



BACKCOUNTRY PUMP INSTRUCTIONS

The MUV Backcountry Adaptable Water Filter is a revolutionary pump water filter that allows you to filter large amounts of water. The MUV Backcountry water filter can also be configured in a variety of different ways, including; being used as a pump, as a straw, as an inline water filter or as a gravity water filter.

Assembly of the MUV Backcountry filter and pump is very simple. All of the connection points are male or female and twist to lock in place.

PUMP CONFIGURATION

Pieces required for pump configuration. Rush Pump, OUT+28 housing, hose adapter, blue hose (clean water), MUV 2 filter, MUV 1 filter, PRE+28 housing, hose adapter, grey hose (dirty water), and pre-filter.

Setting up the pump. Begin with the Rush Pump, OUT+28 housing, one hose adapter, and the blue hose. Attach the female end of the OUT+28 housing to the

bottom/male end of the pump, turning the OUT+28 housing clockwise to lock it in place. Next, insert the threaded end of the hose adapter into the bottom of the OUT+28 housing. Twist the hose adapter clockwise until it is snug with hand tightening. Do not use tools to tighten the hose adapter. Attach the blue hose (clean water) to the bottom/barbed end of the hose adapter. NOTE: Always use the blue hose for clean water and the grey hose for dirty/contaminated water. You risk cross contamination if you switch the hoses.

Attach the male end of MUV 1 into the bottom, non-pump end of the pump and turn the MUV 1 filter clockwise to lock it in place. Attach the male end of MUV 2 to the bottom of MUV 1, turning it clockwise to lock it in place. Next, attach the male end of PRE+28 housing to the bottom of MUV 2 and turn it clockwise to lock it into place. Next, insert the threaded end of the hose adapter into the bottom of the PRE+28 housing. Twist the hose adapter clockwise until it is snug with hand tightening. Do not use tools to tighten the hose adapter. Attach the grey hose (dirty water) to the bottom/barbed end of the hose adapter. Lastly, attach the end of the grey hose to the male end of the included pre-filter.

HOW TO USE THE MUV RUSH PUMP

Once your MUV Backcountry Pump is assembled, put the pre-filter with the grey hose into the river, lake, or water source. Ensure that the blue hose (clean water) does not enter the contaminated water source. Put the end of the blue hose into your clean water receptacle, i.e. Nalgene bottle, water reservoir, etc. Hold the filter and pump in

your hand and with your other hand raise the pump handle and begin pushing the plunger up and down. It will take around a dozen pumps for the compressed air to move the water through the pump when you first start. This is normal. Continue to pump until you have filled your water receptacle. It is recommended that you keep the blue hose (clean water) away from the dirty hose when in storage or transit to reduce the chances of cross contamination.

INLINE OR GRAVITY CONFIGURATION

Pieces required for inline or gravity configuration. MUV 2 filter, PRE+28 housing, OUT+28 housing, and two hose adapters.

Begin with the MUV 2 filter and connect the PRE+28 housing to the bottom/female end of MUV 2. Turn it clockwise to lock it in place. Next, insert the threaded end of one of the hose adapter into the bottom of the PRE+28 housing. Twist the hose adapter clockwise until it is snug with hand tightening. Do not use tools to tighten the hose adapter. Attach the female end of the OUT+28 housing to the bottom/male end of the pump, turning the OUT+28 housing clockwise to lock it in place. Insert the threaded end of the other hose adapter into the bottom of the PRE+28 housing. Twist the hose adapter clockwise until it is snug with hand tightening.

HOW TO USE THE MUV FILTER INLINE FILTER

Once your MUV inline configuration has been assembled (see above), you will need to determine where you want to place the filter inline with your hydration reservoir

(not included). Option 1: Put your hydration backpack on with the hydration tube hanging in front of you. The filter should hang just below your shoulder. Mark that location and cut your hydration tube. Insert PRE+28 hose adapter end into the upper tube of your hydration pack. Next, insert the OUT+28 hose adapter end into the other end of the tube that has the bite valve or spout. Option 2: Similar to option 1, but the tube needs to be cut inside of your hydration backpack. This option keeps the filter inside of your backpack. When installing the MUV filter, make sure the flow direction always points away from the dirty water source.

HOW TO USE THE MUV FILTER AS A GRAVITY FILTER

Using the MUV filter as a gravity filter requires the use of a gravity bag or hydration reservoir (not included). Once your MUV inline configuration has been assembled (see above), insert the PRE+28 hose adapter end into the end of the tube of your hydration pack or gravity bag. When installing the MUV filter, make sure the flow direction always points away from the dirty water source. Water will begin to flow through the filter almost immediately. Place your water receptacle below the filter and allow gravity to push water through the filter.

CLEANING AND MAINTENANCE

Pump

After each use, the Rush pump should be pumped a few additional times with the grey hose outside of the water source. This will push the remaining water in the filters through the filters and pump. After all of the water has been pushed through the filters, it is

best to disconnect all of the pieces and allow them all to dry. You do not want to allow water to remain within the filters or pump. Bacteria and mold can grow in wet conditions.

MUV2 Hollow Fiber Filter

Backflushing MUV 2 filter will extend the life of the filter and will improve its performance. After every use, you should run clean water backwards through the filter to dislodge and remove any contaminants within the filter. This can be done in a few different ways. 1) Run a steady stream of tap water through the filter, opposite of the flow direction marked on the filter. 2) With the OUT+28 housing attached to the MUV 2 filter, use a water/soda bottle with 28mm threading to flush clean water through the filter.

UNDERSTANDING FILTER TECHNOLOGY

Activated Carbon Fiber - MUV 1 Module

Unlike traditional activated carbon in powder or granular form, Activated Carbon Fiber is a fibrous adsorbent that has 10x higher adsorption than traditional activated carbon and gives you faster flow rates.

Activated Carbon Fiber can remove:

- Chemicals
- Heavy metals
- Discoloration of water
- Negative taste
- Filters up to 150 gallons

Hollow Fiber - MUV 2 Module

Hollow Fiber membrane are tiny hollow tubes that look like straws. These fibers have a porous membrane wall that allows clean water into the fiber and prohibits contaminants from passing through the membrane. Hollow Fiber membranes filter water by size exclusion. Size exclusion works by having a pore size smaller than the size of the contaminants. Clean water is allowed to go through the membrane while large contaminants cannot fit through the pores.

Hollow Fiber can remove:

- Bacteria (E. Coli, Cholera, Typhoid, etc)
- Protozoa (Cryptosporidium)
- Parasites (Giardia)
- Filters up to 100,000 gallons
- 0.1 Microns

Nanalum - MUV 3 Module

The technology used in Nanalum was developed by NASA as a way to reuse waste water on the International Space Station. Nanalum works through electro-absorption and is manufactured with non-woven highly

engineered water filter paper which is also impregnated with Granular Activated Carbon (GAC). The Nanalum module has a strong positive electrostatic charge when wet. Like a strong magnet, the positive electrostatic charge of the Nanalum attracts and traps organic contaminants.

Nanalum can remove:

- Viruses (Hepatitis A, Hepatitis E, Poliovirus and Meningitis)
- Bacteria (E. Coli, Cholera, Typhoid, etc)
- Protozoa (Cryptosporidium)
- Parasites (Giardia)
- Heavy Metals
- Chemicals
- Negative taste
- Filters up to 90 gallons

EPA Est No.94660-CHN-1 

Renovo Water | Hydroblu
3653 W 1987 S
Salt Lake City, UT 84104

www.hydroblu.com

800-678-7888 | info@hydrohealthus.com

CONTAMINANTS	MUV 1 Activated Carbon Fiber	MUV 2 Hollow Fiber	MUV 3 Nanalum
HEAVY METALS	Yes	No	Yes
CHEMICALS	Yes	No	Yes
MICROBIOLOGY / BACTERIA	No	Yes	Yes
VIRUSES	No	No	Yes
SEDIMENT AND WATER CLARITY	Yes	Yes	Yes
ABILITY TO BACKFLUSH/CLEAN	No	Yes	No