300 SERIES

HIGH TEMPERATURE, REDUCING ATMOSPHERE, CONTINUOUS FURNACES TO 1800°C (3272°F)

The CM 300 Series furnaces are available in a variety of configurations from manually loaded lab-scale units to fully automated production systems. These furnaces employ a molybdenum wound aluminum oxide muffle, typically D-shaped, designed to operate from 800°C (1472°F) to 1700°C (3100°F) on the standard models and as high as 1800°C (3272°F) for special applications.

The base model includes inclined doors with protective atmosphere flushes, high heat section, and a cooling section. Depending on application requirements other features are added such as preheat sections, binder removal sections, multiple zone controls, low or high dewpoint features, and turn-key automated pusher systems.

The furnaces are constructed of heavy gauge steel that is welded and reinforced. All power components and controls are located on the main frame assembly. A very efficient block graded brick insulation package is utilized with high purity alumina brick on the hot face. Tunnel cross-sections up to 8" wide by 6" high are offered with the 300 Series muffle design furnaces. When automated the pusher plates (carrier trays) form a train and are pushed through the furnace by an external stoker device. All automation is located outside the heat envelope for ease of maintenance and long life.

Hydrogen, dissociated ammonia, forming gas or any other reducing atmosphere compatible the refractory metal heating elements can be employed. The standard gas panel includes all necessary pressure regulators, flow meters, solenoids and pressure switches for both primary processing atmosphere and standby safety nitrogen. All furnaces come complete with the CM combustion atmosphere safety system. Full details are available on request.

Temperature control is by microprocessor based setpoint controllers operating in conjunction with phase angle-fire SCR power controllers and type "C" thermocouples. Independent overtemperature instrumentation is standard.

Model 344-36-3Z Manual

USED FOR THESE AND OTHER APPLICATIONS:

- Refractory Metals
- Powder Metals
- Ceramics
- Nuclear Fuel
- Phosphor
- Sintering
- Metallizing
- Firing
- Co-Firing
- Annealing
- Brazing
- Reducing

SPECIFICATIONS

STANDARD SYSTEM INCLUDES:

- Total system packaged in common frame including power and control components
- Heavy Gauge Welded and Reinforced Steel Frame
- Atmosphere Containment Doors with Protective Atmosphere Flushes
- Molybdenum Wound Aluminum Oxide Muffle Element
- Block Graded Alumina Brick Insulation Package
- Water-Jacketed Cooling Section
- Microprocessor Based Set Point Temperature Controller
- Phase Angle-Fire SCR Power Controller
- Independent Overtemperature Instrumentation
- Type "C" Thermocouples
- Manual Operation

OPTIONAL FEATURES INCLUDE:

- Preheat Sections
- Binder Removal Sections
- Multiple Zone Control
- Low or High Dewpoint Features
- Dewpoint and Oxygen Monitors
- Turn-Key Automation with External Stoker
- Data Recording Equipment

Model 368-72-3Z Automated

TYPICAL SIZES (FOR REFERENCE ONLY, ADDITIONAL SIZES AVAILABLE)

MODEL NUMBER	TUNNEL OPENING H x W (in)	TUNNEL OPENING H x W (mm)	HEATED LENGTH (in)	HEATED LENGTH (mm)	NUMBER OF ZONES	OPERATING TEMPERATURE	MAXIMUM TEMPERATURE	ATMOSPHERES
333-36-1Z	3 x 3	76 x 76	36	914	1	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
344-36-1Z	4 x 4	101 x 101	36	914	1	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
346-36-1Z	4 x 6	101 x 152	36	914	1	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
346-48-3Z	4 x 6	101 x 152	48	1219	3	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
366-48-3Z	6 x 6	152 x 152	48	1219	3	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
366-72-3Z	6 x 6	152 x 152	72	1829	3	1700°C (3100°F)	1800°C (3272°F)	Reducing Inert
368-48-3Z	6 x 8	152 x 203	48	1219	3	1650°C (3000°F)	1700°C (3100°F)	Reducing Inert
368-72-3Z	6 x 8	152 x 203	72	1829	3	1650°C (3000°F)	1700°C (3100°F)	Reducing Inert
368-96-4Z	6 x 8	152 x 203	96	2438	4	1650°C (3000°F)	1700°C (3100°F)	Reducing Inert

Notes: Other configurations available upon request. Round muffles are also offered in addition to the D-Shaped cross-sections listed.

103 Dewey Street • Bloomfield, NJ 07003 • Tel: 973.338.6500 • Fax: 973.338.1625
www.cmfurnaces.com • email: info@cmfurnaces.com