

Modular Powder Feed Pumps

Description

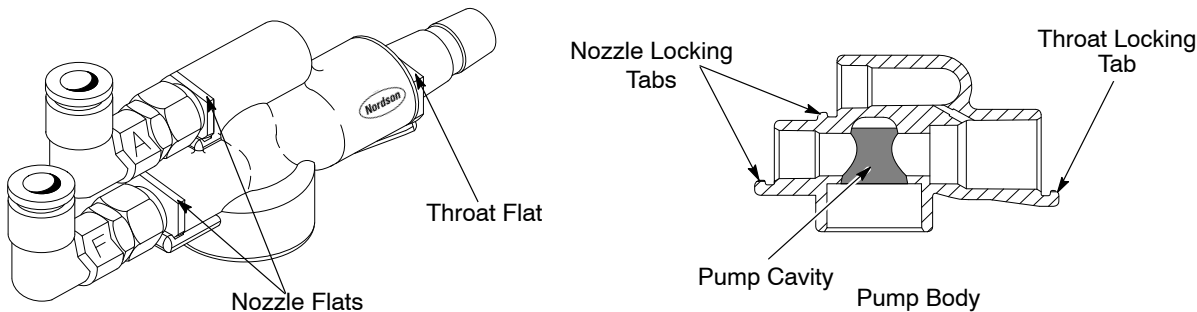
The modular powder feed pumps are venturi type pumps used for most general powder coating applications. Three different pumps are available. The pump type, Corona or Tribomatic, is matched to the spray gun type.

Pump mountings kits, air tubing, and powder feed hose are optional and must be ordered separately.

6-mm Corona Pump

- Original style Corona pump
- 6-mm air tube fittings
- Four locking flats on the nozzles and throat
- Larger diameter pump cavity than the 8-mm Corona pump

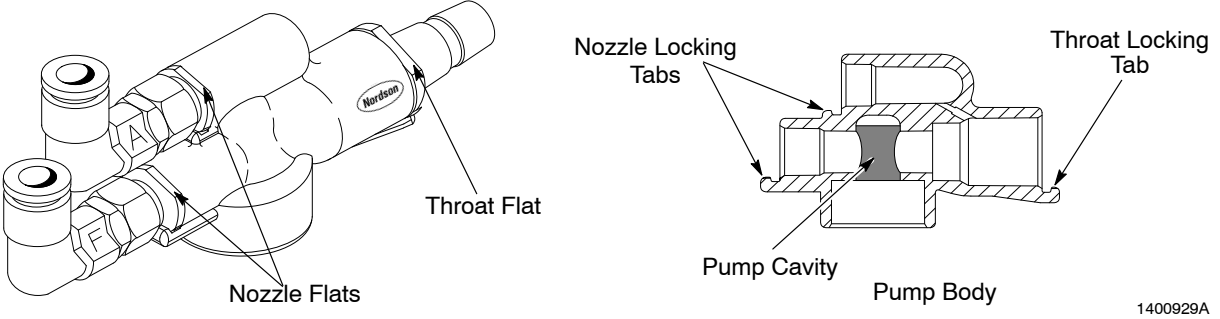
Table 1 6-mm Corona Pump Information

6-mm Corona Pump P/N 224713	
	
Product Lines Used With:	100 PLUS, Sure Coat, and Versa-Spray
Air Pressures ¹ :	
Flow Rate	1.4 bar (20 psi)
Atomizing	1.0 bar (15 psi)
Powder Feed Hose:	
Length	up to 4 m (13.12 ft)
ID	9.5-mm (3/8-in.) ID ²
<p>¹ These pressures are average starting points. They can be raised or lowered to achieve the desired delivery volume and cloud density.</p> <p>² Recommended starting point. Depending on your configuration, you may need to default to 12.7-mm (1/2-in.) ID powder feed hose for higher flow rates or longer hose lengths.</p>	

8-mm Corona Pump

- 8-mm air tube fittings
- Single locking flat on nozzles and throat
- Smaller diameter pump cavity than the 6-mm Corona pump

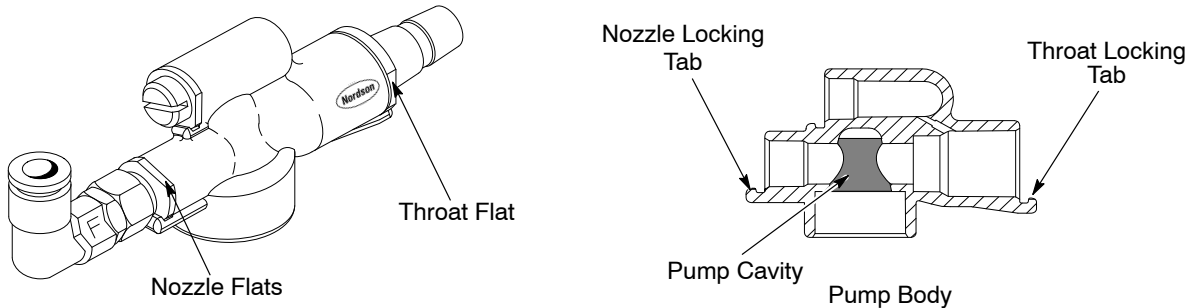
Table 2 8-mm Corona Pump Information

8-mm Corona Pump P/N 334251	
	
Product Lines Used With:	100 PLUS, Econo-Coat, Sure Coat, and Versa-Spray
Air Pressures ¹ :	
Flow Rate	1.0 bar (15 psi)
Atomizing	0.3 bar (5 psi)
Powder Feed Hose:	
Length	4–10 m (13–39 ft) ²
ID	11-mm (0.44-in.) ID ³
<p>¹ These pressures are average starting points. They can be raised or lowered to achieve the desired delivery volume and cloud density.</p> <p>² Hose lengths longer than 8 m (27 ft) may result in lower powder output.</p> <p>³ Recommended starting point. Depending on your configuration, you may need to default to 12.7-mm (1/2-in.) ID powder feed hose for higher flow rates or longer hose lengths.</p>	

Tribomatic Pump

- 6-mm air tube fittings
- Four flats on the nozzle and throat
- Large diameter pump cavity

Table 3 Tribomatic Pump Information

Tribomatic Pump P/N 224715	
	
Product Lines Used With:	Tribomatic
Air Pressures ¹ :	
Flow Rate	1.7 bar (25 psi)
Powder Feed Hose:	
Length	up to 4 m (13.12 ft)
ID	9.5-mm (0.37-in.) ID ²
<p>¹ This pressure is an average starting point. It can be raised or lowered to achieve the desired delivery volume and cloud density. Diffuser air is introduced at the spray gun.</p> <p>² Recommended starting point. Depending on your configuration, you may need to default to 12.7-mm (1/2-in.) ID powder feed hose for higher flow rates or longer hose lengths.</p>	

Feed Hopper Pump Capacity

Refer to Table 4. Some Nordson hoppers include pump mounts. Additional pump mounts can be installed, one mount per pump.

Table 4 Feed Hopper Pump Capacity

Hopper Type	Hopper Capacity	Number of Pump Mounts	
		Included with Hopper	Possible on Hopper
HRS-1	23 kg (50 lb)	1	2
HRS-2	23 kg (50 lb)	1	2
HR-2-50	23 kg (50 lb)	1	2
HR-2-80	36 kg (80 lb)	1	2
HR-8-80	36 kg (80 lb)	2	8
HR-16-150	68 kg (150 lb)	0	16
System Hoppers	91 kg (200 lb)	0	Varies
Vibratory Box Feeders	11–25 kg (25–55 lb)	0	2

Installation

Install pump mounting kits on your hopper, if not already equipped. Refer to *Optional Mounting Kits* on page 10 for part numbers. Top-mount and side-mount kits are available.

You must provide and install air tubing and powder feed hoses.







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 or create sparks hot enough to cause a fire or explosion.

Air Tubing Connections

Refer to Table 5 for air tubing color codes. Connect air tubing to the pump fittings and route the tubing to the gun controller output fittings.

Table 5 Air Tubing Connections

Air	Spray Gun Controller Air Function Symbols		Tubing Color	Pump Fitting Label
	AeroCharge, Sure Coat	100 PLUS, Tribomatic, Versa-Spray		
Atomizing			Blue	A
Flow-Rate			Black	F

Powder Feed Hose

Refer to Table 1, 2, or 3 to identify the correct powder hose ID and length.

1. Connect the powder feed hose to the pump outlet. Secure the hose to the outlet with a snap clamp.
2. If necessary, install a short length of spiral wrap around the hose at the outlet to prevent the hose from kinking and cutting off the flow of powder.

Maintenance



WARNING: Do not use compressed air to blow powder off skin or clothing. Compressed air injected under the skin can cause serious injury or death.

Daily

1. Disconnect the air tubing.
2. Make sure the booth exhaust fan is running.

NOTE: Always blow air from the pump into the booth.

3. Pull the pump off the mounting.
4. Clean the pump body with compressed air.
5. Disconnect the powder feed hose from the pump.
6. Clean the powder feed hose by blowing compressed air through the hose into the booth.

Routine Cleaning



CAUTION: Do not immerse O-rings in solvent. Solvents cause O-rings to swell. Do not use solvent to clean the pump body.



CAUTION: Do not scrape parts with sharp objects. Burrs or scratches on contact surfaces may occur, which may contribute to powder buildup or impact fusion.

Disassemble and thoroughly clean the pump and the pump mount components.

1. Clean the pump and mounting parts with compressed air.
2. Wipe the parts with a clean, lint free cloth. If necessary, remove the O-rings and moisten the cloth with water or isopropyl alcohol.



WARNING: Do not replace conductive O-rings with non-conductive O-rings. The conductive O-rings provide a path to ground. Using incorrect O-rings could result in personal injury, fire, or explosion.

3. Inspect the parts for wear. Replace worn parts as necessary.

To install a nozzle or venturi throat, turn it so one flat on the flange is parallel to the locking tab. Push the nozzle or throat into the pump body then turn it so the high spot on the flange locks into the tab.

4. Inspect the powder feed hose and replace any pieces that are worn or damaged. If powder is impact-fused inside the hose, replace it.

Threaded Pump Mount Seal Replacement

The threaded pump mount is used with the purge adapter kit. After repeatedly pulling the purge adapter out of the threaded pump mount, the purge seal may work loose from inside the tube adapter on the underside of the hopper lid. Follow these steps to replace the seal.

NOTE: The purge seal is part of the threaded pump mount kit. To order a new seal refer to the kit parts list on page 12.

See Figure 1.

1. Remove the locknut (1) and the pump mount assembly from the hopper.
2. Unscrew the threaded pump mount (3) from the tube adapter (5).
3. Remove the purge seal (4) from the tube adapter and discard the seal.
4. Insert a new purge seal into the tube adapter.
5. Screw the threaded pump mount into the tube adapter.
6. Re-install the pump mount assembly on the hopper.

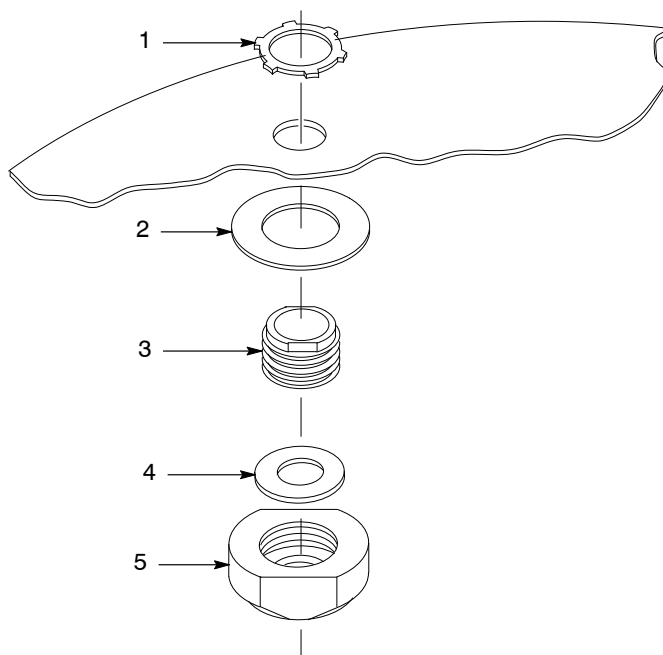


Figure 1 Threaded Pump Mount Seal Replacement

- | | |
|------------------------|-----------------|
| 1. Locknut | 4. Purge seal |
| 2. Washer | 5. Tube adapter |
| 3. Threaded pump mount | |

Parts

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

Corona Modular Pumps

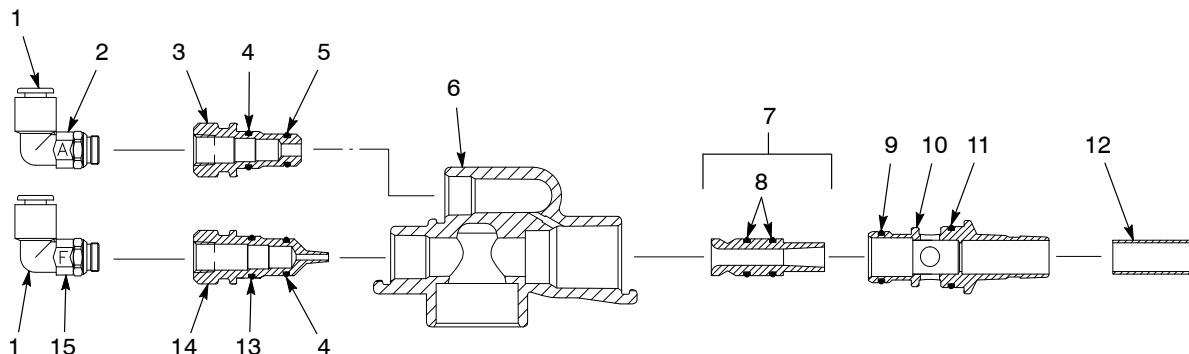


Figure 2 6-mm Corona Modular Pump

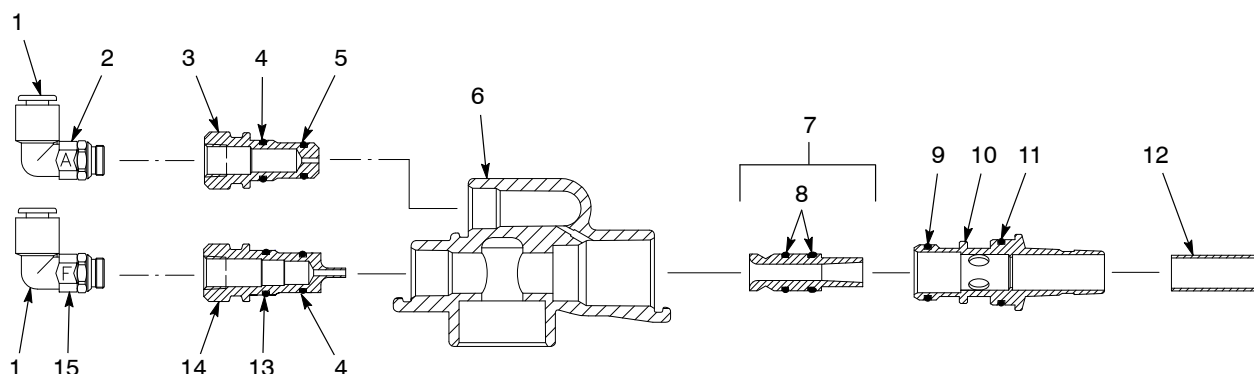


Figure 3 8-mm Corona Modular Pump

Item	Part	Part	Description	Quantity	Note
—	224713		6-mm PUMP, modular, corona	—	
—		344251	8-mm PUMP, modular, corona	—	A
1	972126		• ELBOW, male, 6 mm tube x 1/8 in. universal fit thread	2	
1		972276	• ELBOW, male, 8 mm tube x 1/8 in. universal fit thread	2	
2	939108	248046	• MARKER, clip, A (atomizing)	1	
3	224733	344239	• NOZZLE, air, atomizing	1	
4	940129	940129	• O-RING, silicone, conductive, 0.375 x 0.50 x 0.063 in.	2	B
5	940010	940010	• O-RING, silicone, conductive, 0.312 x 0.437 x 0.063 in.	1	B
6	244726	344240	• BODY, pump, powder, modular	1	

Continued...

Item	Part	Part	Description	Quantity	Note
7	225547	225547	• THROAT, 0.188-in. ID, Tivar, with O-rings	1	
8	940126	940126	• • O-RING, silicone, 0.375 x 0.50 x 0.063 in.	2	
9	940015	940015	• O-RING, silicone, conductive, 0.562 x 0.687 x 0.063 in.	1	B
10	224728	344241	• HOLDER, throat, corona	1	
11	940177	940177	• O-RING, silicone, conductive, 0.687 x 0.812 x 0.063 in.	1	B
12	224736	224736	• TUBE, wear, 0.437 in. OD x 0.03 in. wall	1	
13	940207	940207	• O-RING, silicone, conductive, 0.437 x 0.562 x 0.063 in.	1	B
14	224727	344238	• NOZZLE, air, flow	1	
15	939109	248124	• MARKER, clip, F (flow)	1	
<p>NOTE A: This pump is typically used with the threaded pump mount adapter kit, part 334794, and the purge pump adapter kit, part 334821.</p> <p>B: Black silicone O-rings are electrically conductive. Do not substitute non-conductive O-rings unless otherwise instructed.</p>					

Corona Modular Pump Options

See Figure 2 or 3.

Item	Part	Part	Description	Quantity	Note
—	-----		6-mm PUMP, modular, corona	—	
—		-----	8-mm PUMP, modular, corona,	—	
4	340636	340636	• O-RING, polyurethane, non-conductive, 0.375 x 0.50 x 0.063 in.	2	A
9	340637	340637	• O-RING, polyurethane, non-conductive, 0.562 x 0.687 x 0.063 in.	1	A
7	225546	344254	• THROAT, 0.213 in. ID, Tivar, with O-rings	1	B
7	225548	344259	• THROAT, 0.213 in. ID, PTFE, with O-rings	1	B, C
7	225549	225261	• THROAT, 0.188 in. ID, PTFE, with O-rings	1	C
<p>NOTE A: Optional O-ring that provides better retention of nozzle/throat holder without compromising ground path. All other O-rings in assembly must be conductive to ensure proper grounding.</p> <p>B: Optional throat ID for use in special applications. Consult your Nordson Corporation representative for information about 0.213-in. ID modular pump throats.</p> <p>C: Optional throat material. PTFE throats are more resistant to powder impact fusion, but may wear faster than the standard Tivar throats.</p>					

Tribo Modular Pumps

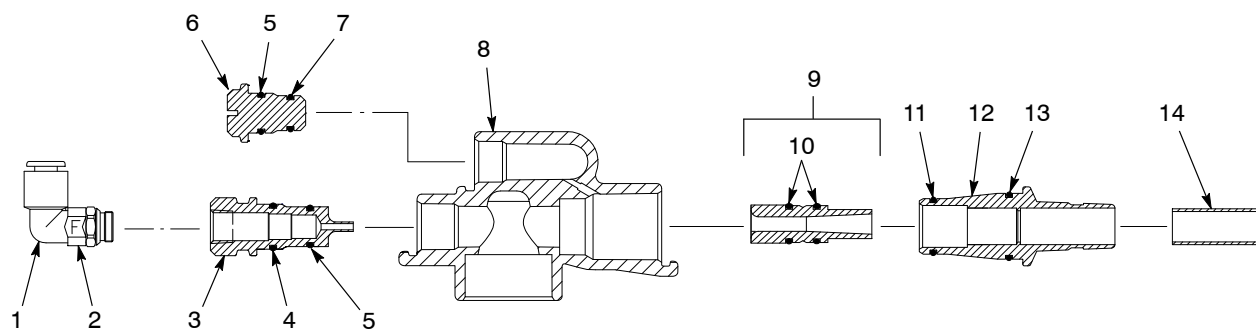


Figure 4 Tribo Modular Pump

Item	Part	Description	Quantity	Note
—	224715	TRIBO PUMP, modular	1	
1	972126	• ELBOW, male, 6 mm tube x 1/8 in. universal fit thread	1	
2	939109	• MARKER, clip, F (flow)	1	
3	224727	• NOZZLE, air, flow	1	
4	940207	• O-RING, silicone, conductive, 0.437 x 0.562 x 0.063 in.	1	A
5	940129	• O-RING, silicone, conductive, 0.375 x 0.50 x 0.063 in.	2	A
6	224735	• PLUG, shutoff, atomizing	1	
7	940010	• O-RING, silicone, conductive, 0.312 x 0.437 x 0.063 in.	1	A
8	224726	• BODY, pump, powder, modular	1	
9	225547	• THROAT, 0.188 in. ID, Tivar, with O-rings	1	
10	940126	• • O-RING, silicone, 0.375 x 0.50 x 0.063 in.	2	
11	940015	• O-RING, silicone, conductive, 0.562 x 0.687 x 0.063 in.	1	A
12	224730	• HOLDER, throat, tribo	1	
13	940177	• O-RING, silicone, conductive, 0.688 x 0.812 x 0.063 in.	1	A
14	224736	• TUBE, wear, 0.437-in. OD x 0.03 in. wall	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not replace with non-conductive O-rings unless otherwise instructed.				

Tribo Modular Pump Options

Item	Part	Description	Quantity	Note
—	-----	TRIBO PUMP, modular,	—	
5	340636	• O-RING, polyurethane, non-conductive, 0.375 x 0.50 x 0.063 in.	2	A
11	340637	• O-RING, polyurethane, non-conductive, 0.562 x 0.687 x 0.063 in.	1	A
9	225549	• THROAT, 0.188 in. ID, PTFE, with O-rings	1	B
NOTE A: Optional O-ring that provides better retention of nozzle/throat holder without compromising ground path. All other O-rings in assembly must be conductive to ensure proper grounding.				
B: Optional throat material. PTFE throats are more resistant to powder impact fusion, but may wear faster than the standard Tivar throats.				

Optional Mounting Kits

Feed Hopper Usage

Refer to Table 6 to choose the correct pump mount kit for your hopper.

Table 6 Top-Mount Pump Mount Kits

Hopper	Hopper Capacity	163555	163556	334794	334821
HRS-1	23 kg (50 lb)	X		X	X
HRS-2	23 kg (50 lb)	X		X	X
HR-2-50	23 kg (50 lb)	X		X	X
HR-2-80	36 kg (80 lb)		X	X	X
HR-8-80	36 kg (80 lb)		X	X	X
HR-16-150	68 kg (150 lb)		X	X	X
System Hoppers	91 kg (200 lb) and greater		X	X	X
Vibratory Box Feeder	11–25 kg (25–55 lb)	Refer to the VBF-1 Vibratory Box Feeder manual.			

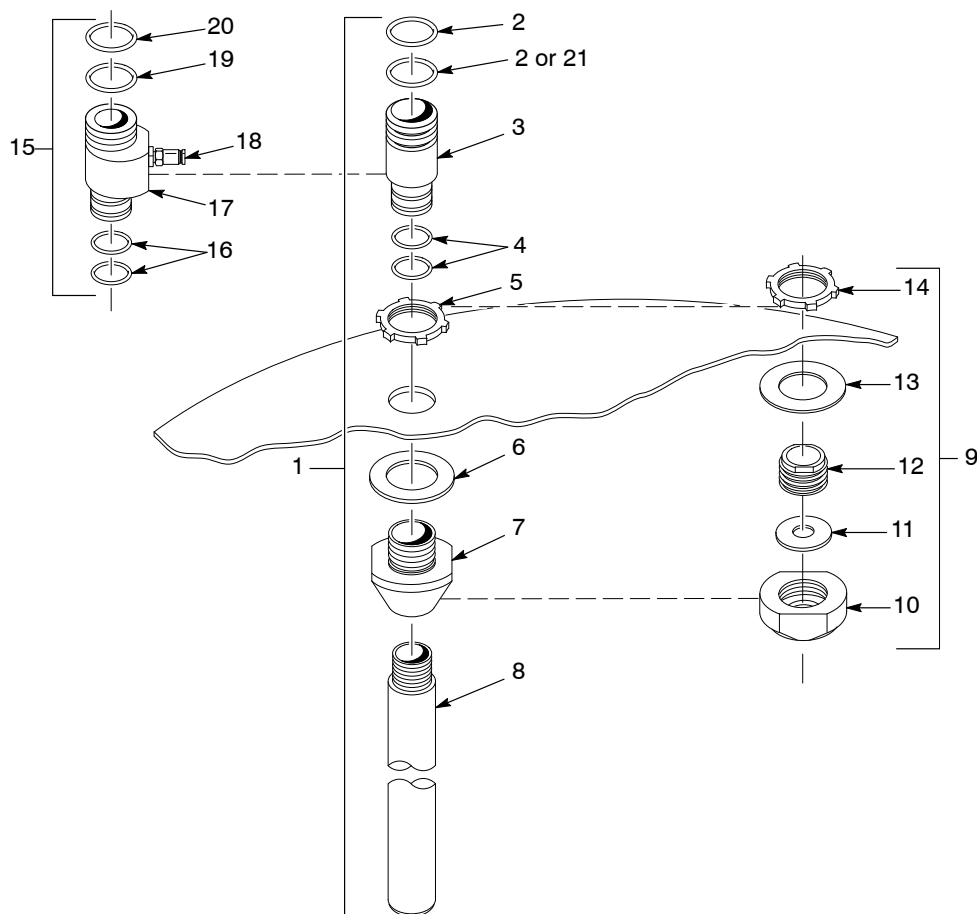


Figure 5 Pump Mount Kits and Optional Purge Mount Kits

Top-mount Pump Mount Kits

See Figure 5.

Item	Part	Part	Description	Quantity	Note
1	163555		MOUNT, pump, with 18 in. pick-up tube	1	
1		163556	MOUNT, pump, with 24 in. pick-up tube	1	
2	941185	941185	• O-RING, silicone, conductive, 0.875 x 1.062 x 0.094 in.	2	A, B
3	152227	152227	• ADAPTER, pump, vibratory box feeder	1	
4	941145	941145	• O-RING, silicone, conductive, 0.625 x 0.812 x 0.094 in.	2	A
5	939613	939613	• LOCKNUT, conduit, $\frac{3}{4}$ in. NPS	1	
6	983055	983055	• WASHER, pump, mount	1	
7	164063	164063	• MOUNT, pump	1	C
8	164065		• TUBE, pick-up, 0.360 in. ID x 18 in.	1	
8		152223	• TUBE, pick-up, 0.360 in. ID x 24 in.	1	
21	940186	940186	O-RING, polyurethane, non-conductive, 0.875 x 1.062 x 0.094 in.	1	D
<p>NOTE A: Black silicone O-rings are electrically conductive. Do not substitute non-conductive O-rings unless otherwise instructed.</p> <p>B: If used with non-conductive O-ring, place conductive O-ring in top groove of adapter to ensure proper grounding.</p> <p>C: Pump mount can be replaced with new pump mount, part 334793.</p> <p>D: Optional O-ring that provides better pump retention. Use only in the lower adapter groove, with a conductive O-ring in the top groove to ensure proper grounding.</p>					

Purge Option Kits (Only used with 8-mm Corona Pump)

See Figure 5. These kits are used for the system purge option and can only be used with the 8-mm corona pump, part 344251.

Item	Part	Description	Quantity	Note
9	334794	THREADED PUMP MOUNT KIT	1	A, B
10	334790	• ADAPTER, clean, tube	1	
11	334791	• SEAL, purge	1	
12	334789	• MOUNT, thread, pump	1	
13	983055	• WASHER, pump, mount	1	
14	939613	• LOCKNUT, conduit, $\frac{3}{4}$ in. NPS	1	
15	334821	PURGE PUMP ADAPTER KIT	1	A, C
16	941145	• O-RING, silicone, conductive, 0.625 x 0.812 in.	2	D
17	334788	• ADAPTER, pump, purge	1	
18	344252	• VALVE, check, 8 mm tube x $\frac{1}{8}$ in. male thread	1	
19	940186	• O-RING, polyurethane, 0.875 x 1.062 x 0.093 in.	1	
20	941185	• O-RING, silicone, conductive, 0.875 x 1.062 in.	1	D
NOTE A: Use these kits together for the system purge option. B: This kit replaces items 5, 6, and 7 of the pump mount with pick-up tube kit illustrated in Figure 5. C: This kit replaces items 2, 3, 4, and 21 of the pump mount with pick-up tube kit illustrated in Figure 5. D: Black silicone O-rings are electrically conductive. Do not substitute non-conductive O-rings unless otherwise instructed.				

Side-Mount Pump Mounting Kit

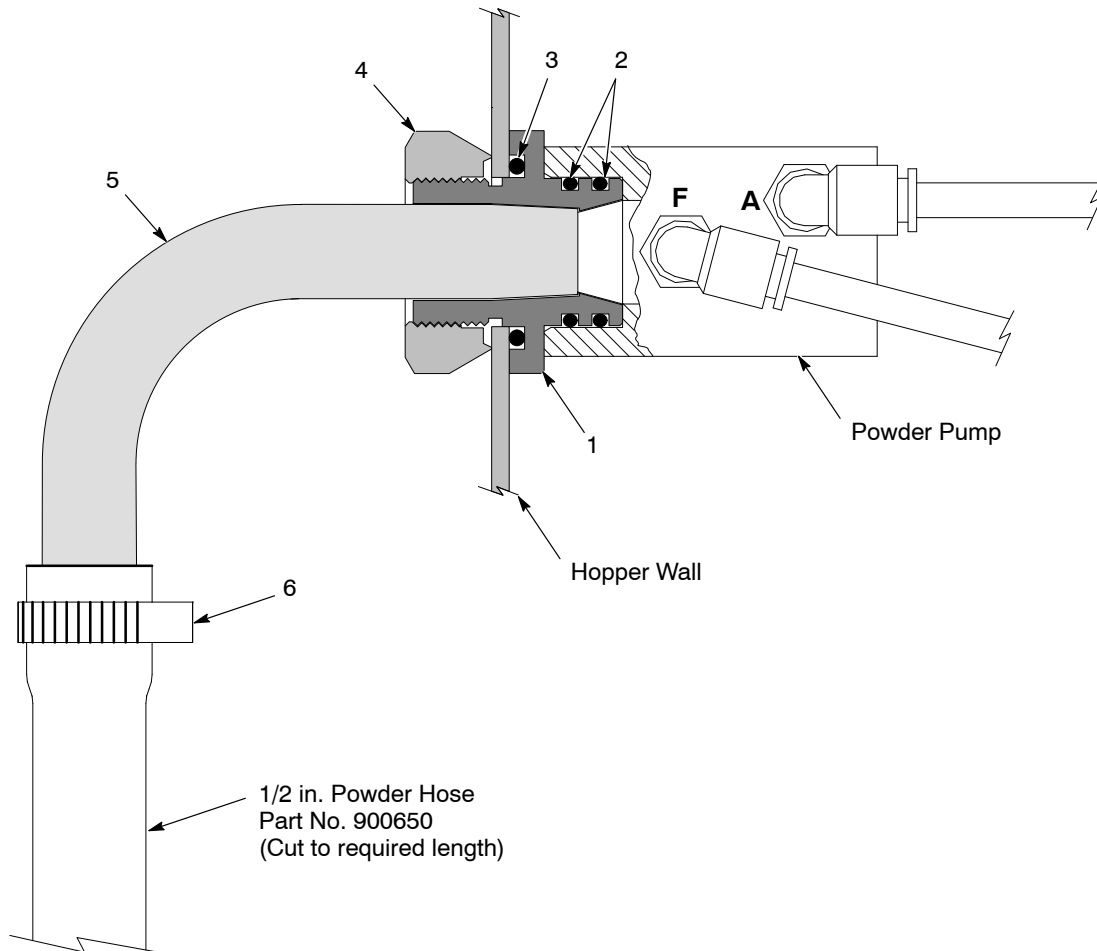


Figure 6 Side Mount Pump Mounting Kit

Item	Part	Description	Quantity	Note
–	1051479	KIT, pump mount w/90-degree angled pickup tube	1	
1	114225	• MOUNT, pump	1	
2	941185	• O-RING, silicone, conductive, 0.875 x 1.062 in.	2	
3	942161	• O-RING, silicone, 1.125 x 1.375 x 0.125 in.	1	
4	142382	• NUT, ground, pump mount	1	
5	1051448	• TUBE, pickup, angled, 90 degrees	1	
6	939247	• CLAMP, hose, snap-it	1	

Accessories

Air Tubing

Tubing must be ordered in increments of one foot.

Part	Color	Material	Size, OD	Usage
900615	Black	Polyethylene	6-mm	flow air
900586	Blue	Polyethylene	6-mm	atomizing air
900741	Black	Polyurethane	6-mm	flow air
900742	Blue	Polyurethane	6-mm	atomizing air
173102	Black	Polyethylene	8-mm	flow air
173101	Blue	Polyethylene	8-mm	atomizing air
900619	Black	Polyurethane	8-mm	flow air
900618	Blue	Polyurethane	8-mm	atomizing air

Powder Feed Hose

The powder feed hose listed here is recommended for use with metallics and most organic powders. Hose must be ordered in increments of one foot.

Part	Description	Note
900649	9.5-mm ($3/8$ -in.) ID, blue	
900648	11-mm ($7/16$ -in.) ID, blue	
900650	12.7-mm ($1/2$ -in.) ID, blue	

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