

Encore[®] Porcelain Enamel Powder Pump



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

Introduction

The Encore Porcelain Enamel powder feed pump is a venturi-type pump that supplies porcelain enamel (frit) powder coatings to powder spray guns. Two streams of air pump and atomize the powder.

Flow air lifts fluidized powder from a hopper through a pickup tube and into the pump. The powder is forced out of the pump through the powder hose to the spray guns. Atomizing air dilutes and atomizes the powder stream and increases its velocity as it exits the pump.

Pump mount kits are available with 18 and 24 in. pickup tubes.

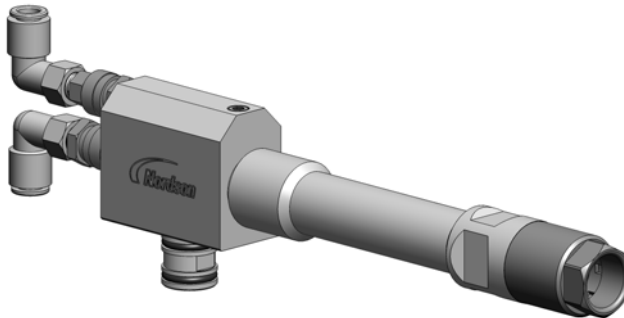


Figure 1 Encore PE Pump

Installation



WARNING: All conductive equipment in the spray area must be connected to a true earth ground. Ungrounded or poorly grounded equipment used in a powder spray area can become electrically charged. This charge can deliver a severe shock.

See Figure 2.

NOTE: Pump mount O-rings (6) are conductive silicone, to provide a ground connection between the pump and the hopper lid, and from there to ground. Do not replace these O-rings with non-conductive O-rings.

Installation (contd)

1. Install the pump mount O-ring (3) in the groove in the base of the pump mount (4).
2. Thread the pickup tube into the bottom port of the pump mount.
3. Install the pickup tube/pump mount assembly into an open pump port in the hopper lid or pump mounting plate, thread the lock nut onto the pump mount and tighten it securely.
4. Remove the nut (8) and sleeve (7) from the throat holder (9). Slide them both over the end of the powder hose (10). Make sure the end of the powder hose is cut straight.
5. Insert the powder hose into the throat holder until it bottoms out on the ceramic sleeve inside the holder.
6. While holding the hose in place, slide the sleeve and nut down the hose and start threading the nut onto the throat holder.
7. Use a 12-point 15/16 in. flare nut wrench to tighten the nut until it bottoms out against the throat holder. Refer to *Optional Tools* for the wrench part number.
8. Connect 8-mm blue atomizing air tubing (11) to the atomizing air fitting.
9. Connect 8-mm black flow air tubing (12) to the flow air fitting.

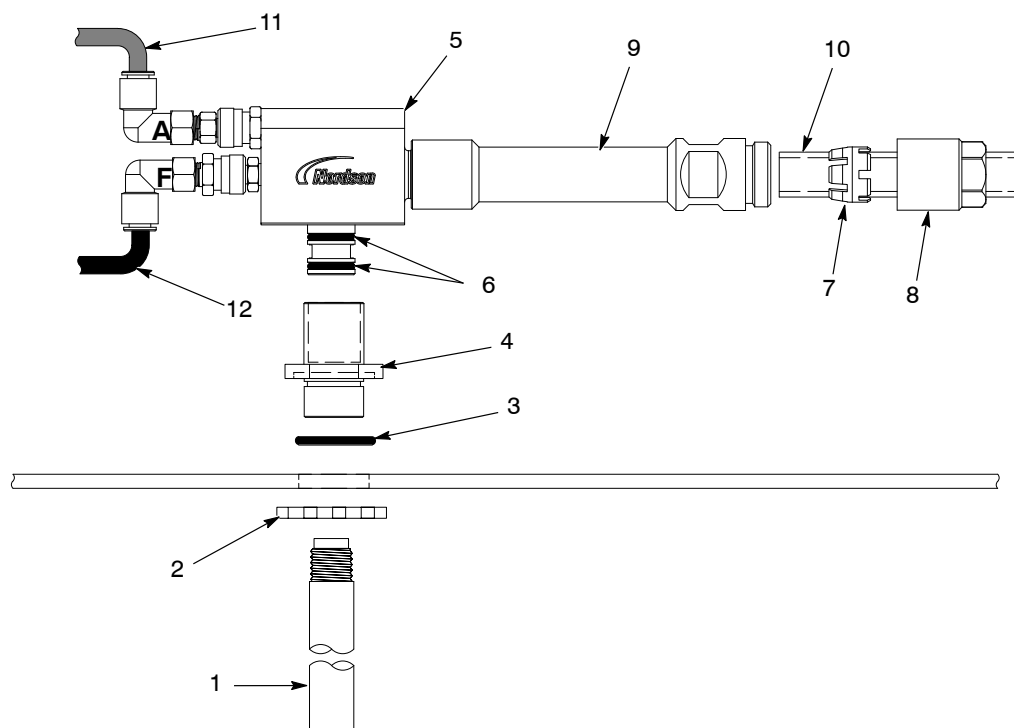


Figure 2 Pick-Up Tube and Pump Installation

- | | | |
|----------------|-----------------------|----------------------------------|
| 1. Pickup tube | 5. Encore PE pump | 9. Throat holder |
| 2. Lock nut | 6. Conductive O-rings | 10. Powder hose |
| 3. O-ring | 7. Sleeve | 11. Atomizing tubing – 8-mm blue |
| 4. Pump mount | 8. Nut | 12. Flow tubing – 8-mm black |

Operation

Make sure the hopper is grounded.

Connect fluidizing air to the hopper and turn on the fluidizing air.

Typical pump operating pressures are:

Atomizing Air: 1.4 bar (20 psi) or 0.85 m³/hr (0.5 cfm)

Flow Air: 2.1 bar (30 psi) or 2.5 m³/hr (1.5 cfm)

These pressures are average starting points. They can be adjusted higher or lower to achieve the desired delivery volume and cloud density.

Maintenance

Daily

Disconnect the powder hose and air tubing quick disconnect fittings. Remove the pump from the pump mount. Blow out the pump with compressed air.

Make sure the booth exhaust fan is running. Blow out the powder hose with compressed air. Always blow out the hose from the pump end into the booth, not from the spray gun end into the pump.



WARNING: Do not replace conductive O-rings with non-conductive O-rings. Conductive O-rings provide a path to ground that is required for powder spray equipment. Failure to observe this warning could result in arcing and personal injury.



CAUTION: Ceramic pump parts are fragile. Handle them with care to avoid breakage.

Throat Replacement

1. See Figure 3. Unscrew the nut (1) and pull the powder hose out the throat holder (5).
2. Unscrew the throat holder (5) from the housing (14) with a 25-mm open end wrench.
3. Pull the throat (8) out of the throat holder. Remove the O-ring (7) from the throat.

4. Install a new O-ring on the new throat, then install the throat into the throat holder.
5. Screw the throat holder into the housing and tighten securely.
6. Push the end of the powder hose into the throat holder until it bottoms out on the ceramic sleeve.
7. Hold the hose in place while threading the nut onto the throat holder, then tighten the nut until it bottoms out on the holder.

Nozzle and Ceramic Cup Replacement

1. Disconnect the flow air elbow and female quick disconnect coupling (19, 17) from the nozzle assembly (15).
2. Remove the throat (8) as described in *Throat Replacement* on page 3.
3. Use Nordson wrench 152999 to remove the inlet adapter (10) from the housing (14).
4. Unscrew the nozzle assembly (15) from the housing (14). The nozzle tip is carbide; be careful not to damage it.
5. Remove the ceramic cup (11) and O-ring (12) from the pump body.
6. Inspect all parts and O-rings and replace any that are damaged or worn. The O-rings (6, 9) on the throat holder and on the inlet adapter are conductive silicone. Do not replace them with non-conductive O-rings.
7. Install the O-ring (12) and ceramic cup (11) in the housing. Line up the smaller hole in the cup with the nozzle port.
8. Hold the cup (11) in place with your finger while you thread the nozzle assembly (15) into the housing. Tighten the nozzle to 8–10.8 N•m (6–8 ft-lbs).
9. Thread the inlet adapter (10) into the housing and tighten it securely.
10. Re-install the throat (8) as described in *Throat Replacement*.

Ceramic Tube Replacement

To replace the ceramic tube (4), remove the O-ring (3) first. The O-ring keeps the tube from falling out of the throat holder and breaking when the powder hose is removed. Install the tube before installing the O-ring.

Parts

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

Pump Parts

See Figure 3.

Item	Part	Description	Quantity	Note
—	1602268	PUMP assembly, 90°, Encore PE	—	
1	1602252	• NUT, tube, 3/4 diameter	1	
2	1602253	• SLEEVE, tube, 3/4 diameter	1	
3	942101	• O-RING, silicone, 0.75 x 1.00 x 0.125 in.	1	
4	107230	• TUBE, 0.50 x 0.75 x 4, ceramic	1	
5	1602251	• HOLDER, throat, housing, 90°, Encore PE	1	
6	940147	• O-RING, conductive silicone, 0.50 x 0.625 x 0.063 in.	2	A
7	941113	• O-RING, silicone, 0.438 x 0.625 x 0.094 in.	1	
8	1602250	• THROAT, venturi, ceramic, 90°, Encore PE	1	
9	941145	• O-RING, silicone, conductive, 0.625 x 0.812 in.	2	A
10	1602255	• ADAPTER, inlet, 90°, Encore PE	1	
11	1602249	• CUP, ceramic, 90°, Encore PE	1	
12	1602266	• O-RING, silicone, 0.296 x 0.574 x 0.139 in.	1	
13	973466	• PLUG, pipe, socket, flush, 1/16 in., zinc	1	
14	1602248	• HOUSING, 90°, Encore PE	1	
15	1602254	• NOZZLE assembly, 90°, Encore PE	1	
16	940093	• • O-RING, silicone, 0.208 ID x 0.07 W	1	
17	241041	• COUPLING, quick disconnect, socket end	2	
18	241042	• COUPLING, quick disconnect, nipple end	1	
19	1096081	• CONNECTOR, female, elbow, 8 mm tube x 1/8 RPT	2	
NOTE A: Do not replace conductive silicone O-rings with non-conductive O-rings.				

Optional Tools

Item	Part	Description	Quantity	Note
20	152999	Wrench		
NS	1602256	Wrench, flare nut, 15/16 in., 12-point		
NS: Not Shown				

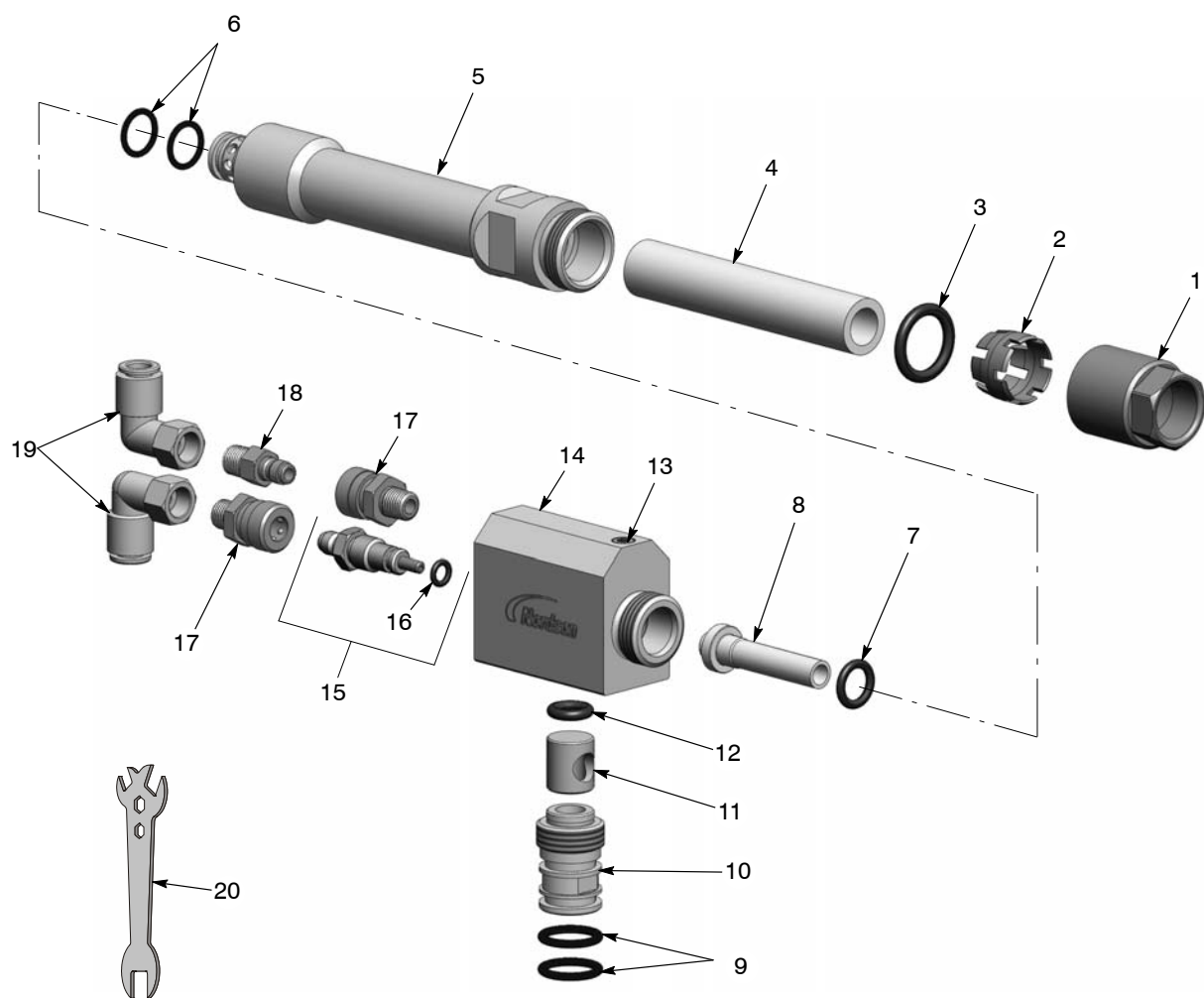


Figure 3 Pump Parts

24-inch Pickup Tube Parts

See Figure 4.

Item	Part	Description	Quantity	Note
–	1602269	MOUNT assembly, pump, 24 in.		
1	1602261	• MOUNT, pump	1	
2	942161	• O-RING, silicone, 1.125 x 1.275 x 0.125 in.	1	
3	939613	• NUT, lock, conduit, 3/4 in. NPS	1	
4	309477	• TUBE, pickup, 0.490 ID x 24 in., 3/8 in. NPS	1	

18-inch Pickup Tube Parts

See Figure 4.

Item	Part	Description	Quantity	Note
–	1602284	MOUNT assembly, pump, 18 in.		
1	1602261	• MOUNT, pump	1	
2	942161	• O-RING, silicone, 1.125 x 1.275 x 0.125 in.	1	
3	939613	• NUT, lock, conduit, 3/4 in. NPS	1	
4	309474	• TUBE, pickup, 0.490 ID x 18 in., 3/8 in. NPS	1	

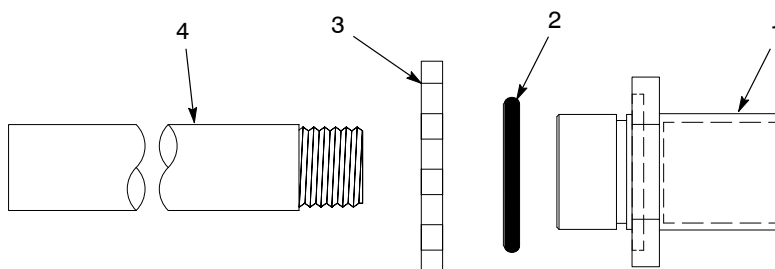


Figure 4 Pickup Tube Parts

Optional Equipment

Part	Description	Note
900619	TUBING, polyurethane, 8 mm OD, black	A
900618	TUBING, polyurethane, 8 mm OD, blue	B
900724	TUBING, 0.50 in. ID, clear	C
NOTE A: Flow-rate air tubing. Minimum order quantity is 50 ft. B: Atomizing air tubing. Minimum order quantity is 50 ft. C: Powder hose. Minimum order quantity is 25 ft.		

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