SIDEPAK™ SP730 Bypass Guide

To quickly determine the Bypass setting of the SIDEPAK™ SP730, use the following procedure.

Internal Bypass Procedure

1. Start up the SP730 pump and let it warm up for 2 minutes.
2. Close the fine control screw on the top of the SIDEPAK™ SP730 (opposite side of the pump from the spool valve) using a flathead screwdriver and turning gently clockwise to the right until the fine control screw is hand tight. Now, open the fine control screw a total of seven (7) full revolutions counter-clockwise to set the fine control at a starting point for low flow operation of the SIDEPAK™ SP730. This may have to be adjusted later in the flow setpoint procedure depending on the type of sorbent tube being used and its associated back pressure.
3. Select the MAIN MENU ▲▼ / FLOW Setpnt screen, then press ↵.
4. The display now shows the ADJUST FLOW, XXXX cc/min ▲▼ screen.
5. Set the ADJUST FLOW screen to 1500 cc/min using the ▲▼ arrow keys, then press ↵ two times to accept the new flow rate setpoint and to restart the pump.
6. Insert a flathead screwdriver into the Bypass Flow valve (screw to the right of the belt clip). If needed, turn the Bypass valve so the screw is in a horizontal position.

7. Observe the alternating ADJUST FLOW, 1500 cc/min ▲▼ screen and the MEAS FLOW, XXXX cc/min ▲▼ screen.
   - The Bypass setting is in Position #1 if the MEAS FLOW, XXXX cc/min screen is indicating a flow rate near 1500 cc/min.
   - If the pump is running at high RPM and the "MEAS FLOW, XXXX cc/min" screen indicates less than 500 cc/min, the pump is in ***Position #3*** (bypass fully open). Turn the Bypass screw valve 180 degrees to Position #1. The pump RPM will slow down and the "MEAS FLOW, XXXX cc/min" will approach 1500 cc/min.
8. You have now determined what Bypass position you are in and can proceed from here to set the SP730 for any of the flow ranges that you would like:
   - Constant Flow Range
     - ✓ Position #1 200 – 3,000 cc/min
   - Integrated Bypass Ranges
     - ✓ Position #2 175 – 350 cc/min
     - ✓ Position #3 75 – 250 cc/min
     - ✓ Position #3 20 – 175 cc/ min (with fine control adjust)

It should be noted that these Bypass Position flow ranges are **only a guide and a starting point** for setting flow rates with various types of sampling media. You may find that a flow setpoint may not be achieved or you get "flow blocked" indications in the beginning Bypass Position. **If the beginning Bypass position does not work, try another Bypass Position.** For example, you are in Position #3, sampling with a sorbent tube and want to sample at a flow rate of 200 cc/min, and you get a "flow blocked" or cannot achieve the desired flow rate. Try setting the Bypass Position to #2. Typically, what is found in this situation is that the sorbent tube has a much higher back pressure and flow resistance than anticipated for the beginning Bypass Position, and all the air flow is going through the Bypass (path of least resistance). By using Bypass Position #2, you effectively increase the Bypass resistance, making the flow path through the sorbent tube less than the Bypass. If Bypass Position #2 does not work, try Position #1.