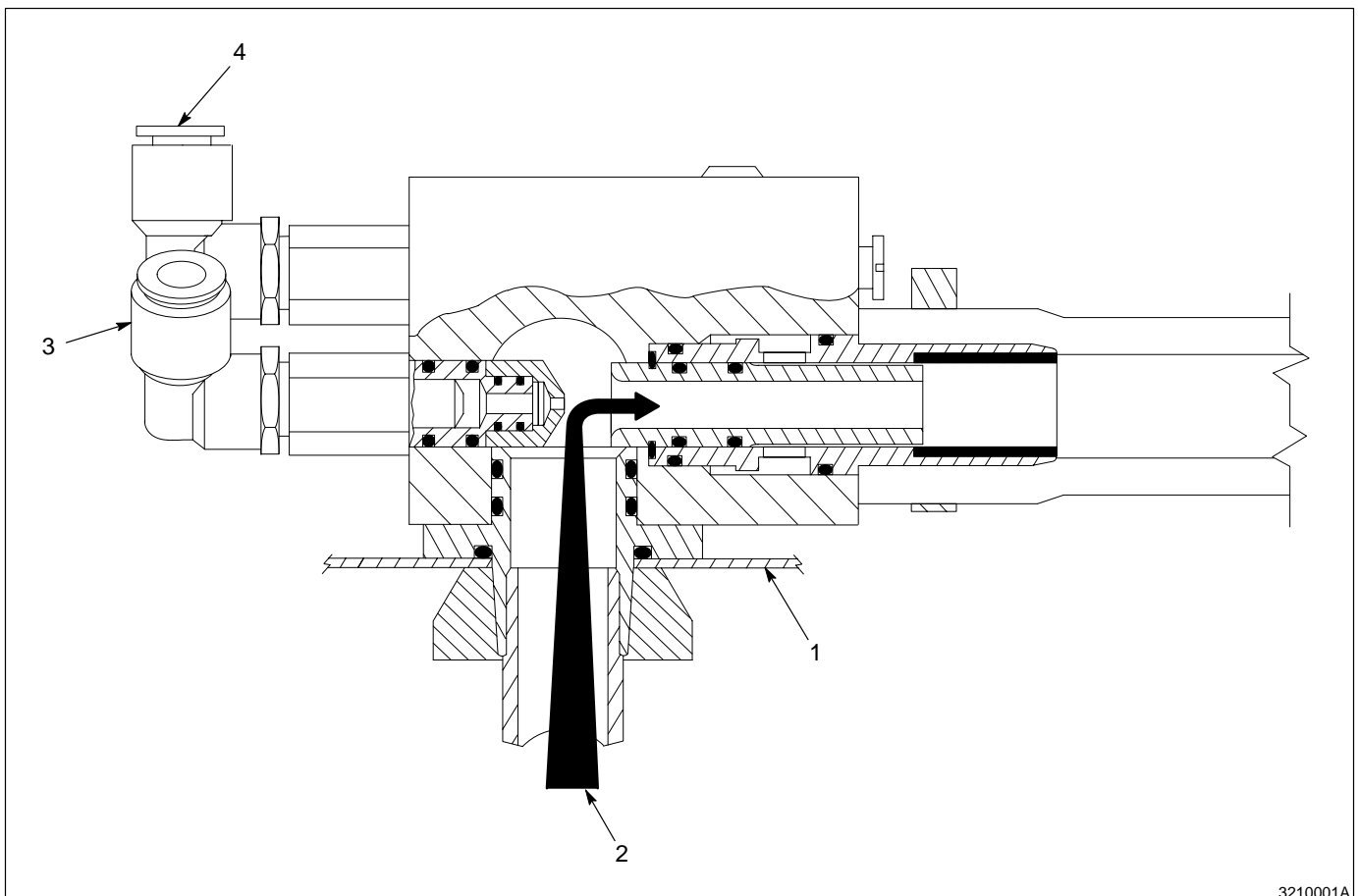


# 100 PLUS® Porcelain Powder Pump

## 1. Description

See Figure 1. The Nordson 100 PLUS porcelain powder pump is a highly efficient venturi-type pump. The pump is designed to lift fluidized powder (2) out of a feed hopper (1), atomize the powder stream and deliver it to a powder spray gun.

Disassembly of the pump is simple. The venturi nozzles, throat, and holder are held into the body, and the body onto the adapter, with interference fits provided by silicone O-rings.



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Fig. 1 100 PLUS Porcelain Powder Pump

- 1. Feed hopper
- 2. Fluidized powder

3. Flow rate air

4. Atomizing air

## 2. Installation

See Figure 2. Use the following steps to install the pump.

1. If the pump mounts on a Nordson Model HTM hopper, locate the 28-mm (1.10-in.) hole to mount the pump. If using another hopper type, make a hole in the top of the hopper for the pick-up tube (8) using a 19-mm ( $\frac{3}{4}$ -in.) conduit punch. This punch will provide the 28-mm (1.10-in.) hole required for installation.

**NOTE:** The pump must be mounted above the powder level.

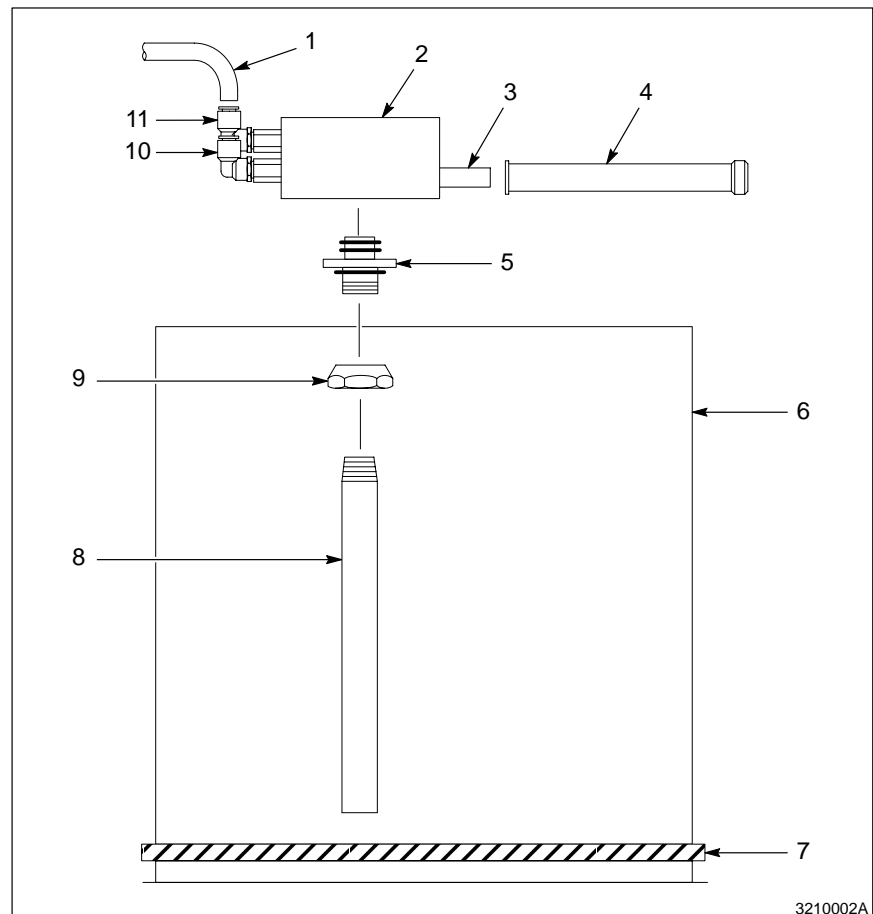


Fig. 2 Pump Installation

- |   |                     |
|---|---------------------|
| 1. 6.35-mm ( $\frac{1}{4}$ -in.) polyethylene tubing      | 6. Hopper           |
| 2. Pump   | 7. Fluidizing plate |
| 3. Holder   | 8. Pick-up tube     |
| 4. 19-mm ( $\frac{3}{4}$ -in.) polyurethane delivery hose | 9. Conduit nut      |
| 5. Pump adapter   | 10. Flow rate air   |
|   | 11. Atomizing air   |

2. Insert the pump adapter (5) into the hole in the hopper (6).
3. Tighten the conduit nut (9) on the pump adapter.
4. Screw the pick-up tube (8) into the pump adapter. The end of the pick-up tube usually extends 25–50-mm (1–2-in.) above the fluidizing plate (7). Cut the pick-up tube to proper length if necessary.
5. Place the pump (2) on the pump adapter.
6. Connect the 6.35-mm ( $1/4$ -in.) OD polyethylene tubing (1) to the atomizing and flow air fittings (10, 11). The atomizing air fitting is the upper fitting marked A, and the flow air fitting is the lower fitting marked F.

**NOTE:** The polyurethane powder delivery tubing is very stiff and may need to be heated before it can be placed onto the pump outlet fittings. Use an air gun to heat the end of the tubing to soften it and make it pliable.

7. Insert a 19-mm ( $3/4$ -in.) polyurethane delivery hose (4) into the holder (3) until it seats the ceramic tube at the rear of the holder.

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### 3. Operation

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Typical operating pressure are:

Atomizing: 1.4 bar (20 psi)  
Flow: 2.1 bar (30 psi)

These pressures are an average starting point and can be adjusted higher or lower until the desired delivery volume and cloud density is achieved.

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### 4. Maintenance

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Disconnect the atomizing and flow air tubing and blow out the pump and powder feed tubing daily. The pump should be disassembled and thoroughly cleaned periodically.

**NOTE:** Reassemble the pump with care, so as not to damage the ceramic throat when installing the throat and throat holder into the pump housing.



**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.

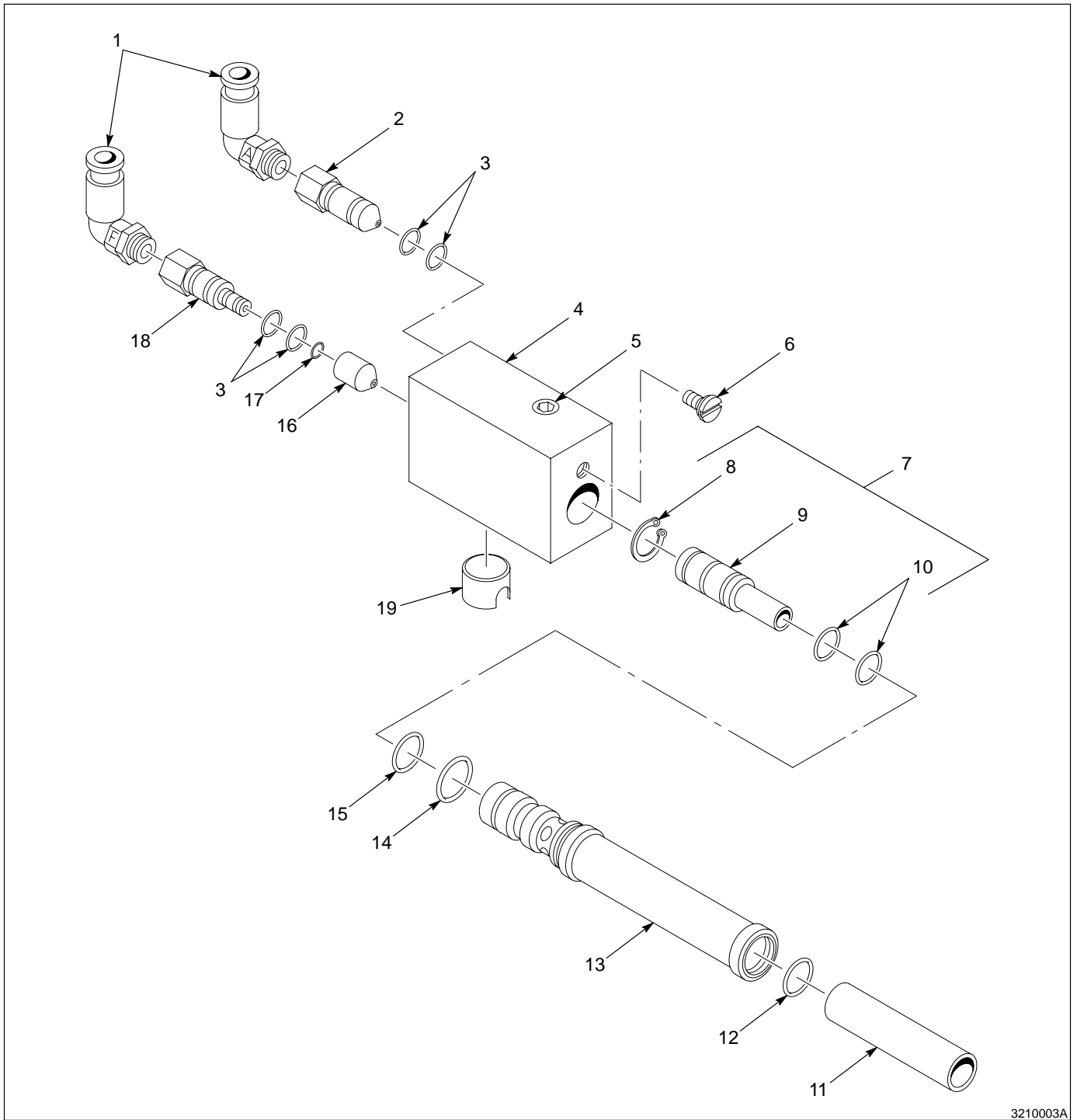
**4. Maintenance** (contd.)

- Blow parts clean with low-pressure compressed air and wipe with a clean, lint free cloth. The cloth may be moistened with a non-toxic solvent if necessary, but do not immerse the O-rings in the solvent. Solvents will swell and damage the O-rings.
- Do not scrape parts with sharp objects as burrs or scratches on powder contact surfaces will contribute to powder buildup or impact fusion.
- Inspect parts for wear and replace if necessary.

**5. Parts**

See Figure 3.

Item	Part	Description	Quantity	Note
—	107 223	Pump, porcelain, 100 PLUS	1	
1	972 119	• Elbow, 1/4 x 1/8 NPT	2	
2	107 240	• Nozzle, venturi, w/check valve	1	
3	940 129	• O-ring, silicone, conductive, 0.375 x 0.50 in.	2	A
4	107 224	• Housing, pump, porcelain	1	
5	973 402	• Plug, pipe, 1/8 NPT	1	
6	112 412	• Screw, lock, 5/16-18, L5-1	1	
7	107 227	• Throat, venturi, porcelain	1	
8	986 100	• • Ring, retaining, 0.50, invert	1	
9	-----	• • Throat, venturi	1	
10	940 126	• • O-ring, silicone, 0.375 x 0.50 x 0.063-in.	2	
11	107 230	• Tube, 0.50 x 0.75 x 4.0, ceramic	1	
12	942 105	• O-ring, polyurethane, 0.750 x 1.0 in.	1	
13	107 229	• Holder, throat	1	
14	940 184	• O-ring, silicone, conductive, 0.75 x 0.875 in.	1	A
15	940 163	• O-ring, silicone, 0.625 x 0.750 x 0.063 in.	1	
16	107 231	• Nozzle, ceramic	1	
17	940 084	• O-ring, silicone, 0.188 x 0.312 x 0.063-in.	1	
18	109 898	• Holder, nozzle, w/check valve	1	
19	107 225	• Cup, insert, ceramic	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not substitute with non-conductive O-rings.				



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Fig. 3 100 PLUS Porcelain Powder Pump

**6. Kits**

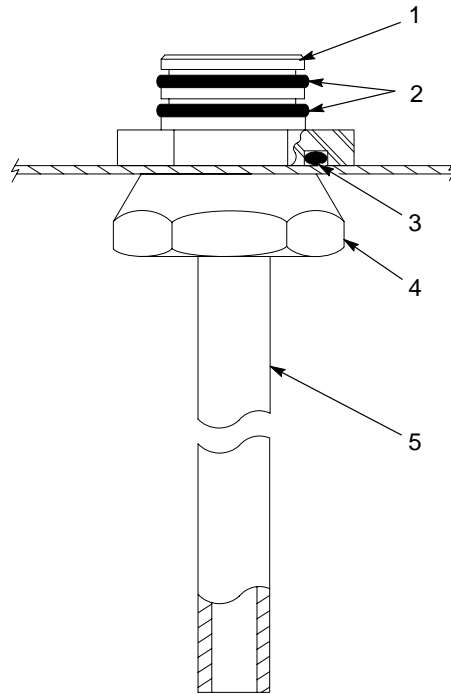
Use the following lists to order an adapter and pick-up tube for the 100 PLUS porcelain powder pump

**Fixed Adapters**

[See Figure 4.](#)

Item	Part	Description	Quantity	Note
—	180 777	Mount, pump, w/pick-up tube, fixed, 18 in.	1	A
1	114 225	• Adapter, pump	1	
2	941 185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	
3	942 161	• O-ring, silicone, 1.125 x 1.375 x 0.125 in.	1	
4	142 382	• Nut, ground, pump mount	1	
5	180 778	• Tube, pick-up, 0.490 ID x 18 in.	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not substitute with non-conductive O-rings.				

Item	Part	Description	Quantity	Note
—	224 721	Mount, pump, w/pick-up tube, fixed, 24 in.	1	A
1	114 225	• Adapter, pump	1	
2	941 185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	
3	942 161	• O-ring, silicone, 1.125 x 1.375 x 0.125 in.	1	
4	142 382	• Nut, ground, pump mount	1	
5	224 722	• Tube, pick-up, 0.490 ID x 24 in.	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not substitute with non-conductive O-rings.				



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Fig. 4 Fixed Adapter with Pick-up Tube

**Thru-Lid Adapters**

See Figure 5.

Item	Part	Description	Quantity	Note
—	309 476	Mount, pump, w/tube, fixed, 18 in., $\frac{3}{8}$ NPS	1	
1	309 471	• Adapter, pump, thru-lid	1	
2	941 185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	A
3	164 063	• Mount, pump	1	
4	941 145	• O-ring, silicone, conductive, 0.625 x 0.812 in.	2	A
5	309 474	• Tube, pick-up, 0.490 ID x 18-in., $\frac{3}{8}$ NPS	1	
6	983 055	• Washer, pump, mount	1	
7	939 613	• Locknut, conduit, $\frac{3}{4}$ NPS	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not substitute with non-conductive O-rings.				

Item	Part	Description	Quantity	Note
—	309 479	Mount, pump, w/tube, fixed, 24 in., $\frac{3}{8}$ NPS	1	
1	309 471	• Adapter, pump, thru-lid	1	
2	941 185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	A
3	164 063	• Mount, pump	1	
4	941 145	• O-ring, silicone, conductive, 0.625 x 0.812 in.	2	A
5	309 477	• Tube, pick-up, 0.490 ID x 24-in.	1	
6	983 055	• Washer, pump, mount	1	
7	939 613	• Locknut, conduit, $\frac{3}{4}$ NPS	1	
NOTE A: Black silicone O-rings are electrically conductive. Do not substitute with non-conductive O-rings.				



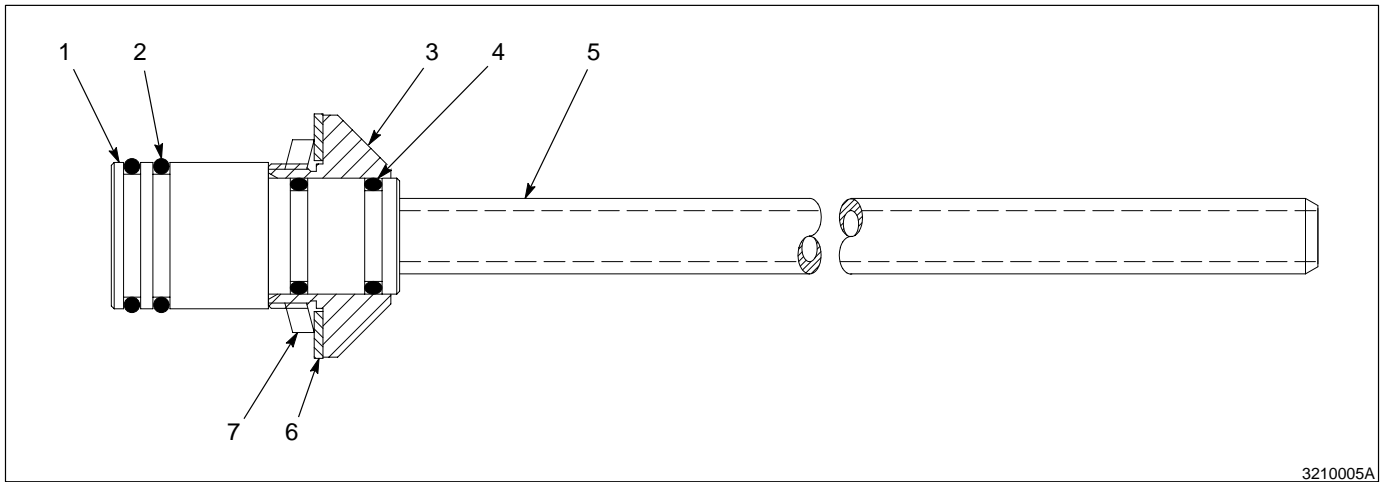


Fig. 5 Thru-Lid Adapters with Pick-Up Tube

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