

Turbulent Fluid Flow (TFF) Instructions—Sample Extraction

Product Item Codes- TFF-10, TFF-ST-2, TFF-ST-3, PXD-02, TFF-PMP-HK, TFF-PMP

Intended Use: To extract samples from Olympus Colonoscopes/Gastrosopes.

Key Specifications: Latex free, Non-sterile, Single use.

Stopper	Maximum Outer Diameter	Minimum Outer Diameter
Clear	9.8mm	6.89mm
Yellow	12.6mm	8.8mm
Orange	15.9mm	11.8mm

Setup

1. Disconnect all three (3) pieces of the connection kit. (Figs.1a–e).



Figure 1a



Figure 1b

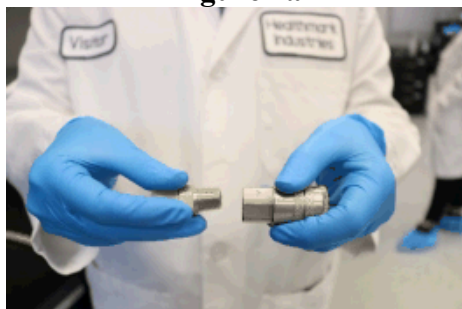


Figure 1c



Figure 1d



Figure 1e

2. Using the three (3) pieces to create a connection with the 3-foot hose and the air source.
 - a. It is not necessary to use all 3 pieces. Use the appropriate connector that will connect with the facility's air source. (Figs. 2a, 2b).



Figure 2a



Figure 2b

- b. Use PTFE tape around the threading and a wrench to ensure a tight seal. (Figs. 3a–c).



Figure 3a

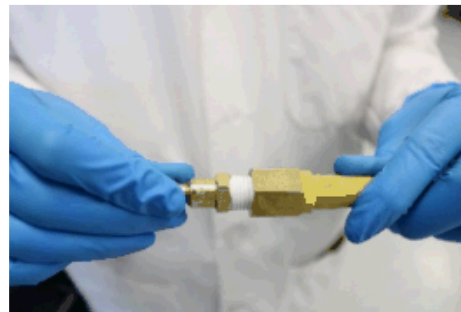


Figure 3b



Figure 3c

3. Once the connection is assembled, connect to the high efficiency particulate air (HEPA) filter. (Note: replace the HEPA filter once a year).
 - a. Use PTFE tape around the threading for a tight seal (Figs. 4a–d).

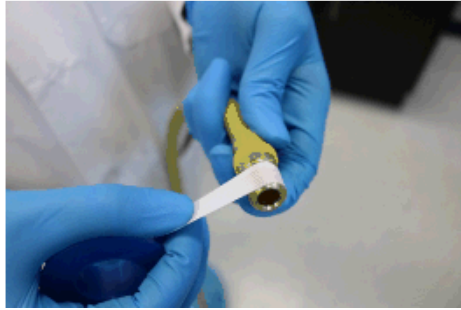


Figure 4a



Figure 4b



Figure 4c

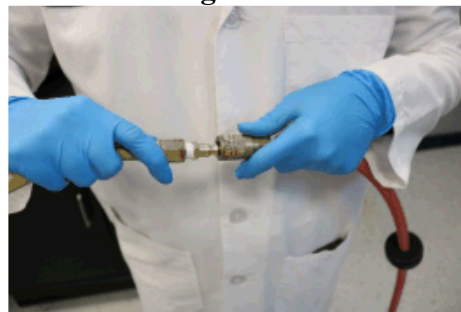


Figure 4d

4. Plug the AC adaptor into a power outlet and into the back of the Pump. (Fig. 5).

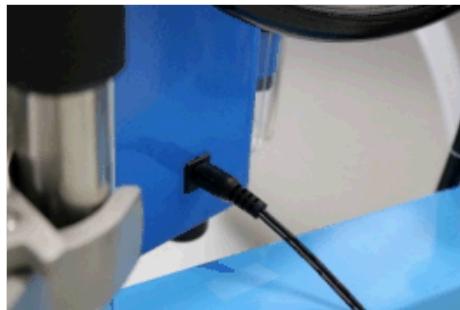


Figure 5

5. Power the Pump ON with the switch located on the front left side of the unit.

Hookup and Verification Kit Components:



Verification Kit:

1. Check the pressure every day the Pump is being used.
2. Put PTFE tape on the pressure gauge and secure to the 1-foot. hose. (Figs. 6a–c).



Figure 6a



Figure 6b

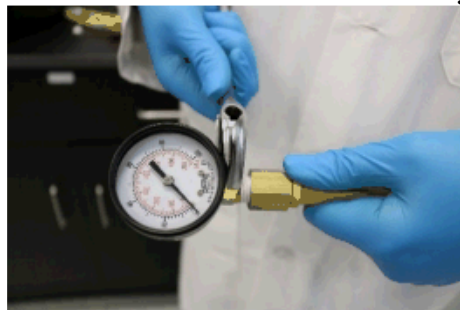


Figure 6c

3. Use one (1) of the 2 luer locks to connect to the Extract ports located on the front of the pump. (Figs. 7a, 7b).
4. Hit the Extract button and read the pressure. (Figs. 8a–d).



Figure 8a



Figure 8b



Figure 8c



Figure 8d

5. Pressure should be between 17–28 psi. (Fig. 9).



Figure 9

6. Record pressure on the calibration log.

Using the TFF Unit:

1. If you are using the EndoDolly™, lower the center pole enough to place the endoscope on the EndoDolly™ (with the universal cord on the right pole and the control section of the endoscope on the center pole) not allowing the distal end to touch the floor.
 - a. If the endoscope has an elevator mechanism, place it in a flat position. (Figs. 10a, 10b).

b. Pump may also be used with the scope lying flat and the distal end hanging down.



Figure 10a



Figure 10b

2. Place the gas cap on the electrical connector to prevent water from getting into the universal cord. (Fig. 11).



Figure 11

3. Attach all scope connectors (before the extraction process).
4. Insert the blue F-block into the air/water port and suction port, and ensure the latch is on by pressing in with thumb. (Figs. 12a, 12b).



Figure 12a

Figure 12b

5. Place the blue rubber stopper firmly in the biopsy port. (Fig. 13).



Figure 13

6. If using the EndoDolly™, raise the center pole to an appropriate height so that the distal end is not touching the floor. (Fig. 14).



Figure 14

7. Select the appropriately sized compression cap (sizes are color coded) for the corresponding endoscope.
 - a. Then slide the compression cap onto the distal end of the endoscope with seal sandwiched between cap and bottle lid (*no more than halfway down*).
 - b. Screw the compression cap onto the lid of the bottle base until the fit is snug (*but not too tight*).
 - c. Place cup back into the holder. (Figs. 15a–c).



Figure 15a

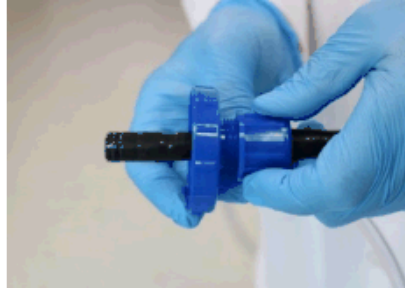


Figure 15b



Figure 15c

8. Next, connect the HEPA filter to the bottle. (Fig. 16).



Figure 16

9. Connect the clear tube to the air source's stainless-steel connector on the side of the Pump (Fig.17a), then to the suction valve on the scope (Figs. 17b, 17c).

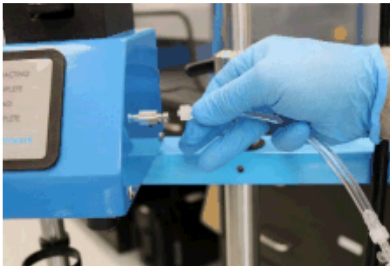


Figure 17a



Figure 17b



Figure 17c

10. Attach blue silicone cover on to the remaining channels of the scope. (Figs. 18a, 18b).



Figure 18a



Figure 18b

11. Remove the white cover from the syringe's tip and connect the tip of the prefilled syringe to the connector of the TFF's extraction tubing by turning the syringe clockwise until it is secured. (Figs. 19a, 19b).



Figure 19a



Figure 19b

12. Lift the safety clamp. Place the syringe down into the TFF (syringe tip facing outward) and secure the syringe by lowering the safety clamp. (Figs. 20a, 20b).

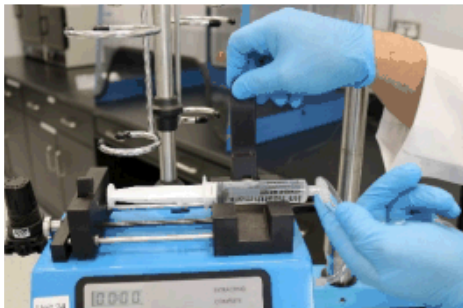


Figure 20a



Figure 20b

13. Adjust the black plate so that it is against the top of the plunger on the syringe. (Figs. 21a, 21b).

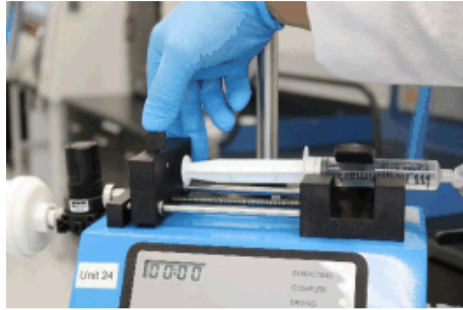


Figure 21a

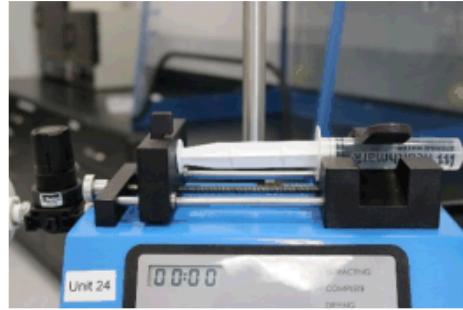


Figure 21b

Extraction:

1. Turn on the air source, then press “**Extract**” to start the process.
 - a. The extracting process takes 1-minute and 40 seconds to complete.
 - b. The green light on the TFF will illuminate when complete. (Figs. 22a, 22b).

(Note: First, air will flow through the tubing followed by the water.)



Figure 22a



Figure 22b

2. When extraction is complete, press “**Stop**” and then “**Reset**”. (Figs.23a, 23b).



Figure 23a



Figure 23b

Removal and Disposal:

1. *Syringe removal:* (Figs. 24a–c).
 - a. The black plate retracts backward.

- b. Remove the syringe by lifting the safety clamp.
- c. Unscrew the syringe from the tube.

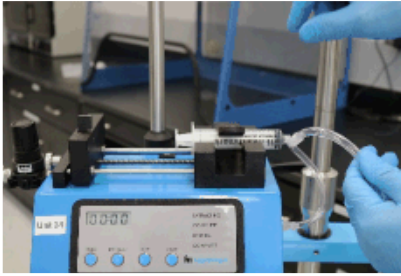


Figure 24a



Figure 24b

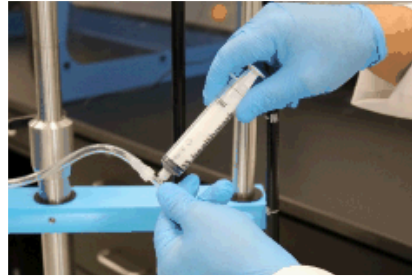


Figure 24c

2. *Bottle removal:* (Figs. 25a–e).

- a. Remove the bottle first.
- b. Unscrew the lid from the bottle.
- c. Separate the compression cap from the compression cover.
- d. Remove the distal tip.
- e. Detach the tubing from the lid of the bottle and from the HEPA filter.



Figure 25a

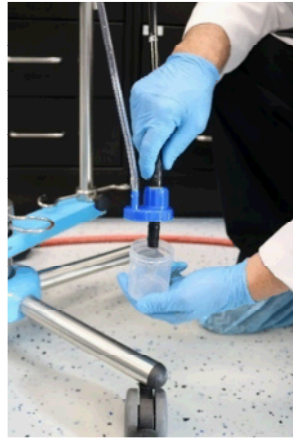


Figure 25b



Figure 25c

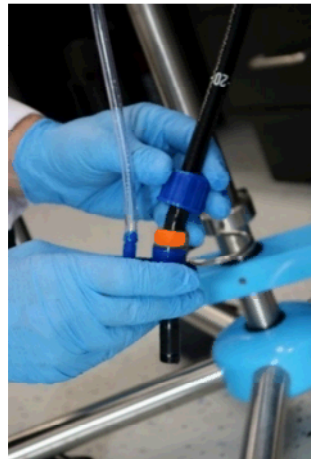


Figure 25d

3. *Tubing removal:* Detach the tubing from the a) pump, b) suction channel, and c) the blue silicone covers. (Figs. 26a–c).



Figure 26a



Figure 26b



Figure 26c

4. If using the EndoDolly™, lower the pole and:
 - a. remove the biopsy cap. (Fig. 27a).
 - b. pull on latch of the F-block to release from the air/water and suction channels. (Figs. 27b, 27c).



Figure 27a



Figure 27b



Figure 27c

5. Dispose all connectors into biohazard ☠ container (in case of contamination) and keep bottle with specimen for future processing. (Fig. 28).



Figure 28

Depressurize:

⚠ Caution: Do NOT disconnect air source before depressurizing.

1. Press “Extract” to depressurize (till air flow stops). (Fig. 29).



Figure 29

2. (Once the air is depleted), press “Stop”, then press “Reset”. (Fig. 30).



Figure 30

3. When finished using this pump:
 - a. Power off the pump. (Fig. 31a).
 - b. Turn off the air source after depressurizing and disconnect the tube from the side of the Pump. (Fig. 31b).



Figure 31a



Figure 31b

Documentation: Record daily pressure readings on calibration log.

Disposal: Dispose of all connectors according to facility policy.

Maintenance, Inspection, and Testing: Replace HEPA filter once a year, take daily pressure readings.