

NHR-25 Feed Hopper with Agitator – 9 Pump

Description

This instruction sheet provides specifications, installation instructions, and parts lists for the NHR-25 Powder Feed Hopper with Agitator and pumps. This hopper is used to fluidize very fine powders used in coating the internal surfaces of containers and pressure vessels. See Figure 1 for the hopper components.

The hoppers are shipped assembled. The level sensor and the powder feed pumps are sold separately. The hopper has the capacity for up to nine powder feed pumps.

The hopper includes the following: Four pump mounts and pickup tubes for powder feed pumps, one fitting used to vent the hopper, and one inlet assembly with barbed connector for bulk feeding powder into the hopper. The powder in the hopper is fluidized by compressed air diffused through the fluidizing plate in the fluidizing drum, an air-powered vibrator, and an air-powered agitator.

Specifications

| | Specification |
|---|-----------------------|
| Powder Capacity: | 11 kg (25 lb) |
| *Feed Pump Adapters and Pickup Tubes: | 4 |
| Height: | 63 cm (24.5 in.) |
| Diameter: | 40.00 cm (15.75 in.) |
| Weight (Empty, without pumps): | 13.6 kg (30 lb) |
| Weight (Empty, with all pumps): | 18.6 kg (41 lb) |
| Weight (Full to Capacity, with pumps): | 30 kg (66 lb) |
| Fluidizing Pressure: | 0.1–0.6 bar (2–8 psi) |
| Fluidizing Air Tubing: | 10-mm OD |
| Agitator Motor Air Requirements | 16 CFM |
| Agitator Blades: | 6 |
| Vibrator Motor Air Requirements (maximum) | 4.5 CFM at 60 psi |
| *Pumps must be ordered separately. | |

Installation



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

Basic Installation and Connections

See Figure 1.

1. Unpack the hopper assembly and remove all the packaging.
2. The cover (6) is installed on the hopper prior to packaging. Make sure that the limit switch (25) and bracket (29) are aligned and the switch shaft is depressed.
3. Connect the short length of 8-mm OD blue flexible air tubing (33) from the side elbow fitting on the limit switch (25) to the elbow fitting (28) on the agitator motor.
4. Supply regulated compressed air to the hopper as follows:
 - Fluidizing air: 10-mm tubing to the elbow fitting (42) on the fluidizing drum (60).
 - Agitator motor: 8-mm tubing to the top elbow fitting (34) on the limit switch (25).
 - Vibrator motor: 6 mm tubing to the elbow fitting (38) on the vibrator motor (41).
5. Install powder feed pumps (63) on the pump adapters (54). See page 11 for pump adapter for pickup tube.
6. Connect the powder hose from the bulk source pump to the barbed inlet connector (16).



WARNING: The hopper must be connected to a true earth ground. Failure to ground the hopper could result in personal injury or equipment damage.

7. Connect the ground cable ring-tong terminal to the ground stud (61) and clamp the cable (62) to a true earth ground.
8. Install a level sensor in the well (36) on the side of the hopper body.

Hopper Body Installation

See Figure 2.

9. When assembling the body (1) on the fluidizing drum (4), make sure the body is centered on the gasket (2). Verify that there are equal amounts of the gasket exposed along the edge of the body. If exposed gasket is not equally distributed, reposition the body.
10. Lock the body (1) in place by clamping clamps A and C down together. Then, repeat for clamps B and D.
11. Re-verify that the gasket (2) is exposed equally along the inside edge of the body (1).

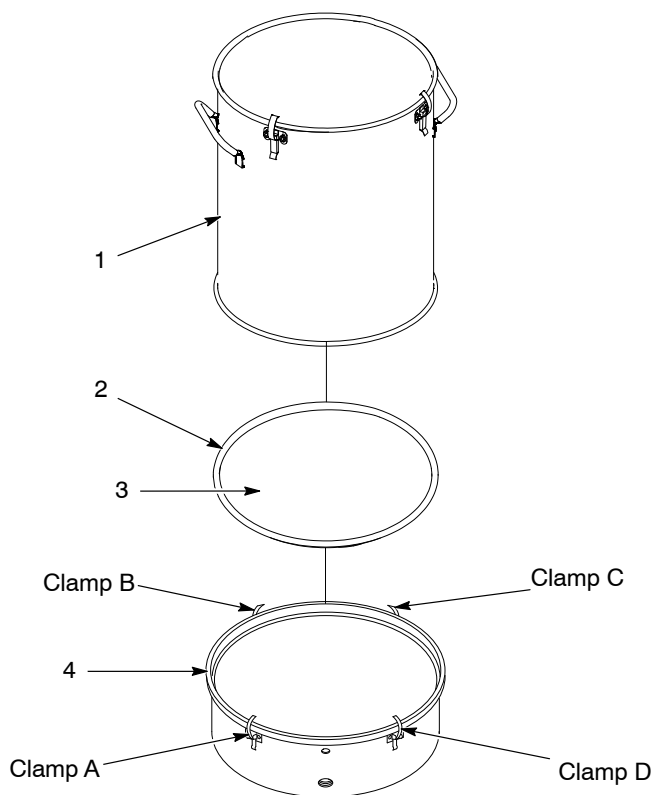


Figure 2 Hopper Body Installation

- | | |
|-----------|---------------------|
| 1. Body | 3. Fluidizing plate |
| 2. Gasket | 4. Drum |

Pump Throat Extension Kit

The feed hopper uses the Encore Corona Pump. Some modifications to the pump must be completed for correct use with the feed hopper.

1. See Figure 3. Unscrew the pump nut (68), and remove the pump throat and pump throat holder.
2. Place the O-rings (67) provided with the pump throat extension kit onto the new throat holder (64).
3. Take the new can coating pump throat (65) and place it into the new can coating pump throat holder (64).
4. Place the pump throat and holder into the pump body (69).
5. Remove the connector (71) from the quick disconnect coupling (70).
6. Install the new extended adapter (66) onto the quick disconnect coupling (70).
7. Replace the connector (71) onto the adapter (66).

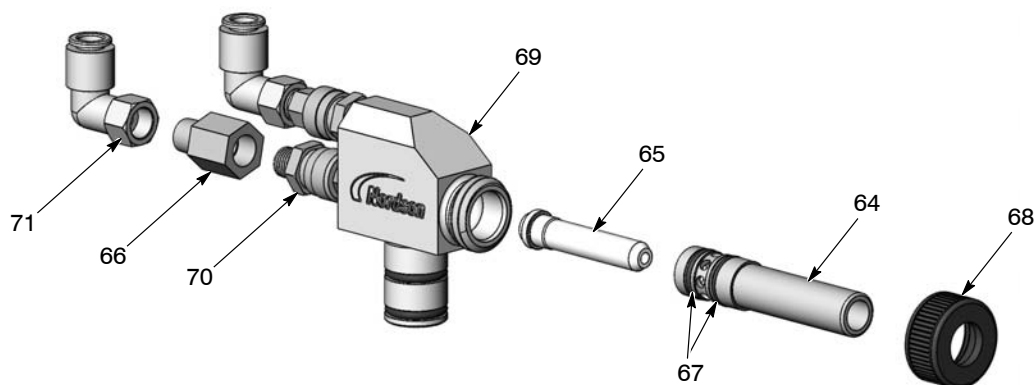


Figure 3 Encore Pump with Pump Throat Kit

| | | |
|-------------------|-----------------|-------------------------------|
| 64. Throat holder | 67. O-rings (2) | 70. Quick disconnect coupling |
| 65. Throat | 68. Nut | 71. Connector |
| 66. Adapter | 69. Body | |

Operation



CAUTION: Always turn on the fluidizing air and vibrator motor before turning on the air to the agitator motor. This will prevent damage to the agitator blades and the agitator motor.

1. Turn on the fluidizing air and the air supply to the vibrator motor.
2. Turn on the air supply to the agitator motor.
3. Connect 2-in flexible tubing to the vent fitting using a clamp, and route the tubing into the booth or a vent stub on the booth collector.
4. Turn on the flow-rate and atomizing air to the feed pumps to start spraying powder.



WARNING: The limit switch cuts off the air supply to the agitator motor when the cover is removed, to prevent injury to personnel. Do not disable or bypass the limit switch.

Maintenance

Periodically, empty the hopper and clean the interior. Clean the fluidizing plate and inspect it for signs of air contamination. If the plate is discolored and appears to be contaminated, replace it. Check your air supply and correct any contamination problems.

NOTE: Inspect and verify hopper ground connection periodically.

Parts

For parts and service, call the Nordson Finishing Customer Service Center at (800) 433-9319, or contact your Nordson representative.

Body Parts

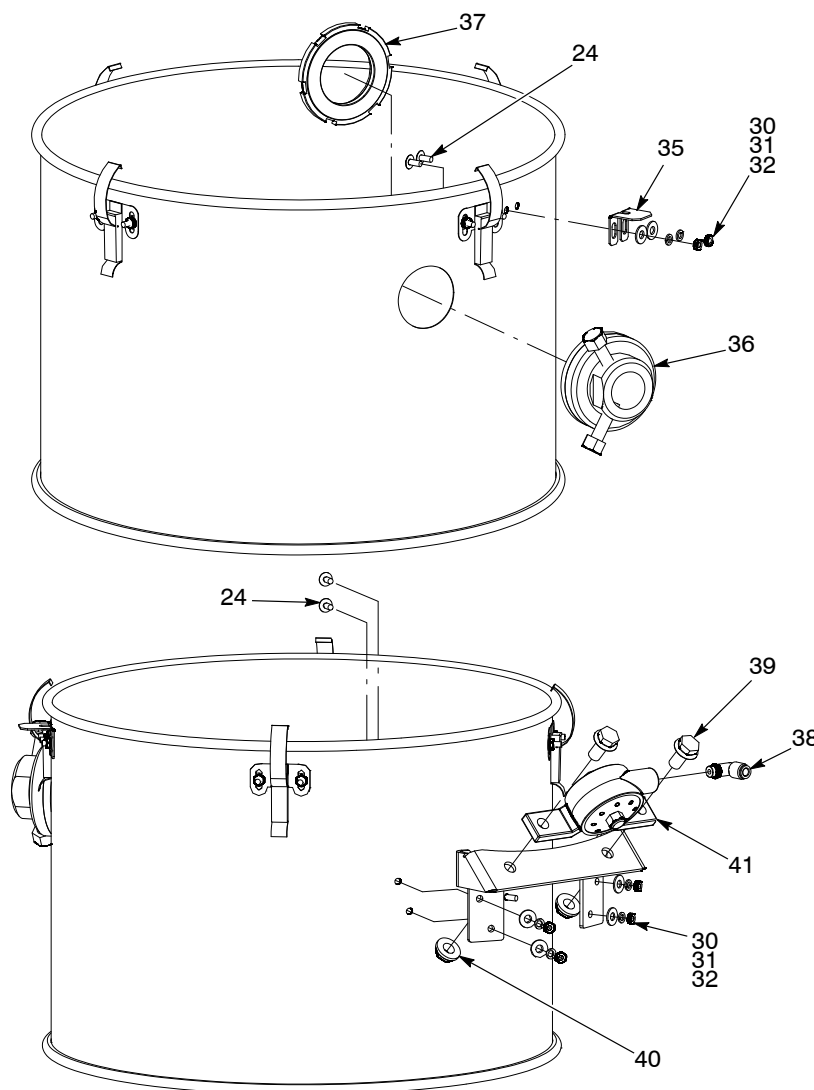


Figure 4 Body Parts

| Item | Part | Description | Quantity | Note |
|---------------|---------|--|----------|------|
| 35 | 1091728 | • BRACKET, limit switch, hopper body | 1 | |
| 36 | 174607 | • KIT, well, level sensor | 1 | |
| 37 | 144705 | • • NUT, conduit, 1-1/2 in. | 1 | |
| NS | 237302 | • • GASKET, sensor well | 1 | |
| 38 | 972126 | • CONNECTOR, male, elbow, 6-mm x 1/8 in. unithread | 1 | |
| 39 | ----- | • SCREW, hex, serrated, M10 x 20 | 2 | |
| 40 | ----- | • NUT, hex, flanged, serrated, M10 | 2 | |
| 41 | 1091370 | • MOTOR, vibrator, hopper | 1 | |
| NS: Not Shown | | | | |

Cover Parts

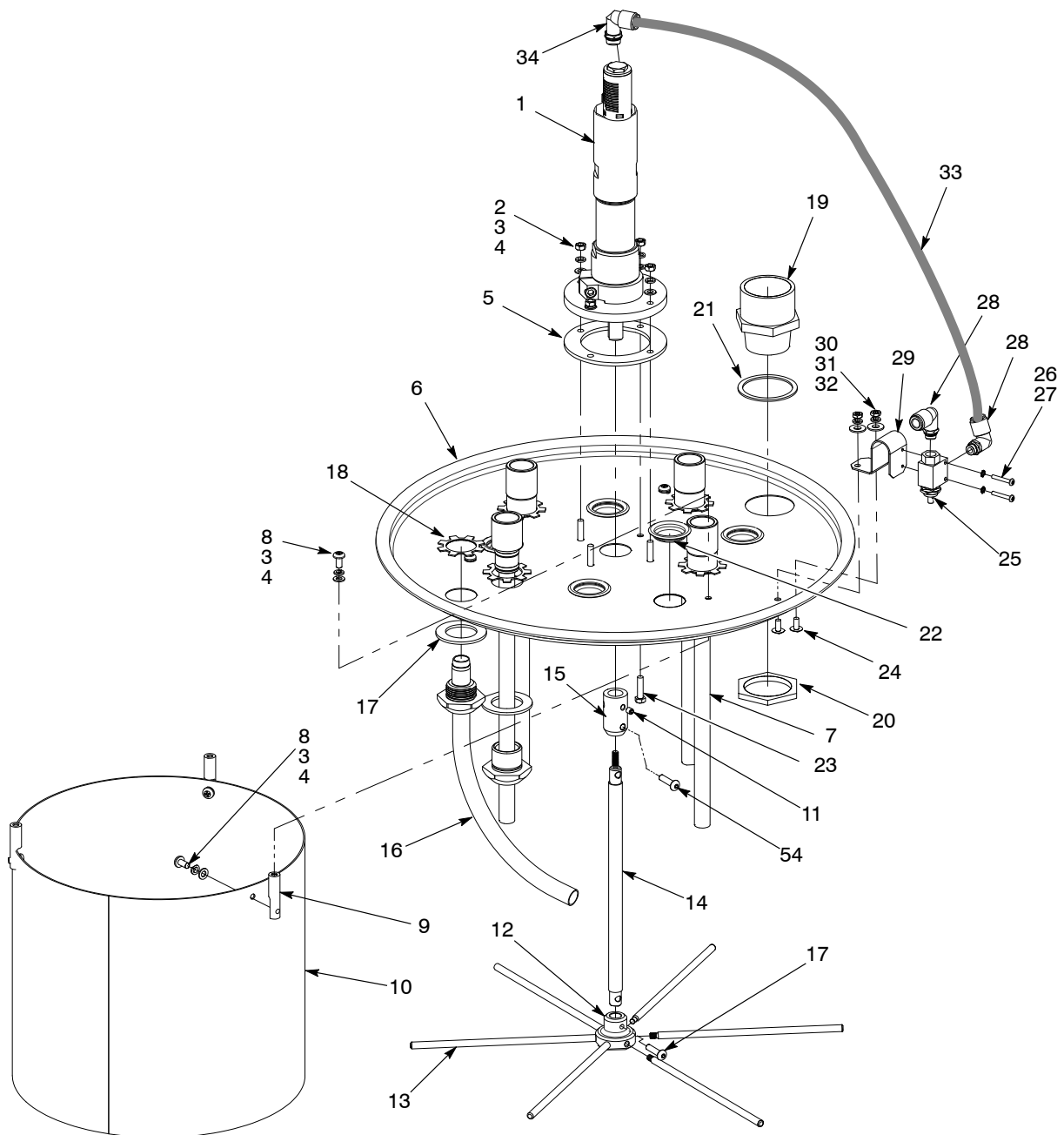


Figure 5 Cover Parts

Cover Parts (contd)

See Figure 5.

| Item | Part | Description | Quantity | Note |
|---|---------|--|----------|------|
| — | 1107668 | HOPPER ASSEMBLY, NHR-25, 9 pump, w/agitator | 1 | |
| 1 | 1091372 | • MOTOR, pneumatic, low RPM, non-reversible, with flange | 1 | |
| 2 | 984571 | • NUT, hex, M5 stainless steel | 4 | |
| 3 | ----- | • WASHER, lock, split, M5 steel, nickel | 10 | |
| 4 | 983264 | • WASHER, flat, regular, M5, stainless steel | 10 | |
| 5 | 1091373 | • GASKET, pneumatic motor, hopper | 1 | |
| 6 | 1107669 | • COVER ASSEMBLY, hopper, NHR-25, 9 pump, w/agitator, packaged | 1 | |
| 7 | 1074868 | • TUBE, pickup, 25 lb, packaged | 4 | A |
| 8 | ----- | • SCREW, pan head, recessed, M5 x 10, stainless steel | 6 | |
| 9 | 1091676 | • SUPPORT, baffle, hopper | 3 | |
| 10 | 1091675 | • BAFFLE, hopper | 1 | |
| 11 | 1091427 | • SCREW, set, cup, M5 x 6, stainless steel | 3 | |
| 12 | 1107442 | • HUB, agitator, hopper, steel | 1 | |
| 13 | 1107441 | • BLADE, agitator, hopper, aluminum | 6 | |
| 14 | 1107443 | • SHAFT, agitator, hopper, through hole | 1 | |
| 15 | 1107444 | • COLLAR, agitator, hopper, through hole | 1 | |
| 16 | 1091833 | • INLET ASSEMBLY, delivery hose, hopper | 1 | |
| 17 | ----- | • CAP, screw, button, socket, M5 x 20, black | 1 | |
| 18 | 939613 | • LOCKNUT, conduit, 3/4 in. NPS | 1 | |
| 19 | 1008079 | • FITTING, pipe, PVC, 1-1/4 male adapter | 1 | |
| 20 | 1008081 | • NUT, 1-1/4-in, vent stack | 1 | |
| 21 | 1008080 | • GASKET, vent stack | 1 | |
| 22 | 142342 | • PLUG, button | 5 | |
| 23 | ----- | • SCREW, hex head, M5 x 20, stainless steel, full thread | 4 | |
| 24 | ----- | • SCREW, truss head, 10–32 x 0.375 in. stainless steel | 8 | |
| 25 | 164636 | • SWITCH, limit, 1/8 in. NPT | 1 | |
| 26 | 760580 | • SCREW, philips head, M3 x 20, zinc | 2 | |
| 27 | ----- | • WASHER, lock, external tooth, M3, steel, zinc | 2 | |
| 28 | 972276 | • CONNECTOR, male, elbow, 8 mm x 1/8 in. unithread | 2 | |
| 29 | 1091729 | • BRACKET, limit switch, hopper cover | 1 | |
| 30 | ----- | • NUT, hex, small pattern, 10–32 | 2 | |
| 31 | 983120 | • WASHER, lock, split, #10, steel, nickel | 2 | |
| 32 | 983058 | • WASHER, flat, 0.219 x 0.50 x 0.049, stainless steel | 2 | |
| 33 | 900618 | • TUBING, polyurethane, 8-mm OD, blue | AR | |
| 34 | 972277 | • CONNECTOR, male, elbow, 8-mm x 1/4 in. unithread | 1 | |
| NOTE A: Complete kit used for powder pumps. Refer to parts list on page 11. | | | | |
| AR: As Required | | | | |
| Continued... | | | | |

Fluidizing Drum Parts

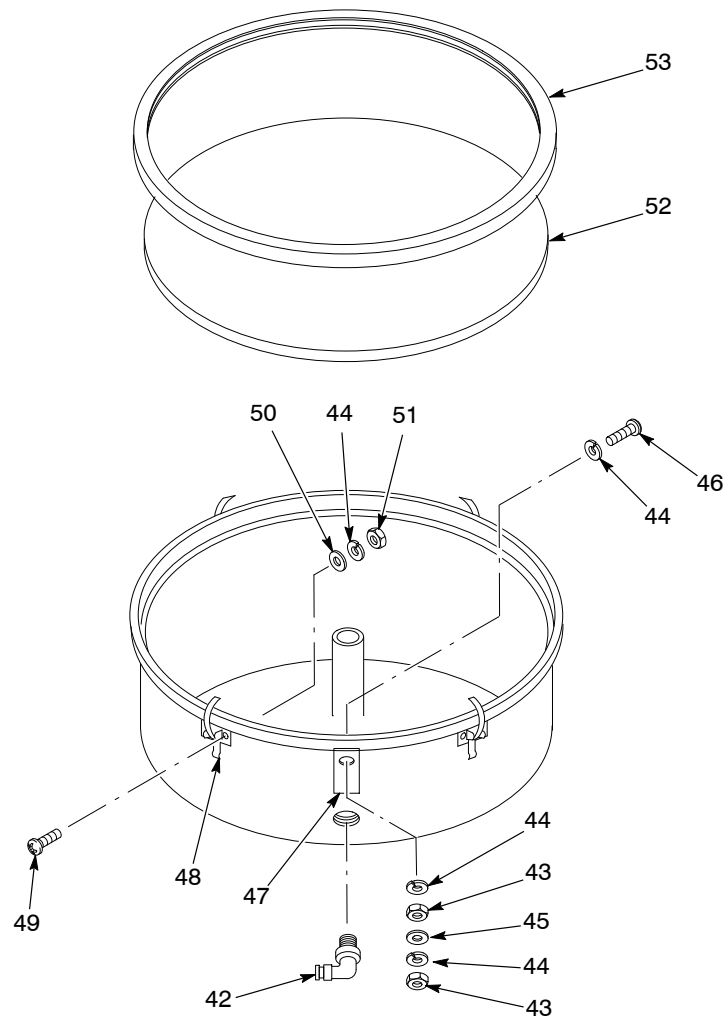


Figure 6 Fluidizing Drum

| Item | Part | Description | Quantity | Note |
|------|---------|--|----------|------|
| — | 1074531 | DRUM, hopper, fluidizing, NHR, assembly, packaged | 1 | |
| 42 | 1074535 | • ELBOW, male, $\frac{3}{8}$ -in. RPT x 10-mm tube | 1 | |
| 43 | 984702 | • NUT, hex, M5, brass | 2 | |
| 44 | 983401 | • LOCK WASHER, split, M5, steel, zinc | 11 | |
| 45 | 1070621 | • WASHER, flat, M5, brass | 1 | |
| 46 | 982126 | • SCREW, pan head, M5 x 25, brass | 1 | |
| 47 | 240674 | • TAG, ground | 1 | |
| 48 | 164064 | • LATCH, hopper, curve base | 4 | |
| 49 | 982000 | • SCREW, pan head, M5 x 10, zinc | 8 | |
| 50 | 1040877 | • WASHER, flat, M5 | 7 | |
| 51 | 984706 | • NUT, hex, M5, steel, zinc | 8 | |
| 52 | 1608053 | PLATE, hopper, fluidizing, NHR, dia 405/406 | 1 | A |
| 53 | 1608054 | GASKET, hopper, U-channel, NHR | 1 | A |

NOTE A: These parts are not included with the fluidizing drum assembly, only with the complete hopper assembly.

Pump Mount and Pickup Tube Kit

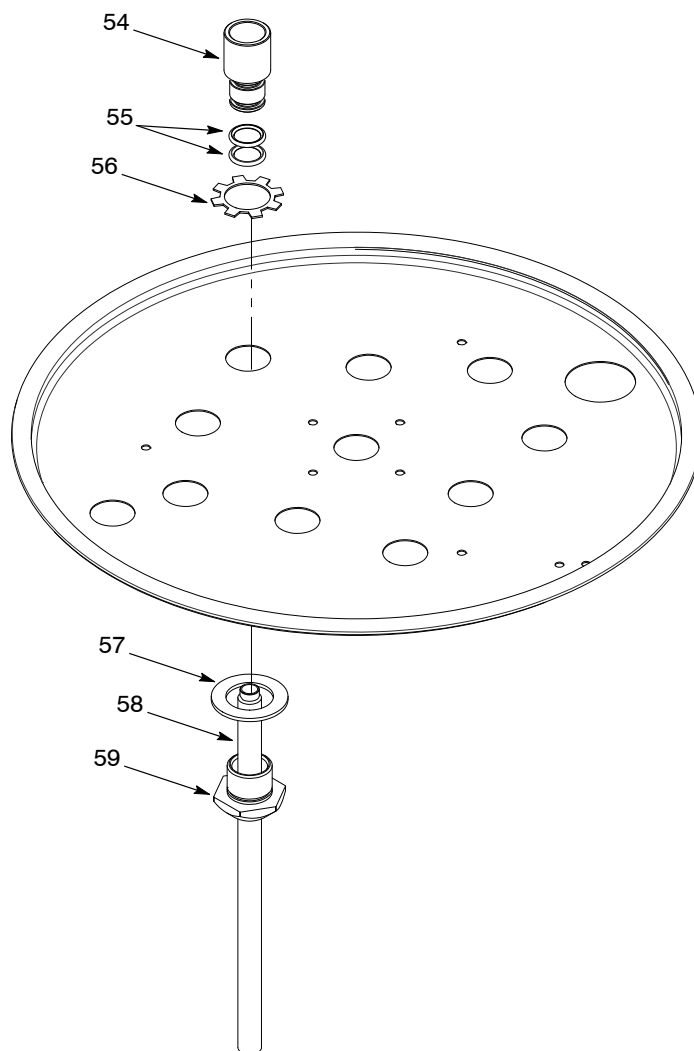


Figure 7 Pump Mount and Pickup Tube Kit for Encore Powder Feed Pumps

| Item | Part | Description | Quantity | Note |
|------|---------|---|----------|------|
| — | 1107650 | ADAPTER, pump mount, powder tube assembly | 1 | |
| 54 | 1082198 | • ADAPTER, pump | 1 | |
| 55 | 941143 | • O-ring, silicone, 0.625 x 0.813 x 0.094 | 2 | |
| 56 | 939613 | • LOCKNUT, conduit, $\frac{3}{4}$ NPS | 1 | |
| 57 | 983055 | • WASHER, pump mount | 1 | |
| 58 | 1071366 | • TUBE, pickup, 0.360 ID x 10-in | 1 | |
| 59 | 164063 | • MOUNT, pump | 1 | |

Pump Throat Extension Kit

| Item | Part | Description | Quantity | Note |
|------|---------|--|----------|------|
| — | 1107653 | KIT, pump throat/extension, 9-pump, NHR-25 | 1 | |
| 64 | 1107666 | • HOLDER, pump throat, corona can coating | 1 | |
| 65 | 1107664 | • THROAT, pump, corona can coating | 1 | |
| 66 | 1107652 | • ADAPTER, 1/8 NPT male–1/8 NPT female, extend | 1 | |
| 67 | 940147 | • O-RING, silicone, 0.50 x 0.625 | 2 | |

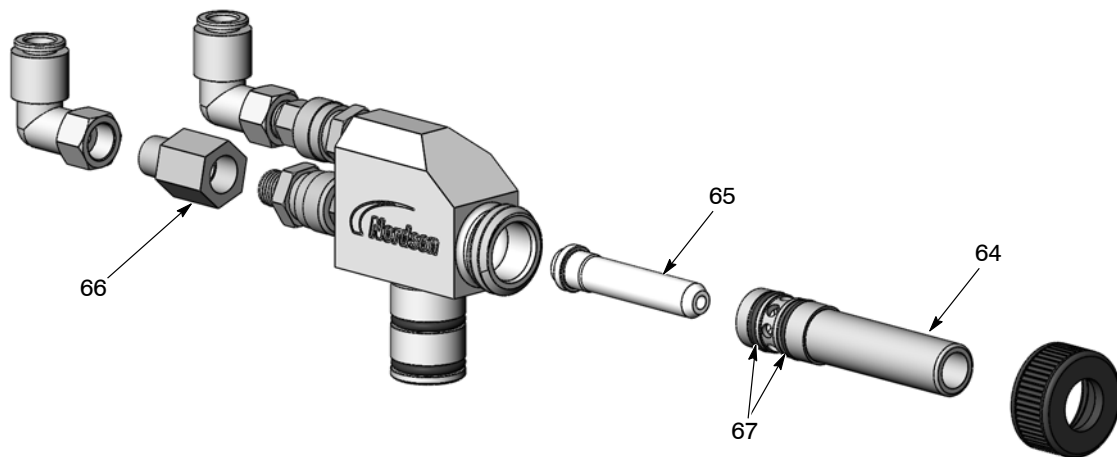


Figure 8 Pump Throat Kit (shown with Encore Pump)

Issued 02/16

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