

Partisol™ 2025i Sequential Air Sampler

Filter Changer Mechanism

Introduction

This Technical Bulletin is a practical guide to troubleshooting filter changer failures for Shuttle (X) errors and status codes. It will step the end user through a basic diagnostic check of the sensors and the filter pressure critical to the operation of the filter changer. There are helpful tips along the way guiding the technician to the most troublesome spots of each failure for analysis.

First we will check the pump pressure to be sure it's adequate:

- A. Go to the pressure screen, it is one of the 5 main screens available and you can flip through the screens using the up and down arrows. If the unit is displaying a split screen and the pressure screen is not visible, simply hit the run button one time and the split screen menu will fall away.
- B. Go to service mode menu and put the unit into service mode (observe the wrench in the status bar). Back out to the main menu, go to service then manual motion. Turn the pump and pressure vent on.

Turn on the pump control; pump control = 1

Turn on the pressure vent; pressure vent = 1

- C. Observe what the pump pressure is reading on the top half of the display, it should be 2.2 – 3.2 ATM or more. If it is less, rebuild or replace the pump. ** Please note that this is a general guideline, if your elevation is much higher than sea level, the pump pressure may be reading lower and still be ok **

Turn the pressure vent and pump off:

Turn off the pressure vent; pressure vent = 0

Turn off the pump control; pump control = 0

Next we will check the operation of the filter changer manually by activating each of the valves. Begin by removing the top cover of the filter changer and load the left side supply magazine with some blank filters or empty filter cassettes for testing purposes. Then perform steps below:

In Manual Motions:

1. Observe conditions of sensors in the top portion of the menu;

>Lift/push actuator 0

Lift 2 <-> DN

Push 2 <-> UP

Shuttle <-> RET

Observe the sensors on the pistons: the top one should be lit on the lift (located between the 2 cassette magazines), and the bottom one should be lit on the push (located top right over the collection magazine). See figure 2 below, these resting sensors are circled in yellow.

Observe the shuttle arm, is it positioned to the left side of the shuttle board? See figure 1 below.

Yes = Go to step 2

No = Try performing advance filter in the manual motions menu to correct the sensor alignment.

If this doesn't work, call or email technical support for further instructions:

Telephone: 866-282-0430 or 508-520-0430

Select menu option 2 for Technical Support

Email: epm.techsupport@thermofisher.com

If it works properly, go back to the beginning of step 1.

2. Turn on the pump; pump control = 1

3. Turn on the pressure vent; pressure vent = 1

4. Turn on the magazine pressure; mag press = 1

Observe the magazine, is it raising the cassettes up? Is the cassette sensor switch activated and roller arm lifted up? In the Manual motion menu, go to Status Hall Sensors, scroll down to FC1 MSW, is it ON?

Yes = Go to step 5

No = Troubleshoot for mag pressure;

Check the white tubing is attached to magazine (should be supplying about 5 psi)

Check the Mag valve (1st valve in the manifold) has a red light on and excess pressure is felt coming out of sintered knob on the attached brass needle valve.

Remove left side magazine and push up on the micro switch manually, is FC1 MSW switching to ON when depressed?

5. Turn off magazine pressure; mag press = 0

6. Turn on lift/push actuator; lift/push actuator = 1

Observe the lift and push pistons, is the lift down and the push up?

Observe the sensors on the pistons the bottom one should be lit on the lift and the top one should be lit on the push. See figure 2 below, the activated sensors are circled in red.

The sensors can also be viewed at the top of the menu in manual motions;

Lift 2 <-> DN

Push 2 <-> UP

Shuttle <-> RET

Yes = Go to step 7

No = Troubleshoot for sensor and piston operation;

Check the lift/push valve (middle valve in the manifold). This valve should have the red light on.

The lift piston requires a minimum of 27 psi to operate, this can be checked by using a pressure gauge at the pressure line from the lift/push valve.

7. Turn on shuttle; shuttle actuator = 1

Observe the shuttle arm, is it positioned to the right side (EXT) of the shuttle board? See figure 1 below.

Observe the shuttle sensor viewed at the top of the menu in manual motions;

Lift 2 <-> DN

Push 2 <-> UP

Shuttle <-> EXT

Yes = Go to step 8

No = Call or email technical support for further instructions, see step 1 for contact information.

8. Turn off lift/push actuator; lift/push actuator = 0

9. Turn off shuttle; shuttle actuator = 0

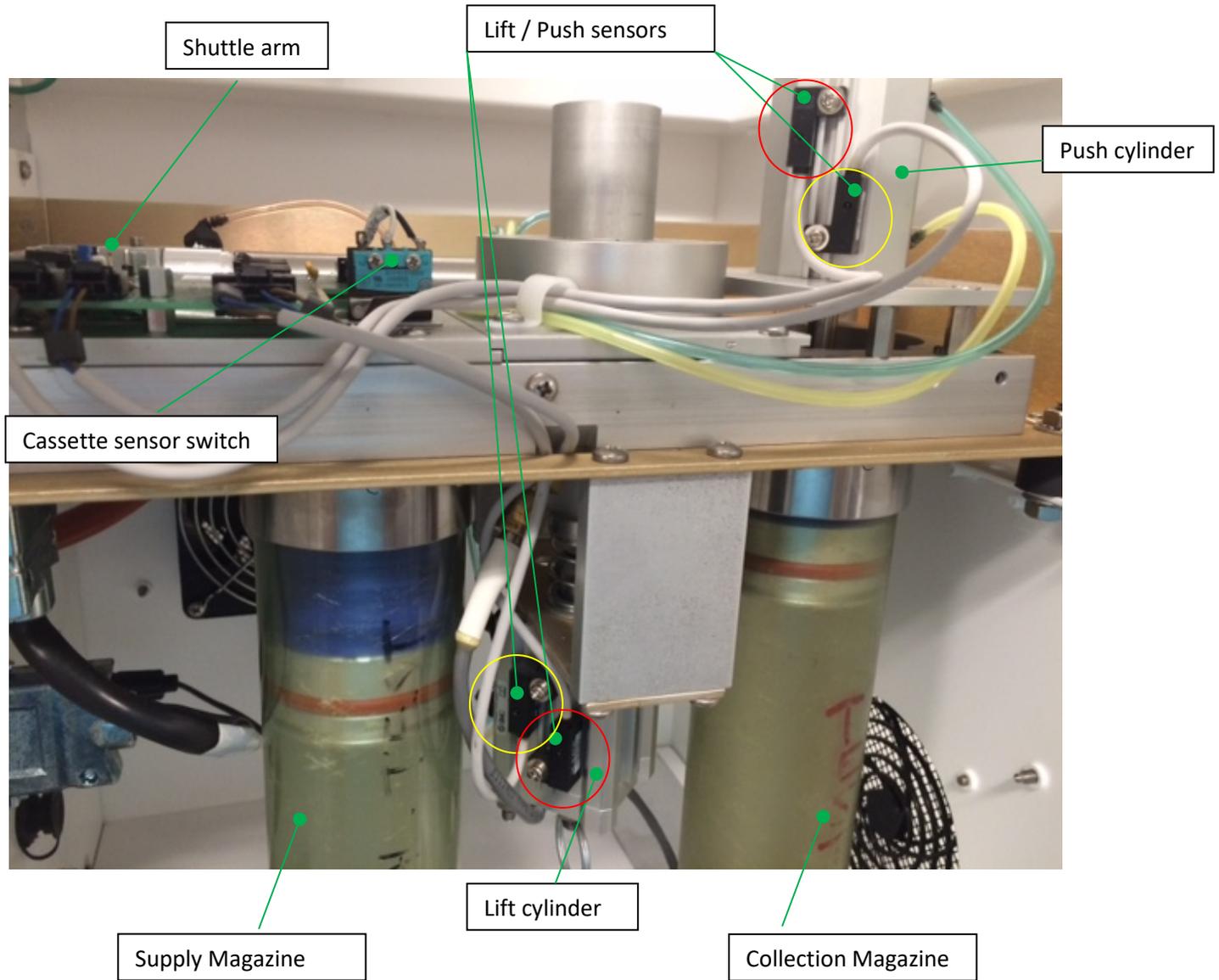
10. Turn off pressure valve; pressure vent = 0

11. Turn off pump; pump control = 0

Figure 1:



Figure 2:



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