

## THE METACAST “BOOST” CRUCIBLE FURNACE



The disadvantage of gas crucible furnaces has always been their low efficiency, as low as 12% with very high emissions. Because silicon carbide crucibles are used, it is very important to apply indirect heat to the load, thus the inefficiency. One of the ways to boost the efficiency is to add a ceramic matrix recuperator to the exhaust system to recover waste heat for preheating the combustion air. This is very expensive and payback is almost never achieved. The new "Boost System" developed by MetaCast does away with recuperators and uses the flame entrainment created by the patent pending tunnel to retrain and reheat unburned gases. This is why the efficiency can be as high as 70%. Thus, higher melt rates are achieved by using less energy.



### METACAST ALUMINUM PRODUCT LISTING

#### MELTING SYSTEMS:

GAS FIRED CRUCIBLE AND BATH  
FURNACES

ELECTRIC CRUCIBLE AND BATH  
FURNACES

HOLDING FURNACES

MAGNESIUM MELTING FURNACES

ZINC MELTING FURNACES

#### THERMAL SYSTEMS:

CUSTOM THERMAL CONTROL S  
FEED FORWARD LOGIC CON-  
TROLS

#### MOLTEN METAL HANDLING:

CIRCULATING AND DEGASING  
PUMPS

PUMPING SYSTEM DESIGNED FOR  
PERMANENT MOLD, SAND FOUN-  
DRIES AND HPD CASTING

LARGE VOLUME TRANSFER

## Capacity Table for Gas Fired Boost System

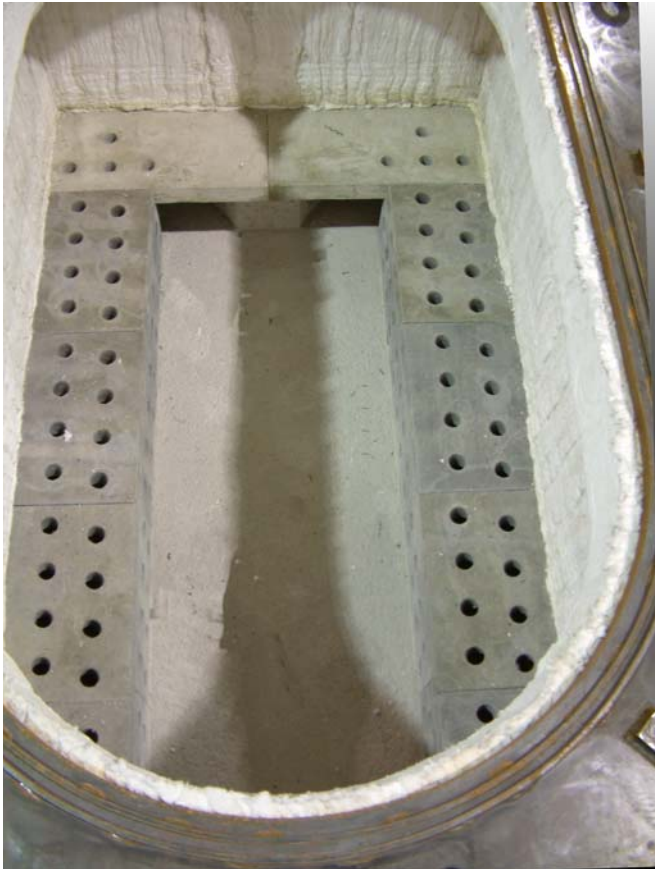
Model	Burner Btu/h	Fuel	Holding Capacity	Melt Rate Hot	Shipping Weight
MCG-80	300,000	Gas/Propane/Oil  Electric models available	160lbs/74kg	70 lbs/31kg/hr	2,200lbs/998kg
MCG-120	500,000		275lbs/124kg	120 lbs/54kg/hr	2,600lbs/1180kg
MCG-240	600,000		500lbs/230kg	240 lbs/108kg/hr	2,700lbs/1224kg
MCG-350	850,000		700lbs/320kg	350 lbs/160kg/hr	3,000lbs/1360kg
MCG-450	900,000		1,000lbs/454kg	450 lbs/204kg/hr	3,200lbs/1452kg
MCG-660	1,500,000		1,600lbs/725kg	660 lbs/300kg/hr	3,400lbs/1544kg
MCG-1000	2,000,000		2,500lbs/1135kg	1,000 lbs/455kg/hr	5,600lbs/2540kg



### Standard Features for the BOOST Line of Aluminum Crucible Furnace

- Rolled steel shell
- Drain port in case of crucible leak
- Natural gas or propane burners
- Digital microprocessor-based temperature controls
- We can match customer's burner preference
- Custom designs, sizes and configurations
- FM approved gas trains
- UL Approved control panels
- High limit shut down
- NEMA 12 control panels
- Fused main power
- Pneumatic actuated lid

## METACAST Specialty Furnaces

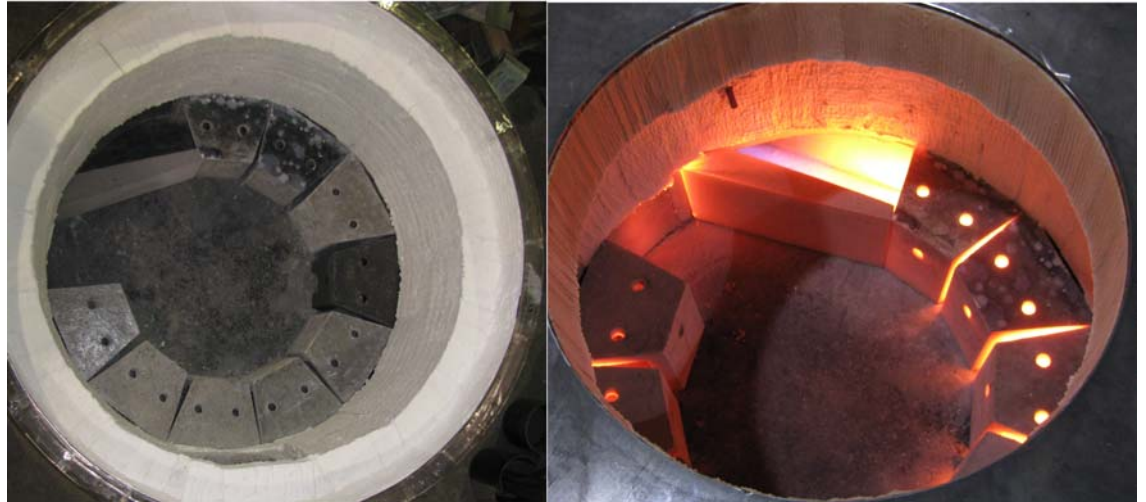


- The “BOOST” tunnel system is used in all specialty furnaces that MetaCast manufactures.
- The system adapts very well to oval crucible application such a magnesium melters/holders.



- The “BOOST” tunnel system (patent pending) eliminates the need to have expensive exhaust recuperators to send heated air in with combustion gases. The specially designed entrainment chamber ensure that all gases entering the firing chamber get burned with little waist. The combination of the high velocity entrainment and heat retention in the tunnel give it a 40 to 70% improvement over conventional systems.
- The use of high-quality insulation materials results in very low power consumption.
- Modular tile design can be easily replaced to tools required

## “BOOST” Features and Benefits



- The “BOOST” gas fired crucible furnaces are setting industry standards for their high melting performance. They are the stalwart for melting operations but also for holding of aluminum.
- Positive pressure in the furnace chamber keeps even heat distribution around the crucible and as a result a more controlled lower flue temperature, and up to 60% increase in crucible life.
- Two independent heat loops. The holding loop is to maintain the set point during non production periods. The production loop allows maximum power to maintain the required melt rate.
- Integrated safety system which continues to operate the furnace at reduced power in case of malfunction in the bath thermocouple, in order to prevent the freezing of the melt
- Over-temperature limit controller
- 7” Thick ceramic module wall construction
- Floor and tunnels made of 3,100° F castable refractory.
- Designed to work with Metacast Pumping Systems

### TECHNICAL SUPPORT

METACAST IS LOCATED IN  
ONTARIO CANADA  
SERVICING THE USA MARKET  
FOR OVER 30 YEARS  
insidesales@metamag.com  
TEL: 1 519 245 0404  
FAX: 1 519 245 4306

### REGIONAL SUPPORT

ONTARIO:  
CRAFT CAST  
MIKE JURCIC  
905 299 7677  
craftcast@cogeco.ca

MICHIGAN, OHIO, INDIANA,

ILLINOIS:

PENNSYLVANIA:

FOR MORE

MELTING SOLUTIONS

visit us on the Web at:  
[www.metacast.com](http://www.metacast.com)



770 WRIGHT ST  
STRATHROY ONTARIO  
CANADA N7G 3H8  
Phone 519-245-0404