# Troubleshooting System Blockage

Use this procedure if you have isolated a chromatography/spectrum problem to a restriction or clog in your ACQUITY UPC²® system.

***CAUTION:*** ***OBSERVE ALL APPROPRIATE SAFETY AND HANDLING PRECAUTIONS (SEE THE RELEVANT Overview and Maintenance Guide). IF YOU HAVE ANY DOUBT ABOUT YOUR ABILITY TO PERFORM THIS PROCEDURE, CONTACT WATERS TECHNICAL SERVICE FOR ASSISTANCE.***

## Parts required

**Table 1: Parts Required[a]**

| Part number | SAP description |
|---|---|
| 700002747 | Pin Plug, 1/16”, High Pressure, (Pkg/5) |
| WAT084078 | Cap, FM 05 Hex SS |
| 700002636 | Union, .020 ID, V-Detail, (1ea) |

a. To ensure that part numbers are up to date, check the appropriate part locator in the Waters Portal.

## Disconnecting fittings to isolate blockage

1. From the plot properties window, set Amount of Data Shown to **1 minute.**
2. In the BSM plot properties window, deselect all plots except for Primary B Pressure and Accumulator B Pressure.
3. Remove the $CO_2$ inlet (the tube coming from P5 on vent valve) from the 250-µL mixer and install a V-detail pin plug into the mixer inlet.
4. Connect a cap plug (WAT084078) to the $CO_2$ mixer inlet tube.
5. Replace the column with a union.
6. Run 100% methanol (MeOH) at 1.0 mL/min, with ABPR set to **Off,** Column Position set to location of union, and Column Temp set to **Off.** Allow the accumulator pressure to equilibrate.
7. Disconnect fitting at the ABPR inlet (position 1 on Figure 1).
   - If pressure *on the B-side accumulator trace* is less than (<) 300 psi, you do not have a blockage before the ABPR.

   ***NOTE:*** *Do not observe system pressure for this step.*

   - If pressure on the B-side accumulator trace is above (>) 300 psi, disconnect fittings, proceeding upstream until the pressure drops below 300 psi. Proceed in the order indicated in Figure 1 and Table 2.

   ***NOTE:*** *To relieve pressure, slowly loosen the fitting. Use a tissue to prevent solvent spray and to collect any spilled solvent.*
8. Once the pressure drops below 300 psi, replace the component downstream from the fitting you just loosened.

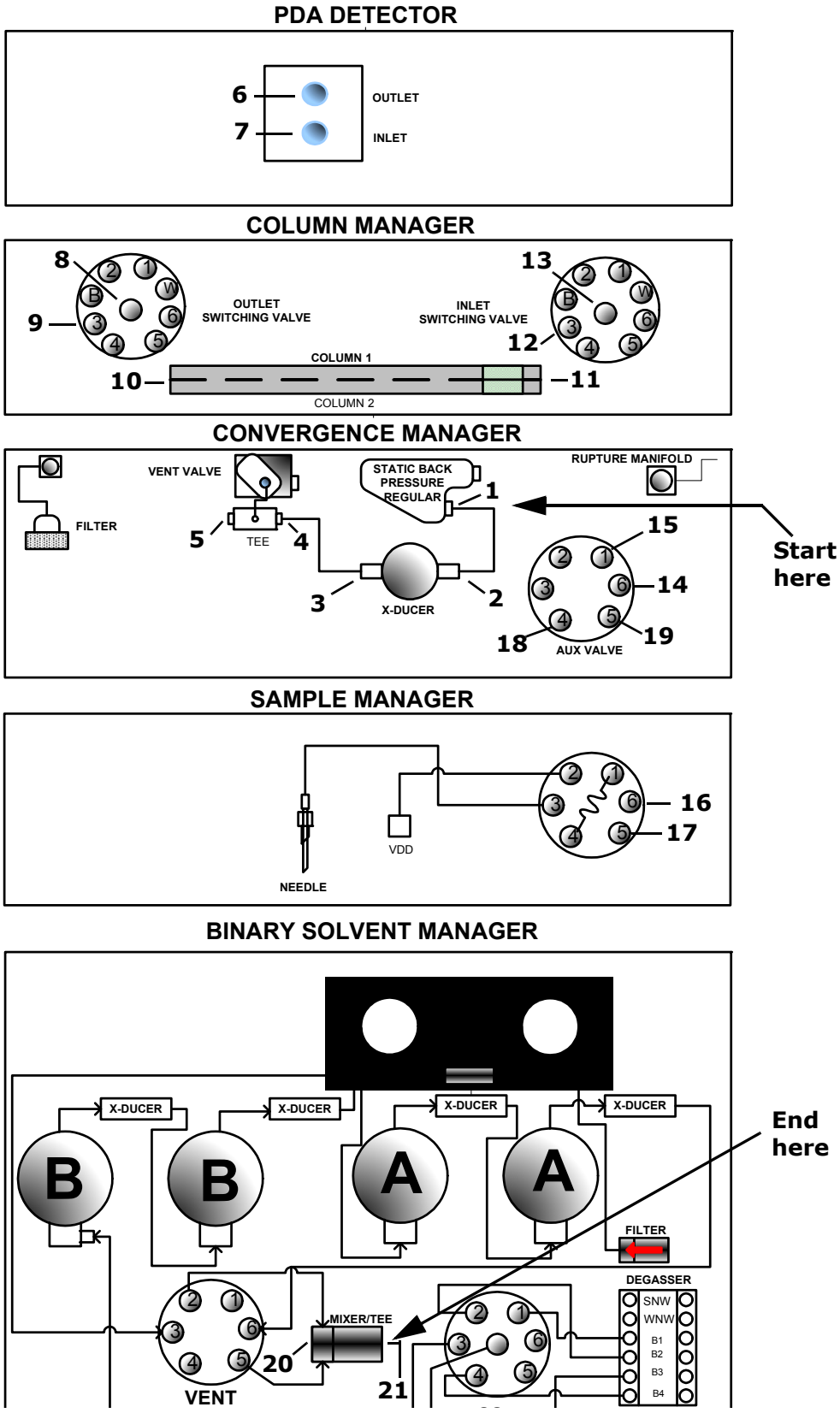


*Figure 1 - Disconnecting fittings to isolate a blockage*

**Table 2: Fitting locations**

| Location number | Description |
|---|---|
| **1** | ABPR inlet |
| **2** | Transducer outlet |
| **3** | Transducer inlet |
| **4** | Vent valve tee outlet |
| **5** | Vent valve tee inlet |
| **6** | PDA outlet |
| **7** | PDA inlet |
| **8** | Column manager outlet valve center port |
| **9** | Column manager outlet valve port 3 |
| **10** | Column outlet |
| **11** | Column inlet or guard column |
| **12** | Column manager inlet valve port 3 |
| **13** | Column manager inlet valve center port |
| **14** | Convergence manager auxiliary valve port 6 |
| **15** | Convergence manager auxiliary valve port 1 |
| **16** | Sample manager injection valve port 6 |
| **17** | Sample manager injection valve port 5 |
| **18** | Convergence manager auxiliary valve port 4 |
| **19** | Convergence manager auxiliary valve port 15 |
| **20** | BSM 250-µL mixer inlet |
| **21** | BSM 250-µL mixer outlet |