

FlexiPump™ Independent Flushing System User Manual



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OVERVIEW

FlexiPump™ Independent Flushing System

The FlexiPump system is designed for use in a medical reprocessing area. It is engineered to provide optimal flushing capacity, installation flexibility, and easy use and maintenance. It can be used independently or with a Pure Station™ Sink Insert, and has been fully tested for use with a wide variety of reusable lumened devices, including rigid and flexible endoscopes, minimally invasive surgical devices, ocular and robotic devices, and suction tips.

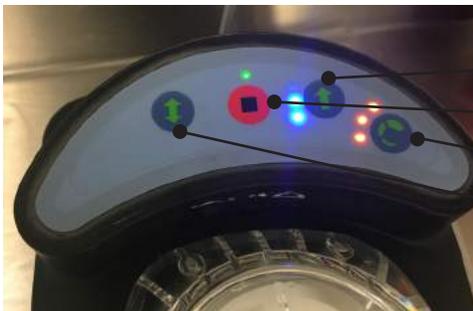
The FlexiPump System is adaptable for counter, sink or wall installation near a water source. Accessories are available from Pure Processing to adapt the system to multiple additional uses. The FlexiPump tube sets connect to most devices, with or without luer locks and/or ports. A pressure relief feature is included to help protect scopes during flushing. The FlexiPump system can be used alone or can augment existing pumps. Up to three devices can be flushed at once through each FlexiPump unit.



DESCRIPTION

Components

- Removable cap with side tabs
- Electric cord
- Pump housing



Key Pad

- Forward Flush button
- Stop Cycle button
- Speed Control button
- Impact Cycle button



Internal Components

- Supply Tube (connects to medical devices)
- Rotor
- Squeeze Tube

OPERATION

Set-up: new FlexiPump Independent Flushing System

Your FlexiPump system does not come with a tube set installed. To install your first tube set, please see the Maintenance section in this manual (page 12). You can also visit our website for a video tutorial on how to install your tube sets.

Set-up: with Nest Accessory

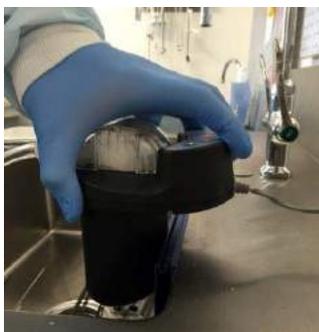
The Nest Accessory can be set up on any counter near a sink. Simply insert the FlexiPump system into the Nest with tubes facing the labeled front of the accessory. Plug the power supply cord into an electrical outlet.



Do not place pumps directly under a water supply.

Set-up: with Sink Rail Accessory

The Sink Rail accessory (sold separately) adheres to the top inside surface of a clean sink at the top edge. Once the rail is attached, lock the back of the FlexiPump system onto the sink rail track, then plug the FlexiPump power supply cord into a wall outlet. PureStation™ systems also include a sink rail track for locking the FlexiPump system onto the side of the Insert.



Use extra caution with sink wall installations to avoid impact with hard surfaces.

OPERATION

Set-up: Horizontal wall mount

Install your angle wall bracket on a wall. The two small holes on the back piece will be attached to the wall. Place the FlexiPump nest hole (located on the back) over the thru bolt.

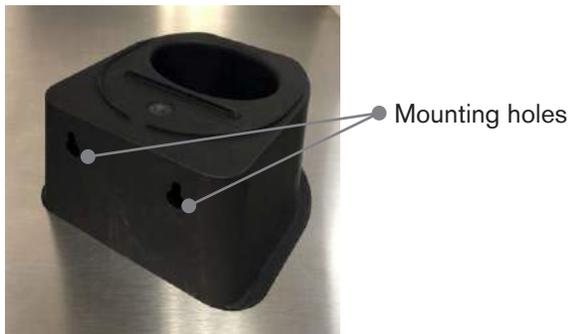
Place the FlexiPump unit into the Nest. Keep one hand on the FlexiPump and attach the pump holder bracket around the back of the FlexiPump, on the gray cord. Connect the other side of the pump holder bracket around the thru bolt.

Screw the wing nut onto the thru bolt and twist to the right until the wing nut is secured.



Set-up: on a wall

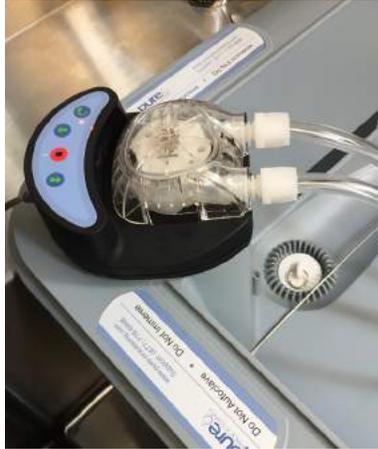
The nest accessory can be mounted on a wall or pegboard using the two through-holes in the back of the accessory. Simply hang the nest on a wall near a sink and insert the FlexiPump unit. Then plug the cord into an outlet. (Hardware not included.)



OPERATION

Set-up: on Pure Station™ Sink Insert

The FlexiPump system can be inserted into the corner well of the PureStation Sink Insert, or along the side ridges molded into the sink.



The FlexiPump unit is not meant to be submerged; use caution when installing near water.

Set-up: power supply

Once your FlexiPump system has been installed in its preferred place, remove the black power cord from your FlexiPump box. Take the barrel end of the gray cord found at the back of the FlexiPump and insert the barrel end of the black power supply to the gray cord. Make sure there are no frays in the wires.

Once both barrel cords have been tightly secured, plug the power supply into your wall outlet. Run the forward flush on your FlexiPump to make sure that the power has been installed correctly.



Do not submerge the power or barrel cords. Please use caution when installing near water.

OPERATION

Set-up: tube sets

The drop-down tube on each new tube set is 30 inches long. If the tube is too long for your sink, it can be cut to shorten it. Each FlexiPump tube set comes with three (3) leads, each of which can be attached to an instrument. You can use all three at once. If you have fewer than three devices to flush, you can cap off the unused lead(s) to ensure appropriate pressure into the lead(s) with attached devices. Use the end cap provided with your tube set. You may also re-use end caps from other FlexiPump tube sets.



General guidelines for speed control

Because fluid will take the path of least resistance, it is important that instrument channels attached to a FlexiPump system are approximately the same diameter, to assure consistent flushing into all the devices. **Do not attach a large-diameter lumen to one lead and a small-diameter lumen to another on the same pump system.**

Low speed

This setting is designed for small channels, 1 to 3 millimeters (mm) in size. This setting will flush 500 milliliters (ml) of fluid in one minute into all three channels (166 ml through each lead). **Do not turn up the speed** when you hear the motor slowing down. The smaller channels cannot accommodate any higher flow volume. Trying to force it to go faster will cause a back-up in the motor and will make the pressure release valve drain fluid.

Medium speed

This setting is designed for channels that are 2 to 3 mm in diameter. This setting will flush 750 ml of fluid in one minute into all three channels (250 ml through each lead). **Do not turn up the speed** if you hear the motor slowing down. However, if there is fluid draining from the pressure relief valve, you can consider slowing the pump speed.

High Speed

This setting will flush 1,000 ml of fluid in one minute into all three channels (333 ml through each lead). This is used for channels larger than 4 mm in diameter.



Too much pressure and speed for small devices can result in tube set damage.

OPERATION

Connecting devices to the FlexiPump system

Many lumened/channeled devices can be properly connected and flushed with the FlexiPump system.



For devices with luer locks

Twist the FlexiPump tube collar onto the device with a luer, until locked

Flush the device following manufacturer's recommendations



For devices with luer ports

Pull the tube collar back

Insert the slip tip into the device

Flush according to manufacturer's recommendations



For devices without luer locks or ports

Use a cup adaptor to create a tight seal

Flush according to manufacturer's recommendations



For devices with female luer locks

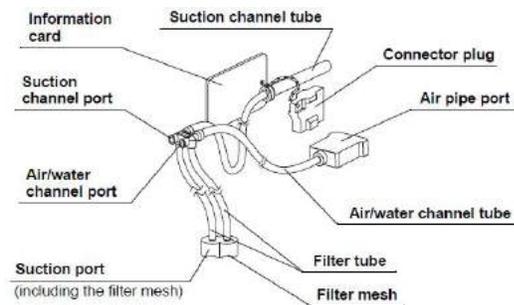
Use a female-to-female luer lock adapter

Flush according to manufacturer's recommendations

OPERATION

Connecting flexible endoscopes to the FlexiPump Independent Flushing System

It is important to follow the manufacturer's instructions for use (IFU) for each flexible endoscope. The FlexiPump system replaces the syringe flushing method in the pre-cleaning sections of these IFU.*



The **injector tube** (or suction channel tube in this example) is used to inject reprocessing fluids into the instrument channel, suction channel, and air/water channels of the endoscope. It is also used to flush air through these channels to expel fluids.

Follow the device manufacturer's IFU to attach the injector tube to the scope.



Attach the FlexiPump tube set luer locks to the suction channel port and air/water port of the injector tube. Directions may vary depending on the scope and the manufacturer.



Cap off all unused tubes on the FlexiPump Tube Set. If there are two channels on the endoscope, place a FlexiPump end cap on the end of the third FlexiPump tube lead. If you are flushing only one channel or lumen, cap off the other two FlexiPump tube leads with luer end caps.

Select the appropriate flush function and speed (page 9) and flush the device.

IMPORTANT

Most endoscope manufacturers specify how much cleaning solution to flush through the device. Follow IFU's to prepare the cleaning solution. Carefully monitor all device exit points for flushing cleaning solution to ensure copious flushing.

Be sure to rinse devices per manufacturer's IFU.

To eject solutions from a scope, remove the drop-down tube from the reprocessing fluid container. Allow pump to run. This will inject air into the scope and purge fluid from the device. Then continue to the next reprocessing step.

OPERATION

Flushing flexible endoscopes with the FlexiPump Independent Flushing System

PSI Settings

Please refer to the manufacturer's IFU for each endoscope's pressure requirements. The FlexiPump system can be used with a low-pressure tube set or a higher-pressure tube set. In general, smaller flexible devices (urology scopes and bronchoscopes, for example) require lower pressure.

General rules and guidelines for flexible endoscope speed control

There are three (3) tubes on each FlexiPump tube set. **If any tubes are not in use, be sure they are secured with end caps provided in the tube set.**

When using all three tubes of the tube set for flushing, the MEDIUM or HIGH FlexiPump speed should be used.

When using two tubes, make sure the third tube is capped and the FlexiPump is set for LOW, MEDIUM or (in some cases) HIGH speed.

When using only one of the three tubes of the FlexiPump tube set, cap off the other two tubes and set the FlexiPump speed to LOW, MEDIUM or (in rare cases) HIGH speed.



If the pump sounds or looks stressed, turn the speed setting down to avoid unnecessary wear on the motor.

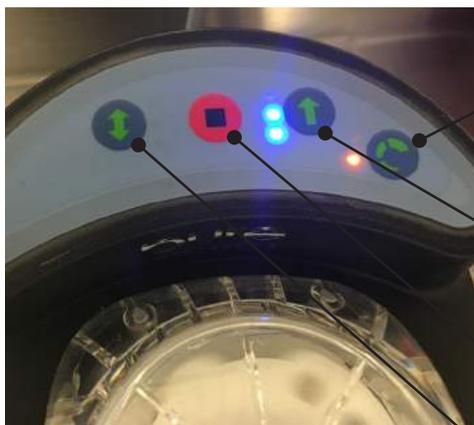
PLEASE NOTE: the FlexiPump Independent Flushing System is intended for pre-cleaning and flushing of lumened devices. It is not for final treatment and does not replace manual brushing and rinsing. Refer to each medical device manufacturer's instructions for use for complete pre-cleaning instructions.

KEY PAD FUNCTIONS	
<p>Forward Flush</p> 	<p>Most frequently used button; time controlled:</p> <ul style="list-style-type: none"> • 1 LED light- 30 seconds • 2 LED lights- 60 seconds • 3 LED lights- 90 seconds
<p>Speed/Volume</p> 	<p>It's important to control the volume without too much pressure:</p> <ul style="list-style-type: none"> • 1 LED light- Low- for small devices 1-2 mm diameter, such as suction tips and eye instruments (500 ml** per min.) • 2 LED lights- Medium- medium devices 2-3 mm diameter (750 ml** per min.) • 3 LED lights- High- large devices, 4 mm and larger diameter, such as laparoscopic, robotic, or orthopedic lumens (1000 ml** per min.) <p>**Milliliters flushed is the total volume. Example: if three devices are flushed at the same time on high speed – each device flushes 333 ml per minute.</p>
<p>Impact Cycle</p> 	<p>Used on devices that have material clog or impact. The impact cycle will create a push and pull pressure- moving in a forward direction, and then stopping to reverse and create suction. This feature will allow the clog to soften up and allow you to push a brush through.</p> <p>Time controlled:</p> <ul style="list-style-type: none"> • 1 LED light: 2 minutes • 2 LED lights: 4 minutes • 3 LED lights: 6 minutes
<p>Stop</p> 	<p>Stops the flushing</p>

- The Forward flush cycle is used for flushing channels. There are three options for this cycle: 30 seconds, 60 seconds and 90 seconds.
- The Impact cycle is used **ONLY** for devices that are clogged. The FlexiPump tube set must be decontaminated after each Impact Cycle run.
- The Speed Indicator shows one, two or three lights, to indicate the pump speed selected.



Too much pressure and speed can cause tube set damage.



Key Pad Operation

Speed Control

Push the button **ONCE** for low (500 ml per minute), **TWICE** for medium (750 ml per minute), and **THREE TIMES** for highspeed (1,000 ml per minute)

Forward Flush

Press the button **ONCE** for 30 seconds, **TWICE** for 60 seconds and **THREE TIMES** for 90 seconds

Stop

Press to stop all pump action and cancel any cycle

Impact

Press for clogged devices. Press the button **ONCE** for two (2) minutes, **TWICE** for four (4) minutes, and **THREE TIMES** for six (6) minutes.

MAINTENANCE

Decontaminating the tube set

Disinfect the tube sets at least daily, preferably at every shift change.

Step 1 Pour 500mL of your ready to use disinfectant into an open, clean container.

Step 2 Place the drop down tube into the container with disinfectant, assuring it's fully submerged.

Step 3 Press the forward flush button to begin filling tube set with disinfectant. Run at least 100mL of disinfectant through the tube leads. Press STOP.

Step 4 Attach end caps onto all the tube leads and set the speed control on Low. Position your pressure relief valves over a container or sink bay. Run a Forward Flush until disinfect is expelled through the pressure relief valves. Press STOP. Your tubes are now completely filled with disinfectant.

Step 5 The disinfectant should remain inside tubing for the contact time of the disinfectant.

Step 6 After the contact time has elapsed, in a empty sink basin, point the tube leads downward. Slowly take off the end caps. Some pressure will have built up inside, so use caution.

Step 7 Run the remainder of the disinfectant through the tube sets.

Step 8 Fill a container with 500 mL of clean water and place the drop down tube inside. Rinse at least 500mL through the tube leads to ensure a proper rinse.



*Bleach or alcohol
disinfectants are
not compatible
with the FlexiPump*

Cleaning FlexiPump surfaces

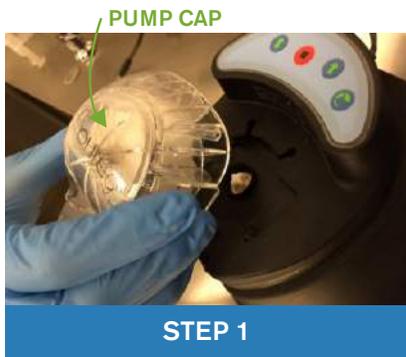
The surfaces of the system should be cleaned daily and whenever there is visible soil.

Step 1 Wipe all external surfaces with a ready to use disinfectant, including the tubing, and allow them to air-dry.

Step 2 Wipe the surfaces of the Nest accessory and/or Rail accessory (if used) and let them air-dry.

MAINTENANCE

Instructions for replacing the tube set



STEP 1

Remove the Pump Cap by pressing on both side tabs and pulling gently.



STEP 2

Flip the Pump Cap upside down (as pictured above) and unthread the tubing from the Tube Rotor.



STEP 3

Now that the old set has been taken out, remove the Tube Rotor from the Pump Cap.



STEP 4

Thread your new tube set around the Tube Rotor (as pictured above). It is important that the red tube component is on the right side in this step.



STEP 5

Place the new tube set and rotor inside the pump cap. Properly align the tube set fittings so that they are properly situated in the cap fittings.



STEP 6

Flip the Cap right-side up. Notice the red component is on the left side now.



FINAL STEP

Press on both sides of the Pump Cap and place it back onto the base, making sure that it snaps down fully.

TIP

If you experience difficulty snapping the cap into place, try activating the "forward flush" button and then proceed to push the cap down until it fastens into place properly.



FORWARD FLUSH

MAINTENANCE

Instructions for replacing the tube set

The Importance of Changing Tube Sets

1. Infection Prevention

Hard water deposits could potentially build up on the inside surface of the tube set.

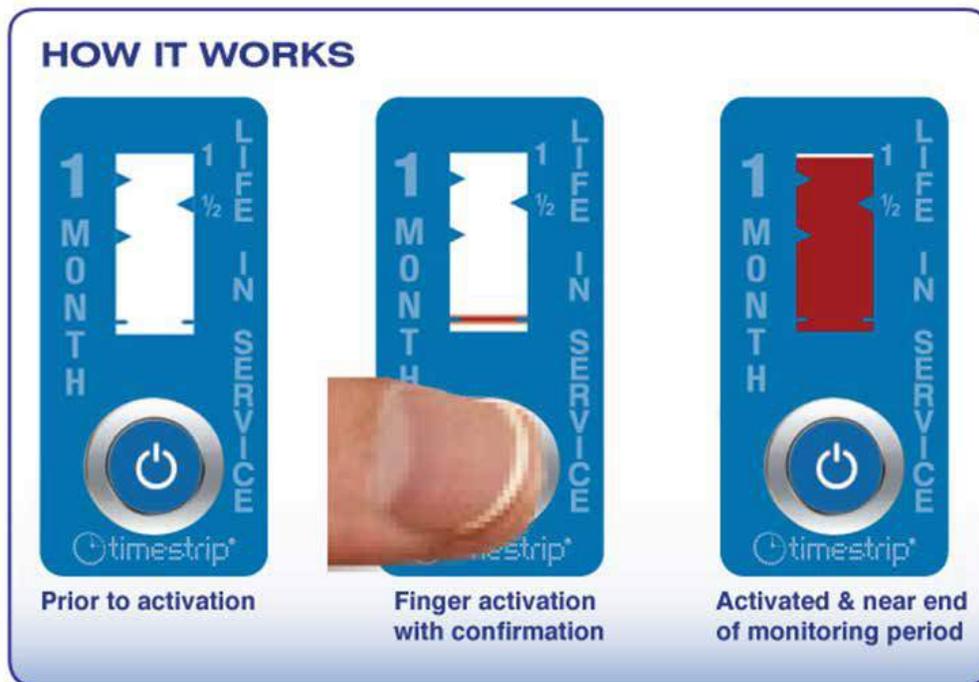
2. Reduced Flow Rate

The squeeze tube can lose its elasticity with time and frequent use.

3. Reduced Pump Life

The factory-applied tube set lubricant eventually wears away, resulting in more resistance and more work for the pump. This can reduce the pump's overall useful lifetime.

Each tube set will include a 30 day timestrip[®] attached.



Best Practice Solution

Whenever you change a tube set, write your initials and expiration date on the back of the timestrip[®] label.

Initials:

Expiration Date:

Conducting a Flow Validation Test

The flow validation will test every speed on the FlexiPump: low, medium, and high for 30 seconds each to assure your FlexiPump is dispensing the right amount of liquid. We recommend running the flow validation test at least once a day. You may use the log provided in the back of this manual to keep track of your flow validation tests.

Step 1 Place the down tube into a container of water that contains at least 1000mL of water. Remove all the end caps from the 3 tube leads.

Step 2 Run an initial Forward flush until you see water dispensed from each tube lead. Hit **STOP**.

Step 3 Place the 3 tube leads into the solution caddy container. Make sure to hold the 3 tube leads into the container while the pump is running. This will measure how much liquid is dispensed during the flush cycles.

Step 4 Make sure your Speed button is on the low setting, showing 1 LED light. Press the Forward Flush button once to run the FlexiPump for 30 seconds on Low. Verify that at least 250mL of water was dispensed.

Step 5 Empty the solution container and refill your container of water, assuring that you have at least 1000mL of water. Place the tube leads back into the solution container.

Step 6 Set your Speed button to medium, showing 2 LED lights. Press the Forward Flush button once for a 30 second cycle. Verify that at least 375mL of water was dispensed.

Step 7 Empty the solution container and refill your container of water, assuring that you have at least 1000mL of water. Place the tube leads back into the solution container.

Step 8 Set your Speed button to high, showing 3 LED lights. Press the Forward Flush button once for a 30 second cycle. Verify that at least 500mL of water was dispensed.

Time	Speed		Water Dispensed
30 Seconds	Low		250 mL
30 Seconds	Medium		375 mL
30 Seconds	High		500 mL



If the pump does not pass the flow validation test, please contact your Pure Processing representative to troubleshoot the issue.

TROUBLESHOOTING

Problem	Recommendation	Notes
1. No Power Unit	Disconnect the black and gray cords at the barrel connector. Reconnect making sure they are tight. If there is no power, slightly turn the adapter to engage the two and tighten. Repeat as necessary.	
2. Power to unit but buttons don't work	Disconnect the black and gray cords at the barrel connector. Reconnect making sure they are tight. If there is no power, slightly turn the adapter to engage the two and tighten. Repeat as necessary.	
3. Pump is not working	Disconnect the power cord from outlet and from the FlexiPump unit. Reconnect the cord and plug in. Press a control button to see if it works	If it still doesn't work, go to #4
4. Pump does not work	Reset the unit by hitting stop, and then press the Forward Flush 30-second button.	If it still does not operate, contact Pure Processing Customer Service.
5. Rotor is spinning but no solution is coming out the end of the device	Make sure the drop-down tube is fully submerged. Also check for kinks in the tubing. Make sure you have the correct end of the tubing in the solution.	
6. Luer lock is broken or separated from the tubing	Change the tube set.	
7. Devices are not clean	Check the device manufacturer's cleaning recommendations. Check the disinfectant instructions for use. Confirm that all directions have been properly followed.	
8. Impact Cycle is not working	Impact Cycle works in conjunction with detergent. Ensure that proper detergent is used for the type of soil in the device (protein-based enzyme for blood, e.g.).	If still not working, see #7
9. Impact Cycle is not flushing	Conduct a flow validation test: 1. Place drop-down tube into container of clean water 2. Press the Forward Flush button once for a 30-second flush 3. When a steady stream of water exits the connector, press the Stop button	If it still does not operate, contact Pure Processing Customer Service.
10. Water is leaking from under the cap	1. Check the tube set for cracks 2. Change the tube set if cracked	
11. One or more components on the tube set are broken	Replace the entire tube set	
12. Unit is not running and I have a red blinking light	Allow the unit to cool down for 30 minutes, and then resume use. Contact us if this does not remedy the issue.	This can occur after prolonged use.
13. Speed control is stuck on HIGH	Allow the unit to reset for 15 seconds. Press the speed control to test.	
14. Unit makes a lot of noise	Use a surface liner under the nest to reduce vibration	
15. Unit stopped while flushing	Unplug the unit to reset it. Repeat interrupted flushing cycle	
16. Pump cap will not stay locked to the base	Replace the cap	Probably cracked or broken where locks engage
17. My tube set is leaking	Unscrew the threaded tube set nut from the connector on both the red and white sides. If the tube has slid off the connector, push it back into place until it is snug. Re-screw the tube set nut tightly so that no threading is visible.	Please contact Pure Processing Customer Service if additional help is required.
18. There's a tear in my tube set	Replace your tube set. Most tears occur because the lubrication on the tube set was removed. The lubricant is necessary to prevent the pump from overexertion and unnecessary strain.	

FLEXIPUMP REPLACEMENT PARTS

	Item	Product Code
	FlexiPump™ Irrigation Tube Set Two-Lead, 15 psi or 30 psi; box of 6	FXITS-0215psi6 FXITS-0230psi6
	FlexiPump™ Irrigation Tube Set Three-Lead, 15 psi or 30 psi; box of 6	FXITS-0315psi6 FXITS-0330psi6
	FlexiPump™ Power Supply	FPPS-01
	FlexiPump™ Pump Cap	FLX-CAP-01
	FlexiPump™ Pump Rotor	FLX-ROTOR-01
	FlexiPump™ Nest Accessory	FLX-NEST
	FlexiPump™ Sink Well Adapter	FPSWA-01
	FlexiPump™ Two-Lead Pre-Assembled Pump Cap and Rotor Tube Set; 15 or 30 psi	FXITS-PREA-0215psi6 FXITS-PREA-0230psi6
	FlexiPump™ Three-Lead Pre-Assembled Pump Cap and Rotor Tube Set; 15 or 30 psi	FXITS-PREA-0315psi6 FXITS-PREA-0330psi6

REPLACEMENT ADAPTERS

	Item	Product Code
	End Cap (to seal FlexiPump tube)	PSFP-EC-10
	Female-to-Female Luer Lock	FFLL-10 FFLL-30 FFLL-50
	XL Slip Tip Adapter	XLSLIP-10 XLSLIP-20 XLSLIP-30
	Rubber Cup Adapter	RCA-01
	Large Rubber Sealing Bridge	RBLG-01
	Small Sealing Bridge	Rbsm-01
	FlexiPump™ Ceramic Weight and Filter	FPCW-01
	FlexiPump™ Accessory Kit	ACC-KIT
	TimeStrip™ Time Indicators	TM-1M

ADDITIONAL ACCESSORIES

These products are available from Pure Processing, Inc. and are compatible for use with the FlexiPump system:

	Item	Product Code
	PureChannel™ Flush Instrument Channel Cleaner, 1 gallon size/32 oz. size	PSCF-08 PSCF-32oz
	PureChannel™ Flush Touch-less Auto Dispenser	PCFTAD-01
	Pro-Spray™ Ready-to-Use Disinfectant/Cleaner, 1 gallon size/32 oz. size	PSC128-1
	ProSpray™ Ready-to-use Disinfectant/Cleaner Wipes; Soft pack, Cannister, Tall Cannister	PSW PSWC PSWCT
	ProWash Multi-Purpose Instrument Detergent and Cart Wash; 1 GAL, 5 GAL, 15 GAL	PRW128-1 PRW640-1 PRW-1920
	PureStation™ Sink Insert	PS1616 PS1626
	PureStation™ Dedicated Eye Sink	PSFP1616-EYE PSFP1626-EYE

FLEXIPUMP™ INDEPENDENT FLUSHING SYSTEM

Daily Assurance Log

Tube Replacement	Name: _____	Date: _____
-------------------------	-------------	-------------

Day	Flow Validation Test	Pass	Fail	Initials
1		Pass	Fail	
2		Pass	Fail	
3		Pass	Fail	
4		Pass	Fail	
5		Pass	Fail	
6		Pass	Fail	
7		Pass	Fail	
8		Pass	Fail	
9		Pass	Fail	
10		Pass	Fail	
11		Pass	Fail	
12		Pass	Fail	
13		Pass	Fail	
14		Pass	Fail	
15		Pass	Fail	
16		Pass	Fail	
17		Pass	Fail	
18		Pass	Fail	
19		Pass	Fail	
20		Pass	Fail	
21		Pass	Fail	
22		Pass	Fail	
23		Pass	Fail	
24		Pass	Fail	
25		Pass	Fail	
26		Pass	Fail	
27		Pass	Fail	
28		Pass	Fail	
29		Pass	Fail	
30		Pass	Fail	
31		Pass	Fail	

Day	Decontamination Procedure	Yes	No	Initials
1		Yes	No	
2		Yes	No	
3		Yes	No	
4		Yes	No	
5		Yes	No	
6		Yes	No	
7		Yes	No	
8		Yes	No	
9		Yes	No	
10		Yes	No	
11		Yes	No	
12		Yes	No	
13		Yes	No	
14		Yes	No	
15		Yes	No	
16		Yes	No	
17		Yes	No	
18		Yes	No	
19		Yes	No	
20		Yes	No	
21		Yes	No	
22		Yes	No	
23		Yes	No	
24		Yes	No	
25		Yes	No	
26		Yes	No	
27		Yes	No	
28		Yes	No	
29		Yes	No	
30		Yes	No	
31		Yes	No	

Month and Year	_____
Unit Number	_____

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