Spectrum® VT Pump Manifold Siphon Block Assembly

Description

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

See Figure 1.

The Spectrum® VT pump manifold siphon block assembly can populate up to six pumps. This document describes procedures for:

- siphon block maintenance
- pinch valve replacement
- blanking plates
- pump manifold clamp handles

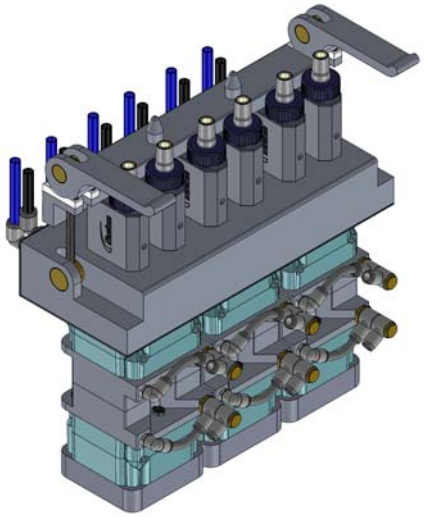

Figure 1 Spectrum VT Pump Manifold Siphon Block Assembly

Siphon Block Maintenance

Required Tools:

- 2.5-, 4-, 5-, 8-, and 10-mm Allen wrenches
- Large flat-head screw driver
- Pump pinch valve tool (included with kit)

Disassembly

Tool Required: 8-mm Allen wrench

1. See Figure 2. Unscrew the socket head cap screw (1) to remove the siphon block (2) from the pump manifold (3). Retain socket head cap screw for reassembly.

   NOTE: The siphon block (2) can be removed from the pump manifold (3) while the assembly is still attached to the feed center.

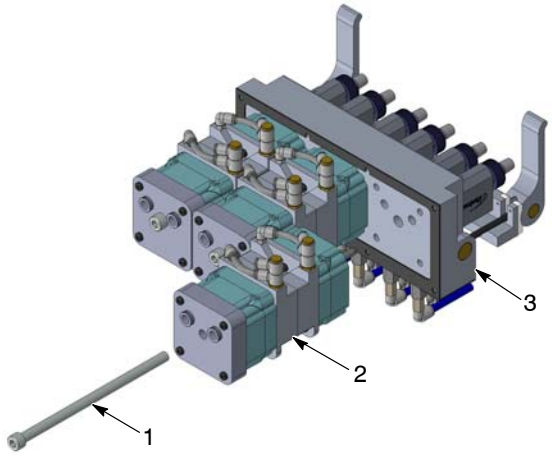

Figure 2 Removing the Siphon Block from the Manifold

Tool Required: 4-mm Allen wrench

2. See Figure 3. Remove the four cap screws (4) from the bottom of the siphon block (5).

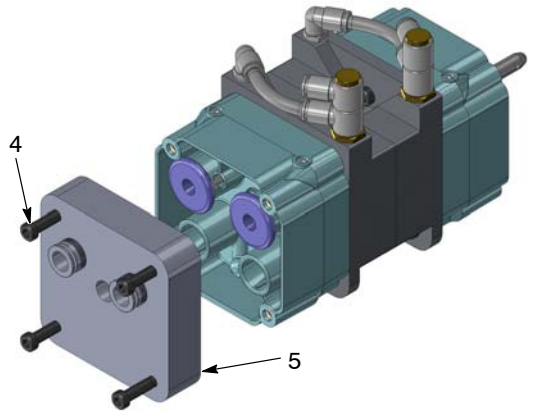

Figure 3 Removing Bottom Siphon Block Plate

3. See Figure 4. Remove three cap screws (6) from each middle siphon block (8) to remove the middle siphon blocks from the pinch valve blocks (7).

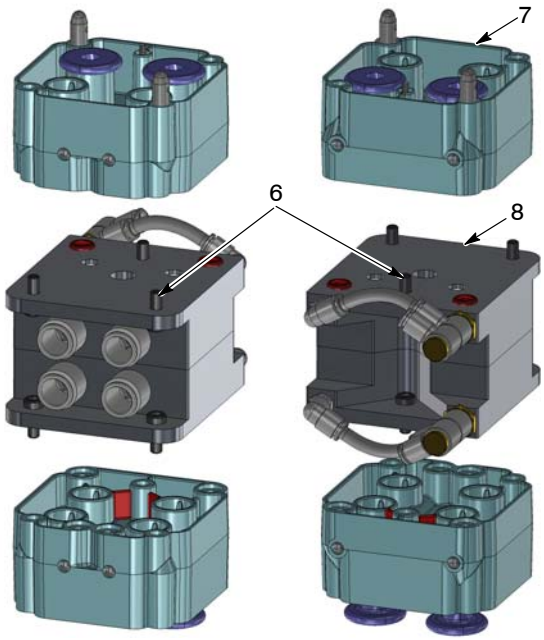

Figure 4 Separating Siphon Block Components

4. See Figure 5. Remove three cap screws (6) from each middle siphon block (8) to separate the two blocks from each other.

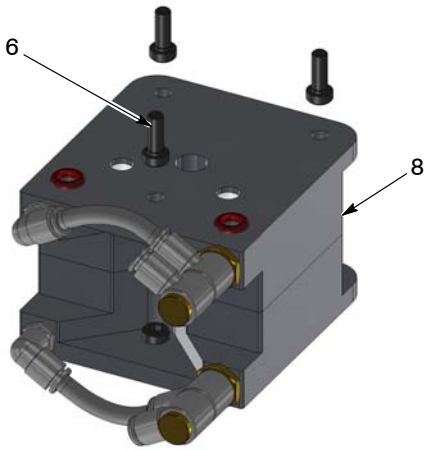

Figure 5 Separating Middle Siphon Blocks

Tool Required: Large flat-head screw driver

5. See Figure 6. Wiggle the screw driver back and forth to remove the fluid tubes (9).

   NOTE: Observe the orientation of the fluid tube during disassembly. The longer end of the fluid tube must be inserted into the middle block (8).

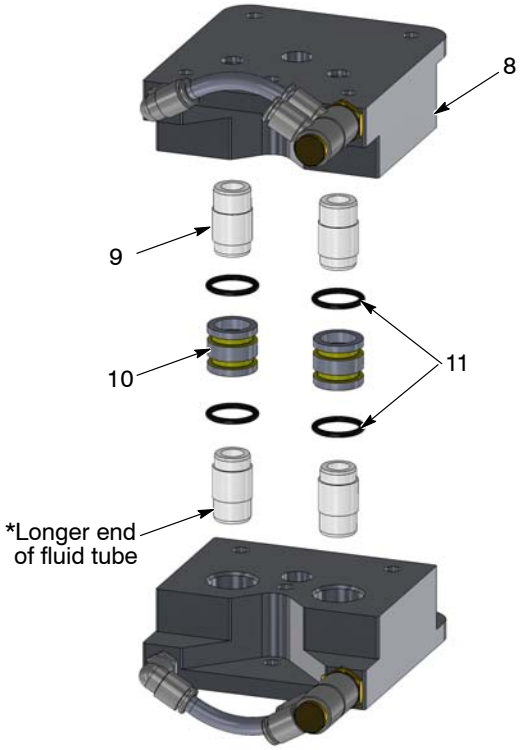

Figure 6 Middle Siphon Block Components

Tool Required: 10-mm Allen wrench

6. See Figure 7. Remove two fittings (14) from each middle block (8).

Tool Required: Large flat-head screw driver

7. See Figure 7. Remove two check valves (14) from each middle block (8). Use a finger to remove the two O-rings (12) from each middle block.

   NOTE: Figure 7 only shows two of the four fittings and check valves to be removed.

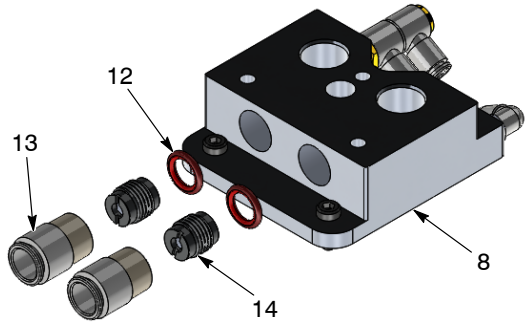

Figure 7 Middle Block Disassembly

Single-Pump Configuration

Dual-Pump Configuration

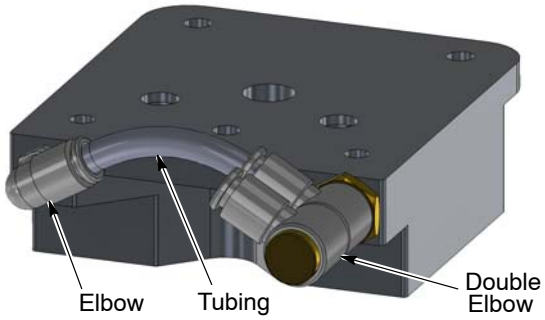

Figure 8 Block Configurations

NOTE: Note the difference between a middle block populated for one pump versus a middle block populated for two pumps.

Reassembly

See Figure 7.

1. Using a finger, securely seat two O-rings (12) in each middle block (8).
2. Using a large flat head screwdriver, insert two check valves (14) into each middle block (8).
3. Using a 10-mm Allen wrench, insert two fittings (13) into each middle block (8).
4. See Figure 6. To connect the two middle blocks (8), insert two fluid tubes (9) into each middle block. Secure two O-rings (11) on each bushing (10). Apply light pressure to secure the two middle blocks together.

   NOTE: The orientation of the fluid tubes is critical. The longer end of the fluid tube must be inserted into the middle blocks.

5. See Figure 5. Using a 4-mm Allen wrench, insert three cap screws (6) into the tapped side of the middle block (8) to secure them together.
6. See Figure 4. Using a 4-mm Allen wrench, insert a total of six cap screws (6) into each middle siphon block (8) to connect the middle blocks to the pinch valve blocks (7).
7. See Figure 3. Using a 4-mm Allen wrench, insert four cap screws (4) into the bottom siphon block (5) to connect the bottom block to the pinch valve blocks and middle blocks.
8. See Figure 2. Using an 8-mm Allen wrench, insert the socket head cap screw (1) into the bottom of the siphon block assembly (2) to secure it to the pump manifold (3).

Pinch Valve Replacement

NOTE: The figures in the *Pinch Valve Replacement* procedure may look different than the Spectrum VT pinch valve blocks.

CAUTION: Before placing the pinch valve body in a vise, pad the jaws. Tighten the vise only enogh to hold the pinch valve block firmly. Failure to observe may result in damage to the pinch valve block.

See Figure 9.

- The word *Up* is written on the top flanges of the pinch valves.
- The side of the pinch valve block has four air passages sealed with O-rings.

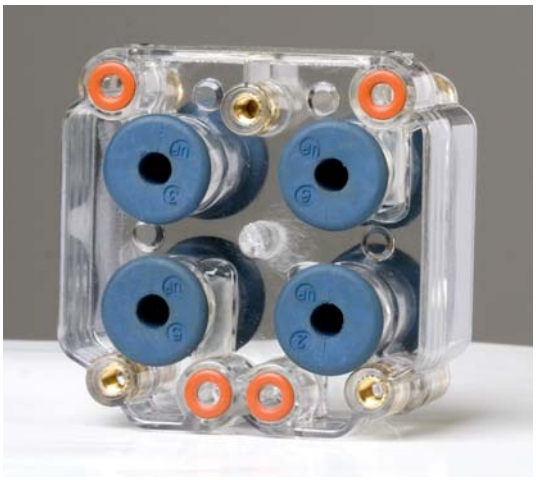

Figure 9 Top of Pinch Valve Block

Pinch Valve Removal

See Figure 10.

1. Place the pinch valve body in a padded vise.
2. Grasp the bottom flange of a pinch valve with one hand and pull it away from the valve body.
3. Use scissors to remove the flange, then pull the rest of the pinch valve out of the top of the valve body.

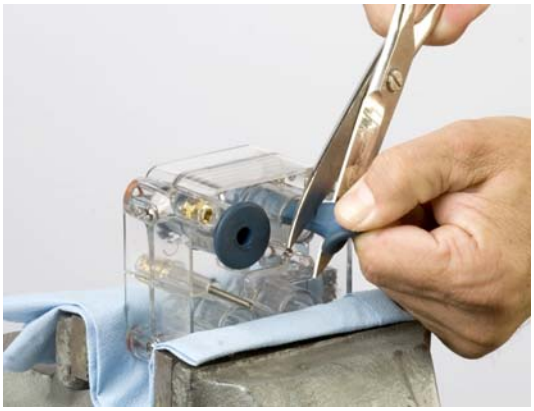

Figure 10 Pinch Valve Removal

Pinch Valve Installation

1. See Figure 11. Insert the pump pinch valve tool through one of the valve chambers, then insert the *Up* flange of the pinch valve into the bottom end of the pump pinch valve tool.

   NOTE: Align the pinch valve ribs with the square grooves in the valve chamber.

Figure 11 Inserting Pinch Valve into Pump Pinch Valve Tool

2. See Figure 12. Pinch the flat *Up* flange of the pinch valve, then feed one end of the flange into the valve chamber.

Figure 12 Pinching Flat Pinch Valve *Up* Flange

3. See Figure 13. Pull on the pump pinch valve tool until the end of the pinch valve is inside the valve body.

Figure 13 Pulling Pinch Valve into Valve Body

4. See Figure 14. Continue pulling on the pump pinch valve tool until the pinch valve pops through the valve body and the tool comes loose.

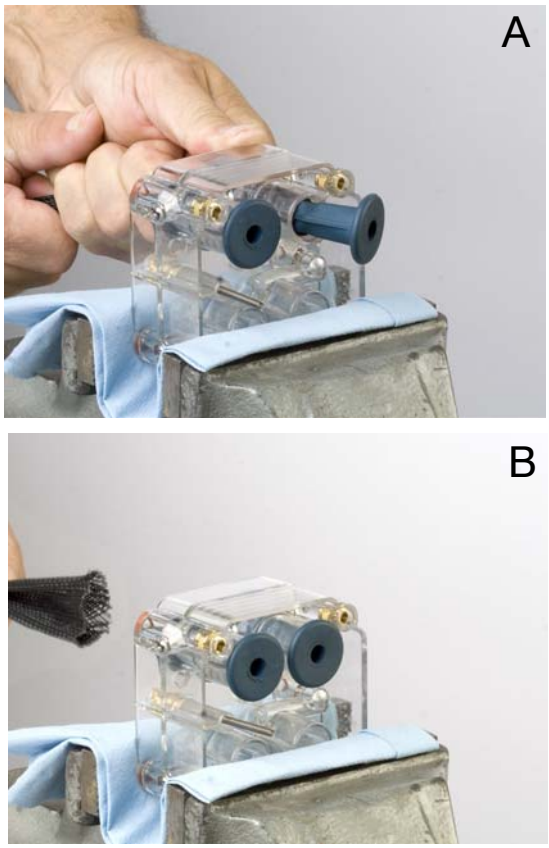

Figure 14 Pulling Pinch Valve through Valve Body

5. See Figure 15. Pull the pinch valve bottom flange away to check the alignment of the valve ribs with the square grooves in the valve body. Pull and twist the pinch valve to align the ribs with the grooves as necessary.

Figure 15 Checking Rib and Groove Alignment

Blanking Plate Procedure

See Figure 16.

The pump manifold must be configured according to the number of pumps being utilized. If the manifold is populated for less than six pumps, blanking plates must be used in order to block powder from contaminating unoccupied pump ports.

NOTE: The blanking plate placement is specified by the application engineer. If the blanking plates are installed incorrectly, the purge sequence will not function properly.

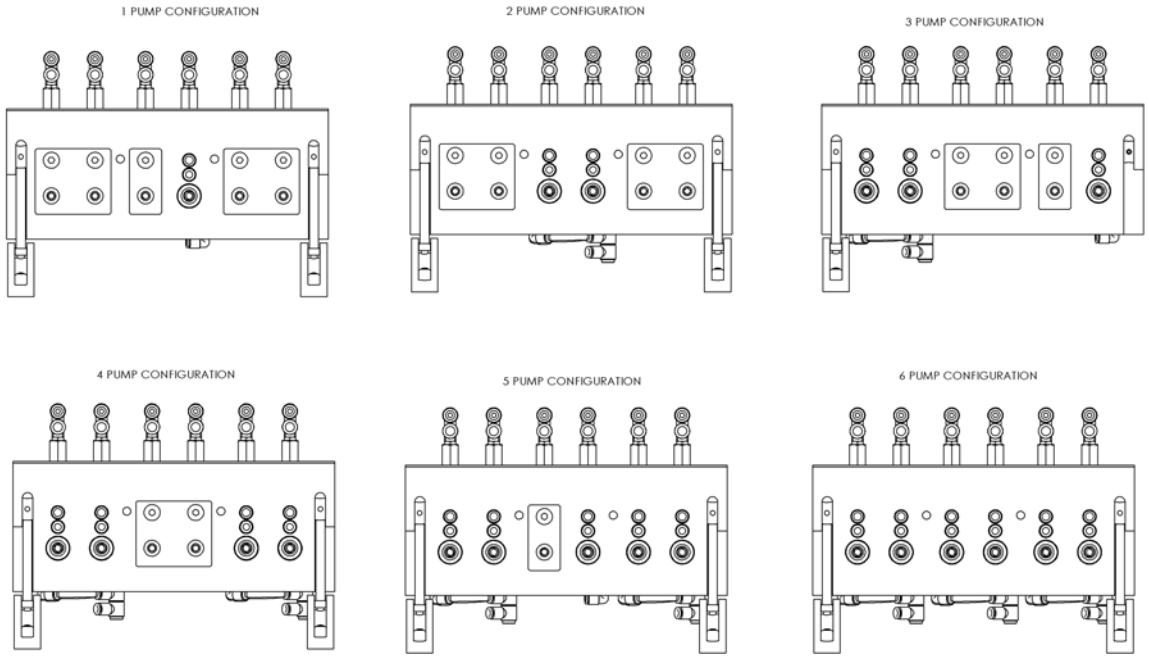

Figure 16 Pump and Blanking Plate Configurations

Blanking Plate Installation

See Figure 17.

NOTE: Clean the blanking plate (2) with isopropyl alcohol before applying the gasket (1). The gasket alignment is not symmetrical.

1. Insert the bushing (5) into the pump port.
2. Align the appropriate blanking plate (2) with the ports on the pump manifold.

   NOTE: There is a 1-pump and a 2-pump blanking plate depending on the configuration of the assembly.
3. Insert the 65-mm button head cap screw (4) through the top of the blanking plate.
4. See Figure 18. From the bottom side of the pump manifold, the washer (6) slides onto the 65-mm button head cap screw (4) and then the nut (7).
5. Using a 5-mm Allen wrench, insert the 25-mm button head cap screw (3) into the threaded pump port.

   NOTE: The manifold seal (8), Nordson part 1608597, comes pre-installed. If there is a need to replace the seal, apply adhesive to a syringe or Q-tip and securely set the seal in the manifold port.

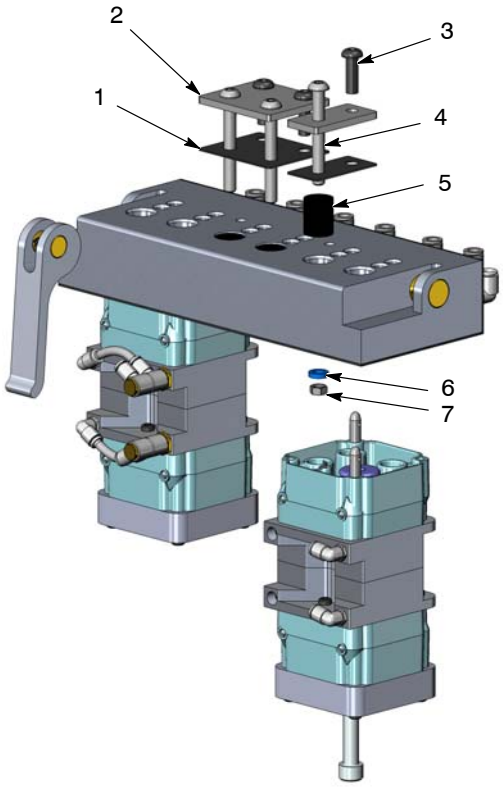

Figure 17 Installing Blanking Plate

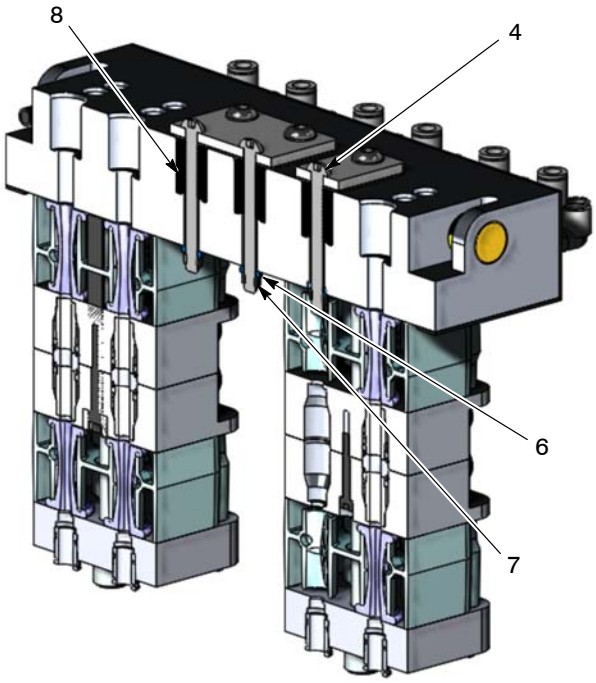

Figure 18 Siphon Block Pump Manifold Section View

Adjusting the Clamp Handle

See Figure 19.

1. Using a 2.5-mm Allen wrench, loosen the set screw (2).
2. Using a 5-mm Allen wrench, tighten the socket head cap screw (1) so it is fully seated onto the wear piece (3).
3. Using a 2.5-mm Allen wrench, tighten the set screw (2).

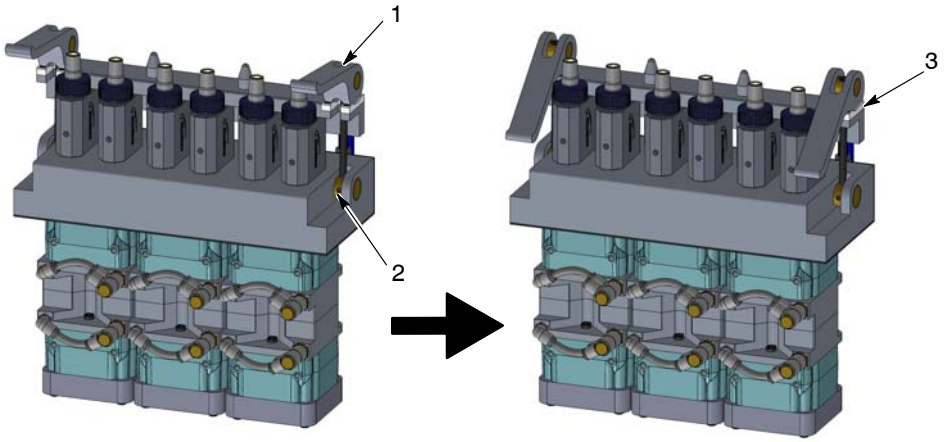

Figure 19 Clamp Handles

Parts

To order parts, contact Nordson customer support or a local Nordson representative.

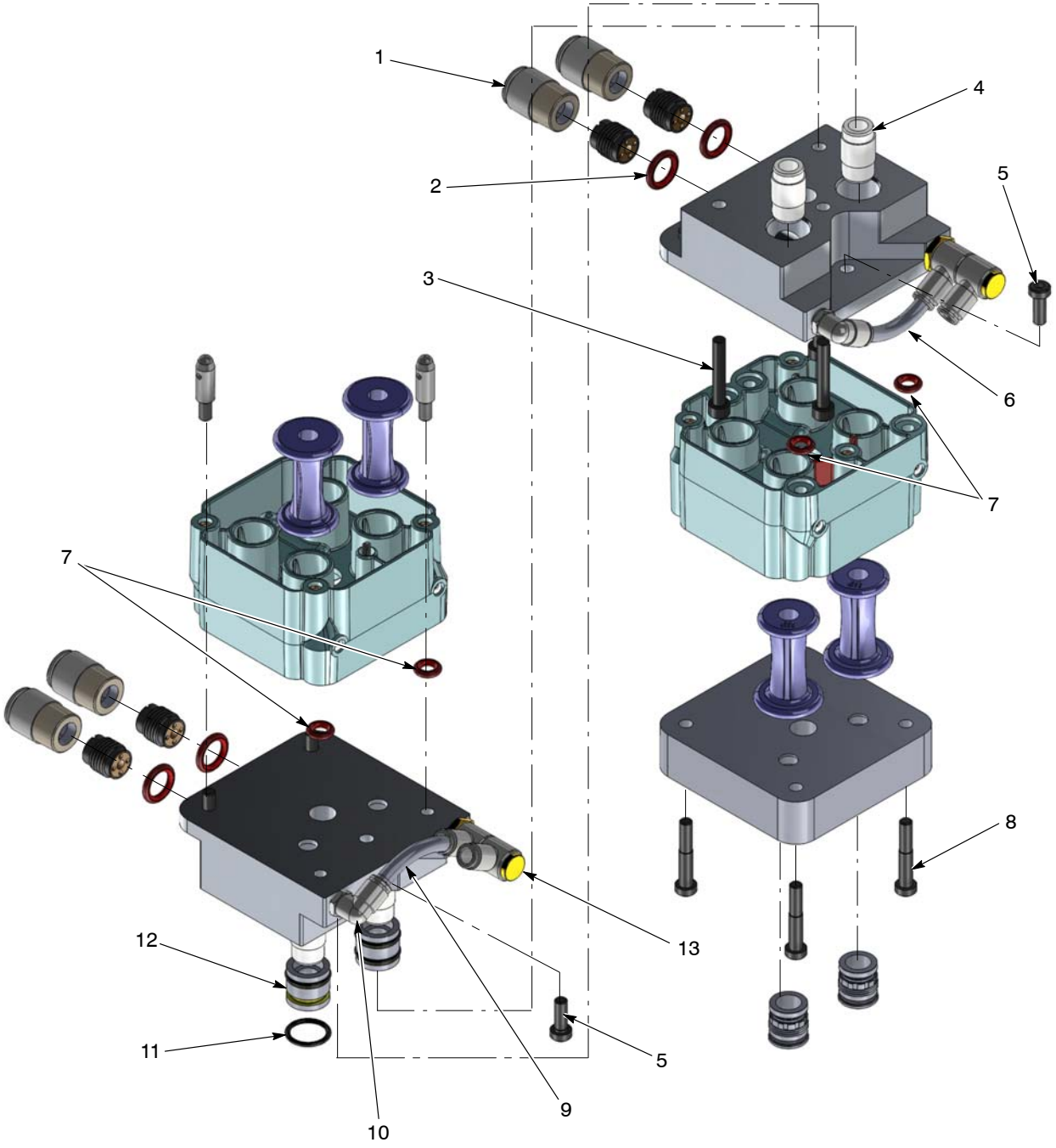

Figure 20 Dual Pump Siphon Block

Spectrum VT Siphon Pump Upgrade Kit

Item	Part	Description	Quantity	Note
—	1609212	SIPHON PUMP UPGRADE KIT, Spectrum VT	1	
4	1608575	• TUBE, fluid, filter, pump, Spectrum VT	2	
12	1608576	• BUSHING, chamber, siphon block, Spectrum VT	1	
11	1609132	• O-RING, –906 silicon	2	
13	1609131	• ELBOW, male, 6 mmx1/8 port, double universal	2	
2	941113	• O-RING, silicon, .438x.625x0.94 (–111)	2	
1	1609130	• TUBE FITTING, male, 12 mm, R 3/8	2	
9	900742	• TUBING, polyurethane, 6/4 mm, blue	67 mm	
6	900741	• TUBING, polyurethane, 6/4 mm, black	67 mm	
NS	1609186	• TOOL, pump manifold, Spectrum VT	1	
NS: Not Shown				

Spectrum VT Siphon Pump Pinch Valve Kit

Item	Part	Description	Quantity	Note
—	1609213	SIPHON PUMP, pinch valve, kit, Spectrum VT	1	
NS	1057294	• TOOL, installation, pump pinch valve	1	
NS: Not Shown				

Spectrum VT Siphon Pump Check Valve Kit

Item	Part	Description	Quantity	Note
—	1609214	SIPHON PUMP, check valve, kit, Spectrum VT	1	
2	941113	• O-RING, silicon, .428x.625x.094 (–111)	2	
NS	1609186	• TOOL, pump manifold, Spectrum VT	1	
NS: Not Shown				

Spectrum VT Siphon Pump Fluid Tube Kit

Item	Part	Description	Quantity	Note
—	1609215	SIPHON PUMP, fluid tube, kit, Spectrum VT	1	
4	1608575	• TUBE, fluid, filter, pump, Spectrum VT	2	

Spectrum VT 1-Pump Siphon Block Assembly Package

Item	Part	Description	Quantity	Note
—	1609156	SIPHON BLOCK, 1 pump, Spectrum VT, assembly, packaged	1	
2	–––––––	• SIPHON BLOCK, 1-pump assembly	1	
3	–––––––	• CAP SCREW, socket head, M10x1.5, 180-mm, steel, zinc	1	

Spectrum VT 2-Pump Siphon Block Assembly Package

Item	Part	Description	Quantity	Note
—	1609157	SIPHON BLOCK, 2 pump, Spectrum VT, assembly, packaged	1	
1	–––––––	• SIPHON BLOCK, 2-pump assembly	1	
3	–––––––	• CAP SCREW, socket head, M10x1.5, 180-mm, steel, zinc	1	

Issued 07/16