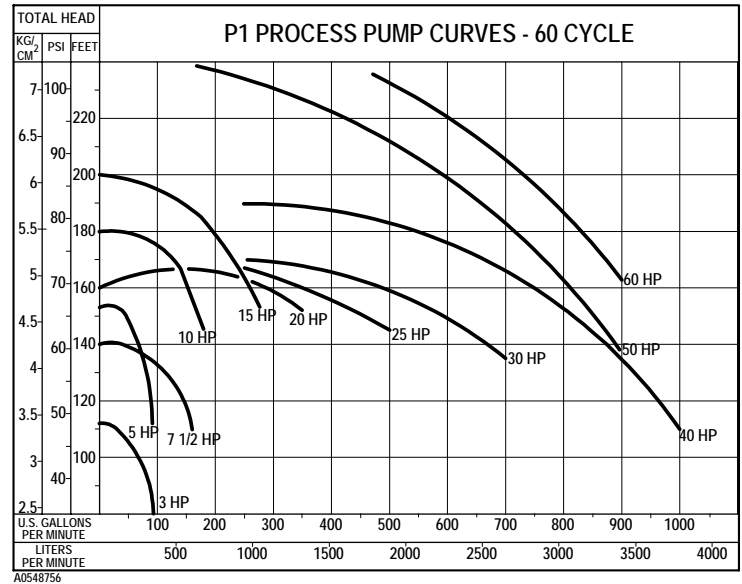
Single well volume = 5 x Kcal/hr ÷ 1,000 + Distance correction

Dual well volume = 8 x Kcal/hr ÷ 1,000 + Distance correction

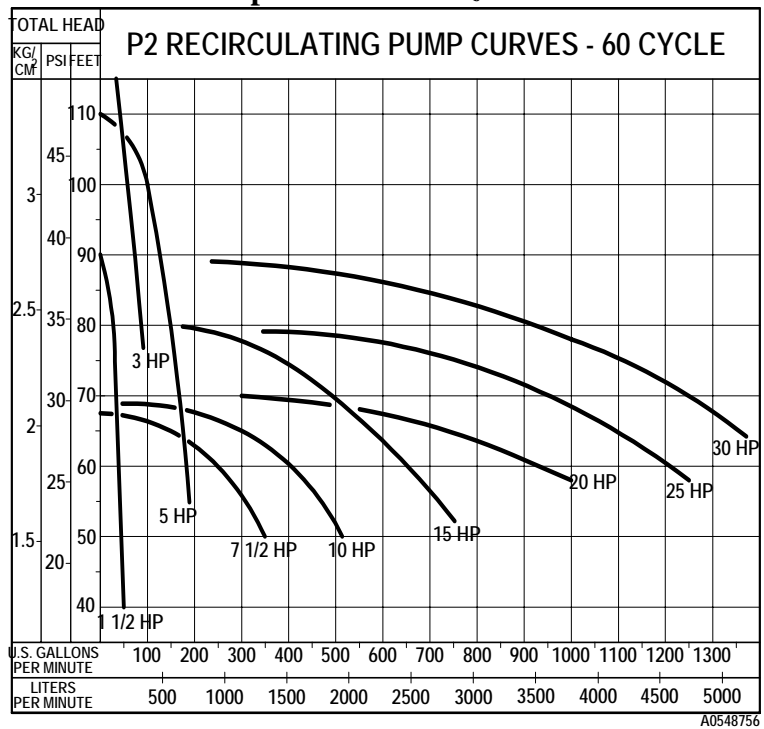
**Standard tank selections are based on the formulas listed above, where the distance correction is zero (0), meaning that the towers are within *eight feet (8)* meters of the tank.**

**Options**

- Armaflex insulation
- Composite cover
- Second pump ledge
- 7-foot support legs
- OSHA handrail and ladder
- Sight glass
- 1" Clayton float valve (Claval makeup valve)
- Well reinforcement
- P1 process pump
- P2 recirculating pump
- TEFC motor (in lieu of ODP motor)
- Bronze impeller
- Single suction trim
- Double suction trim
- Butterfly valve handles
- Discharge manifold, process/recirculation standby
- Stainless steel opening, plugged or valved
- Digital temperature display
- Amp meter
- Hour meter
- Digital flow meter
- UL panel
- NEMA 12 enclosure; includes enclosure and fused control transformer
- Through-the-door disconnect
- Mount panel on tank and wire, (panel installation on tank, pump wiring, and/or alarm wiring)



**P2 Process Pump Curves • 60 Hz**



**Note:** For 50 Hz operation, derate by multiplying pressures by **0.69**

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