

# Tribomatic® II Powder Pump



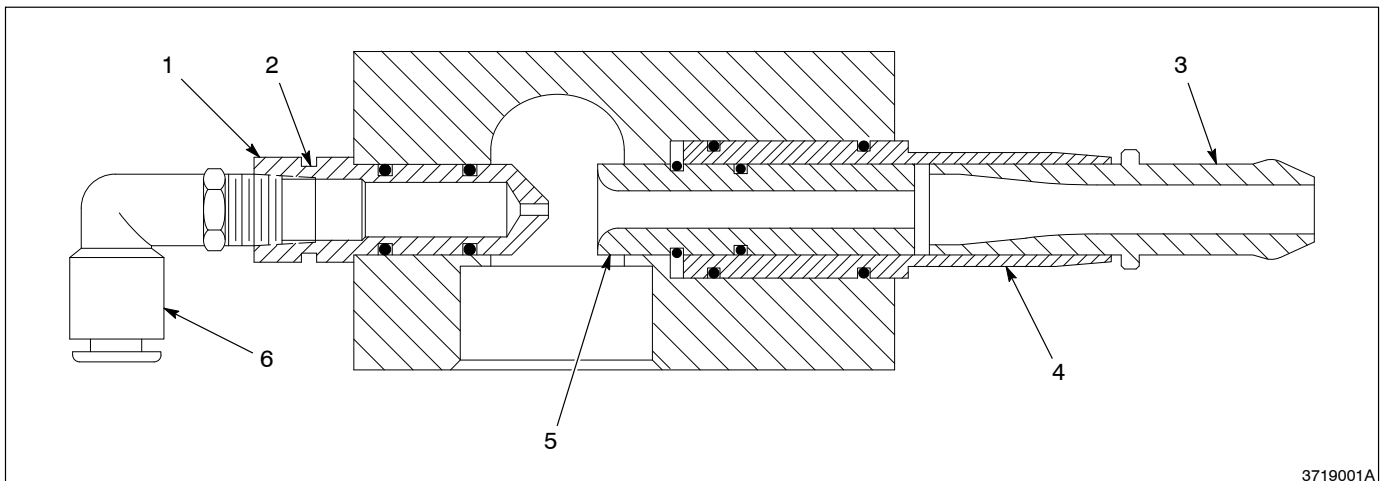
**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

## 1. Introduction

The Tribomatic II powder pump is a highly efficient venturi-type powder pump. It uses a stream of high-velocity air to lift fluidized powder out of a feed hopper and deliver it to a powder spray gun.

See Figure 1.

This pump is compatible with most general powder coating systems. It comes with a standard  $\frac{3}{8}$ -in. ID powder feed tubing connector (3), and can also be used with  $\frac{1}{2}$ -in. ID powder feed tubing. Mounting and adapter kits are sold separately.



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Fig. 1 Tribomatic II Powder Pump Components

- |                     |  |                   |
|---------------------|--|-------------------|
| 1. Venturi nozzle   | 3. $\frac{3}{8}$ -in. powder feed tubing connector | 5. Venturi throat |
| 2. Nozzle ID groove | 4. Venturi throat holder                           | 6. 6-mm elbow     |

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## 2. Installation

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

### ***Pump Adapter***

**NOTE:** If you install a pump adapter into an existing system, disconnect the air tubing and powder feed hose from the pump. Disconnect the pick-up tube and remove the pump from its mount on the feed hopper.

1. See Figure 3.

Push the pick-up tube (7) into the pump mount (6).

2. Place the washer (5) over the pump mount and thread the pump mount through the bottom of the hole in the hopper lid.
3. Tighten the locknut (4) over the pump mount.
4. Install the O-rings (1, 3) onto the adapter (2).
5. Press the adapter into the pump mount with a slight twisting motion.
6. Install the pump on the adapter. Connect the air tubing and powder feed hose to the pump. For more information, refer to *Final Pump Installation and Connections*.

### ***Final Pump Installation and Connections***

Use the following procedure to connect the necessary tubing after you have installed the pump onto the adapter.

See Figure 1.

1. Connect 6-mm air tubing to the 6-mm elbow (6).

**NOTE:** If using  $\frac{1}{2}$ -in. powder feed tubing, remove the connector (3) and install a wear sleeve in the Venturi throat holder (4). Refer to *Parts* for wear sleeve ordering information.

2. Connect  $\frac{3}{8}$ -in. powder feed tubing over the connector (3) and Venturi throat holder (4) and secure it with the hose clamp provided with the mounting kit.

**NOTE:** The end of the flexible pick-up tubing must be at least 25.4 mm (1 in.) above the fluidizing plate. If the end of the pick-up tubing is too close to the fluidizing plate, air and insufficiently fluidized powder could be pulled into the pump. Cut the flexible pick-up tubing to the proper length, if necessary.

3. Connect the flexible pick-up tubing supplied with the adapter kit to the pick-up tube and secure it with the clamp provided.
4. Mount the adapter on the hopper lid as shown in Figure 3.

### **Purge Adapter**

The optional purge adapter is used with 50-lb or larger hoppers in place of the standard pump adapter. Air flow into the purge adapter blocks powder from the feed hopper from entering the pump. Flow rate air then purges powder from the pump, feed tubing, and spray gun.

Install the purge adapter as shown in Figure 4.

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## **3. Operation**

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Typical operating pressures are:

Diffuser:	2.5 bar (36 psi)
Flow-rate:	1.8 bar (26 psi)

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

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## **4. Maintenance**

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

### **Daily**

Disconnect the diffuser air and flow-rate air tubing and blow out the pumps with compressed air.

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

### **Periodically**

Disassemble your pumps and clean the parts with low-pressure compressed air and clean, lint-free cloths. The parts may be wiped clean with a non-toxic solvent such as alcohol after removing the O-rings. The O-rings could be damaged by the solvent.

Do not scrape impact-fused powder off the pump parts with any sharp metal tools. Powder will build up in any scratches on the powder contact surfaces, causing impact-fusion and pump clogging.

**Periodically** (contd)

Inspect all parts and replace any that are worn or damaged.



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

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

**5. Parts**

Use the following parts lists to order replacement parts for the pump; installation and mounting kits; and optional components.

**Pump**

See Figure 2.

Item	Part	Description	Quantity	Note
—	631401	Pump, Tribomatic II, single	1	
1	972126	• Elbow, male, 6 mm tube x 1/8 universal thread	1	
2	631420	• Nozzle, air, 0.073 in. ID	1	
3	940129	• O-ring, silicone, conductive, 0.375 x 0.500 in.	2	
4	635004	• Housing, pump, generation 3	1	
5	635001	• Throat, venturi, generation 3, PTFE	1	A
6	940126	• • O-ring, silicone, 0.375 x 0.500 x 0.063 in.	2	
7	635003	• Holder, throat, generation 3	1	
8	940165	• O-ring, silicone, conductive, 0.625 x 0.750 in.	2	
9	139943	• Connector, pump, powder	1	
10	249507	• Tube, wear, holder	1	B

NOTE A: Bulk quantities of this part are available. Refer to *Bulk Venturi Throats*.

B: Use this wear tube holder in place of item 9 when using 1/2-in. ID powder feed tubing.

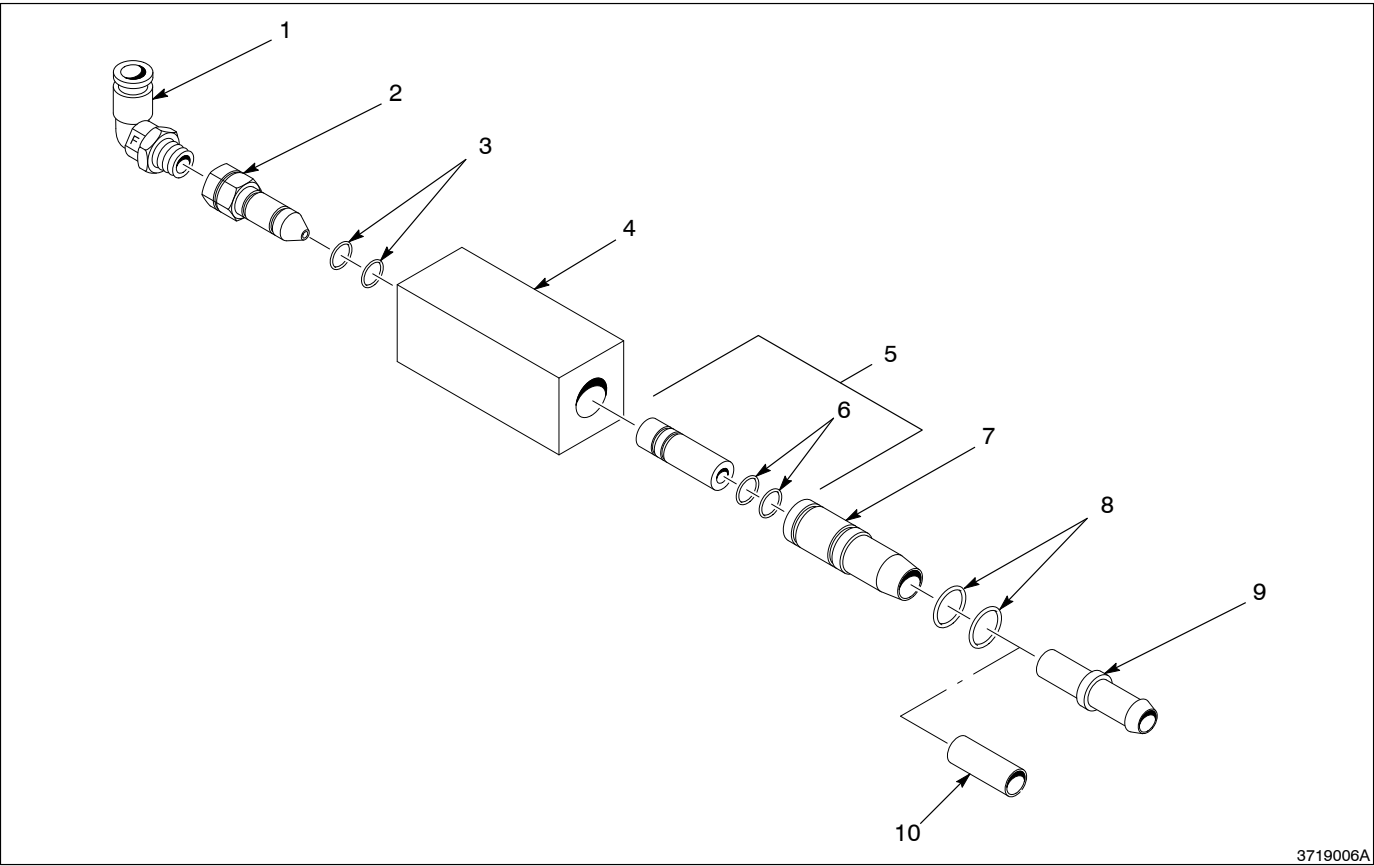


Fig. 2 Tribomatic II Powder Pump

**Bulk Packaged Venturi Throats**

Use the following parts list to order bulk quantities of PTFE and Tivar throats.

Part	Description	Note
631405	Throat, Tribomatic II, PTFE, 10 pack	
631406	Throat, Tribomatic II, PTFE, 25 pack	
631407	Throat, Tribomatic II, PTFE, 100 pack	
631409	Throat, Tribomatic II, Tivar, 10 pack	
631410	Throat, Tribomatic II, Tivar, 25 pack	
631411	Throat, Tribomatic II, Tivar, 100 pack	

**Pump Adapters**

See Figure 3.

The pump mount listed below is used on the following hoppers:

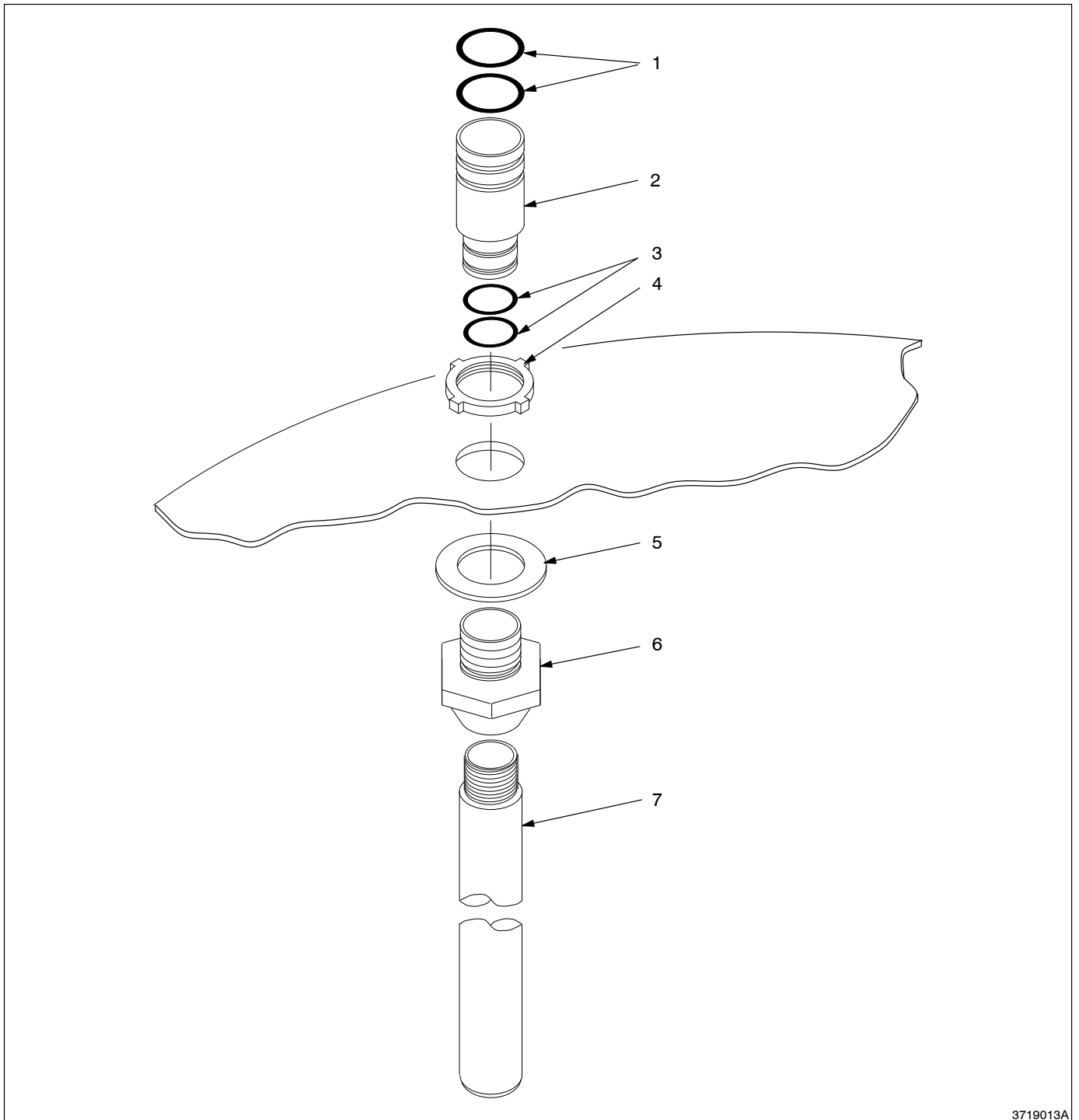
Model HRS-1	23 kg (50 lb) capacity
Model HRS-2	23 kg (50 lb) capacity
Model HR-2-50	23 kg (50 lb) capacity

Item	Part	Description	Quantity	Note
—	163555	Mount, pump with pick-up tube, 18 in.	1	
1	941185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	
2	152227	• Adapter, pump	1	
3	941145	• O-ring, silicone, conductive, 1.625 x 0.812 in.	2	
4	939613	• Locknut, conduit, $\frac{3}{4}$ NPS	1	
5	983055	• Washer, pump	1	
6	164063	• Mount, pump	1	
7	164065	• Tube, pick-up, 0.360 ID x 18 in.	1	

The pump mount listed below is used on the following hoppers:

Model HR-2-80	36 kg (80 lb) capacity
Model HR-8-80	36 kg (80 lb) capacity

Item	Part	Description	Quantity	Note
—	163556	Mount, pump with pick-up tube, 24 in.	1	
1	941185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	
2	152227	• Adapter, pump	1	
3	941145	• O-ring, silicone, conductive, 1.625 x 0.812 in.	2	
4	939613	• Locknut, conduit, $\frac{3}{4}$ NPS	1	
5	983055	• Washer, pump	1	
6	164063	• Mount, pump	1	
7	152223	• Tube, pick-up, 0.360 ID x 24 in.	1	



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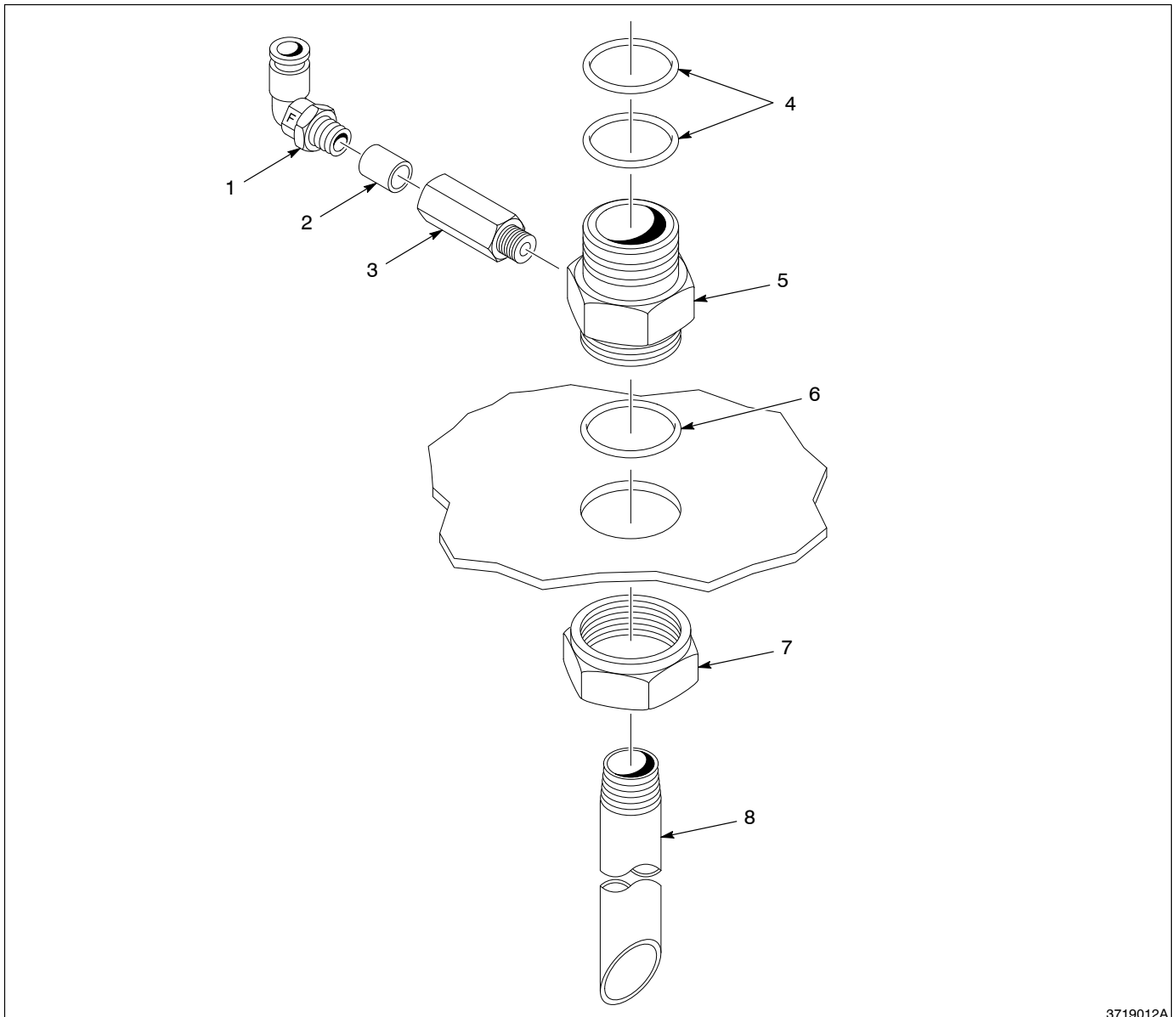
Fig. 3 Pump Adapter

**Purge Adapter**

See Figure 4.

Item	Part	Description	Quantity	Note
—	136624	Adapter, purge, with pick-up tube	1	
1	971266	• Elbow, male, 0.25 tube x 1/4 NPT	1	
2	118841	• Valve, check, cartridge, 0.37 in.	1	
3	- - - - -	• Holder, check valve	1	
4	941185	• O-ring, silicone, conductive, 0.875 x 1.062 in.	2	
5	136623	• Mount, pump, purge	1	
6	942161	• O-ring, silicone, 1.125 x 1.375 x 0.125 in.	1	
7	939613	• Locknut, conduit, 3/4 NPS	1	
8	118740	• Tube, pick-up, PVC, HRS-2, with fitting	1	





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Fig. 4 Purge Adapter

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