

Encore[®] HD Manual Powder Spray Gun

Customer Product Manual
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**For parts and technical support, call the Industrial Coating
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Contact Us

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address:
<http://www.nordson.com>.

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Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include:

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

All phases of equipment installation must comply with all federal, state, and local codes.

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing any moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- Obtain and read Material Safety Data Sheets (SDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored. Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material SDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Grounding



WARNING: Operating faulty electrostatic equipment is hazardous and can cause electrocution, fire, or explosion. Make resistance checks part of your periodic maintenance program. If you receive even a slight electrical shock or notice static sparking or arcing, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.

Grounding inside and around the booth openings must comply with NFPA requirements for Class II, Division 1 or 2 Hazardous Locations. Refer to NFPA 33, NFPA 70 (NEC articles 500, 502, and 516), and NFPA 77, latest conditions.

- All electrically conductive objects in the spray areas shall be electrically connected to ground with a resistance of not more than 1 megohm as measured with an instrument that applies at least 500 volts to the circuit being evaluated.
- Equipment to be grounded includes, but is not limited to, the floor of the spray area, operator platforms, hoppers, photoeye supports, and blow-off nozzles. Personnel working in the spray area must be grounded.
- There is a possible ignition potential from the charged human body. Personnel standing on a painted surface, such as an operator platform, or wearing non-conductive shoes, are not grounded. Personnel must wear shoes with conductive soles or use a ground strap to maintain a connection to ground when working with or around electrostatic equipment.
- Operators must maintain skin-to-handle contact between their hand and the gun handle to prevent shocks while operating manual electrostatic spray guns. If gloves must be worn, cut away the palm or fingers, wear electrically conductive gloves, or wear a grounding strap connected to the gun handle or other true earth ground.
- Shut off electrostatic power supplies and ground gun electrodes before making adjustments or cleaning powder spray guns.
- Connect all disconnected equipment, ground cables, and wires after servicing equipment.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Description

See Figure 1. This manual covers the Encore® HD manual powder spray gun with 6 meter power cable and tubing.

The Encore HD manual powder spray gun should be used with the Encore HD manual controller, which provides electrostatic voltage control, electrode air-wash air, and powder pump air. It is compatible with the following systems:

- Encore HD Mobile Systems
- Encore HD Manual Wall or Rail Mount Systems
- Encore Single and Dual Stand Alone
- Encore Color-on-Demand® Systems
- ColorMax® Powder Coating Systems
- Prodigy® Dual Pump HDLV® Systems



Figure 1 Encore HD Manual Powder Spray Gun

Flat spray nozzles with 3-mm and 4-mm slots are shipped with the gun, as well as a conical nozzle kit that contains a conical nozzle, a 26-mm deflector and a conical electrode holder. Use the conical nozzle kit to convert from flat spray to conical spray applications.

Optional equipment is available for the Encore HD manual spray gun including the following:

- Additional flat, conical and cross-cut nozzles options
- 6-meter cable extension
- 150 and 300-mm lance extensions
- Pattern adjuster for use with lance extensions
- Ion collector

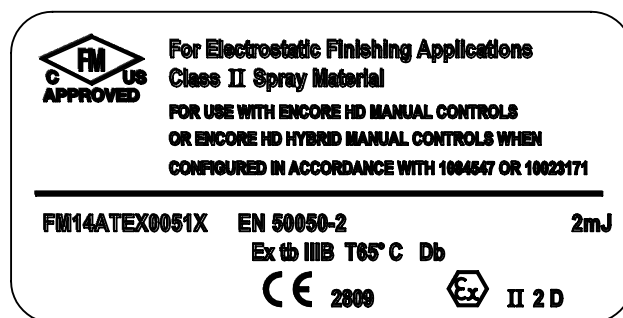
See *Spray Gun Operation* section beginning on page 36 for information on additional options.

Specifications

Model: Encore Applicator	
Input Rating:	+/- 19 VAC, 1 A
Output Rating:	100 KV, 100 μ A
Input Air:	6.0–6.9 bar (87–100 psi), <5 μ particulates, dew point <10 °C (50 °F)
Max Relative Humidity:	95% non-Condensing
Ambient Temperature Rating:	+15 to +40 °C (59–104 °F)
Hazardous Location Rating for Applicator:	Zone 21 or Class II, Division 1
Dust Ingress Protection:	IP6X

Equipment Labels

Applicator Certification Label



1603105-04

Setup

Spray Gun Connections



WARNING: This diagram does not show system grounds. All conductive equipment in the spray area must be connected to a true earth ground.

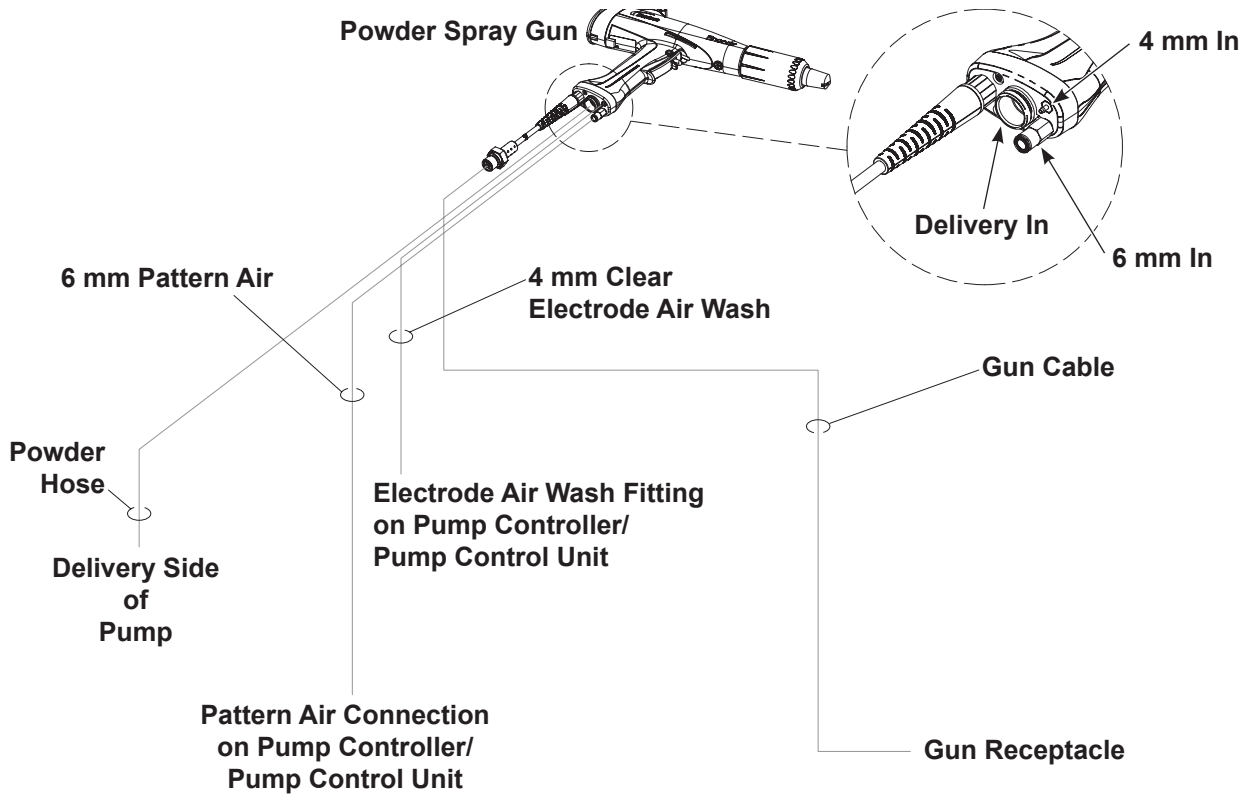


Figure 2 Spray Gun Connections

Spray Gun Installation

See Figure 2 and Figure 3 for gun connection illustrations.

1. Connect the 6-mm pattern air tubing to the quick-disconnect fitting (1) in the bottom of the gun handle. Connect the other end to the pattern air tubing on the fitting located on the pump controller/pump control unit.
2. Connect the 4-mm clear electrode air wash tubing to the barbed fitting (2) in the bottom of the gun handle. Connect the other end to the electrode air wash tubing on the electrode air wash fitting on pump controller/pump control unit.
3. Seat the O-rings (4) onto the barbed hose adapter (3). Push the barbed end of the hose adapter into the end of the powder hose, then plug the adapter into the powder inlet tube (5) in the bottom of the spray gun handle.

NOTE: Arrow on powder hose should point toward the gun.

4. Connect the gun cable (6) to the gun receptacle.

NOTE: The gun receptacle location is dependent on type of system. Refer to system documentation for location.

5. Use the sections of black spiral wrap supplied with the system to bundle together the spray gun cable, all air tubing, and powder hose. Take care not to smash, squish, kink, bind, or deform the powder tubing.

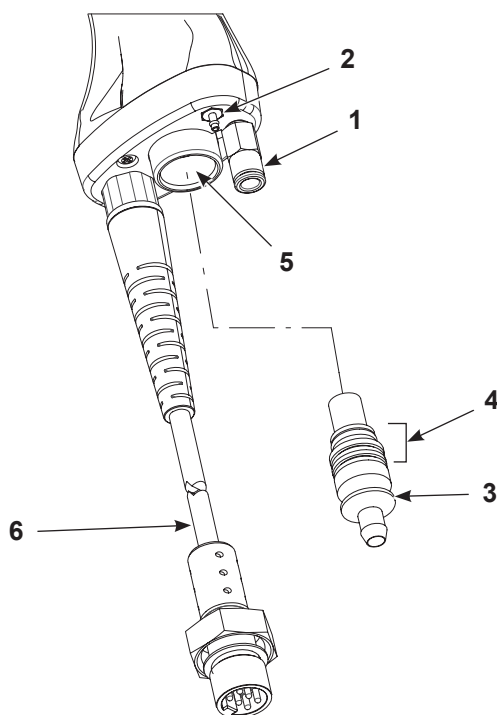


Figure 3 Spray Gun Connections

- | | | |
|---------------------|------------------------|----------------------|
| 1. Quick disconnect | 3. Barbed hose adapter | 5. Powder inlet tube |
| 2. Barbed fitting | 4. O-rings | 6. Gun cable |

Operation



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: This equipment can be dangerous unless it is used accordance with the rules laid down in this manual.



WARNING: All electrically conductive equipment in the spray area must be grounded. Ungrounded or poorly grounded equipment can store an electrostatic charge which can give personnel a severe shock or arc and cause a fire or explosion.

European Union, EX, Special Conditions for Safe Use

1. The Encore HD manual applicator shall only be used with the associated Encore XT/HD interface control unit and Encore HD controller power unit, or the associated Encore HD Manual and Mobile Systems, over the ambient temperature range of +15°C to +40°C.
2. Equipment may only be used in areas of low impact risk.
3. Caution should be taken when cleaning external painted and non-metallic surfaces of the controller, interface, applicator, and all accessories. There is a potential for static electricity build up on these components. Follow the manufacturer's instructions to avoid possible electrostatic charging hazards. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in PD CLC/TR 60079-32-1 and IEC TS 60079-32-1.

System Operation

This manual includes information on the Encore HD Manual Powder Spray Gun. Refer to appropriate system, controller and control panel manuals for information on system components.

Spray Gun Operation

The spray gun interface and settings trigger allow you to change the preset or the powder flow settings, or purge the gun as needed, without using the controller interface.

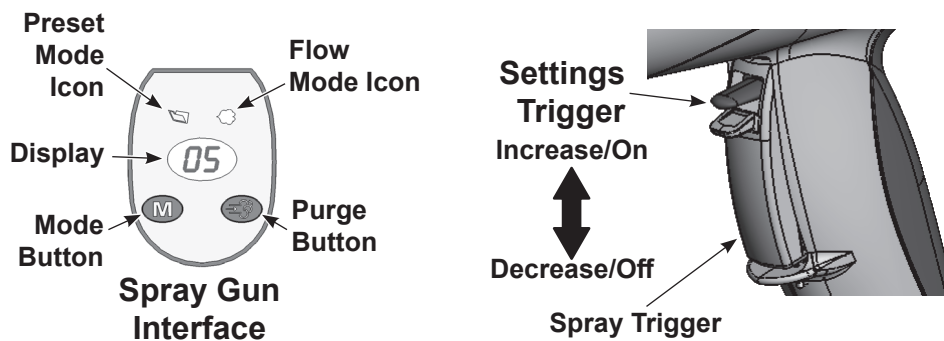


Figure 4 Gun Controls

Changing Presets with the Settings Trigger

1. See Figure 4. Release the spray trigger. Presets cannot be changed while the gun is triggered on.
2. Press and hold the Mode button until the Preset Mode icon is lit. The display shows the current preset number.
3. Push the settings trigger up or down until the desired preset number is displayed on the spray gun interface.

NOTE: Unprogrammed preset numbers (presets where all setpoints are zero) are automatically skipped. Refer to your controller manual for preset programming instructions.

4. Press the spray trigger. The system sprays with the new preset. See controller configuration F08 for more settings.

Changing Powder Flow with the Settings Trigger

1. See Figure 4. Press and hold the **Mode** button until the **Flow Mode** icon is lit.
2. Push the settings trigger up or down to change the flow setpoint. This can be done without releasing the spray trigger.

The powder flow immediately changes. The new flow setpoint is displayed on both the spray gun interface and the controller interface.

Purging the Spray Gun

1. See Figure 4. Point the gun into the booth and release the spray trigger.
2. Press and hold the **Purge** button. The purge will continue as long as you hold the **Purge** button.

NOTE: If the settings trigger is configured for Purge, then pressing up or down on the settings trigger purges the gun. Refer to Controller Configuration in your controller manual for setting trigger configuration.

For optimal performance, purge the gun periodically to keep the powder path inside the spray gun clean. The purge length and frequency required will depend on the application.

NOTE: The purge air only cleans the spray gun powder path. Refer to the system controller manual for additional HDLV purge information.

Electrode Air Wash Operation

Electrode air wash air continually washes the spray gun electrode to prevent powder from collecting on it. Electrode air wash air turns on and off automatically when the spray gun is triggered on and off.

Refer to the pump control unit manual for instructions on adjusting electrode air wash flow.

Daily Operation



WARNING: All conductive equipment in the spray area must be connected to a true earth ground. Failure to observe this warning may result in a severe shock.

Initial Startup

With the fluidizing and powder flow set to zero, and no parts in front of the gun, trigger the gun and record the μA output. Monitor the μA output daily, under the same conditions. A significant increase in μA output indicates a probable short in the gun resistor. A significant decrease indicates a resistor or voltage multiplier requiring service.

Startup

1. Turn on the spray booth exhaust fan.
2. Turn on the system air supply.
3. Make sure the spray gun is not triggered, then turn on controller power. The displays and icons on the controller interface and gun interface should light.

Standby Button

Use the **Standby** button on the Encore HD controller to shut off the interface and disable the spray gun during breaks in production. When the controller interface is off the spray gun cannot be triggered, and the spray gun interface is disabled.

To turn off controller power, shut system power off at power unit or control panel.

Changing Flat Spray Nozzles



WARNING: Release the spray gun trigger, turn off the interface, and ground the electrode before performing this procedure. Failure to observe this warning could result in a severe electrical shock.

NOTE: The tapered electrode holder of the electrode assembly has been designed for optimized cleaning during color changes on systems using flat spray nozzles. This tapered electrode holder will not accept conical deflectors.

1. Purge the spray gun and turn off the interface in order to prevent accidentally triggering the gun on.
2. See Figure 5. Unscrew the nozzle nut counterclockwise.
3. Pull the flat spray nozzle off the electrode assembly.

NOTE: Re-install the electrode if it comes out of the powder outlet tube.

4. See Figure 6. Install a new nozzle on the electrode assembly. The nozzle is keyed to the electrode assembly. Do not bend the antenna wire.
5. Screw the nozzle nut onto the gun body clockwise until finger-tight.

NOTE: To clean nozzles, use the *Recommended Cleaning Procedure for Powder Contact Parts* on page 16.

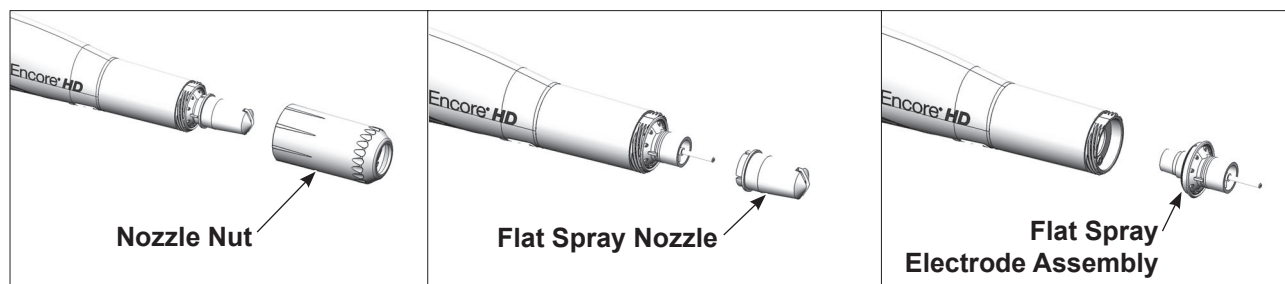


Figure 5 Changing a Flat Spray Nozzle



Figure 6 Correct Nozzle Orientation

Converting from Flat Spray Nozzles to Conical Nozzles



WARNING: Release the spray gun trigger, turn off the interface, and ground the electrode before performing this procedure. Failure to observe this warning could result in a severe electrical shock.

NOTE: The tapered flat spray electrode holder shipped with the gun will need to be changed in order to accept the conical nozzles and deflectors. The conical nozzle kit shipped with the gun is required for this conversion.

1. Purge the spray gun and turn off the interface in order to prevent accidentally triggering the gun on.
2. Convert the electrode holder and the nozzle. See Figure 7.
 - a. Unscrew the nozzle nut counterclockwise and remove it. Pull the flat spray nozzle off the electrode assembly.
 - b. Remove the tapered flat spray electrode holder. Do not bend the antenna wire.
 - c. Install the non-tapered conical spray electrode holder over the electrode.
 - d. Install the conical spray nozzle on the electrode assembly. The nozzle is keyed to the electrode assembly. Screw the nozzle nut onto the gun body clockwise until finger-tight. Install a deflector on the electrode assembly. Do not bend the electrode wire.

NOTE: To clean nozzles, use the *Recommended Cleaning Procedure for Powder Contact Parts* on page 16.

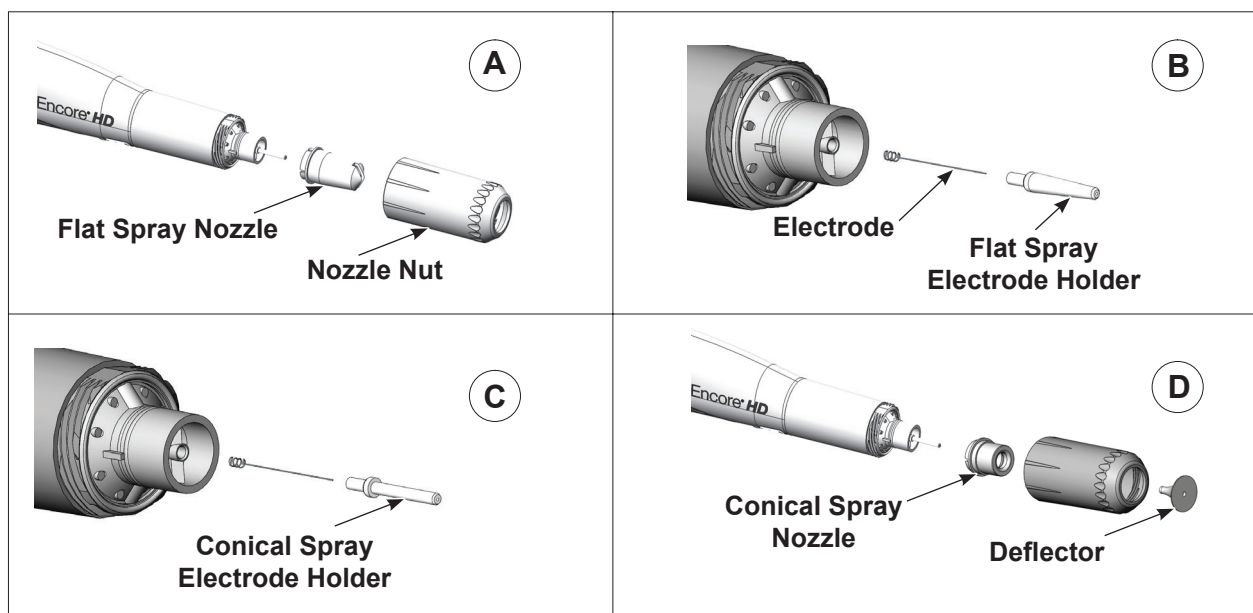


Figure 7 Converting from a Flat Spray Nozzle to a Conical Spray Nozzle

Changing Deflectors or Conical Nozzles



WARNING: Release the spray gun trigger, turn off the interface, and ground the electrode before performing this procedure. Failure to observe this warning could result in a severe electrical shock.

NOTE: The tapered flat spray electrode holder shipped with the gun will need to be changed in order to accept the conical nozzles and deflectors. The conical nozzle kit shipped with the gun is required for this conversion. See page 13 for conversion instructions.

1. Purge the spray gun and turn off the interface to prevent accidentally triggering the gun on.
2. Gently pull the deflector off the electrode holder. If only changing the deflector, install the new one on the electrode holder, being careful not to bend the electrode wire.
3. To change the entire nozzle, unscrew the nozzle nut counterclockwise.
4. Pull the conical nozzle off the electrode assembly.

NOTE: If the electrode assembly comes out of the powder outlet tube, re-install it.

5. Install a new conical nozzle on the electrode assembly. The nozzle is keyed to the electrode assembly.
6. Screw the nozzle nut onto the gun body clockwise until finger-tight.
7. Install a new deflector on the electrode assembly. Do not bend the electrode wire.

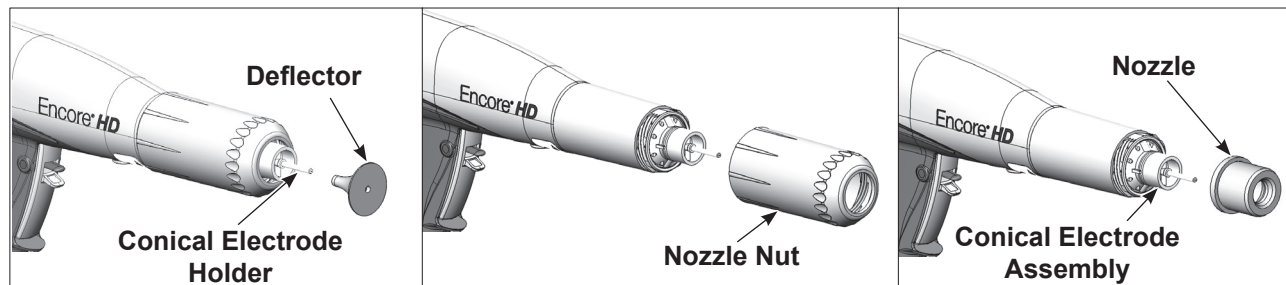


Figure 8 Changing a Conical Nozzle

Installing the Optional Pattern Adjuster Kit

An optional pattern adjuster kit with integral conical nozzle can be installed in place of a standard flat spray or conical nozzle.

NOTE: Deflectors are not included with the pattern adjuster kit; they must be ordered separately. The 38-mm deflector cannot be used with the kit.

1. Remove the deflector, nozzle nut, and conical nozzle, or the nozzle nut and flat spray nozzle.
2. Blow off the electrode assembly.
3. Install the integral conical nozzle onto the electrode assembly and screw the nozzle nut clockwise until finger-tight
4. Install a 16, 19, or 26-mm deflector onto the electrode holder.

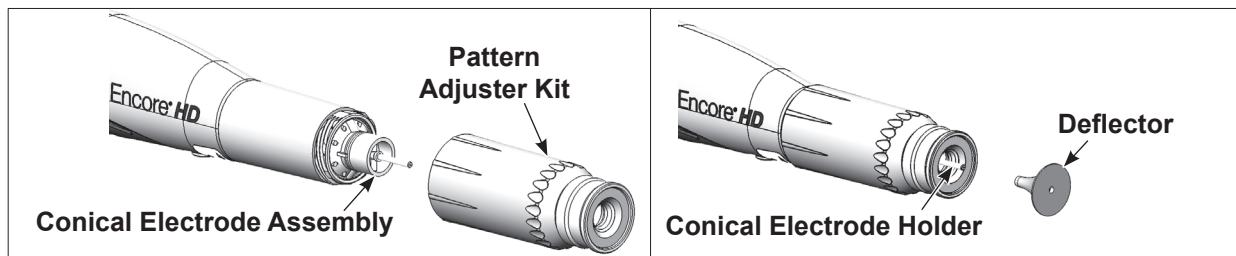


Figure 9 Pattern Adjuster Kit Installation

Shutdown

1. Purge the spray gun by pressing the Purge button until no more powder is blown from the gun.
2. Press the Standby button to turn off the spray gun and interface.
3. Turn off the system air supply and relieve the system air pressure.
4. If shutting down for the night or a longer period of time, shut off the system power.

Maintenance



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: Before performing the following tasks, turn off the controller and disconnect system power. Relieve system air pressure and disconnect the system from its input air supply. Failure to observe this warning may result in personal injury.

Recommended Cleaning Procedure for Powder Contact Parts

Nordson Corporation recommends using an ultrasonic cleaning machine and Oakite® BetaSolv emulsion cleaner to clean spray gun nozzles and powder path parts.

NOTE: Do not immerse the electrode assembly in solvent. It cannot be disassembled; cleaning solution and rinse water will remain inside the assembly.

1. Fill an ultrasonic cleaner with BetaSolv or an equivalent emulsion cleaning solution at room temperature. Do not heat the cleaning solution.
2. Remove the parts to be cleaned from the gun. Remove the O-rings. Blow off the parts with low-pressure compressed air.

NOTE: Do not allow the O-rings to come in contact with the cleaning solution.

3. Place the parts in the ultrasonic cleaner and run the cleaner until all parts are clean and free of impact fusion.
4. Rinse all parts in clean water and dry before re-assembling the spray gun. Inspect the O-rings and replace any that are damaged.

NOTE: Do not use sharp or hard tools that will scratch or gouge the smooth surfaces of powder contact parts. Scratches will cause impact fusion.

Maintenance Procedures

Component	Procedure
Spray Gun (Daily)	<ol style="list-style-type: none"> 1. Point the spray gun into the booth. Remove the suction line from the hopper or box feeder and point them in the booth, as well. Push the <i>Color Change</i> button on the system controller and purge the powder delivery system. 2. Remove the nozzle and electrode assembly and clean them with low pressure compressed air and clean cloths. Check them for wear, and replace them if necessary. 3. Clean the gun face surface (where the electrode assembly attaches) with low pressure compressed air and a clean cloth. 4. Blow off the gun and wipe it down with a clean cloth.
System Grounds	<p>Daily: Make sure the system is securely connected to a true earth ground before spraying powder.</p> <p>Periodically: Check all system ground connections.</p>

Repair



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Spray Gun Repair

Item numbers in this section match the item numbers in the parts lists.

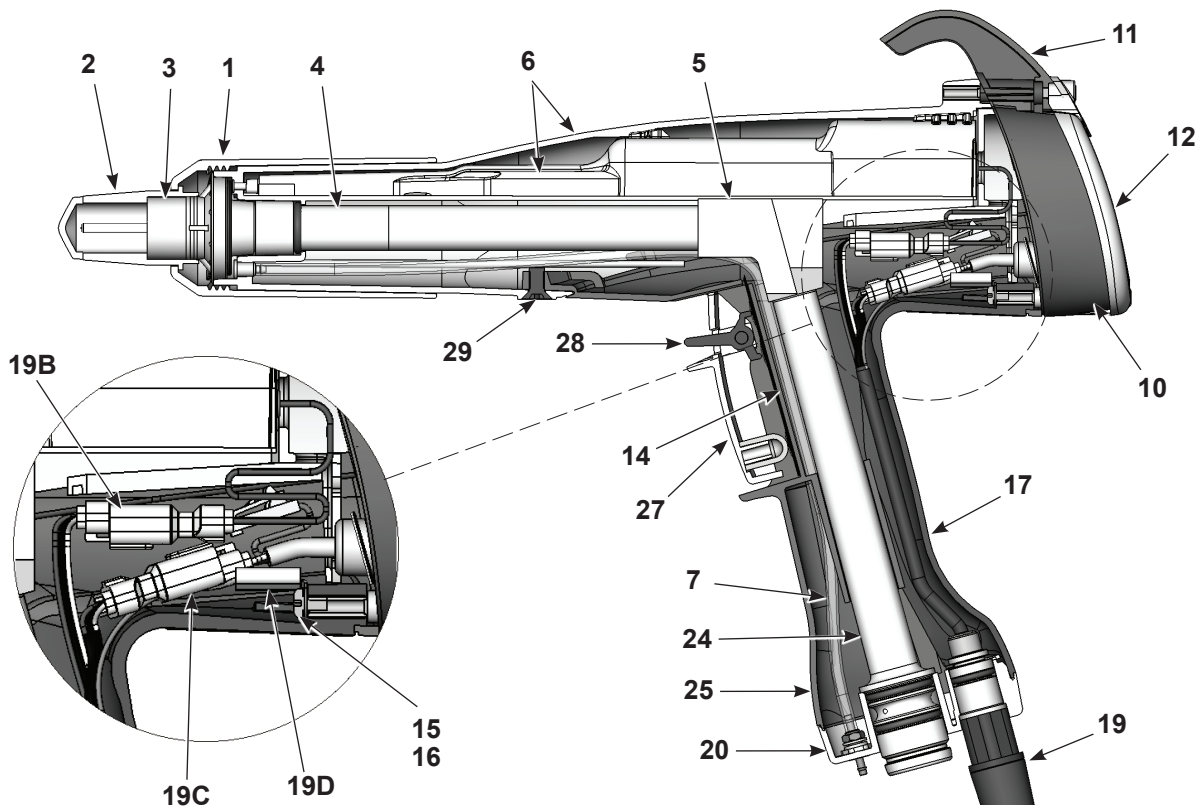


Figure 10 Section View of Spray Gun (item numbers in this section match item numbers in parts list)

- | | | |
|-----------------------------------|----------------------------------|---------------------------------|
| 1. Nozzle nut | 11. Hook | 19C. Display connector (J3) |
| 2. Nozzle, flat spray | 12. Bezel | 19D. Ground terminal (J1) |
| 3. Electrode assembly, flat spray | 14. Trigger switch | 20. Handle base |
| 4. Outlet tube kit | 15. Lock washer | 24. Inlet tube/hose adapter kit |
| 5. Elbow | 16. Ground screw | 25. Handle |
| 6. Power supply/body kit | 17. Ground pad | 27. Spray trigger |
| 7. Filter assembly | 19. Cable assembly | 28. Setting/purge trigger |
| 10. Display module | 19B. Power supply connector (J2) | 29. Screw (handle to gun body) |

NOTE: Ground terminal (19D) must always be connected to the ground screw (16).

Display Module Replacement

Display Module Removal

1. See Figure 10 and Figure 11. Unscrew the top and bottom screws (13) holding the bezel (12), hook (11) and display module (10) onto the gun body.
2. Remove the bezel and slide the hook off the display module.
3. Carefully pull the display module away from the gun.
4. Insert a small screwdriver into the recess in the J3 gun cable/display module connectors to release the catch and disconnect them.
5. Carefully remove the adhesive support pad and the trigger switch header from the display module.
6. If the adhesive support pad remains stuck to the trigger switch header, carefully peel the pad off. Both the display module kit and trigger switch kit include new adhesive support pads.

Display Module Installation

1. On the display module (10), carefully clean the trigger switch header mounting surface and surrounding area with isopropyl alcohol. Allow the surface to dry completely before proceeding.
2. If you are installing a new trigger switch, remove the two liners from the connector side of the trigger switch header as shown in Figure 11.
3. Align the trigger switch header with the display module receptacle and push on the header to connect it. Apply even pressure on the header to seal it tightly against the display module.
4. Remove the liner from the new adhesive support pad and install it over the trigger switch header. Apply even pressure on the support pad to seal it to the display module.
5. Connect the J3 display module and cable connector together. The ground wire connector (A) is not used for this version of the gun.
6. Gently fold the trigger switch ribbon cable and display module cable into the gun, and install the display module onto the gun.
7. Slide the hook (11) onto the display module, then install the bezel (12).
8. Install and tighten the screws (13).

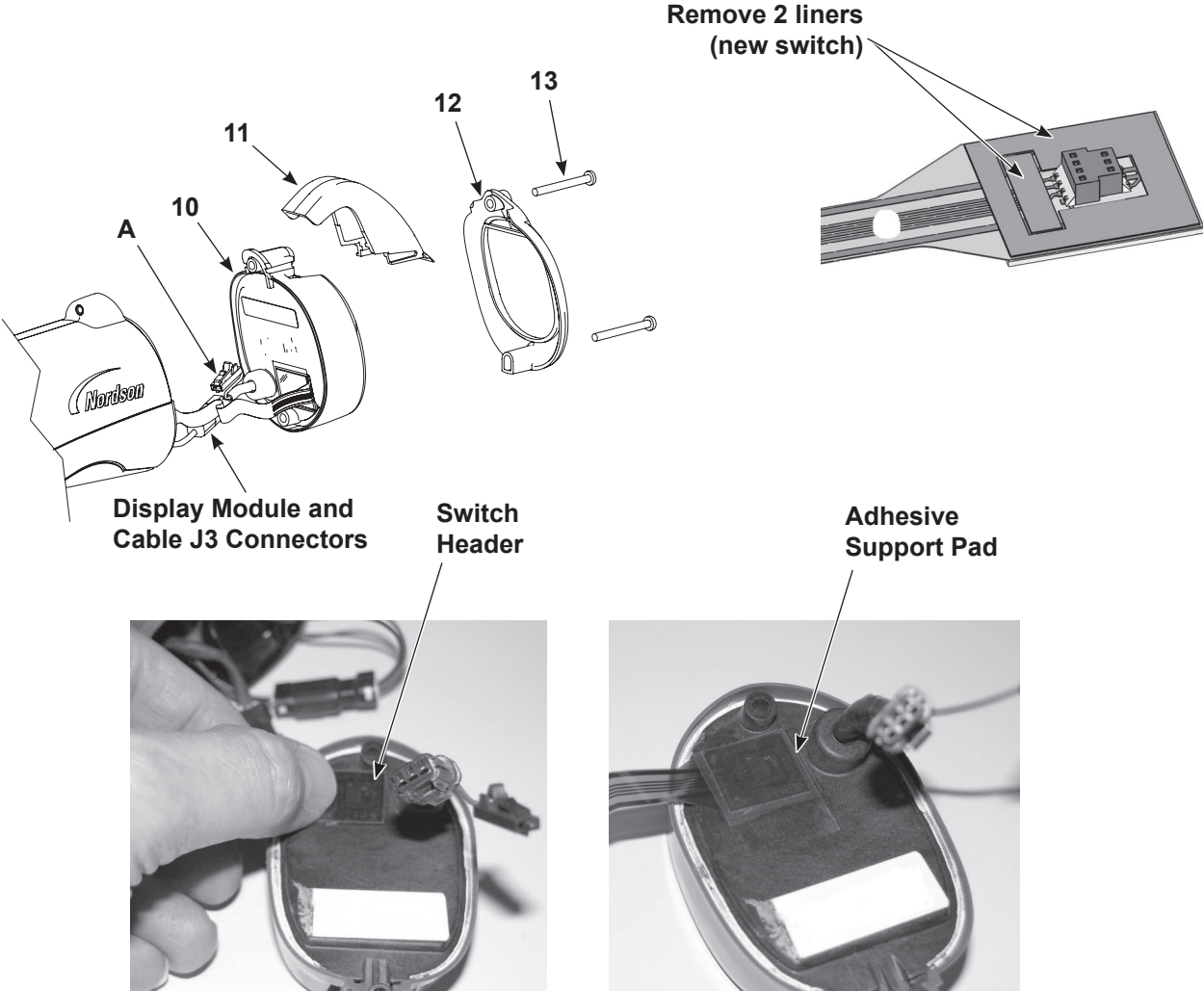


Figure 11 Display Module Replacement

- 10. Display module
- 11. Hook
- 12. Bezel
- 13. M3 x 35 screws
- A. Ground wire connector

Power Supply and Powder Path Replacement

Gun Disassembly

1. Remove the display module from the spray gun as described in *Display Module Replacement* on page 18.
2. See Figure 10. Unscrew the nozzle nut and remove the nozzle and electrode assembly from the spray gun.
3. Insert a small screwdriver into the recess in the J2 gun cable/power supply connectors to release the catch and disconnect them.
4. See Figure 12. Remove the black nylon screw (29) from the gun body.
5. Grasp the handle in one hand and the gun body in the other. Press the thumbs of each hand together while pulling carefully in opposite directions to separate the gun body from the handle. The air wash tubing will prevent a complete separation; leave it connected unless it must be replaced.

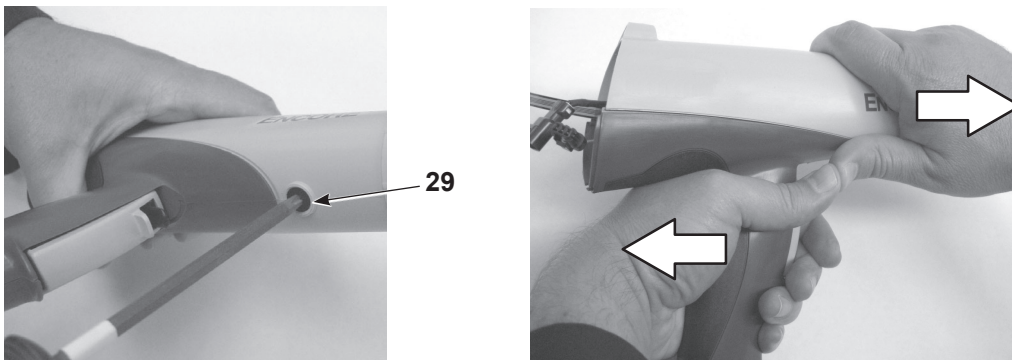


Figure 12 Removing the Gun Body from the Handle

Power Supply Replacement

NOTE: If replacing the powder path, skip this procedure.

1. See Figure 13. Slide the power supply (6A) out of the gun body (6B).
2. Check the gasket (8) on the back of the bulkhead (9). Replace it if it is damaged. The gasket is stuck to the bulkhead with pressure-sensitive adhesive.

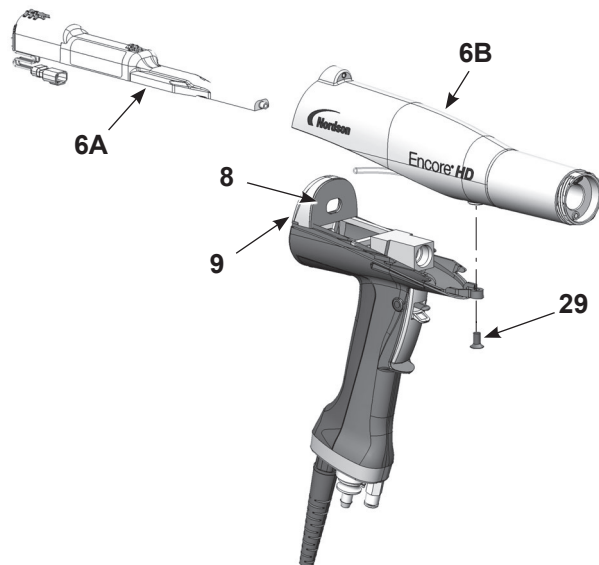


Figure 13 Removing the Power Supply from the Gun Body

3. Slide the new power supply into the upper cavity of the gun body, guiding the gun body ribs between the raised grooves on the top of the power supply.
4. Press on the end of the power supply to ensure that the power supply contact tip is firmly seated against the brass contact inside the gun body.
5. Route the power supply harness connector through the top hole in the bulkhead.

Powder Path Removal

NOTE: Skip these steps if not replacing the powder path. Go to page 24 to reassemble the spray gun.

1. Perform the Gun Disassembly procedure on page 20.
2. See Figure 14. Remove the elbow (5) from the inlet tube (24).
3. Remove the two M3 x 20 screws (21) from the handle base (20).
4. Pull the base away from the handle, then swing the bottom of the ground pad (17) up and away from the handle, then remove it. Leave the ground wire connected to the ground pad.
5. Push the inlet tube (24) up and out of the base, then move the base out of the way and pull the inlet tube out of the handle.
6. Push the outlet tube (4) out of the front of the gun body (6B).
7. Blow off the inlet tube, outlet tube, and elbow, and replace them if the interiors are worn or coated with impact-fused powder. If re-using the tubes, make sure the O-rings are undamaged.

Powder Path Installation

1. See Figure 14. Install the outlet tube (4) into the gun body (6B), with the end of the tube flush with the end of the gun body.
2. Install the inlet tube (24) into the handle (25), then install the end of the tube into the handle base (20).
3. Push the handle base close to the handle, then hook the top end of the ground pad (17) into the body and rotate it onto the handle. Make sure the cable wires are not pinched or trapped during re-assembly.
4. Install the handle base onto the handle and ground pad and secure it with the two M3 x 20 screws (21).
5. Install the elbow (5) onto the inlet tube, with the end oriented toward the front of the gun as shown.

NOTE: To verify proper installation, place a flashlight inside the bottom of the inlet adapter and verify the internal connections by looking through the outlet tube from the front of the powder spray gun.

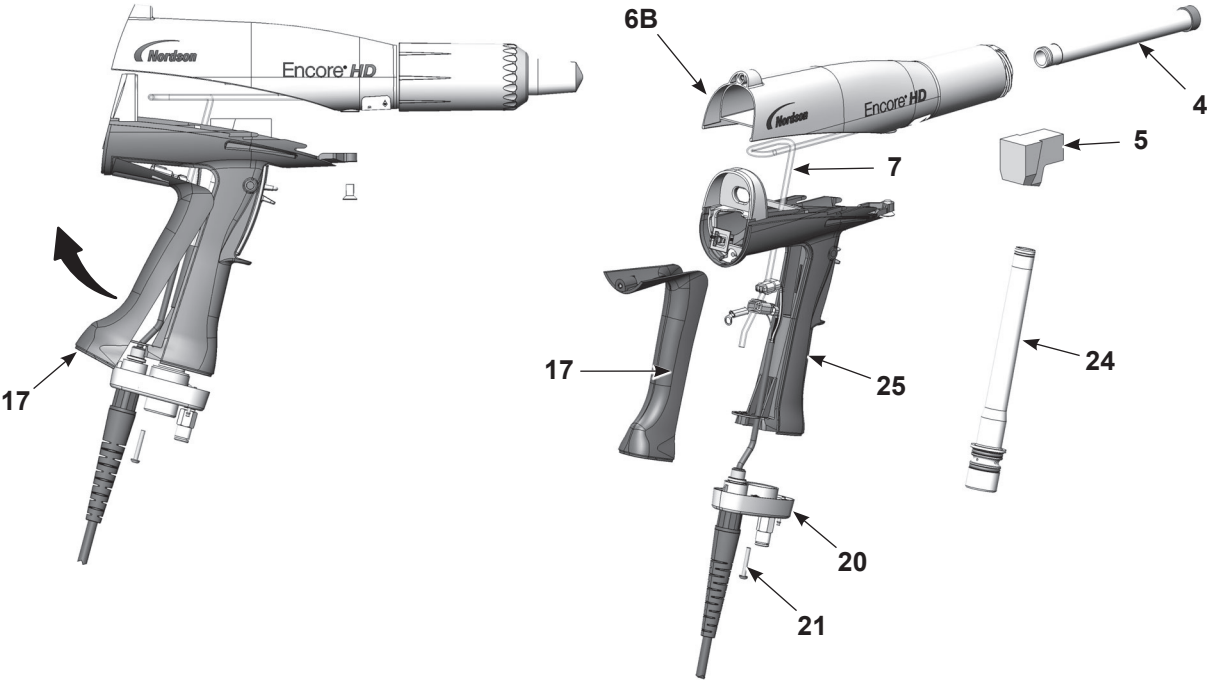


Figure 14 Powder Path Replacement

- 4. Outlet tube kit
- 5. Elbow
- 6. B - Gun body
- 7. Filter assembly
- 17. Ground pad
- 20. Handle base
- 21. M3 x 20 screws
- 24. Inlet tube/hose adapter kit
- 25. Handle

Gun Re-Assembly

1. See Figure 15. Align the gun body with the handle and slide them together, engaging the internal ribs of the gun body with the handle tabs.

NOTE: Make sure that the power supply harness is not pinched between the bulkhead and the power supply.

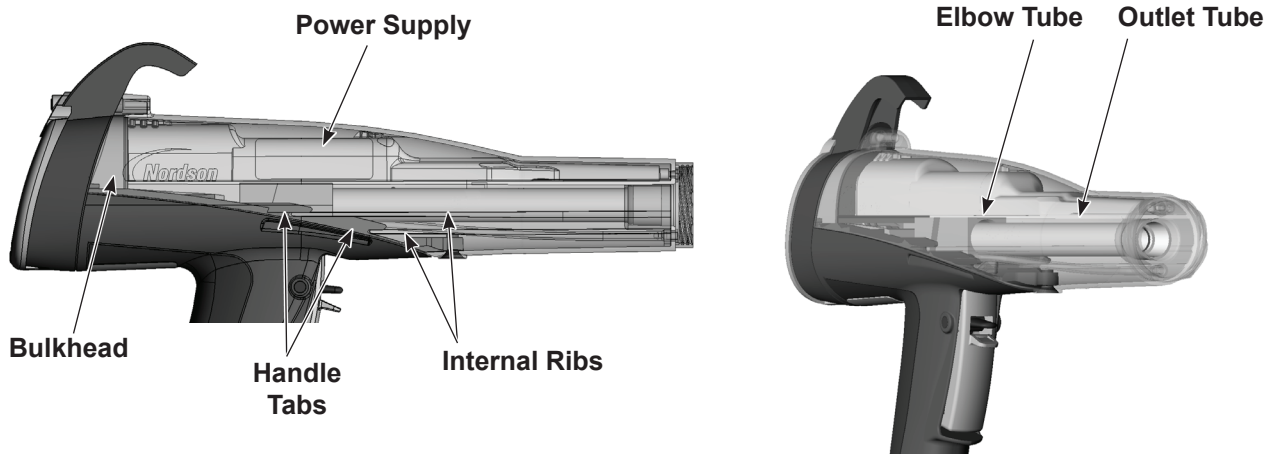


Figure 15 Gun Re-assembly

2. Insert your finger into the outlet tube at the front of the gun and align the inside end of the tube with the elbow, then push on the tube to seat it in the elbow.
3. Connect the power supply harness to the gun cable, then tuck both through the bottom hole in the bulkhead, into the gun body.
4. See Figure 11. Install the display module as described in Display Module Installation on page 18.
5. Install the electrode assembly (3) into the the end of the outlet tube at the front of the gun body. Make sure the wire electrode is not bent or broken.

NOTE: The flat spray and conical nozzles each have their own respective electrode holders.

6. Install the nozzle (2) on the electrode assembly, making sure the keys in the electrode assembly slide into the slots on the nozzle.
7. Install the nozzle nut (1) over the nozzle and rotate clockwise to secure.

Cable Replacement

Cable Removal

1. Disconnect the gun cable from the controller.
2. See Figure 16, View A. Remove the two M3 x 20 screws (21) securing the handle base (20) to the handle.
3. Remove the lower M3 x 35 screw (13) from the display module.
4. Pull the base away from the handle enough to free the bottom edge of the ground pad (17) from the base.
5. Pull the bottom edge of the ground pad out and away from the handle.
6. See Figure 16, View B. Remove the M3 x 8 screw, lock washer (16, 15), and ground terminal from the ground pad.
7. Remove the retaining ring (18) from the cable.
8. See Figure 16, View C. Pull the cable connectors out of the handle. Insert a small flat-bladed screw driver in the slots of the power supply and display connectors to release the catch and disconnect them.
9. Pull the cable out of the handle base, feeding the connectors through the base one at a time.

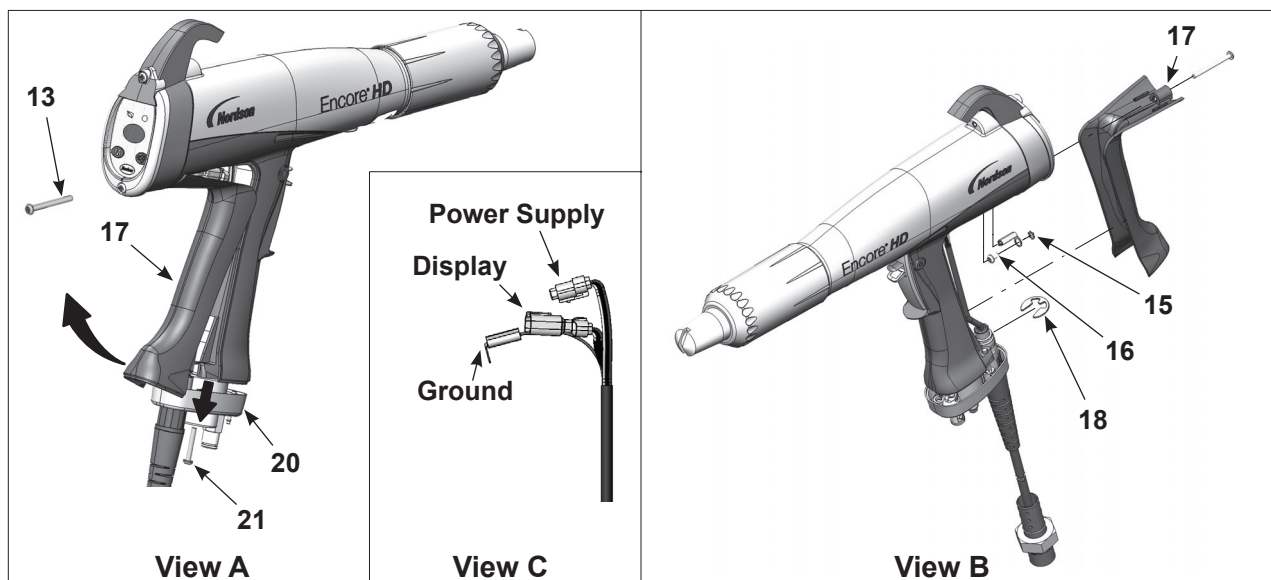


Figure 16 Cable Replacement

- 13. M3 x 35 screw
- 15. Lock washer
- 16. M3 x 6 screw

- 17. Ground pad
- 18. Retaining ring
- 20. Handle base

- 21. M3 x 20 screws

Cable Installation

1. See Figure 16. Feed a new cable through the handle base, then install the retaining ring (18) on the cable to hold it in place.
2. Connect the cable to the display module and power supply connectors.
3. Connect the cable terminal to the ground pad (17) with the M3 x 6 screw and lock washer (16, 15).
4. Tuck the cable connectors and ground wire into the gun, below the multiplier.
5. Hook the top of the ground pad into the gun body, then rotate it into position on the handle.
6. Push the handle base (20) up against the handle and ground pad, and tighten securely the two M3 x 20 screws (21) in the base.
7. Re-install the M3 x 35 screw (13) in the bottom of the display module.

Trigger Switch Replacement

Switch Removal

1. Remove the display module and disconnect the trigger switch ribbon cable from the module as described in *Display Module Replacement* on page 18.
2. Remove the gun body from the handle as described in *Gun Disassembly* on page 20.
3. See page 27. Pull out the elbow (5) off the inlet tube.
4. Push the small diameter end of the axle (30) out of the handle with a small, flat-ended punch or other tool.
5. Remove the spray trigger (27), actuator (26), and purge trigger (28) from the handle.
6. Use a tool to pry and pull the trigger switch (14) off the handle, then pull it up and out of the handle.

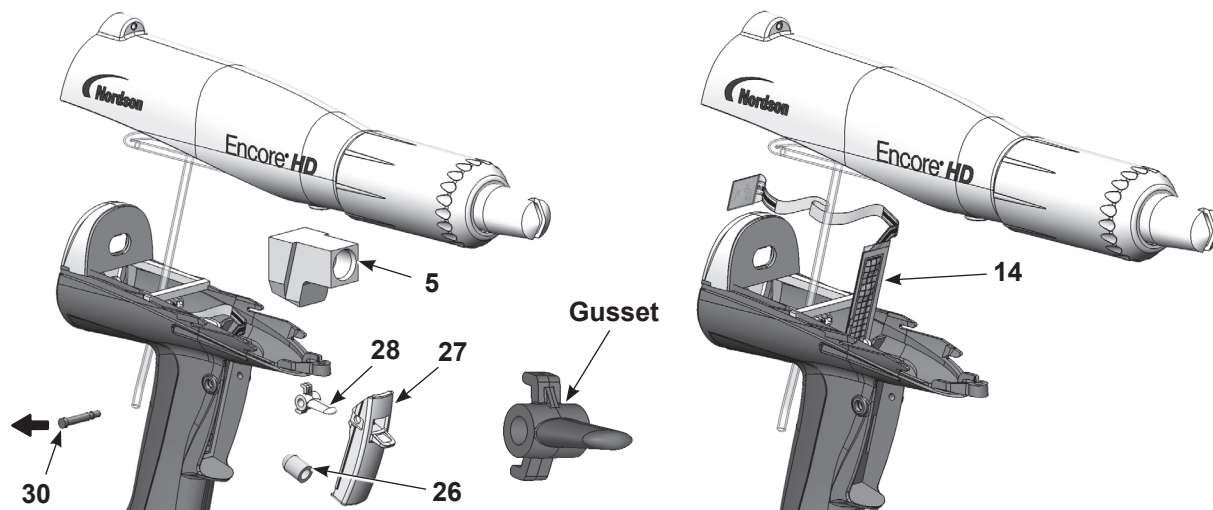


Figure 17 Trigger Switch Replacement

Switch Installation

1. See Figure 17. Orient the new switch (14) with the grid facing the front of the gun, then carefully feed the square, bottom end of the switch through the slot in the handle.
2. Peel the adhesive release liner from the back of the switch.
3. Carefully install the switch against the bottom and left edges of the trigger recess, pressing the switch against the back of the recess. Run your finger up and down on the switch to ensure it is securely adhered to the handle.
4. Install the purge trigger (28) into the spray trigger (27) with the gusset oriented upward as shown. **Do not install the purge trigger upside down.**
5. Position the triggers in the handle and hold them in place while pressing the axle (30) through the handle and triggers until the head of the axle is flush with the handle. The axle will snap into place when properly installed.
6. Feed the trigger switch ribbon cable through the bottom of the bulkhead and connect the ribbon cable connector to the display module as described in *Display Module Installation* on page 18.
7. Re-assemble the gun as described in *Gun Re-Assembly* on page 24.

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Troubleshooting



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: Before making repairs to the controller or spray gun, shut off system power and disconnect the power cord. Shut off the compressed air supply to the system and relieve the system pressure. Failure to observe this warning could result in personal injury.

These troubleshooting procedures cover only the most common problems. If you cannot solve a problem with the information given here, contact Nordson technical support at (800) 433-9319 or your local Nordson representative for help.

Spray Gun Power Supply Resistance Test

Use a megohm meter to check the resistance of the power supply, from the J2-3 feedback terminal at the connector to the contact pin inside the front end. The resistance should be between 225–335 megohms. If the reading is infinite, switch the meter probes. If the resistance falls outside this range, replace the power supply.

NOTE: There are multiple variables that can affect the Meg-Ohm readings of your meter (temperature and measurement voltage). If the Meg-Ohm meter output voltage differs from the 500 VDC setting, it will have a direct impact on the measurement accuracy. Measurements should also be taken at room temperature 22°C or 72°F. Allow time for the multiplier to cool to room temperature for repeatable results.

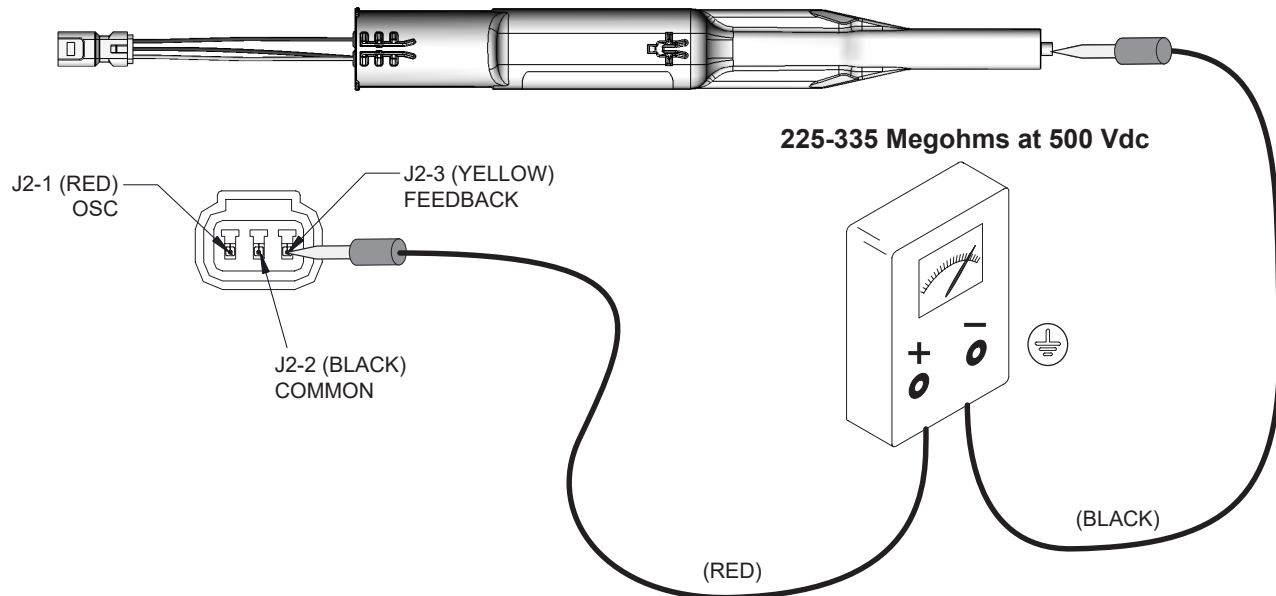


Figure 18 Power Supply Resistance Test

Electrode Assembly Resistance Test

Use a megohm meter to measure the resistance of the electrode assembly from the contact ring on the back to the antenna wire in the front. The resistance should be 19–23 megohms. If the resistance is out of this range replace the electrode assembly.

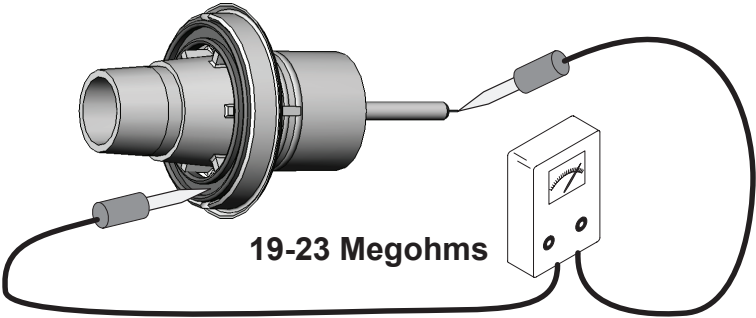


Figure 19 Electrode Assembly Resistance Test

Gun Cable Continuity Test

Test for continuity as follows:

- J1-1 and J3-3
- J1-2 and J2-2
- J1-2 and J3-2
- J1-3 and J2-1
- J1-4 and J3-1
- J1-5 and J2-3
- J1-6 and Ring-tong terminal on gun end.

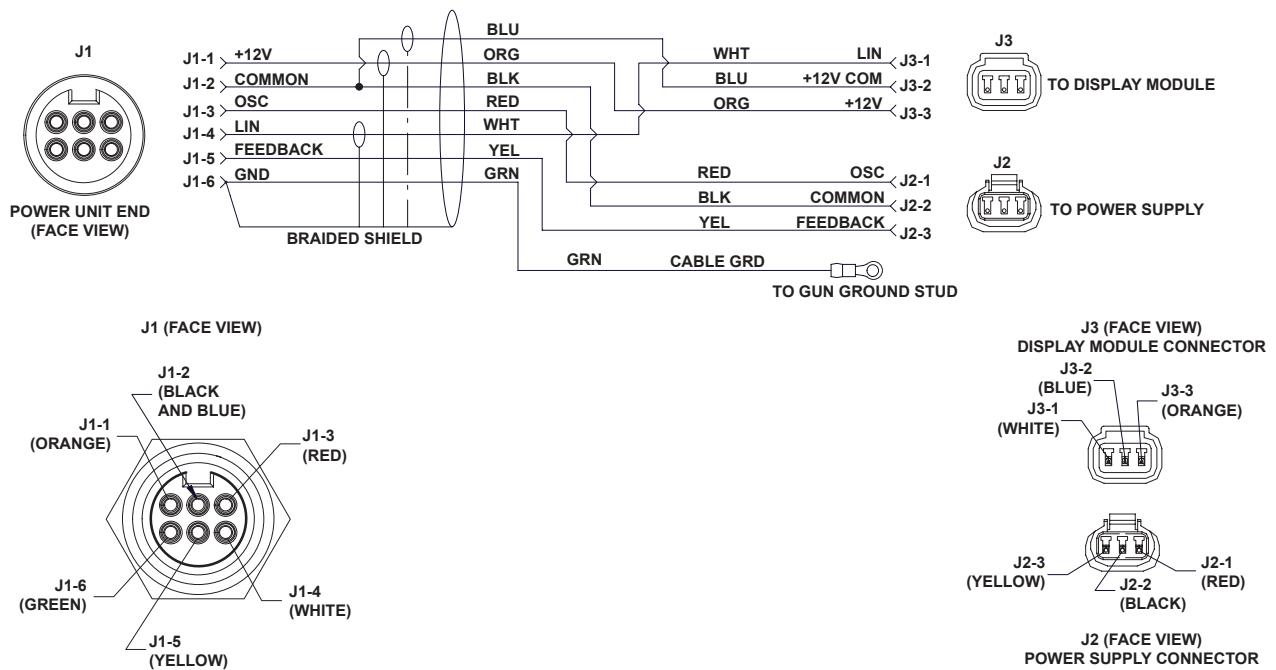


Figure 20 Gun Cable Wiring

Parts

To order parts, call the Nordson Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

This section covers parts and options for the Encore HD manual powder spray gun.

Reference Documentation

For additional information related to other components in the system, reference the following documentation:

Document Title	Document Part Number
Encore HD/XT System Controller Manual	1604870
Encore Cup Gun Kit	1102764
Encore HD Powder Spray Gun Lance Extensions	1604971
Pattern Adjuster Kit for Lance Extensions	1100013
Pattern Adjuster Kit for Encore Manual Spray Guns	1098440

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The number in the Part column is the Nordson Corporation part number. A series of dashes in this column (- - - - -) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

Item	Part	Part	Part	Description	Quantity	Note
—	-----	—	—		—	
1	-----					
2						
<i>Continued...</i>						
NOTE: A.						
B.						
NS: Not Shown						
AR: As Required						

Spray Gun Parts

See Figure 21 and the parts list on the following pages.

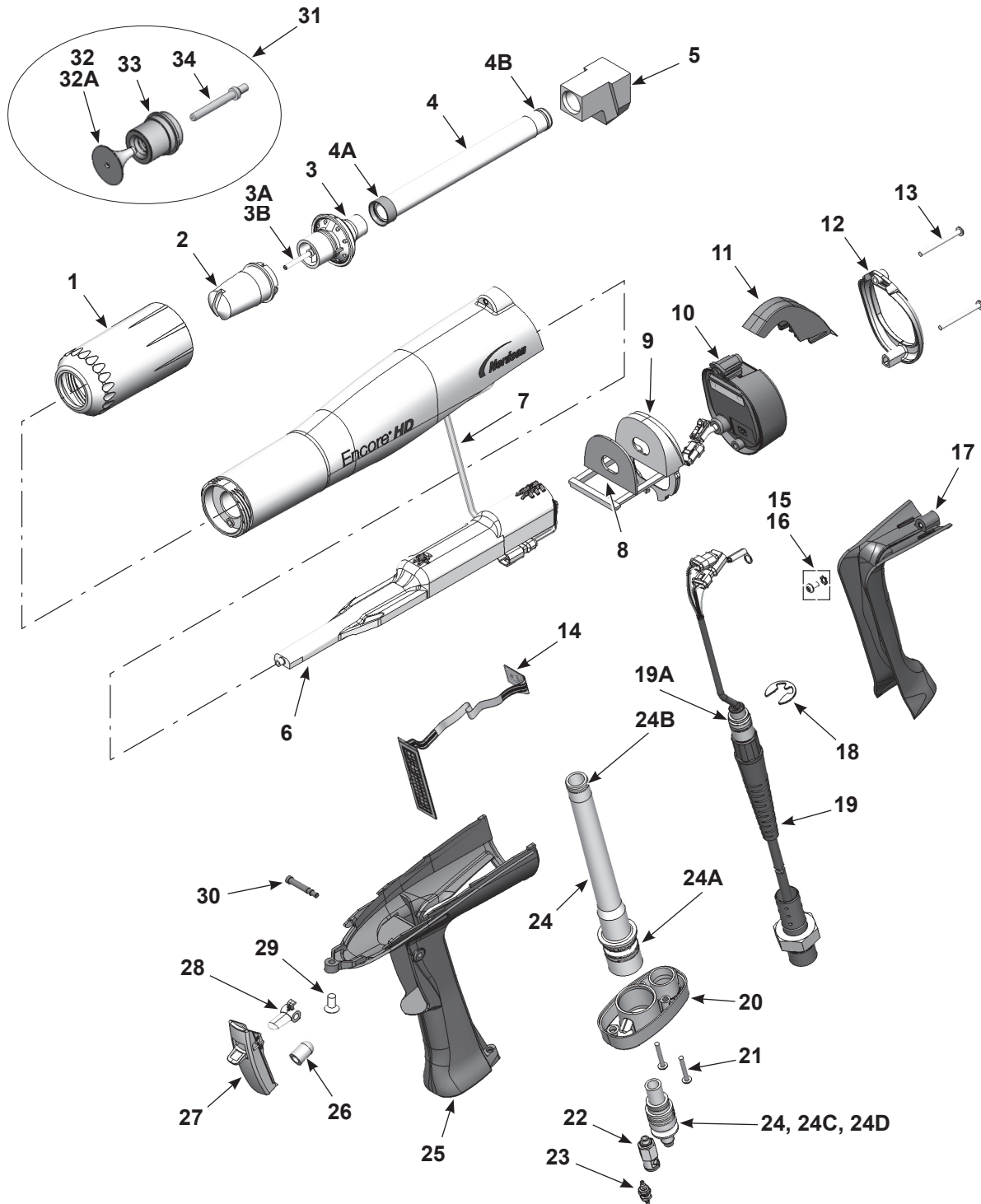


Figure 21 Encore HD Manual Spray Gun and Accessories Parts

Item	Part	Description	Quantity	Note
-	1603160	GUN ASSEMBLY, manual, Encore HD	1	
1	1081638	• NUT, nozzle, handgun	1	
2	1081657	• NOZZLE, flat spray, 3 mm	1	A
3	1604824	• ELECTRODE ASSEMBLY, Encore, flat spray	1	F
3A	1106078	• • ELECTRODE, spring contact	1	
3B	1605863	• • HOLDER, electrode, M3, flat spray, Encore	1	F
4	1606082	• KIT, powder outlet tube, Encore HD	1	D
4A	1097527	• • SEAL, tube, powder	1	
4B	1081785	• • O-RING, silicone, 0.468 x 0.568 x 0.05 in.	1	
5	1096695	• ELBOW, powder tube, handgun	1	D
6	1608280	• KIT, neg power supply/manual body, Encore	1	H
7	1088558	• • FILTER ASSEMBLY, handgun		
8	1088502	• GASKET, multiplier cover, handgun	1	
9	1106872	• BULKHEAD, multiplier, handgun, Encore HD	1	
10	1100986	• KIT, handgun display module, Encore	1	
NS	1085631	• • SUPPORT, adhesive, handgun, Encore	1	
11	1087760	• HOOK, handgun	1	
12	1102648	• BEZEL, shield, plated	1	
13	345071	• SCREW, pan head, recessed, M3 x 35, BZN	2	
14	1101872	• KIT, trigger switch, Encore HD	1	
NS	1085631	• • SUPPORT, adhesive, handgun, Encore	1	
15	983520	• WASHER, lock, internal, M3, zinc	1	
16	982427	• MACHINE SCREW, pan head, recessed, M3 x 6, zinc	1	
17	1106871	• HANDLE, ground pad, handgun, Encore HD	1	
18	1081777	• RETAINING RING, external, 10 mm	1	
19	1600745	• CABLE ASSY, handgun, 6 meter, Encore HD	1	E
19A	940129	• • O-RING, silicone, conductive, 0.375 x 0.50in.	1	
20	1087762	• BASE, handle, handgun	1	
21	760580	• SCREW, Philips head, M3 x 20, zinc	2	
22	1081617	• CHECK VALVE, male, M5 x 6 mm	1	
23	1081616	• FITTING, bulkhead, barb, dual, 10-32 x 4 mm	1	
24	1608282	• KIT, inlet tube and hose adapter, Encore HD, Gen 2	1	
24A	1084773	• • O-RING, silicone, 18 mm ID x 2 mm wide	2	
24B	1081785	• • O-RING, silicone, 0.468 x 0.568 x 0.05 in.	1	
24C	1606709	• • O-RING, PUR, 0.551 x 0.07 x 0.7	2	
24D	940137	• • O-RING, silicone, 0.437 x 0.562 x 0.063	1	
25	1600819	• HANDLE, handgun, Encore HD/XT	1	
26	1106892	• ACTUATOR, switch, trigger, Encore HD	1	
27	1606999	• KIT, service, Encore trigger axle/trigger	1	
28	1081540	• TRIGGER, setting, handgun	1	
29	1088601	• SCREW, flat head, recess, M5x 10, nylon	1	

Continued...

Item	Part	Description	Quantity	Note
30	1606998	• AXLE, trigger, spray gun, Encore	1	G
31	1604828	• KIT, conical nozzle, Encore	1	
32	1083205	• DEFLECTOR assembly, conical, 19 mm	1	A
32A	1098306	• • O-RING, Viton, 3 mm x 1.1 mm wide	1	B
32	1083206	• DEFLECTOR assembly, conical, 26 mm	1	A
32A	1098306	• • O-RING, Viton, 3 mm x 1.1 mm wide	1	B
33	1082060	• NOZZLE, conical	1	A
34	1605861	• HOLDER, electrode, M3, conical, Encore	1	
NS	900617	• TUBE, polyurethane, 4 mm OD, clear	AR	C
NS	900741	• TUBING, polyurethane, 6/4 mm, black	AR	C
NS	900620	• TUBING, poly, spiral cut, 3/8 in. ID	AR	C
NS	1081658	• NOZZLE, flat spray, 4 mm	1	A

NOTE: A. 3- and 4-mm flat spray nozzles, conical nozzles, and deflectors are shipped with the spray gun. Refer to the following pages for optional nozzles.

B. This O-ring is a component of all deflectors.

C. Order in increments of one foot or one meter.

D. Also available in wear resistant material. Refer to *Spray Gun Options*.

E. Optional 6 meter extension available; refer to *Spray Gun Options*.

F. For flat spray nozzle use only. Use kit item 32 to convert for conical nozzle and deflector use.

G. Included with trigger switch kit 1101872.

H. Application Specific: Order part number 1609053 if a positive power supply is needed. The positive power supply is sold separately from the gun body.

Spray Gun Options

Miscellaneous Spray Gun Options

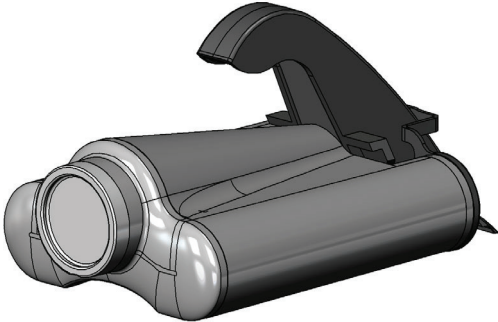
See Figure 21.

Item	Part	Description	Quantity	Note
4	1096698	KIT, powder outlet tube, wear resistant	1	
4A	1081785	• O-RING, silicone, 0.468 x 0.568 x 0.05 in.	1	
4B	941113	• O-RING, silicone, 0.438 x 0.625 x 0.094 in.	1	
5	1096696	ELBOW, powder tube, Encore, impact resistant	1	
NS	1085168	CABLE, 6-wire, shielded, handgun, 6 meter extension	1	

NS: Not Shown

nLighten™

nLighten is an LED inspection kit that helps powder coaters improve quality by effectively illuminating hard to see surface areas. Any imperfection or missed area is quickly identified and corrected. Find out more at: nordsoncoating.com/nLighten.



**1611977
nLighten**

Figure 22 LED Inspection Kit

Flat Spray Nozzles

3- and 4-mm flat spray nozzles are shipped with the spray gun. All other flat spray nozzles are optional.

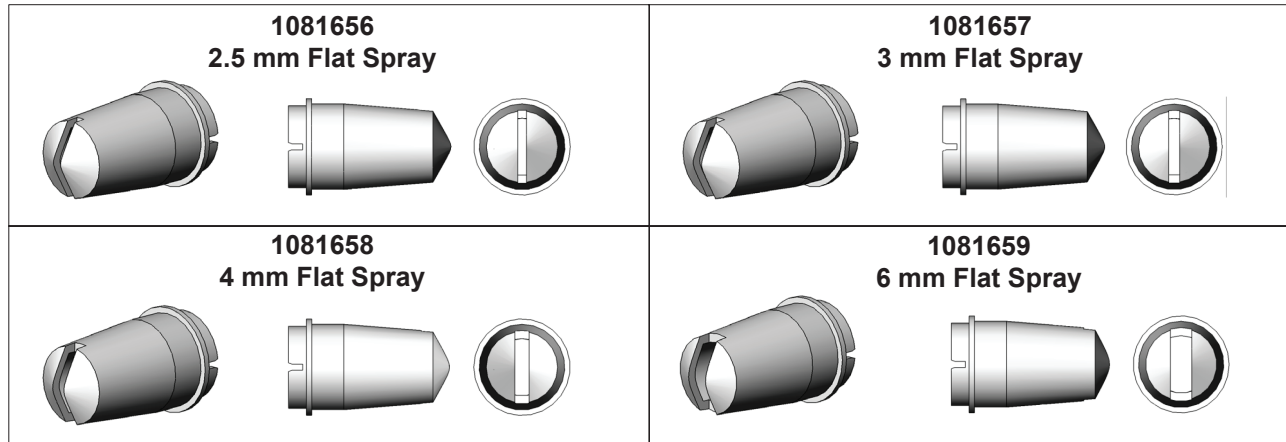


Figure 23 Flat Spray Nozzles

Cross Cut Nozzles

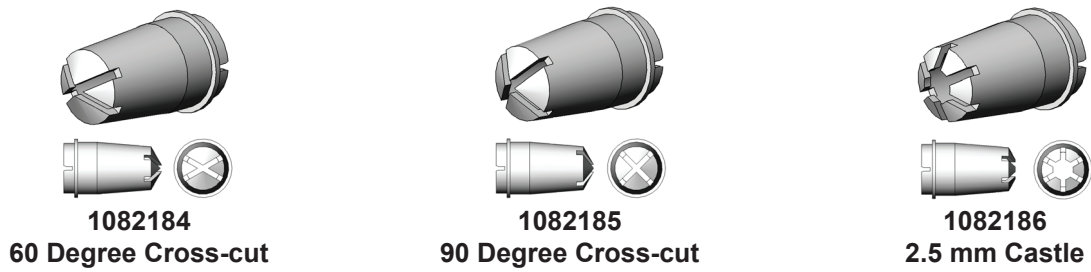


Figure 24 Cross-cut Nozzles

45-Degree Corner-Spray Nozzle

See Figure 25.

Spray Pattern	Wide fan pattern perpendicular to the spray gun axis
Slot Type	Angled, cross slot
Application	Flanges and recesses

Part	Description	Note
1102872	NOZZLE, corner spray, Encore	

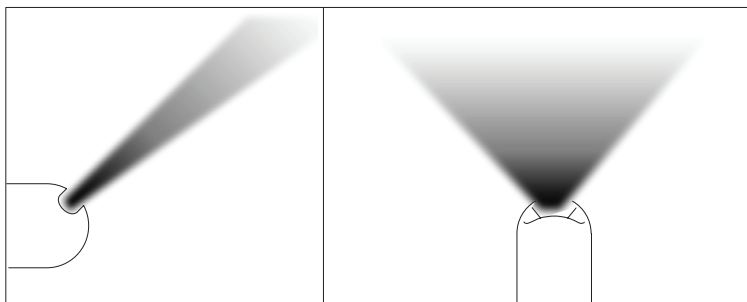
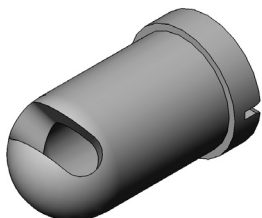


Figure 25 45-Degree Corner Spray Nozzle

45-Degree In-Line Flat-Spray Nozzle

Spray Pattern	Narrow fan pattern in-line with spray gun axis
Slot Type	Three angled slots in-line with spray gun axis
Application	Top and bottom coating; typically no in/out part positioning

Part	Description	Note
1102871	NOZZLE, 45 degree, flat spray, Encore	

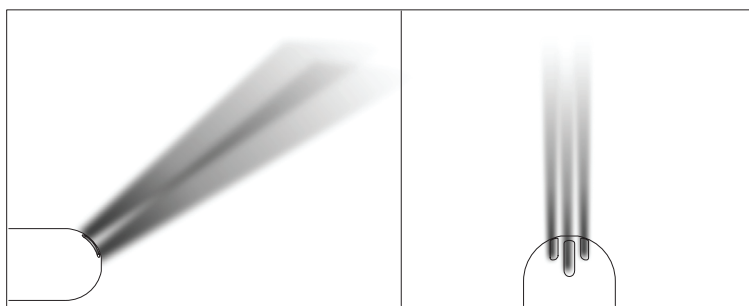
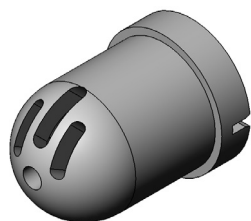


Figure 26 45-Degree Flat Spray Nozzle

Conical Nozzle, Deflectors and Electrode Assembly Parts

See Figure 7, Figure 8, and Figure 9. The conical nozzle and deflectors must be used with the conical electrode holder. One conical nozzle kit (1604828) and one 19 mm deflector (1083205) are shipped with the gun. Other parts shown here are optional and must be ordered separately.

Conical Nozzle and Deflectors

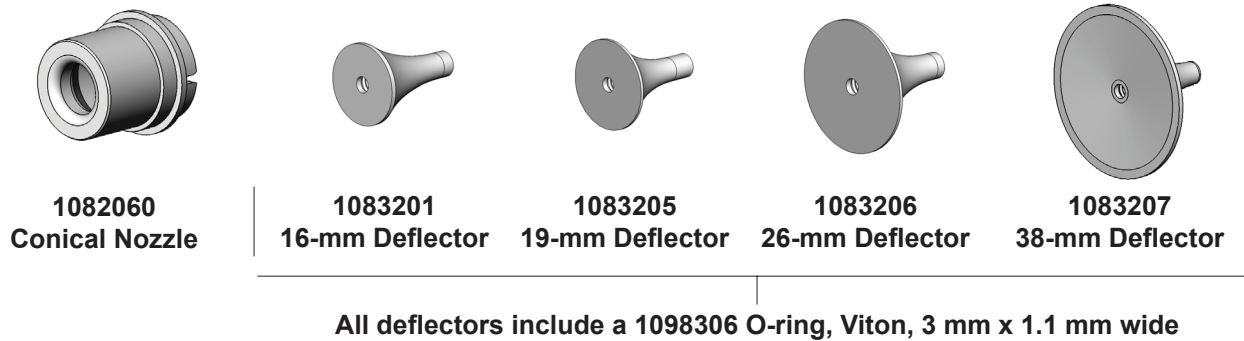


Figure 27 Conical Nozzle and Deflectors

Conical Nozzle Kit (shipped with gun)



Figure 28 Conical Nozzle Conversion Kit

Part	Description	Quantity	Note
1604828	KIT, conical nozzle, Encore	1	
1083206	• DEFLECTOR, 26 mm	1	
1082060	• NOZZLE, conical	1	
1605861	• ELECTRODE HOLDER, conical	1	A

NOTE: A. The conical nozzle requires a different style electrode holder than what is used in the flat spray nozzle electrode assembly.

Conical Nozzle, Deflectors and Electrode Assembly Parts (contd)

Conical Electrode Assembly

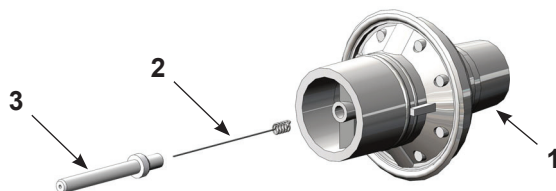


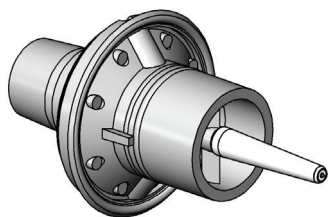
Figure 29 Conical Electrode Assembly

Item	Part	Description	Quantity	Note
—	1106076	ELECTRODE ASSEMBLY, conical, Encore	1	
1	-----	• ELECTRODE SUPPORT	1	
2	1106078	• ELECTRODE	1	
3	1605861	• ELECTRODE HOLDER, Conical	1	A

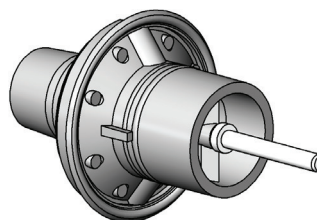
NOTE: A. The conical nozzle requires a different style electrode holder than what is used in the flat spray nozzle electrode assembly.

XD Electrode Support

The XD (extended duty) Electrode Support provides 2 to 3 times longer wear life than that of the standard duty electrode support.



1613834
XD Flat Spray Electrode Support

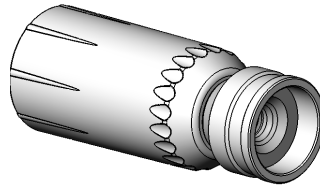


1613835
XD Conical Spray Electrode Support

Figure 30 Conical Spray and Flat Spray Electrode Supports

Pattern Adjuster Kit

The pattern adjuster kit includes an integral conical nozzle. 16, 19, and 26-mm deflectors can be used with the kit. The deflectors are not included with the kit and must be ordered separately.



1098417

Encore HD Manual Gun Pattern Adjuster Kit

Figure 31 Pattern Adjuster Kit

Lance Extensions

The nozzles listed on the preceding pages install directly on the lance extensions. Refer to the instruction sheet shipped with the lance extensions for installation instructions and repair parts.

NOTE: A conical electrode holder is required for use with conical deflectors and lance extensions. See page 40.

Part	Description	Note
1604965	EXTENSION, lance, 150 mm, Encore HD	A
1604970	EXTENSION, lance, 300 mm, Encore HD	A

NOTE: A. If a longer lance extension is required, contact your Nordson representative.

Ion Collector Kit

This kit installs on the standard length gun. Refer to the instruction sheet shipped with the spray gun for installation instructions and repair parts.

Part	Description	Note
1603854	KIT, ion collector assembly, manual, Encore (std length gun)	

Ion Collector Components for Lance Extensions

To use the ion collector kit listed above with 150-mm or 300-mm Lance Extensions, order one of the rods and the bracket listed below. Refer to the instruction sheet shipped with the kit for installation instructions.

Item	Part	Description	Quantity	Note
—	189483	ROD, ion collector, 15 in.	1	A
—	189484	ROD, ion collector, 21 in.	1	B

NOTE: A. Use for 150-mm lance extension.

B. Use for 300-mm lance extension.

Powder Hose and Air Tubing

Powder hose and air tubing must be ordered in increments of one foot.

Part	Description	Note
1081783	Powder hose, 6 mm ID x 8 mm OD, polyolefin (by 100 ft)	B, E
1080388	Powder hose, 6 mm ID x 8 mm OD, polyolefin (by 500 ft)	C, E
1606690	Clear powder hose, 6 mm ID x 8 mm OD, polyurethane (by 100 ft)	A, F
1606695	Clear powder hose, 6 mm ID x 8 mm OD, polyurethane (by 500 ft)	C, F
900617	Air tubing, polyurethane, 4 mm, clear, electrode air wash	A
900742	Air tubing, polyurethane, 6 mm, blue, pattern air	A
1096789	Air tubing, antistatic, 6/4 mm, black (conductive air tubing), VBF pickup tube to controller	D
900741	Air tubing, polyurethane, 6 mm, black	
900618	Air tubing, polyurethane, 8 mm, blue	A
900619	Air tubing, polyurethane, 8 mm, black	A
900740	Air tubing, polyurethane, 10 mm, blue, main air IN	A
900517	Tubing, poly, spiral cut, 0.62 in. ID, dress out	
301841	Strap, Velcro, w/buckle, 25 x 3 cm, dress out	
226690	Tubing, polyurethane, 12/8 mm, blue	

NOTE: A. Minimum order quantity is 50 ft.

B. Minimum order quantity is 100 ft.

C. Minimum order quantity is 500 ft.

D. This tubing is used on VBF systems to provide fluidizing air from the bulkhead union to the pickup tube. It is conductive and grounds the pickup tube to the cart body. Do not replace with non-conductive tubing.

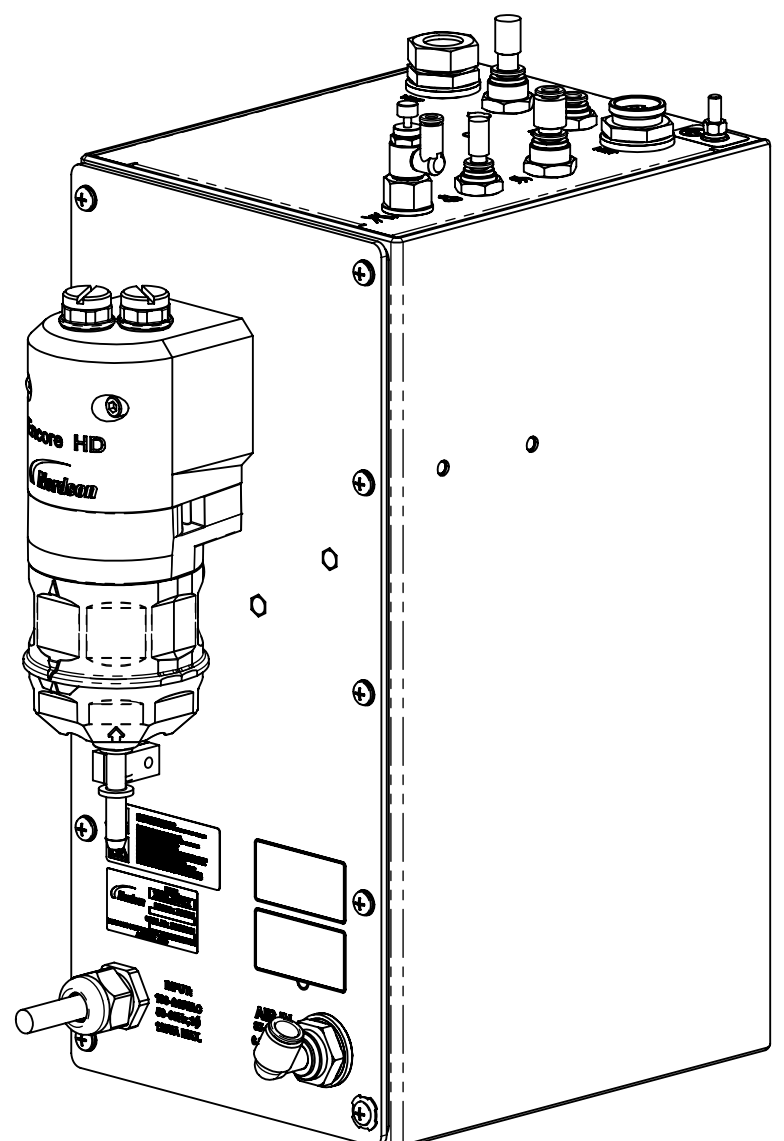
E. Standard powder hose delivered with system.

F. Optional powder hose to use in place of the standard polyolefin.

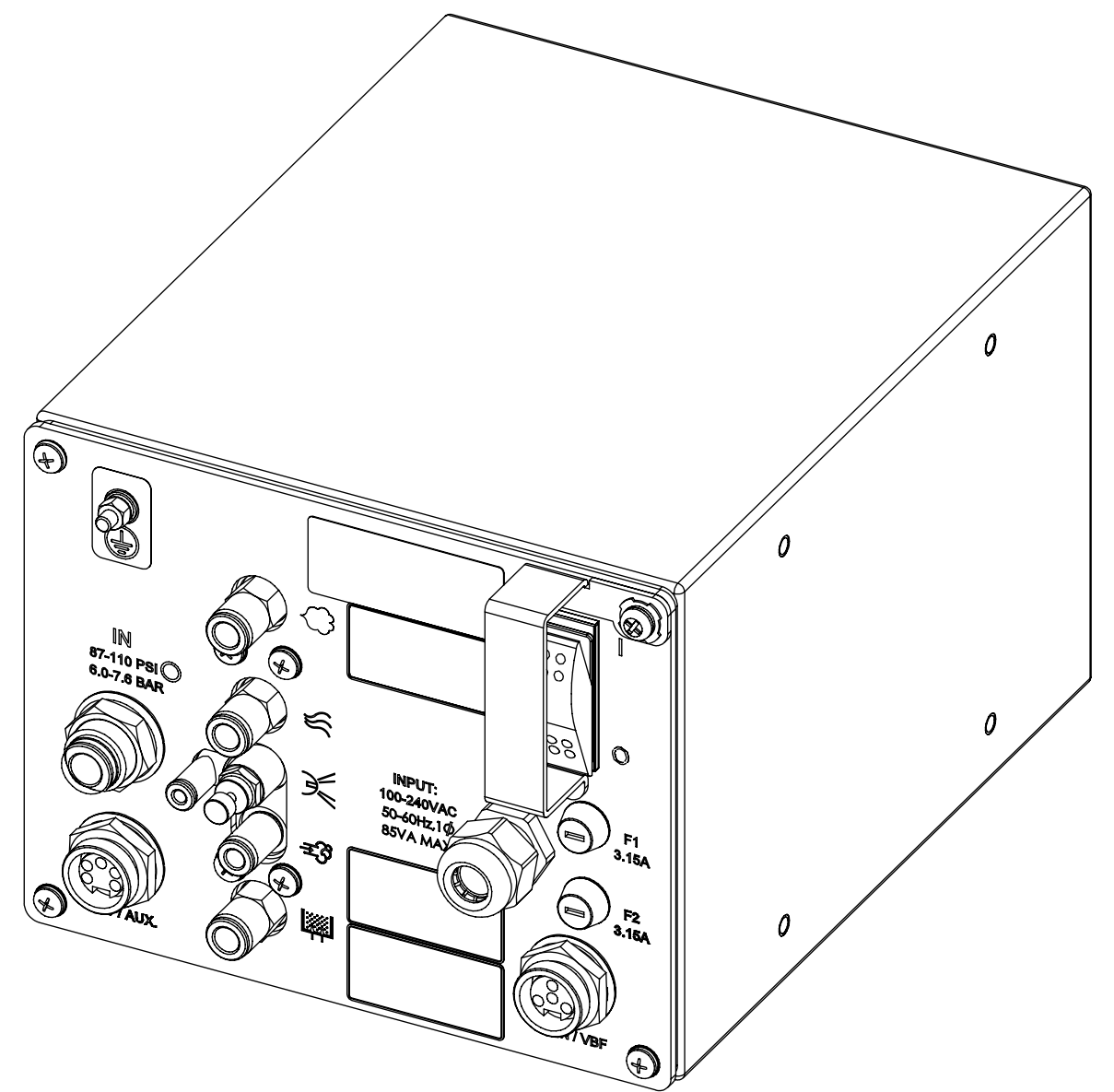
8 7 6 5 4 3

NOTICE THIS DRAWING IS NORDSON PROPERTY, CONTAINS PROPRIETARY INFORMATION AND MUST BE RETURNED UPON REQUEST. DO NOT CIRCULATE, REPRODUCE OR DIVULGE TO OTHER PARTIES WITHOUT WRITTEN CONSENT OF NORDSON.

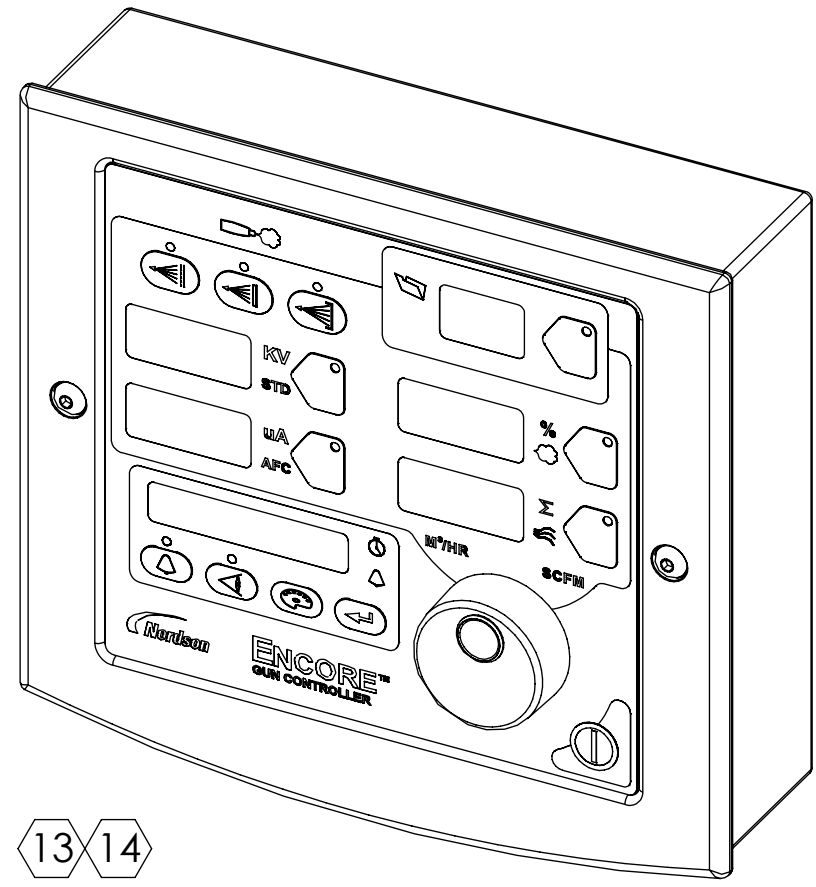
MATERIAL NO. 1084547		REVISION 25		REVISIONS			
ZONE	REV.	DESCRIPTION	BY	CHK	ECO NO.	DATE	
	A00	00) PRELIMINARY.				11JAN08	
	A01	01) RELEASED FOR PRODUCTION.	DRJ	RJF	PE600468	14JAN08	
	A02	02) ADDED ZONES 21 & 22, & MOBILE SYSTEM SPECS.	DRJ	RJF	PE600575	01FEB08	
	A03	03) ADDED 6M CABLE EXTENSION (SHEET 1); ADDED MOBILE SYSTEM WITH 25-LB. HOPPER (SHEET 2).	DC	DY	PE600552	21FEB08	
	A04	04) REDRAWN IN CURRENT FORMAT; ADDED ATEX-APPROVED VERSIONS OF INTERFACE CONTROL UNIT, HANDGUN, 115V & 220V VBF SYSTEMS, AND 50- AND 25-LB HOPPER SYSTEMS; REDESIGNED APPROVED EQUIPMENT SPECIFICATIONS TABLES (SHEETS 1 & 2); REMOVED MOTORS FROM SPECIFICATION TABLES & ADDED MFR'S CERTIFICATION NO.	DC	RJF	PE600806	30MAY08	
	A05	05) REMOVED FM-APPROVED HANDGUN ASSY 1083120 FROM APPROVED EQUIPMENT LISTING (SHEETS 1 & 2).	DC	RJF	PE601120	30JUL08	
	A06	06) PART NUMBER ERROR CORRECTION (SHEET 2).	DC	RJF	PE601509	12MAR09	
	A07	07) REMOVED 1082819, 1082843, 1082844, 1084512, 1084514, 1084517, 1087272, 1087273, 1087274, & 1087275; ADDED 1097072, 1097073, 1097074, & 1097075; UPDATED MPS PICTORIALS.	DRJ	RJF	PE601681	04AUG09	
	A08	08) UPDATED ENCORE HANDGUN PICTORIALS, NEW ENCORE HANDGUN PART NUMBERS UPDATED IN APPROVED EQUIPMENT TABLES.	BB	BDM	PE602105	24JUN10	
	10	09) UPDATE PG.1 & 2 FOR NEW 230V P/N					
		10) UPDATE VIBRATORY MOTOR VIEW, PG.2	DM	DU	PE602591	05AUG11	
	11	1600745 WAS 1102625	DM	BP	PE602297	28NOV11	
	12	12) RES'VD DESCRPTN, TABLES AND ASSEMBLIES TO REFLECT 'XT' VERSION (SHEETS 1 & 2)	MHH	BDM	PE602609	07FEB12	
	13	13) REMOVED ENCORE XT CONTROLLER 1087276 & ADDED 1604125; UPDATED MOBILE SYSTEM VIEWS.	DC	RJF	PE603075	22OCT13	
	14	14) ADDED 'HD' PRODUCTS & 'XT' DESIGNATIONS, UPDATE TABLES, MOTOR CERT # WAS TUUSATEXZ72768X(PG.2)	MB	RJF	PE603483	05MAR15	
	15	15) ADDED ITEM 1609709, CHANGED PART# 1606272 TO 1606978 AND PART# 1606271 TO 1606977	NHY	TF	PE604849	24MAY16	
	16	16) ADDED POS KV MULTIPLIER (1609048)	RF	RJF	PE605057	01NOV16	
	17	SHT 1 - CORRECTED TABLE ENTRIES FOR 1606978 AND 1606977; BOTH SHEETS; ADDED TABLE ROWS FOR HD+ PUMP, ADDED NOTES FOR HD+ OPTION;	EW	BF	PE605057	21NOV17	
	19	ADDED: 18) OPTIONAL LED LIGHT; 19) BOM P/N/S W/LED	TAL	BDM	PE-100225	22MAY18	
	20	20) UPDATES FOR NLIGHTEN ATEX CERTIFICATION	BDM	BDM	PE-100765	22AUG18	
	21	SHT 1 - REMOVED VIEWS OF GUNS, CABLES AND OPTIONS, MOVED INFO TO TABLE. ADDED ENCORE HD ROBOT GUN AND CABLES, ADDED 60 AND 45 DEGREE EXTENSIONS.	BDM	RF	PE-103650	16OCT20	
	22	SHT 1 - 15.11977 WAS CFMUS; SHT 1 & 2 - REVISED TABLE HEADINGS FOR PROPER ATEX RATING TEXT.	BDM	RF	PE-103868	05FEB21	
	23	REMOVED ENCORE HD HYBRID & OBS PARTS	DG	FM	PE-104601	13OCT21	
	24	UPDATED HOPPER VERSION MOBILE SYSTEM VIEW	CG	RM	PE-105860	21MAR23	
	25	ADDED GEN3 APPLICATOR & OPTIONAL KITS	TAL	CG	PE-107163	15MAR24	



14) **ENCORE HD CONTROLLER POWER UNIT W/HD OR HD+ PUMP WITH HD PUMP**
1605586 FOR 230V VBF
1605584 FOR 115V VBF WITH HD+ PUMP
1611089 FOR 230 VBF
1611086 FOR 115 VBF



13) **ENCORE XT CONTROLLER POWER UNIT**
1082815 FOR 230V VBF
1600468 FOR 115V VBF



13) 14) **ENCORE XT/HD INTERFACE CONTROL UNIT**
1604125

22) 15) 12) A 07 09

General Table

THE FOLLOWING EQUIPMENT AND ASSOCIATED CABLES ARE FOR USE IN CLASS II, DIV 2 HAZARDOUS (CLASSIFIED) LOCATIONS OR <Ex> II (2)3D EXPLOSIVE ATMOSPHERES:

PART NUMBER	DESCRIPTION	CFMus	CFMus / ATEX	NOTE
1604125	ENCORE XT/HD INTERFACE CONTROL UNIT		X	XT & HD
1082815	ENCORE XT CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 230V, 50HZ, VBF OPTION		X	XT
1600468	ENCORE XT CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 115V, 60HZ, VBF OPTION	X		XT
1605586	ENCORE HD CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 230V, 50HZ, VBF OPTION		X	HD WITH HD PUMP
1605584	ENCORE HD CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 115V, 60HZ, VBF OPTION	X		HD WITH HD PUMP
1611086	ENCORE HD CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 115V, 60HZ VBF OPTION	X		HD WITH HD+ PUMP
1611089	ENCORE HD CONTROLLER POWER UNIT, RELAY BOARD SET UP FOR 230V, 50HZ OPTION		X	HD WITH HD+ PUMP
1609709	CONTROLLER INTERFACE CABLE 50 FT		X	XT & HD
1080718	CONTROLLER INTERFACE CABLE 10 FT		X	XT & HD
1080719	CONTROLLER INTERFACE CABLE 30 INCH		X	XT & HD

A 05 A 08

22) 21) 14) 13)

THE FOLLOWING APPLICATORS AND CABLES ARE SUITABLE FOR CLASS II, DIV 1, GROUP F & G HAZARDOUS (CLASSIFIED) LOCATIONS, OR <Ex> II 2 D EXPLOSIVE ATMOSPHERES:

PART NUMBER	DESCRIPTION	CFMus	CFMus / ATEX	NOTE
GUNS				
1600818	ENCORE XT HANDGUN		X	XT
1603160	ENCORE HD HANDGUN		X	HD
1097489	ENCORE AUTOMATIC GUN BAR MOUNT (CAN BE USED IN ROBOT APPLICATIONS)		X	WITH XT CONTROLS
1620076	ENCORE SELECT HD ROBOT GUN		X	WITH HD CONTROLS
1624523	APPLICATOR,AUTO,ENCORE,GEN3 (CAN BE USED IN ROBOT APPLICATIONS)		X	APPLICATOR,GEN3
CABLES				
1600745	ENCORE XT/HD 6 METER HANDGUN CABLE		X	XT & HD
1085168	6 METER HANDGUN CABLE EXTENSION		X	XT & HD
1605436	CABLE,SPRAY GUN,ROBOT,AUTO,ENCORE,8M		X	WITH XT & HD CONTROLS
1620523	CABLE,SPRAY GUN,ROBOT,AUTO,ENCORE,20M		X	WITH XT & HD CONTROLS
1601344	CABLE,EXTENSION,ENCORE,AUTO AND ROBOT,4M		X	WITH XT & HD CONTROLS
1620466	CABLE,EXTENSION,ROBOT,ENCORE,10M		X	WITH XT & HD CONTROLS
OPTIONS				
1604084	EXTENSION,SPRAY,90 DEGREE,ENCORE		X	AUTO GUNS
1605614	EXTENSION,SPRAY,60 DEGREE,ENCORE		X	AUTO GUNS
1605703	EXTENSION,SPRAY,45 DEGREE,ENCORE		X	AUTO GUNS
1609048	POSITIVE MULTIPLIER		X	
1611977	NLIGHTEN LED LIGHT KIT		X	XT & HD
1625279	DIFFUSER,ENCORE HD AUTO,GEN3,PKG			APPLICATOR,GEN3
1625160	KIT,BAR MOUNT,APPL,AUTO,ENCORE,GEN3 (CAN BE USED IN ROBOT APPLICATIONS)			APPLICATOR,GEN3
1625161	KIT,COLLECTOR,ION,AUTO,ENCORE,GEN3			APPLICATOR,GEN3

CRITICAL
No revisions permitted without approval of the proper agency.

ALL DIMENSIONS IN MM EXCEPT AS NOTED

X90.8 X340.25 X330.13
MACHINED SURFACES L4
BREAK INSIDE/OUTSIDE CORNERS R1/0.8
THREAD LENGTH DIMENSIONS ARE FULL THREAD
INTERPRET DRAWINGS PER ASME Y14.5-1994
PERFECT FORM AT MMC REQUIRED FOR INTERRELATED FEATURES
THIRD ANGLE PROJECTION

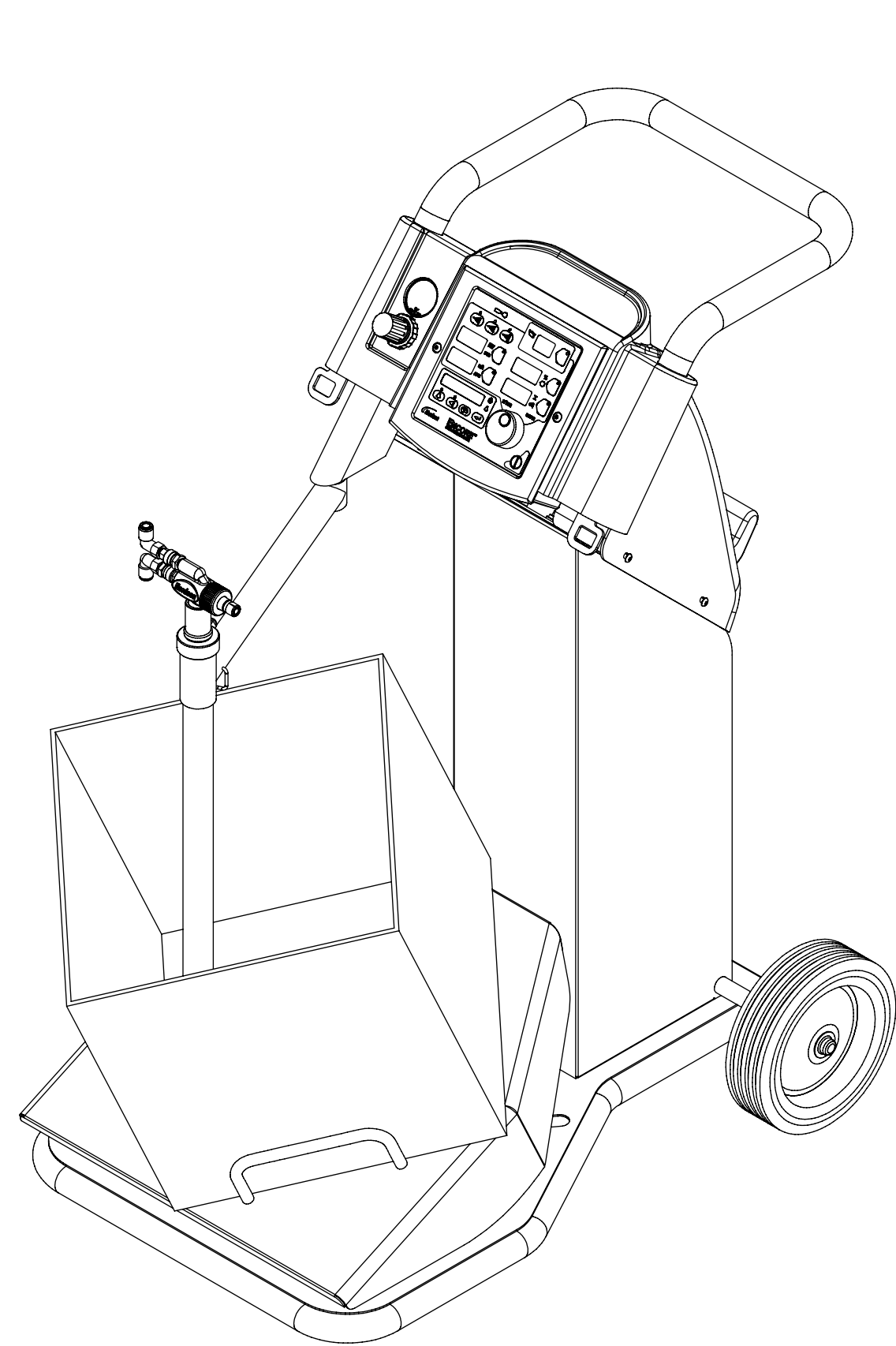
DESCRIPTION: REF DWG,APVD EQUIP,MANUAL ENCORE XT HD

NORDSON CORPORATION
WESTLAKE, OH, U.S.A. 44145

DRAWN BY: DRJ DATE: 11JAN08 RELEASE NO.:
CHECKED BY: RJF APPROVED BY: RJF PE600468

SIZE: D FILE NAME: 1084547 MATERIAL NO.: 1084547 REVISION: 25

SCALE: NOT TO SCALE SOLIDWORKS GENERATED DWG. SHEET 1 OF 2

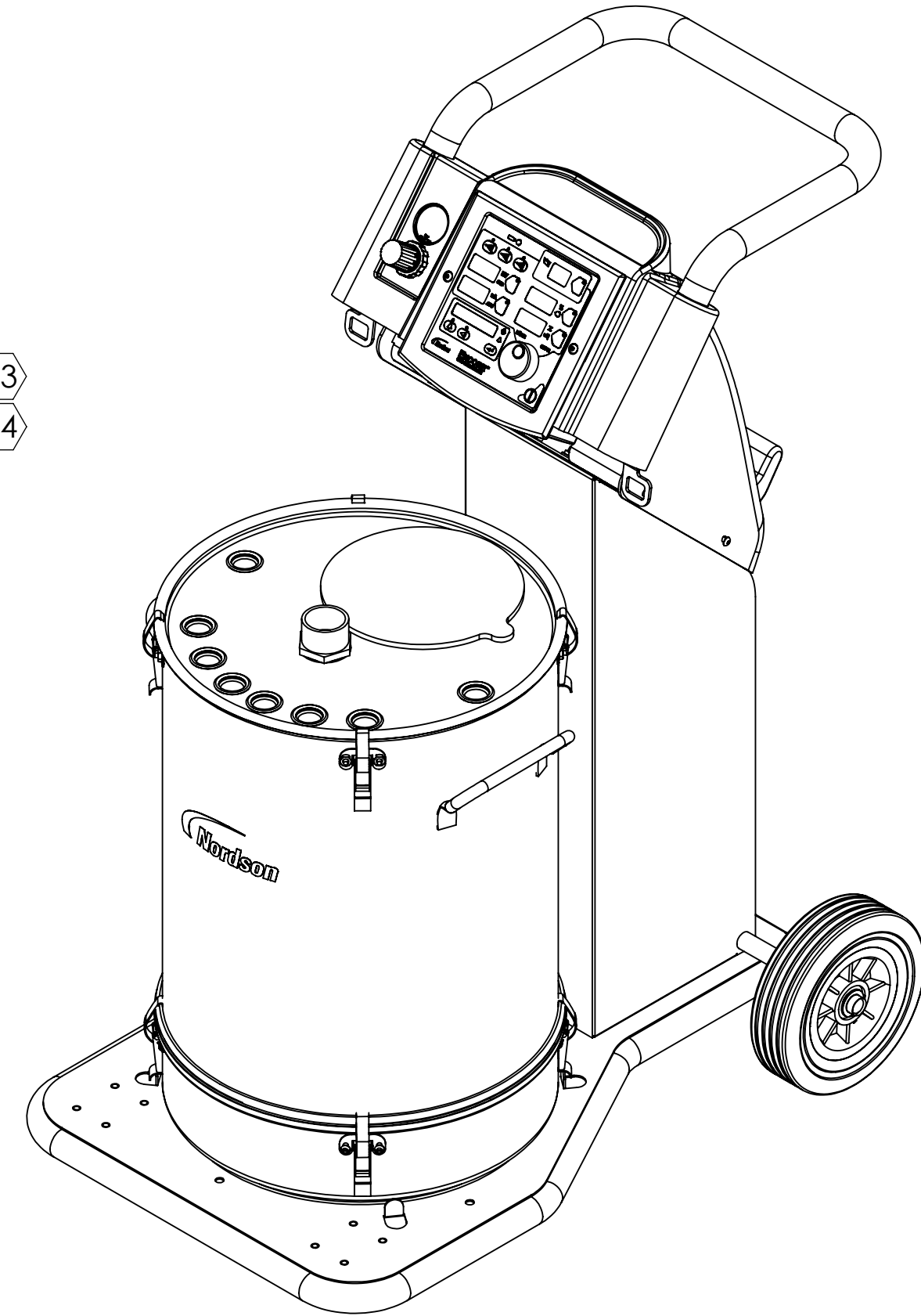


**ENCORE 115V 60Hz & 230V 50Hz VBF
 MOBILE POWDER SYSTEMS
 1613882 OR 1613884 (W/nLIGHTEN)**

HEIGHT: 1078 [42.5]
 WEIGHT: 50.8kg [112lbs]
 wheel base: 620 [24.4] L X 511.5 [20.1] W

**ENCORE HD 115V & 230V VBF
 MOBILE POWDER SYSTEMS
 1613900 OR 1613901 FOR
 HD PUMP (W/nLIGHTEN)**

HEIGHT: 1078 [42.5]
 WEIGHT: 50.8kg [112lbs]
 wheel base: 620 [24.4] L X 511.5 [20.1] W

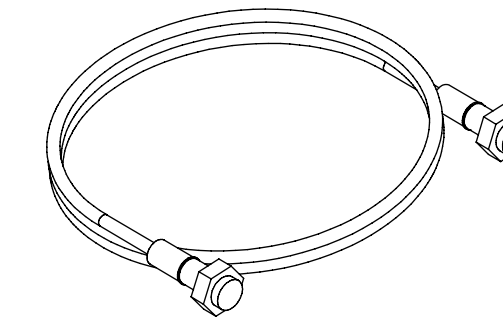


**ENCORE XT 50LB HOPPER
 MOBILE POWDER SYSTEM
 1613885 (W/nLIGHTEN)**

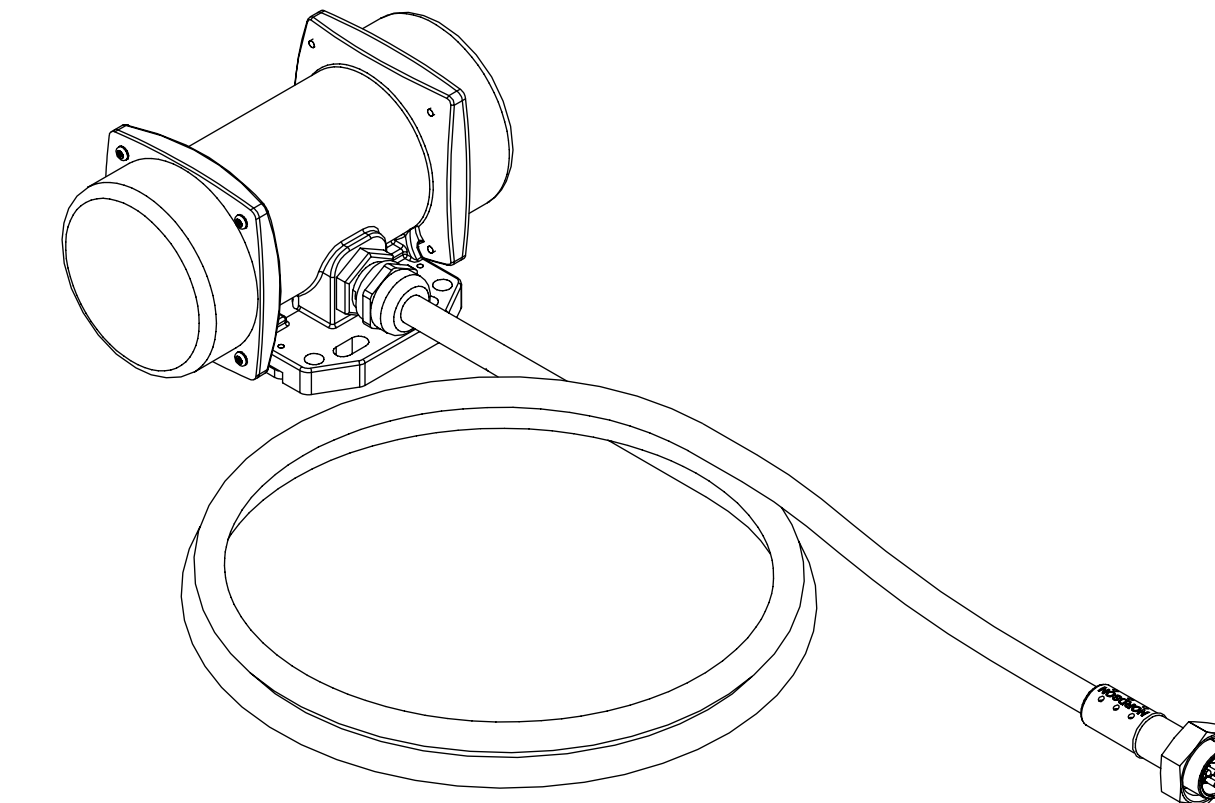
HEIGHT: 1078 [42.5]
 WEIGHT: 54.4kg [120lbs]
 wheel base: 620 [24.4] L X 511.5 [20.1] W

**ENCORE HD 50LB HOPPER
 MOBILE POWDER SYSTEMS
 1613899 FOR HD PUMP (W/nLIGHTEN)
 1613910 FOR HD+ PUMP (W/nLIGHTEN)**

HEIGHT: 1078 [42.5]
 WEIGHT: 54.4kg [120lbs]
 wheel base: 620 [24.4] L X 511.5 [20.1] W



**CONTROLLER INTERFACE CABLE
 1080718-10 FT.
 1609709-50FT.
 1080719-30 IN.**



**115V VIBRATOR MOTOR 1604511
 230V VIBRATOR MOTOR 1080950**

WITH EXTRA-HARD USAGE ELECTRICAL CORD
 UL/CSA APPROVED 18 AWG 90°C

MANUFACTURER'S CERT. #: TUV12ATEX094817
 ALSO: ETL CERTIFIED FOR U.S. & CANADA

	PART NUMBER	DESCRIPTION	cFMus	ATEX	cFMus / ATEX
THE FOLLOWING MOBILE SYSTEMS ARE SUITABLE FOR CLASS II, DIV 2 HAZARDOUS (CLASSIFIED) LOCATIONS OR <Ex> II (2)3D EXPLOSIVE ATMOSPHERES.	1613882	SYS,MOBILE POWDER,115V VBF,ENCORE XT,LED	X		
	1613884	SYS,MOBILE POWDER,230V VBF,ENCORE XT,LED		X	
	1613900	SYS,MOBILE POWDER,115V VBF,ENCORE HD,LED	X		
THE MANUAL GUNS AND GUN CABLES ATTACHED TO THE MOBILE SYSTEM, ARE SUITABLE FOR USE IN A CLASS II, DIV 1, GROUP F & G HAZARDOUS (CLASSIFIED) LOCATIONS OR <Ex> II 2 D EXPLOSIVE ATMOSPHERES.	1613901	SYS,MOBILE POWDER,230V VBF,ENCORE HD,LED		X	
	1613885	SYS,MOBILE PWDR,50-LB HOP,ENCORE XT,LED			X
	1613899	SYS,MOBILE PWDR,50 LB HOPR,ENCORE HD,LED			X
	1613910	SYS,MBL PWDR,50 LB HOP,ENCORE HDXD,LED			X

CRITICAL
 No revisions permitted without approval of the proper agency.

ALL DIMENSIONS IN MM EXCEPT AS NOTED
 X30.8 X340.25 X304.13
 MACHINED SURFACES L4
 BREAK INSIDE/OUTSIDE CORNERS 5:1/0.8
 THREAD LENGTH DIMENSIONS ARE FULL THREAD
 INTERPRET DRAWINGS PER ASME Y14.5-1994
 PERFECT FORM AT MMC REQUIRED FOR INTERRELATED FEATURES
 THIRD ANGLE PROJECTION

NORDSON CORPORATION
 WESTLAKE, OH, U.S.A. 44145

DESCRIPTION: REF DWG,APVD EQUIP,MANUAL ENCORE XT HD

DRAWN BY: DRJ DATE: 11JAN08 RELEASE NO.: PE600468
 CHECKED BY: RJF APPROVED BY: RJF

SIZE: D FILE NAME: 1084547 MATERIAL NO.: 1084547 REVISION: 25
 SCALE: NOT TO SCALE SOLIDWORKS GENERATED DWG. SHEET 2 OF 2

EU DECLARATION of Conformity

This Declaration is issued under the sole responsibility of the manufacturer.

Product: Encore XT / HD Manual Powder Spray Systems

Models: Encore XT Manual, Fixed Mount or Mobile Dolly unit.

Encore Auto Applicator with Encore XT controls for a single gun, automatic systems. Encore HD Manual, Fixed Mount or Mobile Dolly unit.

Encore Select HD Robot Applicator with Encore HD controls for robot systems.

Description: These are electrostatic, powder spray systems, including applicator, control cables and associated controllers. The Encore XT Manual system uses venturi style pump technology for supplying powder to the spray gun. While the Encore HD Manual system uses high density pump technology for supplying powder to the spray gun.

Applicable Directives:

2006/42/EC - Machinery Directive

2014/30/EU - EMC Directive

2014/34/EU - ATEX Directive

Harmonized Standards:

EN/ISO12100 (2010)

ISEN60079-0 (2014)

EN61000-6-3 (2007)

EN50050-2 (2013)

EN1953 (2013)

EN60079-31 (2014)

EN61000-6-2 (2005)

EN55011 (2016)

EN60204-1 (2018)

Principles:

This product has been designed & manuf. according to the Directives & standards / norms described above.

Type of Protection:

- Ambient Temperature: +15°C to +40°C

- Ex tb IIIB T60°C / Ex II 2 D / 2mJ = (Encore XT and HD Applicators)

- Ex tc IIIB T60°C / EX II (2) 3 D = (Controllers)

- Ex II 2 D / 2mJ = (Encore Auto Applicator and Encore Select HD Robot Applicator)

EU-Type Certificates (issued by NB 2809):

- FM14ATEX0051X = Encore XT/HD Manual Appl. And Encore Select HD Robot Appl. (Dublin, Ireland)

- FM14ATEX0052X = Controls (Dublin, Ireland)

- FM11ATEX0056X = Encore Automatic Applicator (Dublin, Ireland)

ATEX Surveillance (QAN issued by NB 0598):

- 0598 SGS Fimko Oy (Helsinki, Finland)



Date: 10Oct25

Jeremy Krone
Supervisor Product Development Engineering
Industrial Coating Systems
Amherst, Ohio, USA

Nordson Authorized Representative in the EU

Contact: Operations Manager
Industrial Coating Systems
Nordson Deutschland GmbH
Heinrich-Hertz-Straße 42-44 D-
40699 Erkrath



UK DECLARATION of Conformity

This Declaration is issued under the sole responsibility of the manufacturer.

Product: Encore XT / HD Manual Powder Spray Systems

Models: Encore XT Manual, Fixed Mount or Mobile Dolly unit.

Encore Auto Applicator with Encore XT controls for a single gun, automatic systems. Encore HD Manual, Fixed Mount or Mobile Dolly unit.

Encore Select HD Robot Applicator with Encore HD controls for robot systems.

Description: These are electrostatic, powder spray systems, including applicator, control cables and associated controllers. The Encore XT Manual system uses venturi style pump technology for supplying powder to the spray gun. While the Encore HD Manual system uses high density pump technology for supplying powder to the spray gun.

Applicable UK Regulations:

Supply Machinery Safety 2008

Equipment & Protective Systems Intended for use in Potentially Explosive Atmosphere Regulation 2016 Electromagnetic, UKSI 2016 : 1107 (as amended)

Compatibility Regulation 2016

Harmonized / Designated Standards:

EN/ISO12100 (2010) ISEN60079-0 (2014) EN61000-6-3 (2007) EN50050-2 (2013)

EN1953 (2013) EN60079-31 (2014) EN61000-6-2 (2005) EN55011 (2009) EN60204-1 (2018)

Principles:

This product has been designed & manuf. according to the Directives & standards / norms described above.

Type of Protection:

- Ambient Temperature: +15°C to +40°C
- Ex tb IIIB T60°C / Ex II 2 D / 2mJ = (Encore XT and HD Applicators)
- Ex tc IIIB T60°C / EX II (2) 3 D = (Controllers)
- Ex II 2 D / 2mJ = (Encore Select HD Robot Applicator)

UK-Type Certificates (issued by NB 1725):

- FM21UKEX0129X = Encore XT/HD Manual App & Select HD Robot Appl. (Maidenhead, Berkshire, UK)
- FM21UKEX0130X = Controls (Maidenhead, Berkshire, UK)
- FM22UKEX0006X = Encore Automatic Applicator (Maidenhead, Berkshire, UK)

EX Surveillance (QAN issued by NB 1180):

- SGS Baseefa NB 1180 (Buxton, Derbyshire, UK)



Date: 10Oct25

Jeremy Krone
Supervisor Product Development Engineering
Industrial Coating Systems
Amherst, Ohio, USA

Nordson Authorized Representative in the UK

Contact: Technical Support Engineer
Nordson UK Ltd.; Unit 10 Longstone Road Heald
Green; Manchester, M22 5LB. England



EU DECLARATION of Conformity

This Declaration is issued under the sole responsibility of the manufacturer.

Product: Encore XT / HD Manual Powder Spray Systems

Models: Encore XT Manual, Fixed Mount or Mobile Dolly unit.

Encore Auto Applicator with Encore XT controls for a single gun, automatic systems. Encore HD Manual, Fixed Mount or Mobile Dolly unit.

Encore Select HD Robot Applicator with Encore HD controls for robot systems.

Description: These are electrostatic, powder spray systems, including applicator, control cables and associated controllers. The Encore XT Manual system uses venturi style pump technology for supplying powder to the spray gun. While the Encore HD Manual system uses high density pump technology for supplying powder to the spray gun.

Applicable Directives:

2006/42/EC - Machinery Directive

2014/30/EU - EMC Directive

2014/34/EU - ATEX Directive

Harmonized Standards:

EN/ISO12100 (2010)

ISEN60079-0 (2014)

EN61000-6-3 (2007)

EN50050-2 (2013)

EN1953 (2013)

EN60079-31 (2014)

EN61000-6-2 (2005)

EN55011 (2016)

EN60204-1 (2018)

Principles:

This product has been designed & manuf. according to the Directives & standards / norms described above.

Type of Protection:

- Ambient Temperature: +15°C to +40°C

- Ex tb IIIB T60°C / Ex II 2 D / 2mJ = (Encore XT and HD Applicators)

- Ex tc IIIB T60°C / EX II (2) 3 D = (Controllers)

- Ex II 2 D / 2mJ = (Encore Auto Applicator and Encore Select HD Robot Applicator)

EU-Type Certificates (issued by NB 2809):

- FM14ATEX0051X = Encore XT/HD Manual Appl. And Encore Select HD Robot Appl. (Dublin, Ireland)

- FM14ATEX0052X = Controls (Dublin, Ireland)

- FM11ATEX0056X = Encore Automatic Applicator (Dublin, Ireland)

ATEX Surveillance (QAN issued by NB 2809):



Date: 21Dec25

Jeremy Krone
Supervisor Product Development Engineering
Industrial Coating Systems
Amherst, Ohio, USA

Nordson Authorized Representative in the EU

Contact: Operations Manager
Industrial Coating Systems
Nordson Deutschland GmbH
Heinrich-Hertz-Straße 42-44 D-
40699 Erkrath

