

Smart Core Box and Superheat Systems

**FURNESS-
NEWBURGE,
INC.**

*Innovative strategies
for the foundry
industry to:*

- *Reduce scrap*
- *Reduce binder use*
- *Speed up core making*
- *Reduce casting scrap*
- *Reduce environmental impact*
- ***Improve the
bottom line***



**Improve core making processes with
Superheat technology**

**Control cure temperatures anywhere
between 150 to 1300 degrees F**

**Stabilize core making process with
Smart Core Box sensing**

Make cores more quickly for less cost

**Retrofits available for all core
machines at a reasonable cost**

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SUPERHEAT EFFECTS AND BENEFITS

RAPID DEHYDRATION OF WATER BASED LOW EMISSION CORE BINDERS

- Improves overall core room efficiency
- Increases out of box strengths
- Reduces cycle times
- Allows low emission core binder to be used in applications previously thought to be possible *only* with higher emission binders

HIGH TEMPERATURE PURGE WITH CONVENTIONAL HIGHER EMISSION CORE BINDERS

- Aids in removal of high molecular weight solvent from newer organic binder systems
- Reduces amine usage
- Reduces odors during core storage
- Reduces binder levels
- Reduces scrap cores
- **Reduces core gas related casting scrap**

THE SUPERHEAT SYSTEM INCLUDES:

- Inline heater sized for your process needs
- Type K thermocouple for heater temperature control
- Panel mounted controls including emergency stop, flow meter, pressure regulator and gauge
- PLC user interface
- Safety valves and switches to prevent heater burnout
- NEMA 12 dust tight enclosure for system components
- PLC controls that are expandable for use with **Smart Core Box technology**

SUPERHEAT OPTIONS

HEATER INNOVATIONS:

Increased watt density of heaters enables a foundry to more easily pass air through cores at desired temperature. Available power ranges from 4 to 30 kW are standard design. Larger systems can be custom designed.

POWER TYPE:

The typical standard heater package for most small to mid-sized core machines is a 4 kW, 480VAC, 3 phase unit. Other voltages and phasing available upon request.

PLC and HMI USER INTERFACE:

The standard comprehensive package uses a Unitronics PLC with built-in 6 inch black and white touch screen. Optional Allen Bradley Micrologix and SLC series are also available. FNI will custom build PLC controls to customer's specifications in non-standard applications.



SMART CORE BOX ADD-ONS

VACUUM ASSISTED CORE BLOWING AND CURING:

Provides better air flow for hard to blow cores and improves core making performance on all core processes.

PRECISION AMINE INJECTION:

Controls the exact amount of amine used in each core which allows for more efficient binder use and dramatically reduced amine use and the associated odors.

CUSTOM AND UNIVERSAL CORE BOX PLENUMS:

Designed to effectively seal and distribute heated air through core box.

CORE PROCESS SENSORS:

Additional pressure, vacuum, temperature, and flow sensors are available. Both wired and wireless sensors are available.

For higher emission core processes with flammable vapors, safety devices (burst disc, flame arrestor, and check valve) are recommended and available from Furness-Newburge, Inc.

SUPERHEAT SYSTEM PRICING

Comprehensive Systems

4 kW Unit	\$14,000.00
6kW Unit	\$15,500.00
12kW Unit	\$17,500.00

Comprehensive systems include

- Spare heater with thermocouple
- Unitronics HMI-PLC Control
- On-site installation support and core-room operational training

Basic Systems

4kW Unit	\$5,900.00
6kW Unit	\$6,900.00
12kW Unit	\$7,900.00

The following Smart Core Box add-ons are custom designed for your specific application:

VACUUM ASSIST

PRECISION AMINE INJECTION

CORE BOX PLENUMS

CORE PROCESS SENSORS

Allen Bradley PLC upgrades to Micrologix or SLC series controllers

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