



"OUR HEAT IS
YOUR IMPROVEMENT"

ENERGY SAVINGS

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PRESENTED BY

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EFFICIENCY OF THE HEATER FOR
ALUMINIUM HOLDING FURNACE

At present, energy problem is one of the most important issues seeming endless and continually affects all industries directly. The price of natural gas in the global market has been increased from time to time.

One of the major cost drivers in the aluminium die casting process is the gas cost. In many instances, industries that use gas burner holding furnaces have attempted to maximize furnaces efficiency to thereby ***reduce fuel consumption or conserve energy by use electrical holding furnace.***

At some point, there may come a time when replacing your energy source is actually more advantageous than continuously paying for expensive repairs and gas cost.



The primary topic involves comparison of gas consumption and electric consumption. We are responsible for improve and installation **The SiC heater U-Type “EREMA”** in holding furnace for aluminium industry since June, 2019. Temperature for holding aluminium is approximately 690°C to 750°C.

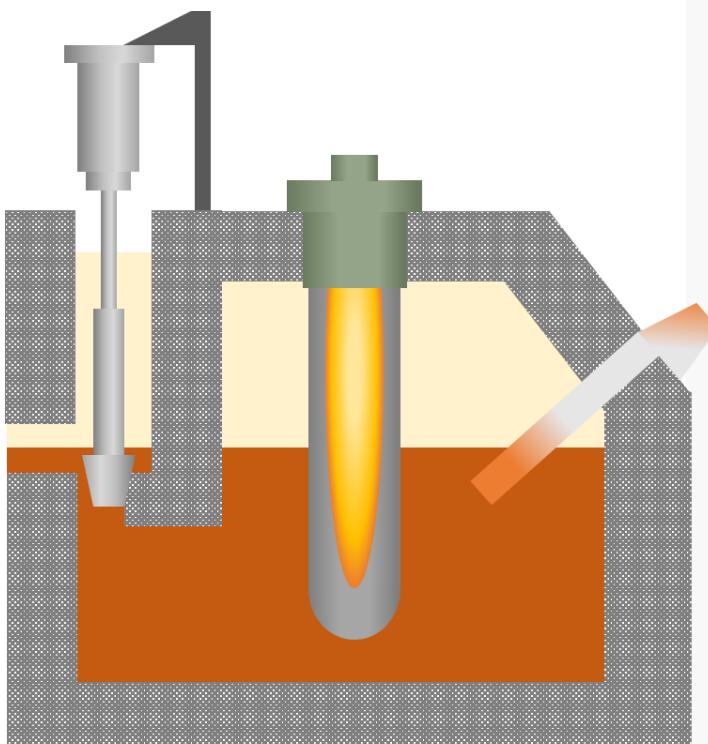


Figure 1 - Schematic of gas burner holding furnace.

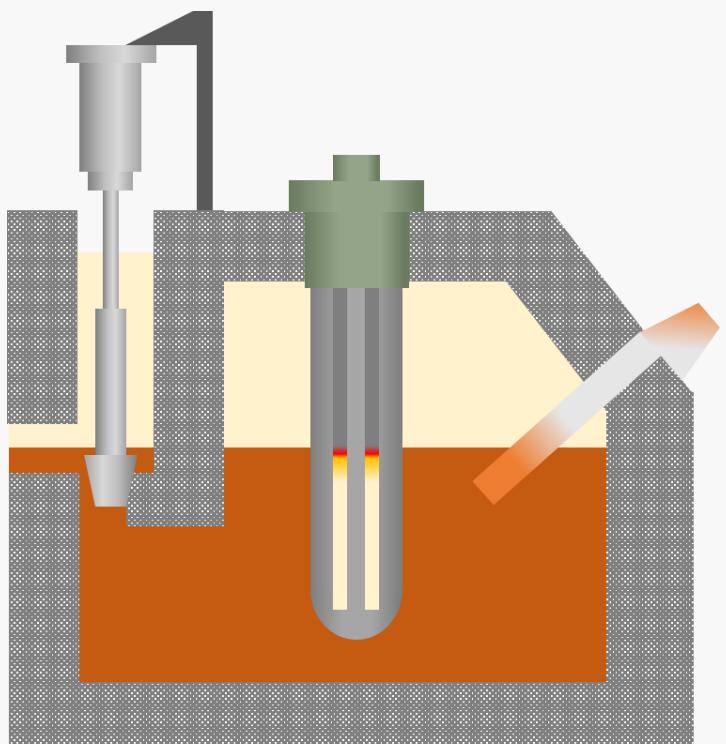
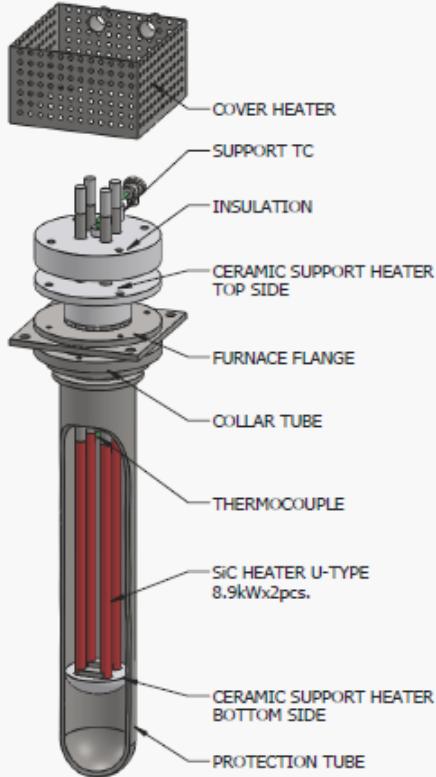


Figure 2 - Schematic of SiC Heater holding furnace (**Improvement**).



Result

We assume the following details:

24 hours production per day

365 working days per year

15.94 baht per m³ of natural gas price

3.32 baht per kW of electrical price

(Last update: September 2019)

Figure 3 - Schematic of SiC Heater U-type "EREMA" with Protection tube (*Improvement*).

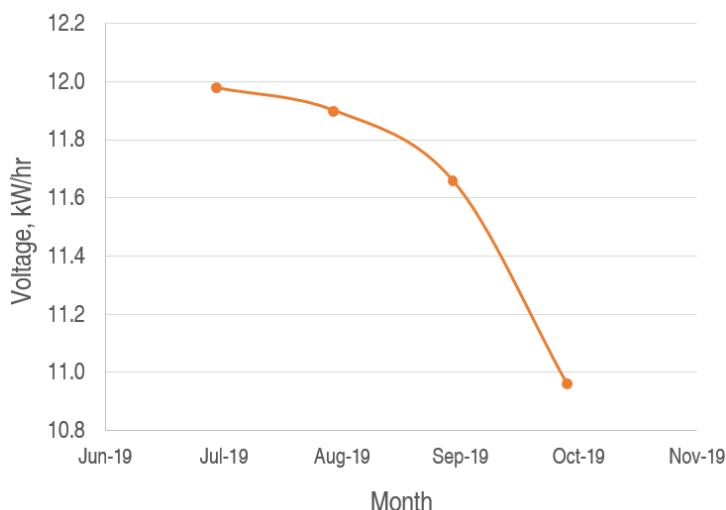


Figure 4 - Energy savings from reduced voltage (Temperature stable).

Monthly gas burner holding furnace cost can be calculated below

Gas cost = **44,481 THB/month**

Monthly heater holding furnace cost can be calculated below

Electrical cost = **27,745 THB/month**

As a result,
they can **save up to 62%**
of consumption cost.

Further advantages of SiC heater "EREMA" for holding furnaces including;

- Reduced environmental impact (CO₂ emissions)
- Higher quality and more temperature stable metal
- Long life time of heater and protection tube
- Ease of install and maintenance

Additionally, when manufacturers needed to monitor their energy consumption of production, they can use IoT to realize even greater strategic benefits, such as improving the reliability of power supply, prevent machine damage and breakdowns, and reduce the maintenance workload.