

Clearing Blocked UFC Pathways

NOTE: This information is provided as an aid in Technical Support for trained support personnel. Do not attempt to service the system without the appropriate technical training and the proper tools.

IMPORTANT: These procedures are not for customer use.

Product	ADVIA® 120/2120/2120i Hematology systems
Estimated Time	1 to 2 hours
References	<i>ADVIA 120/2120 Service Guide</i> , PN 067-S061-xx <i>Cleaning the Perox Chamber Ports</i> , PN 067D0225-02

Parts Required

Description	SMN	Part No	Qty
Needle cleaning kit	10329234	113-B911-01	1
Flared tube assembly	08698323	067-0573-15	1
Tubing, tygon, .010 ID	NA	562-0005-01	1
Support Bulletin (this document)	NA	067D0234-01	1

Purpose

This support bulletin provides useful procedures for removing blockages from the Uni-fluidics Circuit (UFC), PN 067-B293-xx. UFCs are often replaced due to clogs or blockages in the various pathways within the UFC. Procedures in this bulletin may be helpful in clearing the blocked pathways and eliminating the need to replace the UFC.

These techniques are for specific UFC areas but can also be applied to alternative UFC areas as required. Before replacing a UFC, perform the procedure that best relates to the pathway that is blocked.

IMPORTANT: Please read each entire procedure before performing it.

Uni-Fluidics Circuit (UFC), PN 067-B293-xx

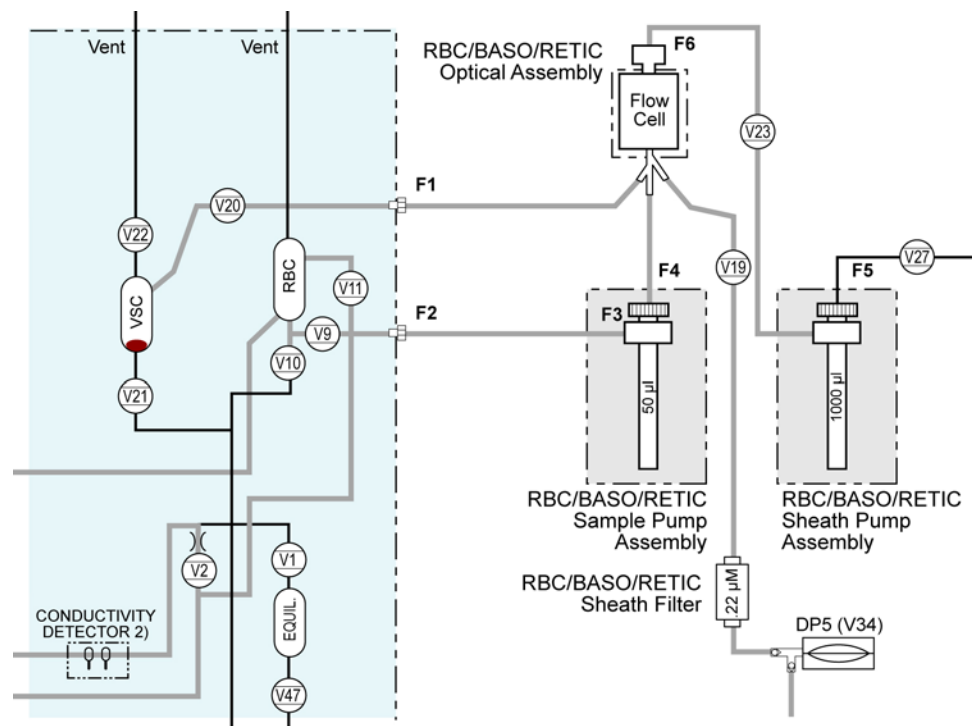
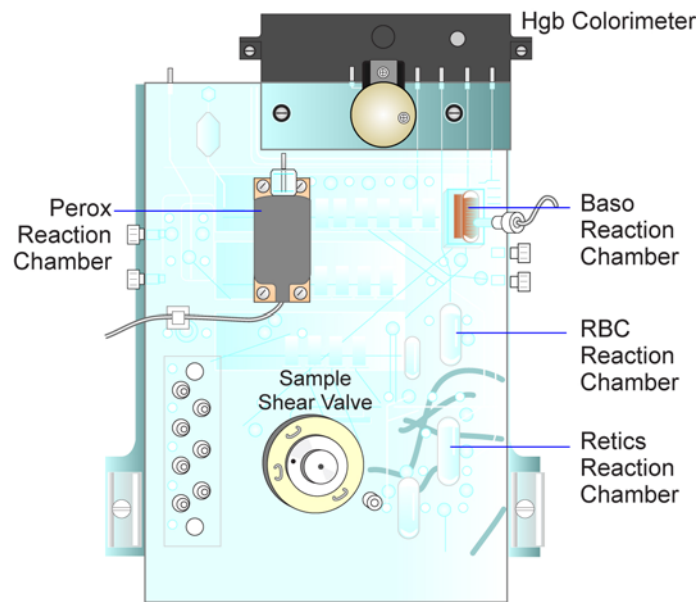


Figure 1. UFC with schematic showing valve and vent connections

Procedures



BIOHAZARD

All products or objects that come in contact with human or animal body fluids should be handled, before and after cleaning, as if capable of transmitting infectious diseases. Wear facial protection, gloves, and protective clothing.

The operator should follow the recommendations to prevent the transmission of infectious agents in health-care settings as recommended by the Clinical and Laboratory Standards Institute (formerly NCCLS) in *Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline - Third Edition*. 2005. CLSI Document M29-A3. This document contains complete information on user protection and it can be used as reference material for instructions on laboratory safety..

Cleaning the RBC Pathways

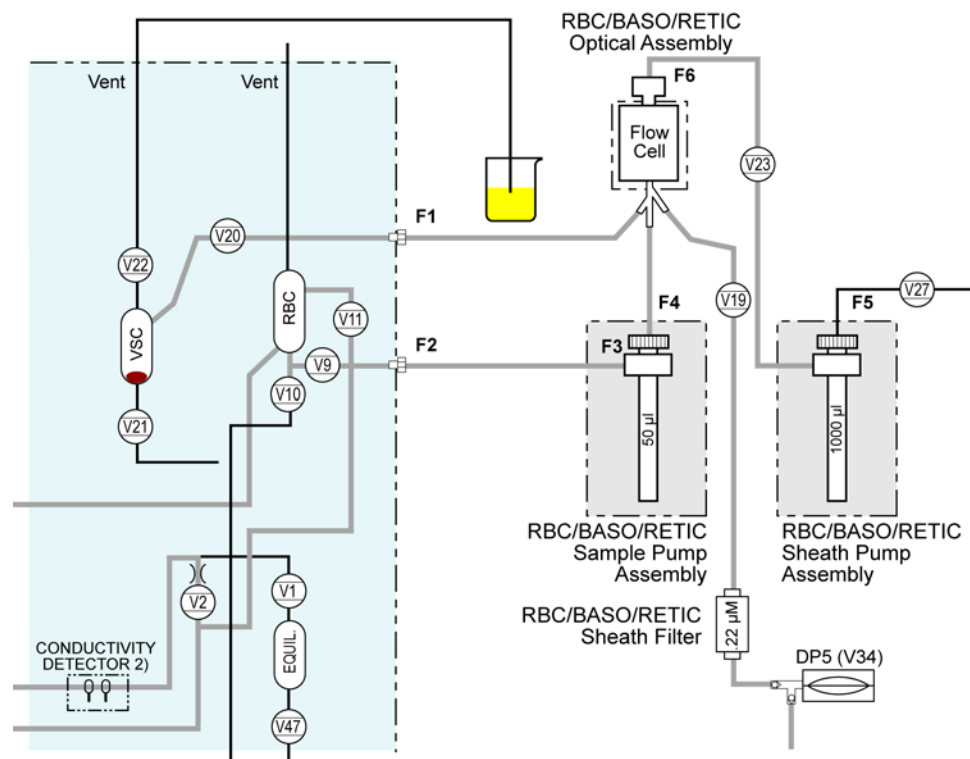


Figure 2. Transmission tubing connection to V22

1. At the Utilities menu select **Exerciser > Valves**.
2. Open valves **V22** and **V21**.
3. Connect a piece of transmission tubing to the **V22** vent line and try to aspirate 25% bleach from a beaker. See **Figure 2**.
4. If the 25% bleach solution is aspirated, lift the transmission tubing and allow air segments to go through in order to increase the wash efficiency.

Clearing blocked UFC pathways

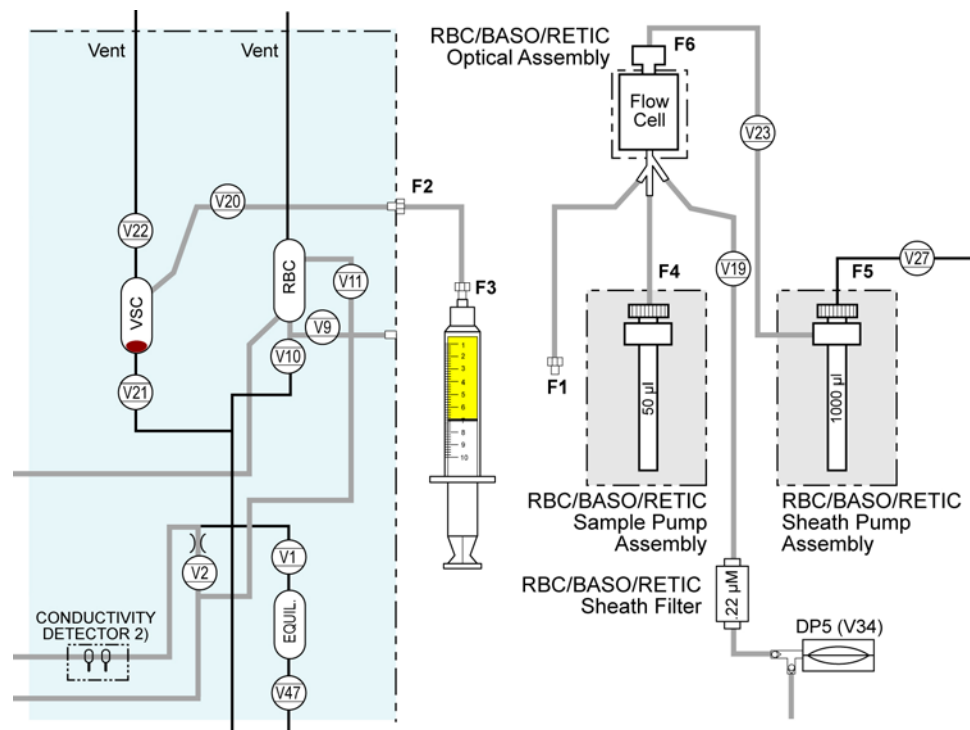


Figure 3. Syringe with 25% bleach solution connected to upper UFC output port

5. After the path is cleared thoroughly, rinse with distilled water.
6. If no liquid is aspirated, try the following configuration:
 - a. Open valves **V20, V21 & V22**.
 - b. Disconnect and remove the fitting **F1**.
 - c. Disconnect and remove the Teflon tubing at **F2** and **F3** (PN 067-0573-15).
 - d. Connect the fitting **F2** to the upper right output port of the UFC. See **Figure 3**.
 - e. Connect a syringe, PN 113-B911-01, filled with 25% bleach to **F3**.
 - f. Close **V22** (this prevents bleach solution from entering the vent line).
 - g. Gently push on the plunger to fill the VSC with the 25% bleach solution.
 - h. Close **V21** and **V20**.
 - i. Allow to soak for 10 minutes.
 - j. From time to time select the **Do valve check** button.
 - k. Open **V20, V21** and **V22** again.
 - l. Repeat steps b through h until the pathway is clear.
7. If the blockage still does not clear, try the following configuration.
 - a. Close **V22** while **V20** and **V21** are still open.
 - b. Slowly increase the pressure on the syringe plunger.

Clearing blocked UFC pathways

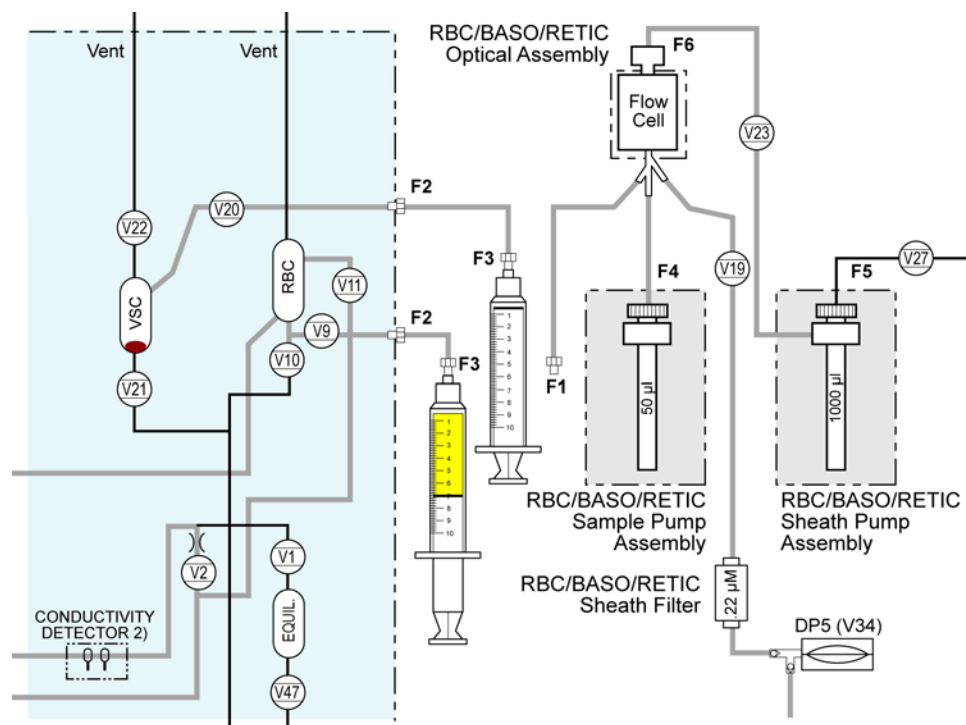


Figure 4. Second empty syringe connected to the shuttle output port

8. If steps 6 and 7 do not clear the blockage, add a second syringe to the configuration.
 - a. Use a second piece of Teflon tubing with fittings **F2** and **F3** and connect from the RBC channel output port.
 - b. Swap and connect a second empty syringe, as shown in **Figure 4**.
 - c. Connect a short piece of transmission tubing to the RBC chamber vent line and clamp it.
 - d. Clamp the waste line from the back of the instrument to the waste container.
 - e. Open **V9**, **V10**, **V20** and **V21**.
 - f. Simultaneously push on the 25% bleach syringe plunger and pull on the empty syringe plunger.
The RBC pathway should clear.
 - g. After the path is cleared, rinse the valves thoroughly with distilled water.
 - h. Disconnect the clamp to the waste line from the back of the instrument to the waste container.
 - i. Close **V9**, **V10**, **V20** and **V21**.
 - j. Re-connect the tube assemblies to their correct positions.

Cleaning Perox Pathways

Perox buildup can block the V5, V6 or V7 pathways causing poor priming of the sample syringe and the CFM or Perox chamber overflow. This will impact the Perox results and the Perox rates. See **Figure 5**.

Before cleaning the Perox pathways, ensure that the Perox chamber is removed and cleaned using the Perox cleaning kit, PN 067-B547-01, in conjunction with the support bulletin *Cleaning the Perox Chamber Ports*, PN 067D0225-02.

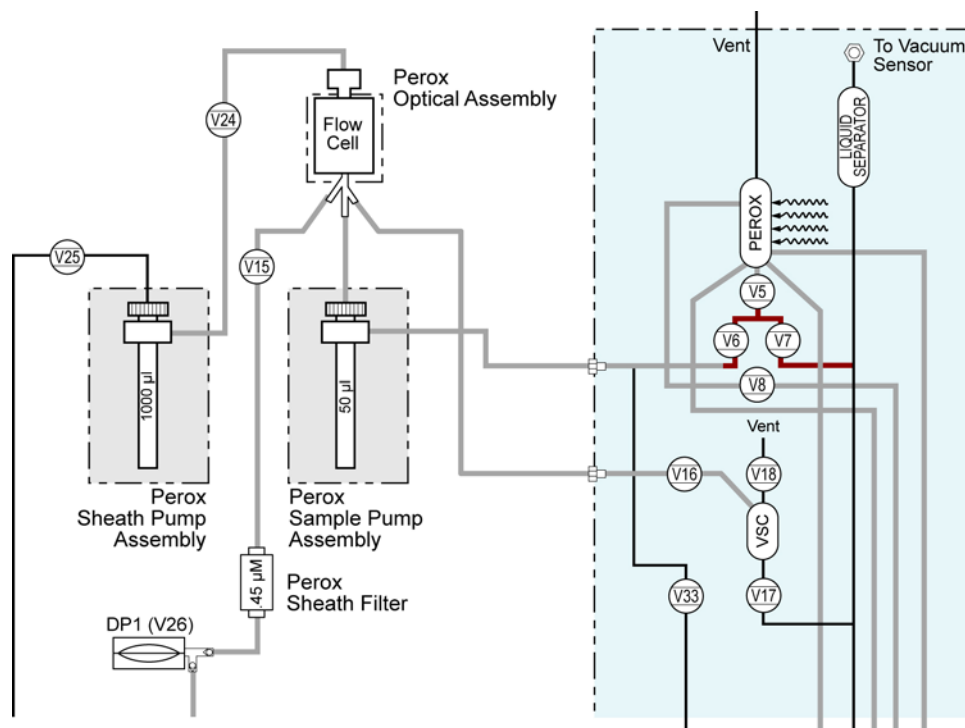


Figure 5. Perox build-up in valves V5, V6, and V7

NOTE: Inspect the Perox cap o-ring and replace it if necessary. If the o-ring quality is degrading, rubber particles and pieces of the cap can fall into the Perox reaction chamber.

1. At the Utilities menu select **Exerciser > Valves**.
2. Open valve **V5** and **V7**.
3. A plastic pipette can be used to pour EZ WASH drop by drop into the chamber.
4. Repeat the same sequence with **V5** and **V7** open, or **V5, V6, V16**, and **V17** open, or **V5, V6, V24** and **V25** open.
5. If the EZ WASH is aspirated, allow some air to go through the line in order to increase the wash efficiency.
6. After the path is cleared, rinse thoroughly with distilled water.
7. Be sure to close **V5, V6, V7, V16, V17, V24** and **V25**.
8. Open **V6** and **V7**.

Clearing blocked UFC pathways

9. Disconnect the Teflon line fitting removed from the Perox sample syringe.
10. Try to aspirate EZ WASH from a beaker. See **Figure 6**.
11. If the EZ WASH is aspirated, lift the Teflon line and allow air segments to go through the line in order to increase the wash efficiency.

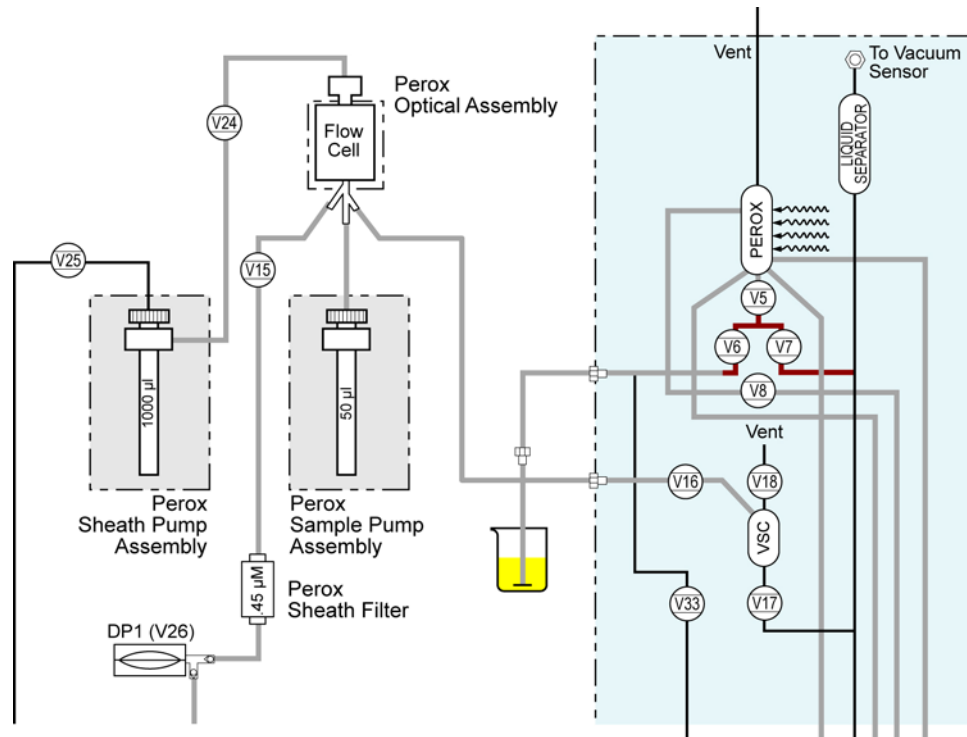


Figure 6. Teflon line from the Perox sample syringe in a beaker of EZ WASH

12. After the path is cleared rinse thoroughly with distilled water.
13. If this does not resolve the problem, place some towels below the Perox reaction chamber assembly and cautiously remove it from the UFC front plate.
NOTE: Remember to save the O-rings.
14. Connect a syringe filled with EZ WASH to the Perox sample outlet port line.

15. Keeping **V5** and **V6** open, gently apply pressure on the syringe plunger.
See **Figure 7**.



WARNING

Liquid may come directly from the block at the Perox reagent ports. Use paper towels to block the liquid. After the path is cleared thoroughly rinse with distilled water.

The EZ WASH cleaning solution contains Sodium Hydroxide. You **must** block the Perox reagent ports to avoid contacting the cleaning solution.

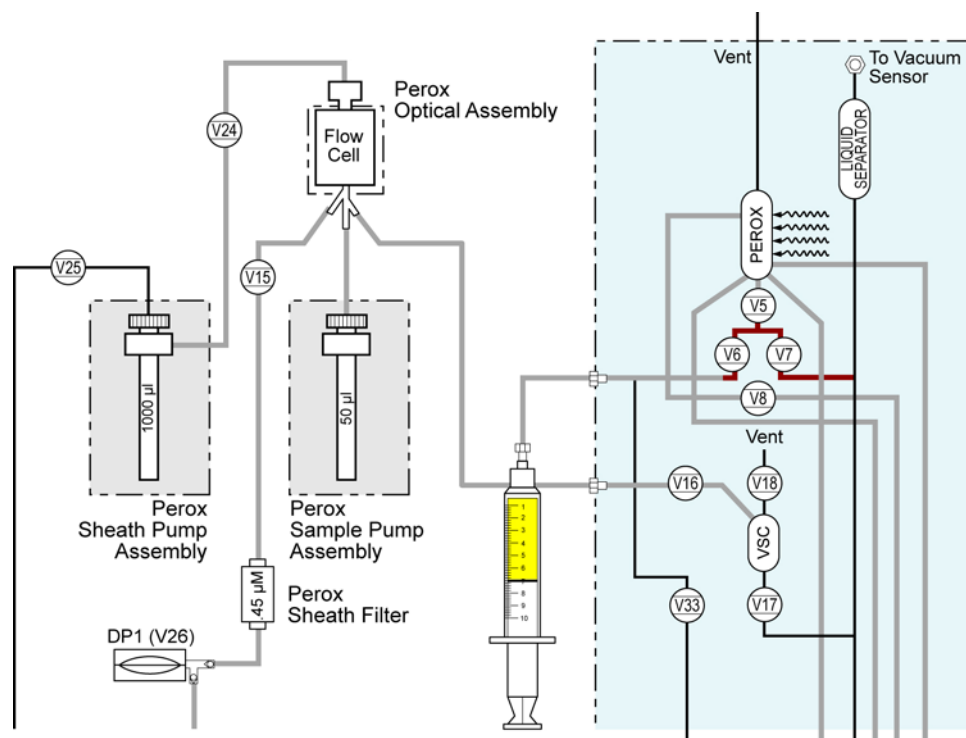


Figure 7. Syringe with EZ WASH connected to the sample output port

16. Connect a syringe filled with EZ WASH to the Perox shuttle inlet port of the UFC.
17. Connect a second Teflon tube assembly, PN 067-0573-13, to an empty syringe.

18. Connect the other end of the tube to the Perox sample outlet port. See **Figure 8**.

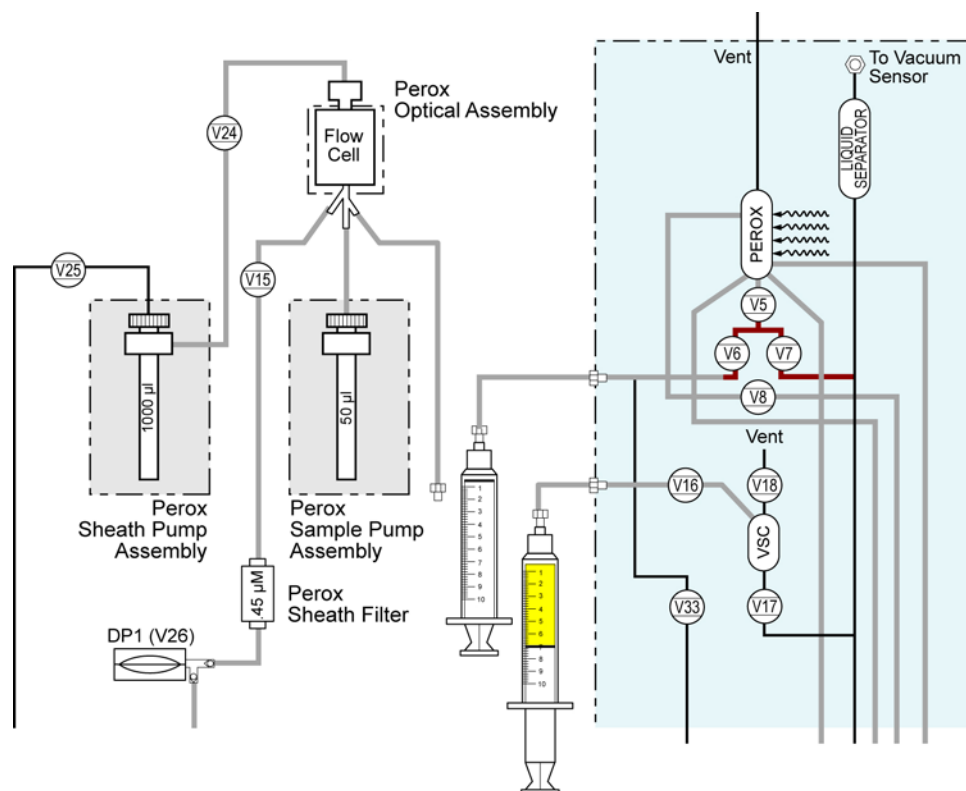


Figure 8. Two syringes connected to the Perox ports

19. Clamp the waste line going from the back of the instrument to the waste container.
20. Clamp the vacuum line coming from the rear of the liquid separator.
21. Open **V6**, **V7**, **V16** and **V17**.
22. Gently push on the syringe plunger, filled with cleaning solution and at the same time pull on the empty syringe plunger.
23. After the path is cleared thoroughly rinse with distilled water.
24. Disconnect the clamp to the waste line from the back of the instrument to the waste container and from the rear of the liquid separator.
25. Close **V6**, **V7**, **V16**, and **V17**.

Cleaning the Perox VSC

Perox buildups coat the Perox VSC which is putting this chamber at risk for blockages in case they fall to V17. See **Figure 9**.

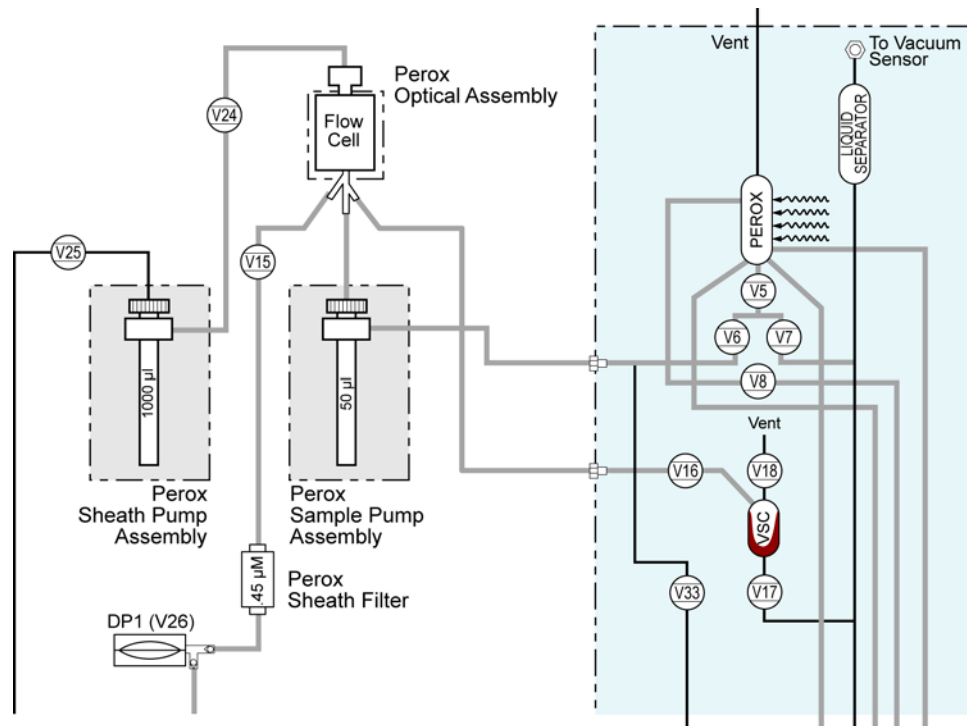


Figure 9. Perox VSC and V6 blockages

1. Using the Teflon line connected between the Perox sample syringe and the V6 outlet port on the UFC, connect the syringe from the Perox cleaning kit, filled with EZ WASH, to the Perox VSC V16 outlet port.
2. At the Utilities menu select **Exerciser > Valves** and open **V16** and **V18**.
3. Connect a 50-cm (20 inch) piece of the 15/16-in. transmission tubing, PN 116-0536-15, to the Perox VSC vent line, placing the other end in a beaker to collect liquids.

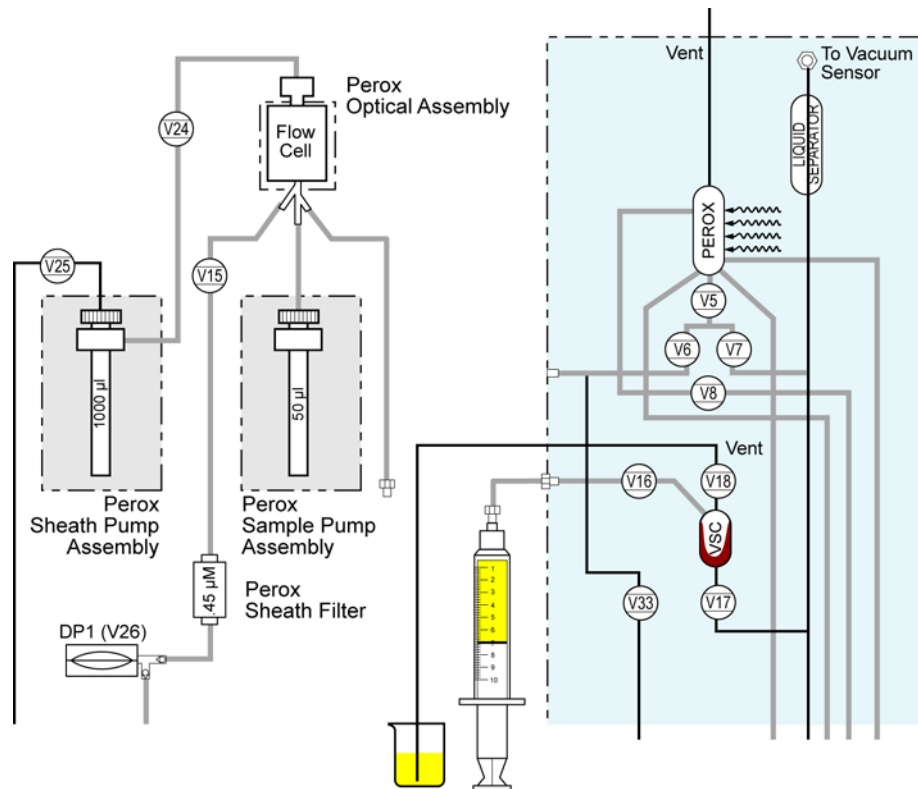


Figure 10. Syringe and beaker line connected to the Perox VSC V16 and V18 ports

4. Strongly push and pull on the syringe plunger to create the significant turbulence in the Perox VSC.
5. Leave the Perox VSC to soak for several minutes with EZ Wash inside, then push and pull on the syringe plunger again. See **Figure 10**.
6. Once the brown coating disappears, flush well with distilled water.
7. Close **V16** and **V18**.

Cleaning Sample Shear Valve Pathways

Perform the maintenance procedure *Cleaning the Shear Valve Pathways* in the ADVIA 2120 Operator's Guide using 25% bleach solution.

If the bleach solution cannot be aspirated; perform the following:

1. Connect flared tube assembly, PN 067-0573-15, to a flowcell cleaning syringe filled with 25% bleach solution.
2. Disconnect the UFC bloodline, PN 067-1360-01, from the front of the UFC and connect the syringe/tube assembly to the UFC.
3. Verify valves **V72**, **V73**, **V74**, **V47** and **V1** are all open.
4. Gently push the bleach solution into the UFC until the pathway is unblocked.

Clearing blocked UFC pathways

5. After the path is cleared, rinse thoroughly with distilled water.
6. Be sure to close **V72, V73, V74, V47, and V1**.

Cleaning V-46 Pathways

Because the MCTS aspiration mode is not often used and flushed with rinse, the V46 pathway can become clogged. See **Figure 11**.

The following procedure utilizes a syringe from a cleaning kit equipped with a piece of Tygon tubing, PN: 562-0005-01.

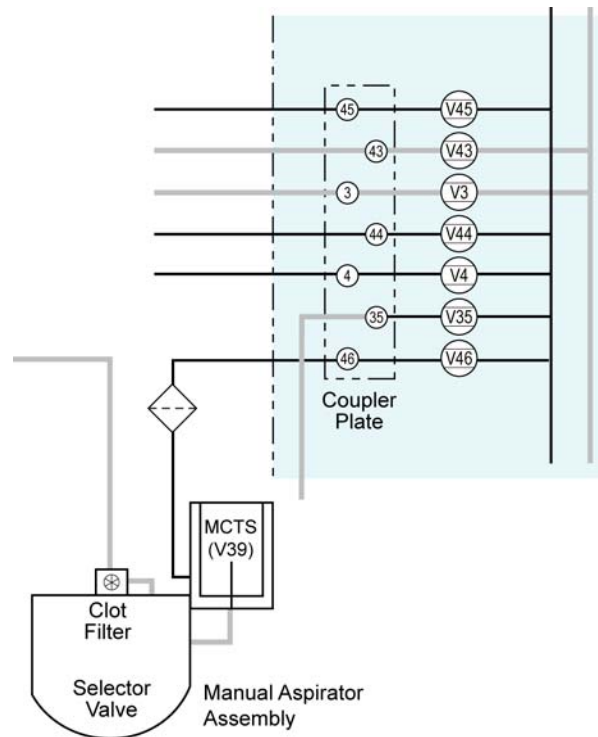


Figure 11. MCTS connected to the V46 pathway

1. When the system is ready to run, at the Utilities menu select **Exerciser > Valves**.
2. Open valves **V4, V5, V7, V17, V18, V44, V45 and V46** to break the vacuum.
3. Remove the coupler plate, PN 067-B631-01, and place the empty syringe tip equipped with one-half inch of Tygon tubing, PN 562-0005-01, into the vacant V46 port hole.

4. Press the syringe and firmly pull on the plunger. See **Figure 12**.

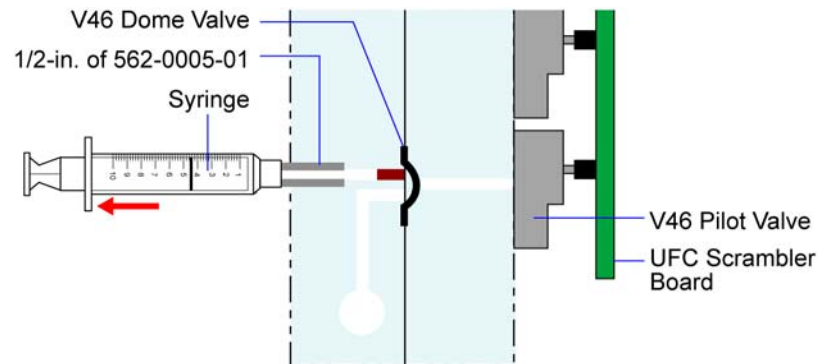


Figure 12. Using syringe with 1/2-in. Tubing

7. Close and open **V46** and select the **Control valves** button many times. This will generate hydraulic turbulence and help the V46 dome valve and pathway to unclog.
8. Remember to open **V4, V5, V7, V17, V18, V44, V45, and V46** again.
9. Once the V46 path is clear, aspirate bleach through the line and rinse thoroughly with distilled water. See **Figure 13**.
10. Remember to close **V4, V5, V7, V17, V18, V44, V45, and V46**.

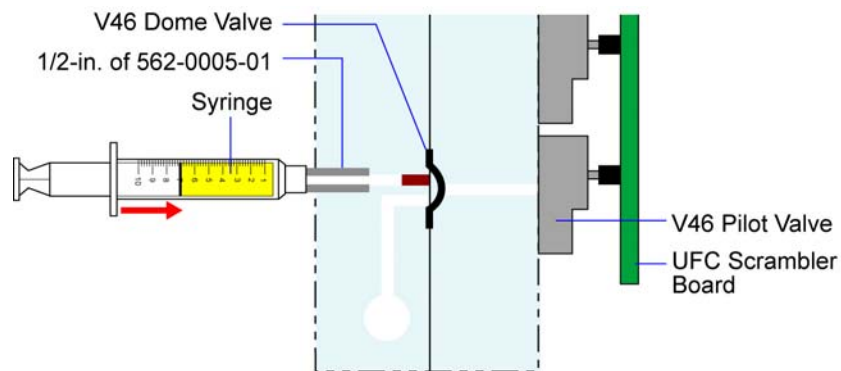


Figure 13. Using syringe with bleach solution

Cleaning the Retic Pathway

To clear a blockage in the Retic drain pathway:

1. Connect a syringe, PN 113-B911-01, filled with 25% bleach to fitting **F4**. See **Figure 14**.
2. At the Utilities menu select **Exerciser > Valves**.
3. Open **V64** and gently push on the syringe, filling up the Retic chamber with 25% bleach.
4. Close **V64** and open **V65**.
If the chamber drains the clog is free.
5. If the chamber does not drain, open **V64** keeping **V65** open.
6. Clamp off the Retic vent line.
7. Gently push the bleach solution into the UFC until the pathway is unblocked.
8. After the path is cleared, rinse thoroughly with distilled water.
9. Be sure to close **V64** and **V65** and remove the clamp.

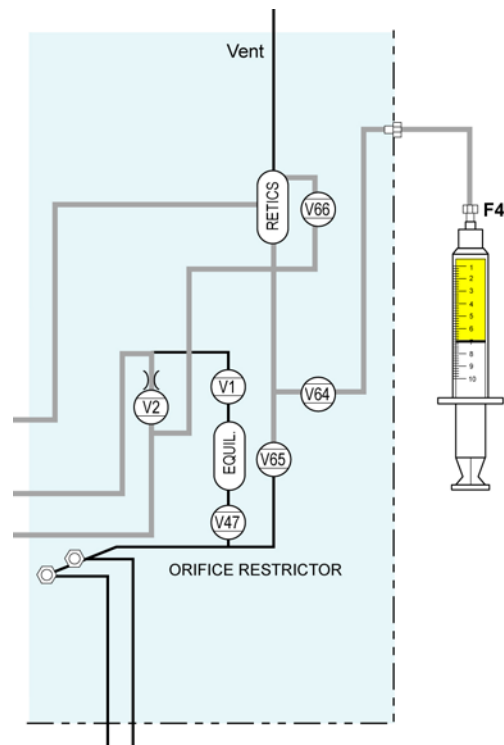


Figure 14. Syringe with 25% bleach connected to V64 pathway

Trademark Information

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