

# BeaverMatic

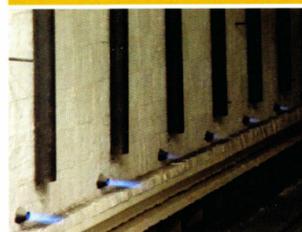
Carbottom Furnaces with  
Various Design Features



*Carbottom Furnace  
with car mounted door*

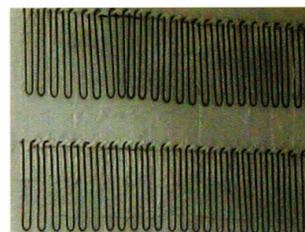
## BeaverMatic Carbottom Furnaces are simplistic in appearance and operation, yet offer numerous design features to meet your specific needs.

### Heating System



#### Direct Gas-Fired

Direct gas-fired furnaces incorporate burners that fire above the work area on one side of the furnace and below the work area on the other side. Down draft flues and the arrangement of the burners force the heat to swirl around the workload area. Fixed excess air burners provide excellent temperature uniformity across a wide temperature range, and pulse fired burners can be more energy efficient.



#### Electric

Rod overbend heating elements are mounted on the walls of electrically heated furnaces. The elements are low wattage output which results in long service life.

Both direct gas-fired and electric large furnaces can be split into multiple zones of control to provide excellent temperature uniformity.

### Rail Locations



#### In Trench

Rails can be installed in trenches as shown in the picture above on left or on the floor as shown in the picture above on right.



#### On Floor

Trenches enable driving forklift trucks across the rails.



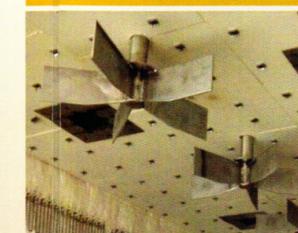
### Door Configurations

#### Car Mounted Door (left)



#### Vertical Lift Door (above)

### Forced Circulation System



#### Electric

Electric furnaces, that are designed to operate within the forced convection temperature range (up to 1,400°F or 760°C), typically require fans to circulate the heat through the workload area. A blower can be installed to cool the workload.



#### Air Cooling System

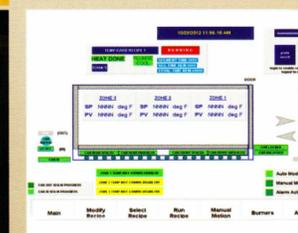
During the cooling portion of a cycle, natural gas flow to the burners on gas-fired furnaces is modulated and/or stopped, and air continues flow to the burners to capture and carry the heat out of the furnace to achieve a desired cooling rate.

### Control System



#### Enhanced Control System

Standard cabinet mounted on furnace and standard control system utilizes a programmable temperature controller/recorder.



#### OIT Capabilities Screen

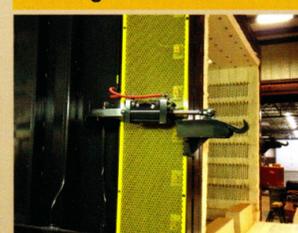
The enhanced control system utilizes a touchscreen operator interface (OIT) and PLC to enable recipe management, furnace and alarm monitoring, and automatic and manual control via menu driven screen.

### Cable Reel



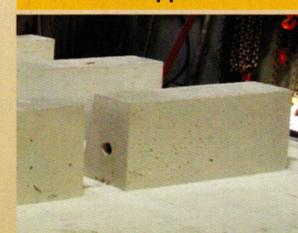
Car drive system with cable reel is required to drive the car in and out of the furnace for loading and unloading.

### Locking Mechanism



Pneumatic locking mechanism seals car to furnace for improved energy efficiency for furnaces with car mounted door.

### Pier Load Support



Pre-cast refractory pier workload supports raise the workload off the car hearth to enable airflow around and through the workload and results in excellent temperature uniformity.

### Insulated Bung Seals



Pneumatically actuated insulated bung seals are pneumatically actuated to seal the gap between the car and the furnace frame.

### The BeaverMatic Advantage:

For reliable processing results from load-to-load, the BeaverMatic Carbottom Furnace has many distinct and sophisticated design features, which when combined, make this furnace highly effective and advantageous in meeting a wide range of requirements.

Lightweight ceramic block insulation reduces power consumption and increases throughput and efficiency as a result of faster thermal cycling and reduced heat loss. Furnaces with direct gas-fired or electric heating systems are ideal for annealing, stress relieving and normalizing.

## Whatever your production requirements —large or small, standard or specialized— a BeaverMatic Carbottom Furnace will serve you most effectively.

These units reflect the same emphasis on sophisticated yet simplified design that has earned BeaverMatic acceptance from heat processors throughout the world.

Precision-engineered and built to the industry's most exacting specifications, BeaverMatic® Carbottoms can heat treat loads up to 100,000 lbs., and sections 20 ft., 30 ft., or longer, at temperatures to 1850°F (1010°C). Numerous design options are available ranging from standard or modular furnaces to loading / unloading systems and heating with electric elements or gas-firing in a variety of configurations. Pulse gas-fired to reduce energy consumption can also be provided. Each furnace is customized to individual requirements, which can be seen within this brochure.

For Carbottom Furnace Technology geared to your specific needs, rely on BeaverMatic. We're confident you'll find us an excellent choice!



Carbottom Furnace capable of processing a 14 foot wide  
by 14 foot high by 45 foot long workload that weighs up to  
80,000 lbs.



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