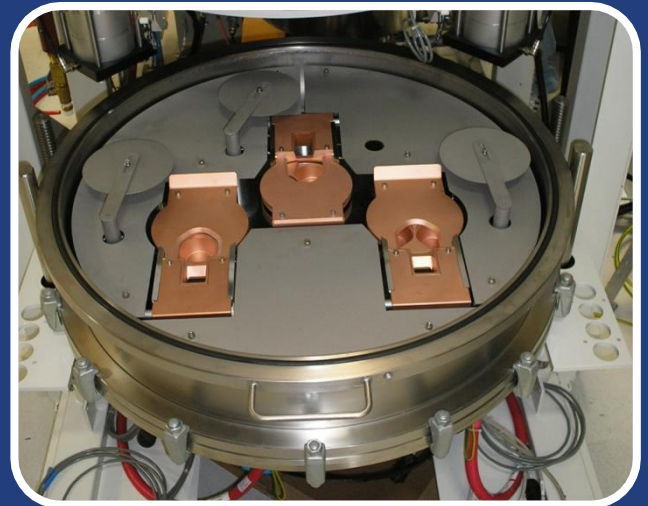




V&N Advanced Automation Systems
Delivering Excellence From Concept To Completion



**E-BEAM DEPOSITION
SYSTEM UPGRADES
ON-SITE UPGRADES**



**SUBSTRATE MOTION
ION ASSIST**



**FULL AUTOMATION
OPTICAL COATING**

P 321-504-6440

www.vnaas.com

info@vnaas.com



V&N Advanced Automation Systems
Delivering Excellence From Concept To Completion

FULL SYSTEM UPGRADES

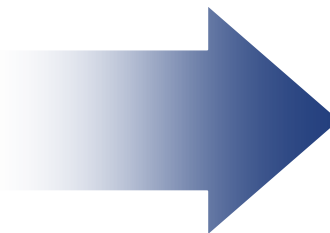
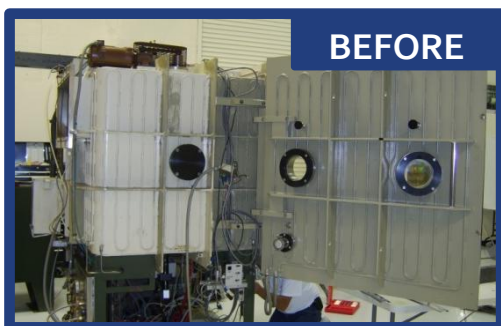
While V&N excels at producing original vacuum process equipment, our capabilities also extend to the refurbishment and enhancement of existing customer vacuum systems. V&N offers Full System Upgrades, Electrical/Controls Upgrades and Customer In-House Upgrades.

In a Full System Upgrade, the existing system would be shipped to the V&N Facility in Rockledge Florida for the integration of the following products and capabilities:

- Full Disassembly and Replacement of All Seals
- Polishing and Powder coating of Chamber and Frame
- Provide New or Refurbish Existing Substrate Motion (Customer Option)
- Replacement of All Cooling Water and Pneumatic Components: sensors, lines and fittings
- Provide New or Refurbish Existing Deposition Equipment:
E-beam Sources, Thermal Sources, and/or Ion Beam Sources, etc
- Provide New Process Heating Units and Control
- Integration of New or Existing Optical Monitor (Customer Option)
- Provide New or Refurbish Existing High Vacuum, Rough Vacuum Pumps and High Vacuum Valves
- Replacement of all Vacuum Gauges as well as Roughing, Vent, and Foreline Valves
- Complete Electrical Overhaul – Replacement of all Power and Communication Components, wires, etc
- Fully Interlocked and Automatic PLC-based System Control
- Recipe Driven Process Control
- Control Options Include Remote Trouble-shooting and Local Monitoring

Our Full System Upgrades have the Benefit of Providing Comparable Functionality to a New System but at a Lower Cost

Full System Upgrades can be performed on systems from any number of original manufacturers and have a 1 year Warrantee for workmanship and new/refurbished components.





V&N Advanced Automation Systems
Delivering Excellence From Concept To Completion

SYSTEM CONTROLS UPGRADES

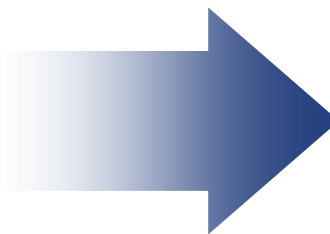
If cost or time constraints make a Full System Upgrade unfeasible or your current system hardware—chamber, vacuum pumps, substrate motion and process equipment—are in solid shape, but you wish to upgrade to automated system control, then our System Controls Upgrade option will fit your needs.

In a System Controls Upgrade, the existing system would be shipped to the V&N Facility in Rockledge FL for the integration of the following products and capabilities:

- Provide New Drives (and Motors if necessary) for Substrate Motion
- Replacement of Water Flow Sensors and Pneumatic Solenoid Valves
- Integration of Existing Deposition Equipment: E-beam Sources, Thermal Sources, and/or Ion Beam Sources, etc with new System Controls
- Provide New Process Heating Units and Control
- Integration of New or Existing Optical Monitor (Customer Option)
- Replacement of existing Vacuum Valves with no position feedback
- Replacement of all Vacuum Gauges
- Complete Electrical Overhaul—Replacement of all Power and Communication Components, wires, etc
- Fully Interlocked and Automatic PLC-based System Control
- Recipe Driven Process Control
- Control Options Include 2nd Touch screen, Remote Trouble-shooting and Local Monitoring .

System Control
Upgrades
will Increase
Productivity over your
Current Manual
Control Configuration

System Controls Upgrades can be performed on systems from any number of original manufacturers and have a 1 year warrantee for workmanship and new/refurbished components.





ON-SITE SYSTEM UPGRADES

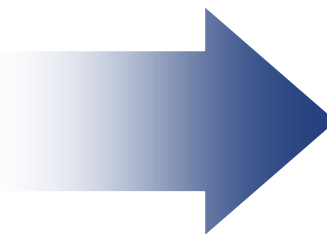
When you want the increased productivity of converting your manually controlled system to a fully automated system, but maintaining production on that system is critical, then our On-Site System Upgrade option will allow you to automate your system with minimal downtime – as little as one week depending on selected options.

In an On-Site System Upgrade, V&N would pre-build and test the new control system before integrating it into the system at the customer's facility. Upgrades include:

- Provide New Drives (and Motors if necessary) for Substrate Motion
- Replacement of All Cooling Water and Pneumatic Components: sensors, lines and fittings
- Provide New or Refurbish Existing Deposition Equipment: E-beam Sources, Thermal Sources, and/or Ion Beam Sources, etc
- Provide New Process Heating Units and Control Integration of New or Existing Optical Monitor (Customer Option)
- Provide New or Refurbish Existing High Vacuum, Rough Vacuum Pumps and High-Vacuum Valves
- Replacement of any existing Vacuum Valves that do not have position feedback
- Replacement of all Vacuum Gauges
- Complete Electrical Overhaul – Replacement of all Power and Communication Components
- Fully Interlocked and Automatic PLC-based System Control
- Recipe Driven Process Control
- Control Options Include 2nd Touch Screen Remote Trouble-shooting and Local Monitoring

On-Site System Upgrades provide the Maximum Preservation of Production possible during the upgrade process

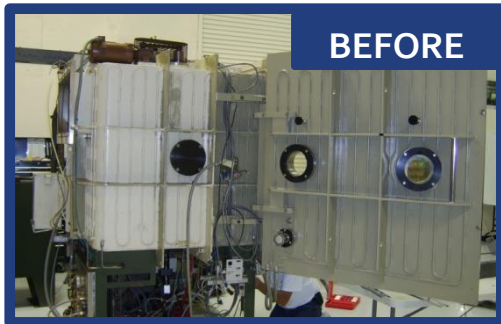
On-Site System Upgrades can be performed on systems from any number of original manufacturers and have a 1 year warrantee for workmanship and new/refurbished components.



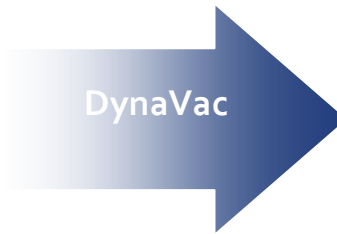


SYSTEM UPGRADE SAMPLES

System Upgrades can be performed on systems from any number of original manufacturers such as DynaVac, Leybold, MRC, Perkin Elmer, D&W, CHA, Salzer Metco, Balzers, etc.



BEFORE



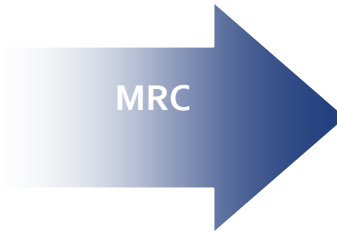
DynaVac



AFTER



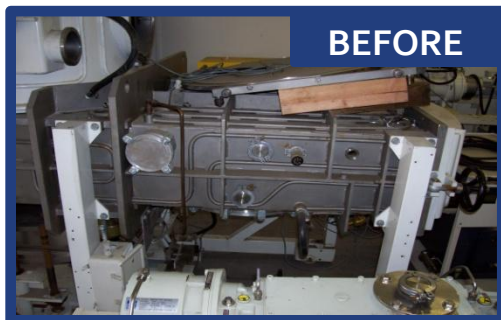
BEFORE



MRC



AFTER



BEFORE



Balzers



AFTER