



VAPOTHERM®

Precision Flow High Altitude / High Flow Kit

Instructions for Use

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Intended Use

The Precision Flow High Altitude/ High Flow Kit provides an auto-draining water trap for the Vapotherm Precision Flow.

Indication, Warnings and Cautions

Indications

The Vapotherm Precision Flow High Altitude/ High Flow Kit is designed for use only with the Vapotherm Precision Flow system. It is for institutional use only. It is not intended for home use.

GENERAL WARNING: Federal law (US) restricts the sale of this device to, or on the order of, any physician. This device should be used ONLY by a trained operator.

Contraindications

The Vapotherm Precision Flow High Altitude/ High Flow Kit is not intended for use in MRI environments.

For more information see the Precision Flow Operating Instruction Manual.

Warnings and Cautions



WARNING: indicates that a situation may occur which is potentially harmful to the patient or user.



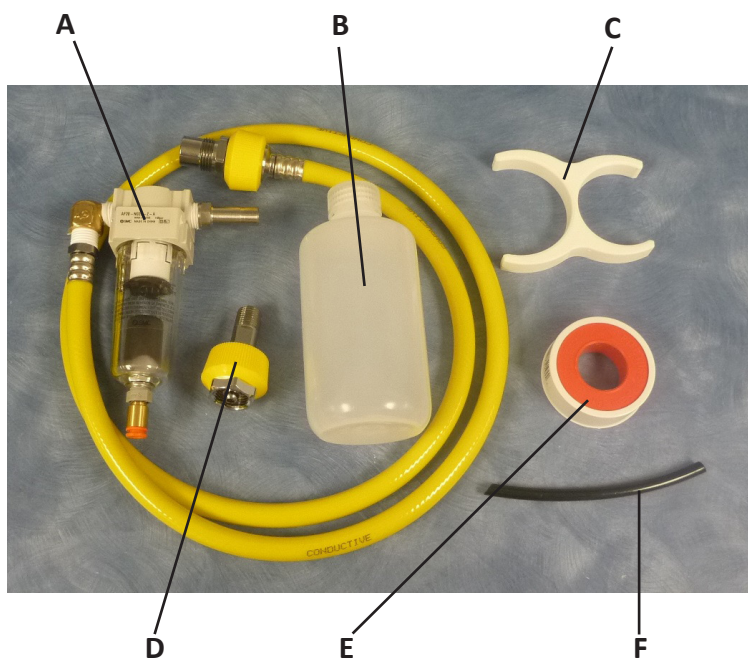
CAUTION: indicates a condition that may lead to equipment damage, malfunction, or inaccurate operation.



NOTE: indicates a point of emphasis to make operation more efficient or convenient.

Kit Components

Item Description	Qty
A. Auto-draining water trap assembly	1
B. Water bottle	1
C. Water bottle holder	1
D. Female DISS fitting	1
E. Roll of PTFE tape	1
F. Drain tube	1



Set Up

Tools Needed

Two 7/8 inch wrenches

7/16 inch wrench

Needle nose pliers



NOTE: Adjustable wrenches may be used in place of wrenches of specific size.

Installation

To install the High Altitude Kit:

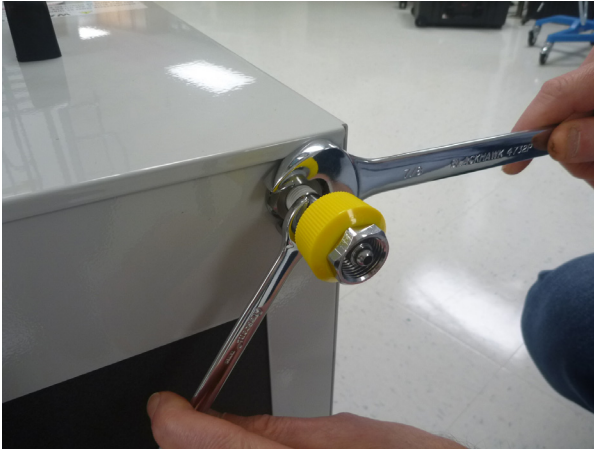
1. If required, remove the male NPT to male DISS connector from the compressor using the two 7/8" wrenches. Use one 7/8" wrench to prevent rotation of the bulkhead fitting while loosening the DISS fitting with the other.



2. Apply PTFE tape to the male NPT threads of the male NPT to female DISS fitting. Wrap the PTFE tape twice around the threads of the fitting clockwise.



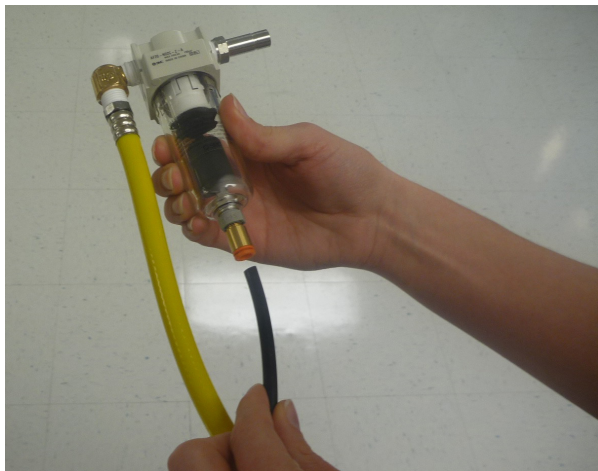
3. Install the High Altitude Kit male NPT to female DISS fitting on the compressor using a 7/8" wrench and a 7/16" wrench. Use the 7/8" wrench to prevent rotation of the bulkhead fitting while tightening the fitting with the 7/16" wrench.



4. Remove the manual draining water trap from the air inlet to the Precision Flow. Using a pair of needle nose pliers, push the retaining ring of the air fitting on the back of the Precision Flow unit in towards the Precision Flow. Pushing in this ring will release the fitting on the water trap. Pull the water trap away from the Precision Flow.



5. Install the drain tube into the fitting on the bottom of the water trap. Gently pull on the tube to confirm that it is captured by the fitting.



6. Install the Auto draining water trap into the Air inlet of the Precision Flow by pressing the fitting on the water trap fully into the air fitting on the back of the Precision Flow. To ensure that the fitting have completely engaged, gently pull on the water trap.



7. Press the water bottle holder on to the Vapotherm Roll Stand approximately four inches below the auto draining water trap.



8. Insert the tube attached to the bottom of the water trap into the hole in the cap of the water bottle and press the water bottle into the water bottle holder.



9. Connect the free end of the air hose to the new DISS fitting on the compressor.





*The Precision Flow with High Altitude High Flow Kit,
fully assembled.*

Operation

Once the High Altitude/ High Flow Kit is installed and proper installation of the water bottle is verified, operation of the Precision Flow as described in its manual may begin.

The water bottle reservoir should be checked once a shift (or every 8 hours) and emptied as appropriate and between patients. Actual emptying requirements will depend on environmental conditions.

To empty the water bottle:

1. Pull the water bottle from the water bottle holder and slide the draining tube out of the water bottle cap.
2. Empty the contents of the water bottle.
3. Reinstall by pushing the drain tube into the cap of the water bottle and pressing the water bottle into the water bottle holder.



NOTE: It is normal for some water to remain in the water trap bowl while draining the majority of the water to the water bottle.

When emptying the bottle, the water trap may also be emptied if desired.

To empty the water trap:

1. While the compressor is running, gently turn the gray knob on the bottom of the water trap towards the “O” marking. This manually opens the drain on the water trap.
2. When the water trap is empty, gently turn the gray knob in the direction of the “S” marking. This engages the seals within the water trap. Do not over tighten the gray knob.



CAUTION: Using tools to tighten the gray knob on the bottom of the water trap may result in overtightening and damage to the High Altitude / High Flow Kit.

Cleaning and Maintenance

This manual is intended only to give general guidelines for the cleaning and disinfection of the High Altitude / High Flow Kit. It is the end user's full responsibility to ensure that any methods and techniques used are effective and conform to the institution's guidelines and procedures.

Part	Procedure	Comments
Water Trap and Air Hose Exterior	Wipe the exterior according to hospital disinfection policies. Use clean water to remove any residual residue.	Do not allow liquid to enter the outlet of the water trap as this liquid will enter the Precision Flow device causing damage to the electrical and/or mechanical components.
Water Bottle Reservoir	Wipe the exterior of the water bottle reservoir and reservoir tubing according to hospital disinfection policies after emptying the water bottle reservoir and in between patient uses.	
	Rinse the water bottle reservoir with warm soapy water after emptying the water bottle reservoir and in between patient uses.	Confirm rinsing of the water bottle reservoir to remove soap residue.

Troubleshooting

Troubleshooting

<i>Trouble</i>	<i>Fault State</i>	<i>Possible Cause</i>	<i>Method</i>
High Altitude/ High Flow Kit will not connect to compressor.	High Altitude/ High Flow Kit air hose is not compatible with DISS fitting on compressor	The compressor has not been retrofitted for use with the High Altitude/ High Flow kit.	Follow Installation steps one through six on page 4
High Altitude / High Flow Kit makes a hissing sound	Air is escaping from the water trap.	The gray knob which seals the water trap is loose.	Gently turn the gray knob in the direction of the "S" marking by hand. This engages the seals within the water trap. Do not over tighten the gray knob. Do not use tools.
Air output is low causing PF to alarm	Insufficient pressure	Internal pressure regulator below recommended operating levels	Call for service
	Air flow required of the compressor exceeds capabilities.	FiO ₂ and flow rates exceed the guidance for high altitude operation provided	Reduce flow rate
	General Fault	Air flow required of the compressor exceeds capabilities.	Reduce flow rate

<i>Trouble</i>	<i>Fault State</i>	<i>Possible Cause</i>	<i>Method</i>
Air output is low causing PF to alarm, cont	Gas supply Alarm	Air flow required of the compressor exceeds capabilities.	Reduce flow rate
There is condensation in the High Altitude / High Flow Kit water trap	Insufficient pressure	Internal pressure gauge below recommended operating levels	Call for service.
	Airflow is blocked	Air inlet or exhaust are blocked or air filter needs cleaning	Clean air filter and ensure that the air inlets are not blocked.
	Cooling fan is not operating (no airflow from exhaust port on bottom of compressor)	The fan has failed	Call for service.
	Water trap is collecting moisture not removed within the compressor	Operation at high altitude or high flow rates	Condensation is normal. Check the water bottle reservoir every 8 hours and empty as needed.

Disposal

The High Altitude / High Flow Kit should be disposed of in accordance with the user's defined disposal procedure for mechanical equipment.

Reference Documents

Vapotherm Precision Flow Operating Instructions Manual
Document Number: 3001002



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