

# HORIZON™ SERIES POWDER SPRAY BOOTHS

Compact, self-contained powder/spray recovery systems  
for manual and automatic powder coating operations.



# Horizon™ spray booths provide efficient, flexible and clean coating operation in automatic and manual powder coating applications.

Nordson Horizon booths are designed to provide efficient, flexible and clean coating operation in automatic and manual powder coating applications. Utilizing a unique “down-draft” design and Nordson-pioneered cartridge-filter technology, Horizon booths provide high material utilization and fast color-change capability in a space-efficient, economical system.

Whether you coat large or small parts using automatic and/or manual guns, Horizon booths are designed to meet your specific application requirements, and are available in sizes ranging from 2,000 to 5,500 cfm. Factory preassembly of the booths prior to shipment to your plant helps to reduce installation time and speed start up.

All Horizon powder booths feature easily removable cartridge-filter collector modules to facilitate color-change and cleaning operations.

## Unique, down-draft booth design.

The down-draft design of the Horizon booths locates the filter/collector module directly below the spray booth for maximum operating efficiency in most coating applications. The downward airflow allows oversprayed powder to naturally “wash down” over the part resulting in a more consistent, uniform coating and improved operating efficiency.

The down-draft design also provides more efficient use of floor space and allows access to either side of the booth for automatic and manual spray gun stations. The collector module is



easily removed to facilitate cleaning and maintenance, and to ensure fast, easy color change.

## Polypropylene booth canopy.

Horizon booths are available with a strong, yet lightweight high-performance polypropylene canopy. The low conductivity of the polypropylene minimizes the amount of powder overspray that collects on the interior surfaces of the booth canopy to provide increased operating efficiency and easier booth cleaning during color change. Because powder is not attracted

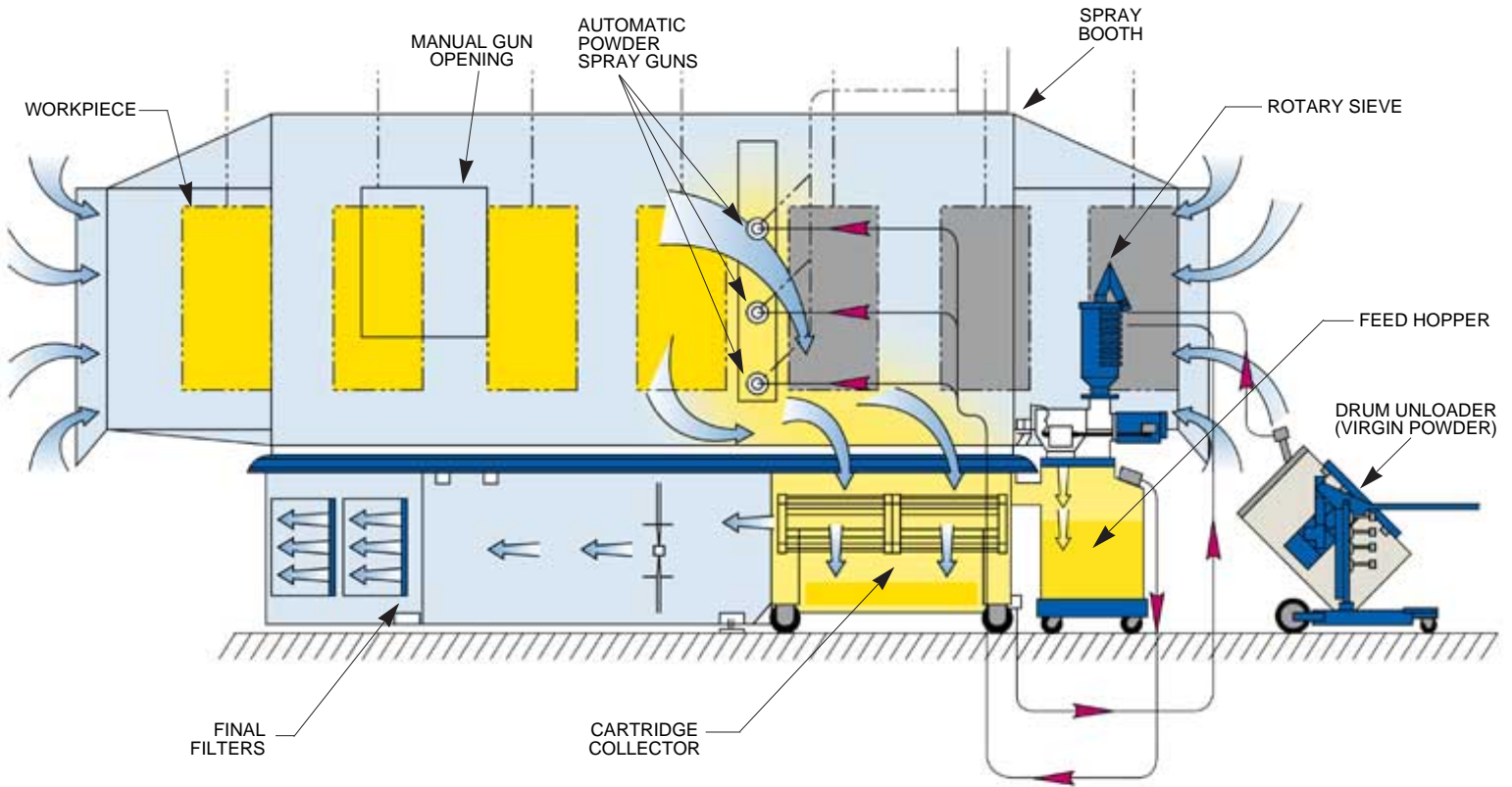
to polypropylene walls, more powder deposits on grounded parts resulting in greater first-pass transfer efficiency.

The polypropylene material is also

translucent, allowing ambient light through, for improved visibility inside the spray booth. Curved flares allow for improved air flow through vestibules to minimize the potential for powder escape.

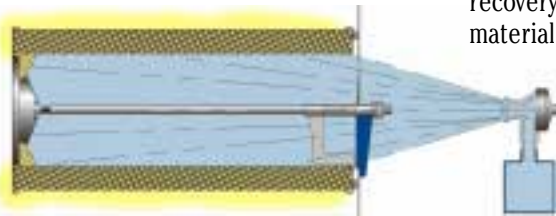
The Horizon booth canopy is also available in a stainless steel version to meet varying production requirements.

# Horizon 400 Powder Booth Flow Schematic



## Highly efficient cartridge-filter technology.

PowderGrid™ Plus filters, designed specifically for powder coating applications, are the heart of the Horizon booths. Combining an innovative, self-supporting filter pleat design with Nordson's exclusive process of filter media dimpling, the PowderGrid Plus filter delivers maximum effective surface area for the highest operating



*Nordson Reverse-Pulse Cartridge Cleaning*

efficiency and performance available. As powder laden air is drawn through the filters, powder particles are captured by the filter media and expelled by a reverse-pulse of compressed air from inside the cartridges. A specially

designed showerhead filter cleaning nozzle directs the reverse-pulse air throughout the entire surface of the cartridge, ensuring uniform, thorough cleaning and extending cartridge filter life.

Powder expelled from the cartridge filters drops down into a fluidized collector module and is delivered by transfer pumps back to the feed system. This closed-loop automatic recovery/recycling technology provides material utilization of up to 99 percent.

It also minimizes the powder's exposure to contaminants and helps provide a safe, clean working environment for plant personnel.

## Booth base and fan assembly.

Nordson Horizon systems are equipped with high efficiency final filters for maximum air filtration. The unique "V"-shaped final-filter arrangement provides for even air-pressure distribution over the entire surface of the filters for improved airflow. The air-foil-type fan

delivers maximum airflow capacity with less horsepower for greater operating efficiency.

Horizon 400 booths feature a standard manual airflow damper to control booth airflow to meet specific application requirements and to maximize transfer efficiency. Sound deadening material in the fan section provides for minimal noise level.



The booth base is available in fixed or roll-away configurations to meet varying production requirements.

### **Easily removable filter/collector module.**

Using separate, "dedicated color" modules speeds color change and reduces the possibility of color contamination. A conveniently located quick-disconnect plate serves as a manifold for all air tubing connections and makes color module removal and change fast and easy. Nordson Horizon



color modules feature steel grates to protect cartridge filters from accidental damage during booth operation. The removable grates provide easy access to the fluidizing bed for maintenance. Baffles over cartridges provide for uniform airflow around cartridges for



better filtration and extended service. Transfer pumps on the color module are mounted outside the hopper for easy maintenance.

The inductive proximity sensor switch ensures proper sealing of the color module to the fan section.

Modules are easily leveled using the mechanically adjustable casting system.

### **Feed hopper.**

Horizon booths can be used with either Nordson HTM or HR-16-150 powder feed hoppers for maximum operating flexibility. The hoppers feature improved fluidizing, venting, and accessibility, and can be used with either rotary or

*Nordson model HTM feed hopper (below left) and model HR-16-150 feed hopper (below right).*



vibratory sieves to meet specific application requirements. Quick-disconnect hardware between the hopper and color modules

facilitates movement of the components for convenient cleaning and storage.

### **Versatile, economical operation.**

Horizon booths are available in four airflow capacities ranging from 2,000 to 5,500 cfm to accommodate varying part sizes and the demands of particular coating requirements. Based on part configurations, Horizon booths are sized to help ensure maximum transfer efficiency, complete powder retention inside the booth, and safe operation. In addition, automatic gun positioning directly above the collector module greatly minimizes the amount of

oversprayed powder which collects on the booth floor to provide for easier booth cleaning and color-change.

### **Convenient controls for operator ease.**

Nordson Horizon systems are designed for easy, convenient access to all electrical and pneumatic controls functions. In automatic powder coating installations, the programmable microprocessor-based fire detection system uses multi-spectral sensors to eliminate false shutdowns and provide for maximum operating safety.

### **Optimal booth layout.**

All control equipment and feed hoppers can be positioned on either side of Horizon booths to accommodate varying paint room arrangements. In addition, the hopper level sensor, pneumatic quick-disconnects, and electrical receptacles are located conveniently to facilitate routine cleaning .....and maintenance, and reduce color-change time.



# System Components

## Advanced technology for every application.

Nordson offers a full line of powder spray guns to meet your specific coating requirements. Whether you need manual or automatic guns, corona or tribo-charging, Nordson technology combines advanced application features with sophisticated process control equipment to deliver the most efficient, versatile and operator-friendly powder spray systems in the industry.

Nordson Versa-Spray® II systems incorporate advanced features that provide powder coaters with the ultimate flexibility to precisely control electrostatic parameters of application equipment.

User-adjustable Automatic Feedback Current (AFC) Control allows users to set the maximum gun current that will work best for their specific application. Precise control over the gun current maximizes transfer efficiency, limits back ionization, facilitates coating

of recessed areas, and improves finish quality and uniformity.

The optional ion collector (IC) device dramatically reduces stray ion current to the part. The IC device virtually eliminates back ionization to provide the best finish quality while facilitating coating of Faraday-cage areas.

For tribo-charge applications, Tribomatic® II powder coating systems use Nordson's patented wave-charging design to deliver highly effective powder charging and powder outputs comparable to corona-charging systems. Tribo-charging systems effectively overcome Faraday-cage effect. This makes Tribomatic II technology the ideal choice for coating parts with complex shapes and deep recesses to deliver exceptionally fine finishes.

For coating of parts with large exterior surfaces, the Nordson Magnastatic™ Bell<sup>1</sup> delivers high transfer efficiency and coating uniformity while reducing the number of guns required. The Magnastatic Bell is a non-rotating device that utilizes a patented edge-charging design that maximizes charging efficiency and delivers a highly uniform conical spray pattern up to 35 inches diameter. The versatile design of the Magnastatic Bell accommodates both vertical and horizontal orientations, and can be used in combination with other spray guns or applicators.

*Superior Nordson powder spray guns complement Horizon booths to deliver peak performance.*



## Wide range of booth control options.

Process control and monitoring devices can significantly enhance the operating efficiency of your powder coating system. A broad range of Nordson Versa-Screen® and Smart-Coat® PLC controllers are available to closely fit any application requirements. Whether you need a simple gun triggering package or a sophisticated Smart-Coat system to monitor and control all the booth and guns operating parameters, Nordson PLC controllers will reduce your operating costs and downtime while increasing powder material savings and the quality of the finishing process.



User-friendly function-key or Windows<sup>2</sup>-based operator interfaces of PLC controllers provide for easy on-screen diagnostics and alarm indications for vital components of the powder coating system. Use of the Nordson process monitoring and control options results in optimum transfer efficiency, consistent booth airflow, minimum powder overspray and uniform coating thickness.

<sup>1</sup> Patent applied for.

<sup>2</sup> Windows is a trademark of Microsoft Corporation.



## Features and Benefits of Horizon Spray Booths.

- **Proven cartridge-filter technology** — improved filter cleaning prevents excessive powder build-up on cartridges for extended service life and improved operating efficiency.
- **“Pre-shipment” assembly** — arrives nearly fully assembled at customer plant for fast, easy installation.
- **Strong, high-performance polypropylene canopy** — reduces attraction of charged powder to booth walls for easy cleaning and high transfer efficiency.
- **Removable filter/collector module** — speeds color change and reduces the possibility of color contamination for improved operating efficiency.
- **Efficient space utilization** — modular design minimizes space required for installation and operation.
- **Microprocessor-based system control** — the optional Nordson booth controller monitors and controls automatic powder addition, and monitors and records system air supply dewpoint, low or high final-filter differential pressures, and other fault conditions to ensure complete control of booth operations.

- **Final filter sensor** — triggers system shutdown should final filter become clogged.
- **Centralized, easy operator interface** — centralized location of electrical and pneumatic gauges allows easy operator access for system operation.
- **Hopper level sensor** — automatically controls powder flow back to hopper on demand for improved fluidization and greater operating efficiency.
- **Reduced compressed air consumption** — improved fluidizing, cartridge cleaning and transport of recovered powder overspray greatly reduces energy and air consumption and overall operating costs.
- **Inductive proximity sensor switch** — ensures proper sealing of the color module to the fan section for greater operating reliability.
- **Zero make-up air requirements** — air used to ventilate the spray booth and recover overspray material is filtered and returned to the plant as clean air.
- **Complete operating and maintenance manual** — accompanies each unit shipped to facilitate operation and troubleshooting.

## Commitment to Total Customer Satisfaction.

At Nordson, we are committed to helping industry become more productive. Manufacturers around the world use Nordson application technologies to improve their products, increase operating efficiency, reduce manufacturing costs, and meet the ever growing challenges of a competitive marketplace.

ISO certification of Nordson facilities and operations attests to excellence in our systems and enhances our ability to provide better quality products and services to our customers. In addition, our exclusive Package of Values™ backs every Nordson product and system. The Nordson Package of Values includes production testing, application engineering, installation assistance and operator training. These standards of excellence are the foundation of our quality management system, and confirm our ongoing commitment to continuous improvement and total customer satisfaction.



## Call Nordson.

For more information on how Nordson powder application technology can make your coating operation more productive and profitable, talk with your Nordson representative or call **800-626-8303**. Outside the United States, contact your Nordson regional office listed on the back cover.

Internet, <http://www.nordson.com>

# Specifications<sup>3</sup>

	<b>Horizon 400 Booth</b>	<b>Horizon 200 Booth</b>
<b>Booth Enclosure<sup>4</sup></b>		
Width	6 ft.	5 ft.
Length	16 ft. 2 in. 22 ft. 4 in. (includes vestibules)	9 ft. 0 in. 15 ft. 10 in. (includes vestibules)
Height	3 ft. and part height	2 ft. 4 in. and part height
<b>Overall System<sup>4</sup></b>		
Width	6 ft. 8 ft. (with optional gun vestibules) 15 ft. (with platforms)	5 ft. 12 ft. (with platform and auto gun console platform)
Length	22 ft. 4 in.	16 ft. 8 in.
Height	6 ft. 6 in. and part height	5 ft. 4 in. and part height
<b>Circulating Fan</b>		
	10 hp AC, TEFC, 1750 rpm, with v-belt drive	5 hp AC, TEFC, 1725 rpm, with v-belt drive
<b>Compressed Air Consumption</b> (with six guns)		
Minimum	75 SCFM	50 SCFM
Working Pressure	80-100 psi	80-100 psi
<b>Electrical Data</b> (approx. system current with 10 guns and rotary screener, without oscillator)		
38 amps	208V, 3 phase, 60 Hz	208V, 3 phase, 60 Hz
35 amps	230V, 3 phase, 60 Hz	230V, 3 phase, 60 Hz
21 amps	380V, 3 phase, 60 Hz	380V, 3 phase, 60 Hz
18 amps	460V, 3 phase, 60 Hz	460V, 3 phase, 60 Hz
14 amps	575V, 3 phase, 60 Hz	575V, 3 phase, 60 Hz

<sup>3</sup>The information presented here is representative of typical system configurations. Other options are available to tailor equipment to specific application requirement

Nordson reserves the right to make design changes to products to improve their function. These changes may occur between printings.

<sup>4</sup>Actual system footprint may vary based on overall system dimensions.

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**For more information, talk with your Nordson representative or contact your regional headquarters office.**

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