# SEQUOIA Continuous Process Machine

- MRL Patented Aztec Heating Technology
- Process Control/Monitor System
- Reduced Electrical and Process Gas Consumption
- Designed for Optimum Safety, Ergonomics and Environmental Impact
- Modular Design for Future Production Expansion

MRL's Sequoia Continuous Processing Machine (CPM) provides a revolutionary new concept in continuous furnace design. For example, it incorporates MRL's patented "Aztec" coiled element design to ensure uniform temperature across the belt as well as to provide sufficient energy storage for reducing zone cycling and for maintaining setpoint temperature while the furnace is fully loaded. This energy efficient design provides a very rapid load response while significantly reducing consumed power as compared to traditional "hot box" type furnaces.

The process control system of the Sequoia CPM monitors, controls and supervises all process variables including temperature, atmospheric flow rates, belt speed and insitu profile thermocouple junctions. Also, the CPM can capture and send data to removable storage media, or download it to a PC through a communications link.

MRL developed the CPM with particular consideration to environmental impact, operator safety and ergonomics. And, its modular design allows for maximum flexibility to address process requirements with minimal impact to price or lead-time.

The CPM features a high efficiency D-style muffle that provides optimum atmospheric distribution while minimizing gas consumption for inert and controlled atmospheric applications.

| Model | Description | Belt Width | Heat Zones | Heated Length | Overall Length |
|---|---|---|---|---|---|
| **SQ9CA-30/4** | Sequoia CPM (Research) | 225 mm | 3 | 76 cm | 450 cm |
| **SQ9CA-48/4** | Sequoia CPM (Research) | 225 mm | 4 | 120 cm | 550 cm |
| **SQ9CA-48/12** | Sequoia CPM (Light Industrial) | 225 mm | 4 | 120 cm | 795 cm |
| **SQ9CA-96/8** | Sequoia CPM (Light Industrial) | 225 mm | 8 | 240 cm | 795 cm |
| **SQ9CA-144/4** | Sequoia CPM (Light Industrial) | 225 mm | 12 | 360 cm | 795 cm |
| **SQ9CA-48/20** | Sequoia CPM (Production) | 225 mm | 4 | 120 cm | 1040 cm |
| **SQ9CA-96/16** | Sequoia CPM (Production) | 225 mm | 8 | 240 cm | 1040 cm |
| **SQ9CA-144/8** | Sequoia CPM (Production) | 225 mm | 12 | 360 cm | 1040 cm |

*Above Light Industrial & Production Models also available in 350mm (SQ 14CA) & 450mm (SQ18CA) belt widths.*
*(Contact a MRL factory representative for belt widths beyond 450mm).*

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## A REVOLUTIONARY NEW DIRECTION FOR CONTINUOUS PROCESS MACHINES

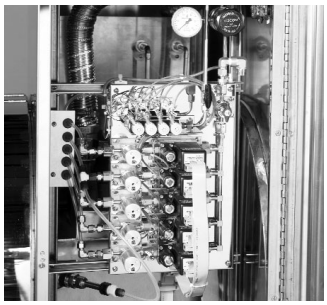
While revolutionary in scope, the Sequoia CPM design applies proven batch technologies in a system that is superior in performance to existing offerings at an affordable price. It's constructed of top-rated materials for durability, features the latest components, allows for retrofit expansion for future production requirements, and provides full access to all internal components through corrosion resistant hinged panels for easy maintenance.

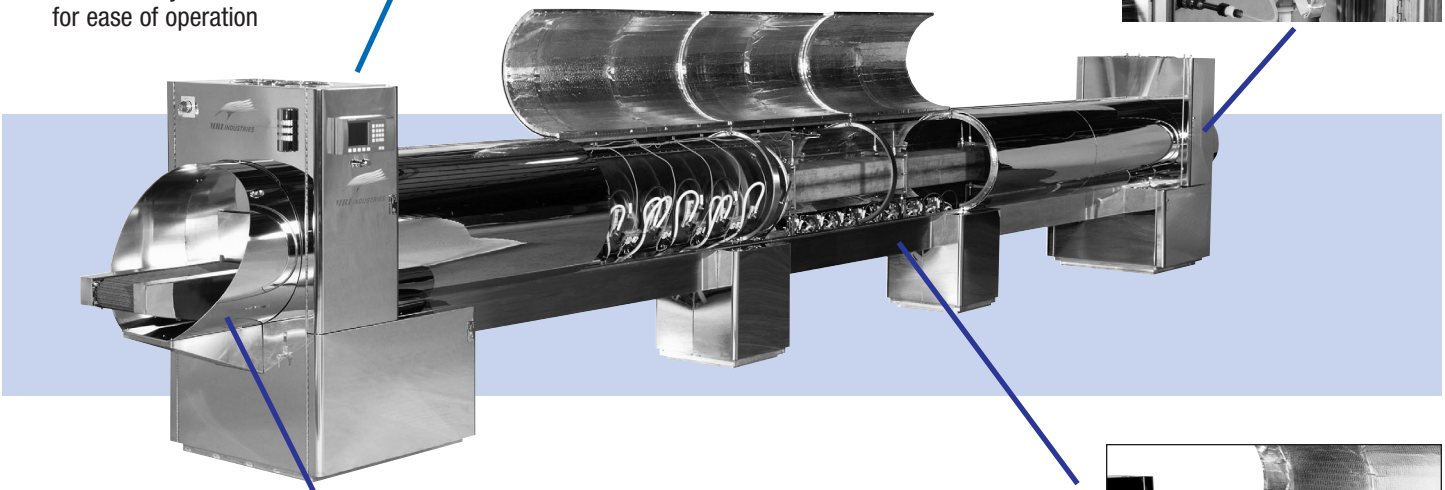
### COMPLETE PROCESS CONROL


- Universal Multiloop Process Controller with 5.5" display and membrane touch panel
- Setpoint programming capability with up to 16 control loops and 96 digital I/O
- Configurable screens for trend charting, data logging and recipe management
- Removable storage "floppy disc" or download to a PC through the integral communications port
- User friendly control functions for ease of operation

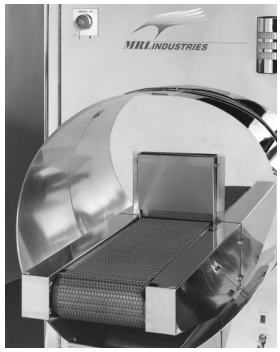
### UNSURPASSED ATMOSPHERIC CONTROL

- Use of Mass Flow Control (MFC) technology for atmospheric control
- Programmable sequencing of gas flows through process controller
- Complete atmospheric data capture capability
- Up to six (6) flow loops (30 slpm) with pneumatic diaphragm valves
- Standard "off the shelf" components are surface mounted for easy removal from gas tray
- The innovative D-style muffle used in conjunction with the programmable gas control panel can provide 25% to 30% reduction in gas consumption over conventional systems





### OPERATOR ERGONOMICS AND SAFETY



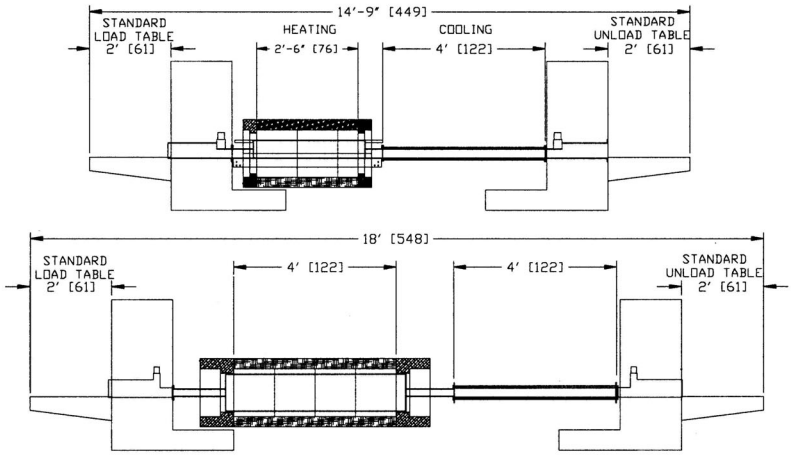

- Modular opposing tower construction with power assisted ventilation maintains internal cabinet temperature and provides a safe outside skin temperature
- Height adjustable entry door and Nitrogen curtain with removable stainless curtain assembly to prevent escape of atmospheric gases or radiated heat to load area
- Emergency off button with lock out capability at load and unload stations
- Integral tri-stack light assembly for overview of current system status
- Lockable hinged side panels for full access to system control, power, drive, cooling and gas distribution components
- Integral thermocouple jack located in the load tower for convenient system profiling

### PROVEN THERMAL SOLUTION

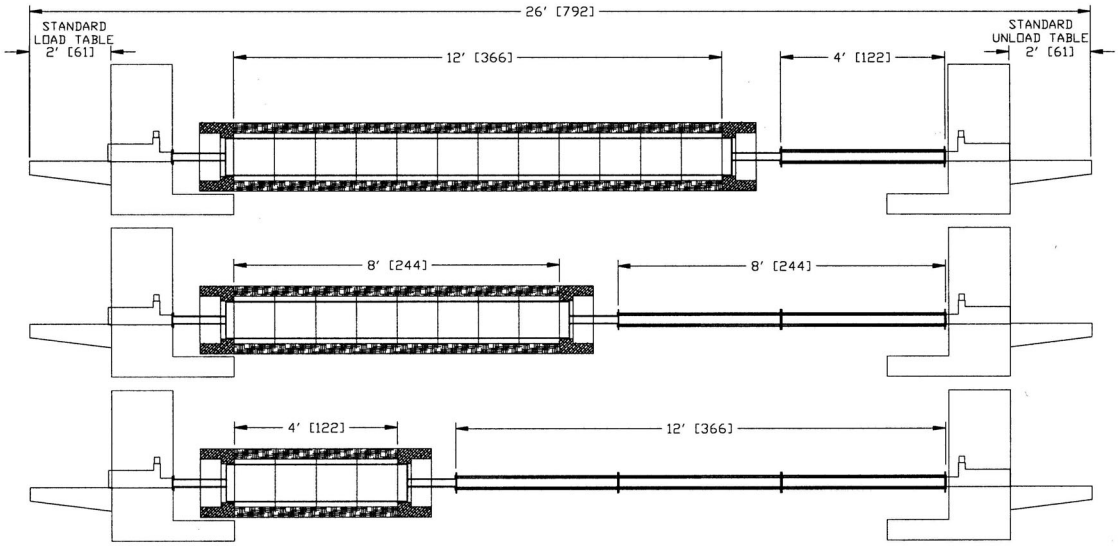
- Incorporates "Aztec" heating element providing greater thermal mass than the load to maintain a stable profile temperature and provide fast ramp of the product
- Enhanced thermal isolation and the elimination of step down transformers provides reductions of power consumption by up to 20% over conventional "hot box" systems
- Heavy gauge helical design provides the ultimate in element lifetime
- Removable gas distribution manifolds provide location field adjustment capabilities to fine tune the atmosphere in the muffle
- Double wall cooling chamber provides increased surface area and incorporates an internal sinusoidal routing of the cooling water for maximum cooling efficiency

# SEQUOIA CONTINUOUS PROCESS MACHINE SYSTEM CONFIGURATIONS

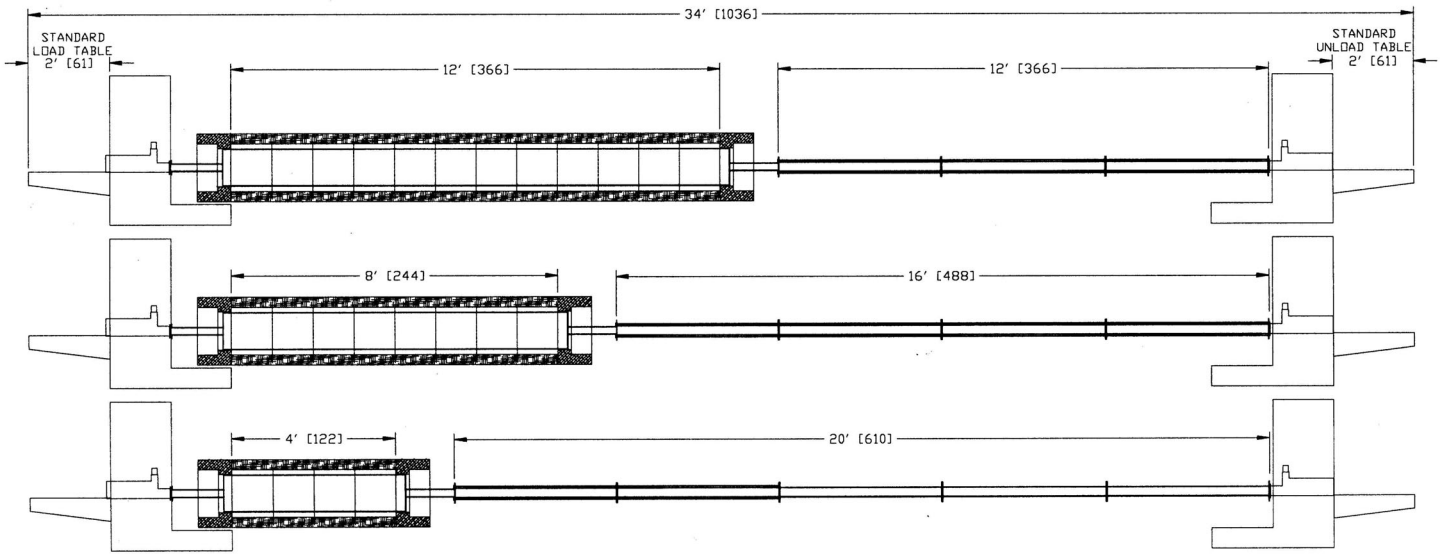
## RESEARCH




## LIGHT INDUSTRIAL




## PRODUCTION




*Note: Contact a MRL factory representative for configurations not shown or special system requirements.*

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