

Encore® HD

Automatic Powder Coating Guns

HDLV® (High-Density, Low-Velocity) Technology for Repeatable, High Deposition Rate, Most Efficient Powder Application



The Encore HD Automatic Powder Spray Guns from Nordson – the third, and most advanced, generation dense-phase powder spray guns – incorporate a proprietary, integral HDLV module* for the most versatile and efficient performance available today.

Designed specifically to work with Nordson HDLV pump technology, the unique and innovative Encore HD gun design allows easy adjustment of the powder concentration and spray velocity to achieve optimum coating coverage and cured finish quality for every conceivable part type. From a highly dense phase spray to a more diluted (powder and air) mixture, and everywhere in between. The pump and gun also provide exceptionally fast, contamination-free color change.



Better Process Control and Finish Quality with HDLV Technology

Nordson HDLV – or “High Density Low Velocity” technology – delivers a high concentration of powder, but using very little air. An integrated coating solution, the system includes the Encore HD gun, the Nordson HDLV dense phase pump and iControl® integrated control system to achieve the ultimate in process control.

Central to the system operation is the HDLV dense phase gun pump, which operates much differently than a traditional venturi pump. Venturi pumps use high velocity air, which – when coupled with abrasive powders and/or high powder output rates – causes them to wear over time. They also wear at different rates, requiring frequent adjustments to the gun settings to achieve consistent output.

The Nordson HDLV gun pump does not use a venturi throat, which means it does not wear out. As a result, powder output stays consistent over time. Additionally, the pump

* patent applied for



meters powder to the gun using less air to propel it – in fact, it is four times slower. This provides better charging as the aerodynamic forces are secondary to the electrostatic forces, producing a “softer” and more thoroughly charged powder cloud. The optimized electrostatic time provides better coverage into Faraday cage areas and improves overall transfer efficiency.

In addition, in a traditional venturi powder pump, the atomizing air and the flow rate air interact, producing non-linear output. This is difficult to control and can lead to inconsistent results. Nordson HDLV technology removes the guesswork and variables in repeatability and uniformity, replacing it with simple, linear output control. This simplifies equipment set-up and adjustments.

Benefits of HDLV Technology

- **Consistent, repeatable applied coating thickness and uniformity**
- **Highest transfer efficiency**
- **Fastest powder deposition rate**
- **Lowest operating cost per part**
- **Improved coverage of interior corners and recessed areas**
- **Automatic purge cleaning of gun, hose and pump**
- **Contamination-free, ultra-fast color change**

High-Performance Encore HD Guns

With many design enhancements, Encore HD automatic guns take operating efficiency and coating performance to an even higher level, offering:

- **Highly uniform powder spray patterns**
- **The ability to increase or decrease spray velocity when required**
- **Takes advantage of existing HDLV pump and Color-On-Demand instant color change systems**
- **A wide range of nozzles to meet any application need, including commonality with the Encore gun family**
- **Easy serviceability for reduced maintenance and downtime**
- **Advanced, engineered materials allow faster internal and external cleaning during color change**

Two Versions to Meet Any Application Requirement

The Encore HD automatic gun is available in two versions to accommodate a broad range of application requirements. A tube mount and bar mount gun both have a width of only 1.93 in. (4.90 cm), minimizing surface area to clean during color change. It also minimizes the width of the booth’s automatic gun slot openings, for optimum air flow control.

Fast Contamination-Free Color Change

When it comes to fast color change technology, Nordson has long been on the forefront of powder spray guns and recovery booths that are ultra-fast cleaning, easy to use and exceptionally efficient.



Encore HD guns are perfectly suited for use with the ColorMax® fast-color-change powder coating and recovery booth systems. Providing reclaim-to-reclaim color change in generally 5 to 10 minutes, the ColorMax system also ensures optimum application area air flow and control for maximum coating performance and efficiency in today’s lean manufacturing operations.

The ColorMax booth utilizes advanced booth canopy materials to resist powder attraction, and air-flow technology to continuously move powder off the floor and into the recovery/reclaim system, for minimal powder-in-process and fast, easy cleaning during color change.

As a result, you'll realize:

- **Reduced downtime**
- **Reduced labor cost**
- **Maximum system efficiency**
- **Contamination-free, ultra-fast color change**

Optional Components

Nordson offers a variety of nozzles and accessories to help provide optimum spray coverage for a wide range of applications. In addition, Encore HD guns are available with ion collectors that can enhance finish quality and coating appearance in some applications.



iControl® Integrated Control System

The iControl Integrated Control System provides advanced controls for the complete powder coating process. The system builds on our extensive controls knowledge and technology to incorporate all powder application control functions into an easy-to-operate, all-inclusive system.

Utilizing digital, closed-loop air pressure control technology, the production-proven pump controls continuously compensate for variations in plant air supply pressure. Stable air input to the pump ensures consistent, repeatable powder output. Combined with the exceptionally efficient Encore HD spray gun, this translates to faster coating speed, unsurpassed film thickness control, excellent finish appearance, and maximum material utilization efficiency.

With the ability to control 32 guns in one console, the iControl system also offers significant space saving benefits. Unlike venturi systems, which can

manage only 16 guns, the iControl system provides twice the capacity in the same amount of valuable manufacturing floor space.

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The iControl system can accept input from part identification sensors for gun triggering and in/out positioning, and can accommodate up to 255 presets. These presets can be tailored to each color and each part for substantial powder material savings and consistent, repeatable film build. The presets allow operators to adjust various gun control parameters such as flow rate, atomizing, kV and current for various part styles. Included are five advanced coating modes – Standard, Recoat, Deep Recess, Special for dry blend metallic and mica based powders, and a User-Programmable mode that can be customized for specific part configurations or application parameters.

The system also features a “Percent Adjust” function for global adjustment to preset airflow settings to compensate for changes in the coating environment.

A built-in dual flash card unit provides operating system and program storage. Other innovative features of the iControl System include:

- **A 12" LCD full-color touch screen display for single view of all settings**
- **Icon-based graphics for easy set-up and operation in any language**
- **Up to 255 presets for application, gun movement and part identification parameters**
- **Presets can be tailored to each color and each part for up to 30 percent powder material savings and consistent, repeatable film build**
- **Closed-loop digital flow control technology to ensure consistent air flow to the pump**
- **Recipe-based system that optimizes process control, improves repeatability, lowers reject rates and reduces material usage**



Advanced Powder Delivery

The patented Nordson HDLV gun pump uses advanced dense-phase technology to deliver more powder with less air at a lower velocity. This revolutionary design is purgeable in both directions – suction and delivery. The see-through pump block allows for easy, at-a-glance monitoring and diagnostics.

- Unsurpassed process control
- No pistons or diaphragms to wear or cause contamination issues
- Ultra-fast, contamination-free color change
- Reduced material use
- Softer spray at gun nozzle



Technical Specifications

Dimensions	
Height	6.60 cm (2.60 in)
Width	4.90 cm (1.93 in)
Length	5' tube mount: 169.7 cm (66.81 in) 6' tube mount: 199.7 cm (78.62 in) Bar mount: 47.2 cm (18.6 in)
Weight	5' tube mount: 2.02 kg (4.45 lbs) 6' tube mount: 2.37 kg (5.23 lbs) Bar mount: 651 g (1.44 lbs)
Gun air	0.5 – 4.0 cfm
Filtration	Air must be clean and dry

For more information, speak with your Nordson representative or contact your Nordson regional office.

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