

## DETERMINING SPECIFIC HEATING REQUIREMENTS FOR SERFILCO IMMERSION HEATERS

To determine the heating requirement of a tank, first obtain the following information.

- 1) Total cubic feet of tank. (Multiply the inside dimensions of the tank — depth x width x length).
- 2) Total gallons of solution. Multiply by 7.48 the cubic feet of the tank occupied by solution. (If the solution is normally 6" below the top of the tank, allow for this when figuring).
- 3) Average ambient (room) temperature at which tank will be used.
- 4) Temperature level at which solution is to be held.
- 5) Heat up time desired.

- Specific heat of water. Insert specific heat of your solution here.
- Weight of water. Insert specific weight of your solution here.

After this information is known the following calculations can be made.

$$\frac{A \times 1.0^* \times 8.35^{**} \times B}{3412 \times C} = \underline{\hspace{2cm}}$$

$$D \times E = \underline{\hspace{2cm}}$$

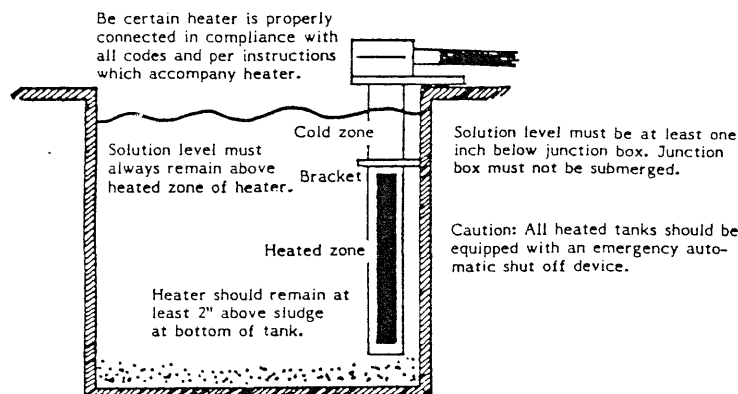
Add the results of both calculations. The total is the Kilowatt requirement of the tank.

- A = Total gallons of solution
- B = Difference from ambient temperature and desired solution temperature.
- C = Desired heat up time (hours)
- D = Heat loss of tank. Refer to chart above.
- E = Square feet of top of tank (multiply length x width).

## SURFACE LOSSES IN KILOWATTS FROM OPEN HOT WATER TANK

80°	—	130°	.16	180°	.50
85°	.01	135°	.18	185°	.55
90°	.02	140°	.21	190°	.60
95°	.04	145°	.24	195°	.66
100°	.05	150°	.27	200°	.72
105°	.065	155°	.30	205°	.80
110°	.09	160°	.34	210°	.87
115°	.10	165°	.37	215°	.95
120°	.12	170°	.41	220°	1.04
125°	.14	175°	.45		

Multiply square footage of surface by above factor.



## A TYPICAL HEATER INSTALLATION

*0 Insulate -  
Put on Badd  
of TA-103A  
5/91*