

**SIZING A MOKON FOR MOLD TEMPERATURE CONTROL:****TYPICAL APPLICATION:**

Steel Mold = 24" x 20" x 12"  
Operating Temp. = 140°F  
Preheat = 30 minutes  
4-3/8" Cooling Lines (4 ins / 4 outs)

**NOTE:**

Steel Weight = 490 lbs./ft.<sup>3</sup>  
C<sub>p</sub> (Steel) = .12 BTU/lb./°F  
Ambient Temp. = 70°F

Q (Heat Required) = W (Weight) x C<sub>p</sub> (Specific Heat) x )T (Temperature Difference)

$$\text{Mold Weight} = \frac{(24 \text{ in.}) (20 \text{ in.}) (12 \text{ in.})}{1728 \text{ in.}^3 / \text{ft.}^3} \times (490 \text{ lbs./ft.}^3)$$

Mold Weight = 1633 lbs.

Therefore:  $Q = (W) (C_p) (T)$   
 $Q = (1633 \text{ lbs.}) (.12 \text{ BTU/lb./}^\circ\text{F}) (140^\circ\text{F} - 70^\circ\text{F})$   
 $Q = 13,717 \text{ BTU's}$

To get BTU/Hr:      Divide BTU by the preheat time  
(ie. 1 Hr divide by 1 Hr, 1/2 Hr divide by .5 Hr, etc.)

Therefore a 30 min. preheat

$$Q = 13,717 \text{ BTU} / .5 \text{ Hr}$$

$$Q = 27434 \text{ BTU/Hr}$$

Since 1 KW = 3412 BTU/Hr, the heat required  $Q = \frac{27,434 \text{ BTU/Hr}}{3412 \text{ KW/BTU Hr}} = 8 \text{ KW}$

Note: Additional heating capacity will be required to overcome line losses and surface losses of the mold. The majority of the heat required is in the preheat of the mold for application operating under 200°F. Actual preheat time may increase slightly if an 8 KW unit was chosen.