

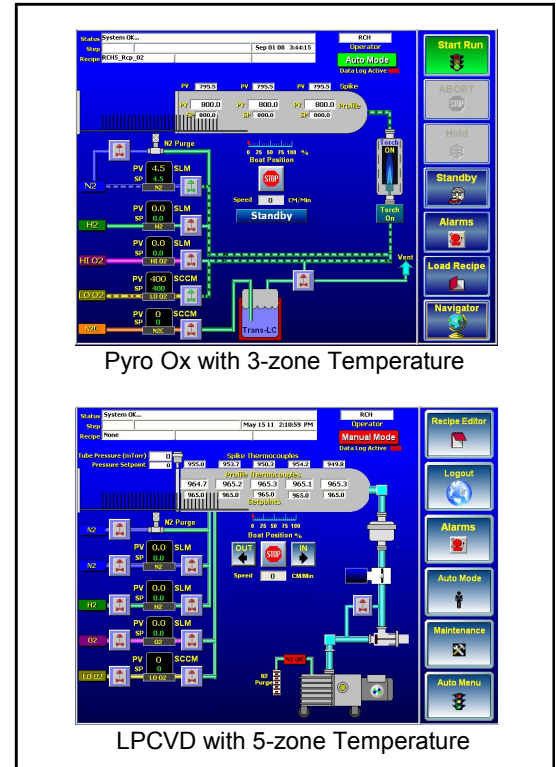
ASTRA™ Diffusion and LPCVD Furnace Control System

DESCRIPTION

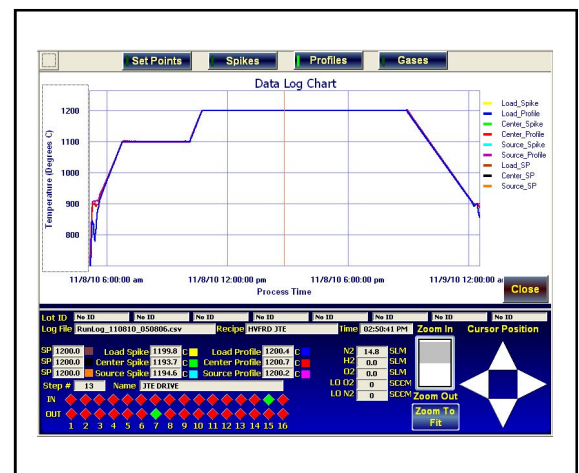
The RCH **ASTRA** Control System controls all aspects of diffusion and LPCVD furnace processing. It is Ethernet-based using distributed control with the heart of the system being a high-powered microcomputer with reliable, process-logical software. All operations are accomplished through graphical and animated, touch screen access. Comprehensive data acquisition, logging and graphing provide real-time assessments for optimum process management.

BENEFITS

- Precise control of temperature, gas/fluid, vacuum and loading parameters.
- Intuitive programming and operation through graphical touch screen access.
- Tube-level microcomputer for high speed and masterful data management.
- Distributed control with full safety interlocks for gas/vacuum/temperature/loading.
- Optimized temperature control with divisible cascading and auto profiling.
- 3-zone or 5-zone temperature control.
- Graphical, easy programming and monitoring with animation.
- User permissions protocols for safe operation.
- Comprehensive alerts, alarms, redirects and monitors for all parameters.
- Full maintenance accessibility with integral troubleshooting and calibrations. No maintenance computer required.
- Advanced LPCVD control and monitoring functions for sustained process repeatability.
- On-screen keyboard for easy data entry.
- Lot tracking/run history for multiple lots per run.
- Retrofittable to most any furnace brand or model
- Low COO.
- Optional ASTRA Host System
 Centralized recipe management, downloading, data acquisition and logging for up to 99 tube-levels.



Example Operator Main Screens



Comprehensive Data Acquisition, Logging and Graphing



GENERAL SPECIFICATIONS

Microcomputer

Intel® Core2 Duo™ Processor, DDRII RAM, High Capacity HD.
Flash drive data transfer. Print module. Exel™ compatible.

Touch Screen

Fab-friendly touch even with cleanroom gloves.

Temperature

Multiple loops. Spike TC, profile TC or cascade.
Auto profile or custom PID. Programmable temperature tolerancing.
NIST standard offset program. Ramp by time or target.
Alerts/alarms with redirects. Logging and graphing. 0.1°C resolution.

Gas/Fluids/Vacuum

Multiple MFC loop control. Auto MFC calibration. Programmable flow tolerance monitor and alerts. Hazards override. Fault redirects with abort or branch. Interface programming of bubblers, torches and peripherals. Comprehensive LPCVD vacuum control monitoring. LPCVD self-check leak protocol. LPCVD base pressure protocol.

Loading

Intelligent motor control. Programmable motion and feedback logic. End-of-travel sensing with step function upon completion. Over travel sensing with fault redirect abort or branch.

Example States and Functions

Operation/programming. Navigate. Password management/access rights. Recipe editing; temperature parameters, gas parameters, loading parameters. Step times and event response editing. Calibrations. Alarm/fault redirects. Hardwire relay logic and firmware interlocks.

Power

120/220/240VAC, 50 or 60Hz. UPS.

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