MŪV

ADAPTABLE WATER FILTER

SURVIVALIST WATER FILTER INSTRUCTIONS

The MUV Survivalist Water Filter is a revolutionary water filter that allows you to adapt the water filter to different water contaminations. The MUV Survivalist Water Filter can be configured in a variety of different ways, including; being used as a straw, as an inline water filter, as a gravity water filter, or in a water bottle.

Assembly of the MUV Survivalist Water Filter is very simple. All the connection points are male or female and twist to lock in place.

HOW TO USE MUV IN A STRAW CONFIGURATION

Pieces required for using MUV as a straw will vary depending on the contamination level of the water you are filtering.

Begin with the PRE+28 housing and connect the male end to the female end of the MUV 1, 2, or 3 filter. Turn it clockwise to lock it in place. Connect the male end of the chosen filter to the female end of the mouthpiece. Turn it clockwise to lock it in place. Insert the PRE+28 end of the configuration into the water source and begin to suck water through the filter. It will generally take 5-10 seconds to draw water through the filter as the water has to make its way through the filter membranes. This is normal and is critical to make sure that the membranes are filtering the water.

HOW TO USE MUV WITH THE BUCKET ADAPTER/GRAVITY SYSTEM

Pieces required to use MUV with the bucket adapter. MUV 1, 2, or 3 filter, PRE+28 housing, OUT+28 housing, one hose adapter, hose, hose clamp, bucket adapter, and 5-gallon bucket. You will also need a drill with a ½" drill bit.

Using the drill and drill bit, drill a hole in the 5-gallon bucket. Make the hole roughly 2" from the bottom of the bucket. This will allow any sediment in the contaminated water to settle to the bottom of the bucket and not plug the bucket adapter. Once the whole has been drilled into the bucket, twist apart the two pieces of the bucket adapter. The bucket adapter includes two O-rings. Remove one of the O-rings, keeping the other O-ring on the threaded/male portion of the bucket adapter. Push the threaded/male end of the bucket adapter into the whole that you drilled into the bucket. With the threaded/male end of the bucket adapter inside the bucket, push the second O-ring onto the threaded end and thread the female end of the bucket adapter onto the male end of the bucket adapter. Hand tighten the bucket adapter until it is firmly in place. Do not use tools to tighten the bucket adapter. Attach the hose to the hose barb end of the bucket adapter. Slide the hose clamp onto the hose and position it half way up the hose. Pinch the hose clamp together, sealing the hose. Either, dip the bucket into the water source to collect water or use some other container to fill the bucket with water.

Assemble the MUV filter by connecting the MUV 1, 2, or 3 filter to the PRE+28 housing. Turn it clockwise to lock it in 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. Insert the barbed end of the hose adapter (connected to the PRE+28 housing) in the bottom of the hose. Place a water receptacle below the filter and unclamp the hose clamp. This will allow water to begin to flow through the filter. Once the receptacle is full you can pinch the hose clamp together to stop the flow of water.

HOW TO USE THE MUV FILTER INLINE WITH A HYDRATION RESERVOIR

Pieces required for inline configuration. MUV 1, 2, or 3 filter, PRE+28 housing, OUT+28 housing, two hose adapters, and a water reservoir (not included).

Begin with the MUV 1, 2, or 3 filter and connect the PRE+28 housing to the bottom/female end of filter. 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.

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/your hydration reservoir.

Next fill your hydration reservoir with the contaminated water. Make sure the reservoir mouth piece and the OUT+28 end of the MUV filter to not come in contact with the contaminated water. This can cause cross contamination. Once your reservoir is filled with contaminated water, place the reservoir into your backpack or bag. Using the reservoir mouthpiece, begin to draw water through the mouthpiece as you normally would. It will generally take 5-10 seconds to draw water through the filter for the first time as the water has to make its way through the filter membranes. This is normal and is critical to make sure that the membranes are filtering the water.

HOW TO USE MUV WITH A THREADED 28MM WATER/SODA BOTTLE

Pieces required for threading MUV onto a water/soda bottle top. PRE+28 housing, MUV 1, 2, or 3 filters, and mouthpiece.

Begin with the PRE+28 housing and connect the male end to the female end of the MUV 1, 2, or 3 filter. Turn it clockwise to lock it in place. Connect the male end of the chosen filter to the female end of the mouthpiece. Turn it clockwise to lock it in place. Fill your water/soda bottle with contaminated water and then twist the top into the threaded/bottom end of the PRE+28 housing. Turn the bottle and filter upside down and drink through the mouthpiece. It will generally take 5-10 seconds to draw water through the filter as the water has to make its way through the filter membranes. This is normal and is critical to make sure that the membranes are filtering the water. A gentle squeeze of the bottle will help push the water through the filter.

CLEANING AND MAINTENANCE

Backflushing

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.

Drying

After each use, you should allow the filters to completely dry. This is best achieved by standing the filters on their female ends (opposite the flow direction) with a towel or paper towel under the filter to collect water.

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 and Typhoid)
- 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)
- Protozoa (Cryptosporidium)
- Parasites (Giardia)
- Heavy Metals
- Chemicals
- Negative taste
- Filters up to 90 gallons

EPA Est No.94660-CHN-1 ⚠
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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