

MUKA STOVE

OD-1NP

Patent Pending

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Instruction Manual

Be sure to read this manual carefully before using the Muka. Keep this manual for future reference and review its contents regularly to keep aware of procedures and warnings. Failure to follow the warnings described in this manual may result in fire, property damage, injury, or death. Please contact your retailer or SOTO if you have any maintenance or repair related questions.

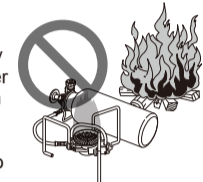
Cautions and Warnings

Actions marked "⊘" in the illustrations are strictly prohibited.

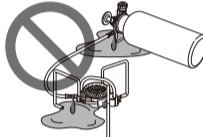
- This stove can produce carbon monoxide, which has no odor. Using it in an enclosed space can be deadly. Never use this stove in an enclosed space, including a camper, tent, car, or home. Failure to follow this instruction may cause injury or death.



- Use only SOTO approved windscreens with the Muka. The windscreen is intended only to be used with the stove. Never cover the fuel with a windscreen while the stove is in use. Avoid exposing the fuel to heat. The bottle may explode if exposed to heat.



- Make sure no fuel is leaking out before lighting the stove. Stop operating the stove immediately if a fuel leak is found. Never light a stove that is leaking fuel.



- Never move a hot stove or a stove that is in use. Wait until the stove is completely cooled before touching.

- Never leave a burning or hot stove unattended.

- Keep children and/or pets away from stove and never leave it unattended.

- Use the stove only as intended for cooking food and boiling water. Do not use pans with a diameter exceeding 21cm (8 in.). The weight of the pan plus food should not exceed 4.5kg (10 lbs.).



- Stop operating the stove if the ambient temperature falls below -20°C (-4°F) because the O-ring will temporarily harden and lose elasticity, causing the fuel to leak.

- Never use 2 stoves side-by-side (i.e., a griddle), as this may cause the stove to deform or explode.

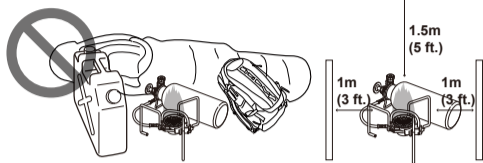


- ALWAYS store the fuel in a cool area. Never expose fuel to direct sunlight and never leave inside tent or car. Heated fuel may explode.

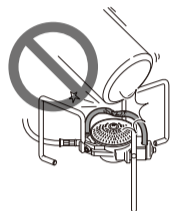


- Always keep the connection between hose and pump clean. Failure to keep the connection clean may cause a fuel leak. Never use the bottle if wear-and-tear, cuts, warps, and bends are found at the mouth of the bottle where the O-ring contacts the Smart Pump when it is installed.

- Never use the stove near any flammable materials. Keep all such materials at least 1m (3 ft.) away from sides of the stove and at least 1.5m (5 ft.) away from top while stove is in use.



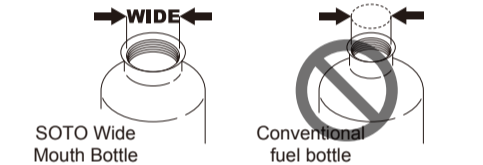
- The generator unit on the Muka Stove has been engineered precisely to accomplish instantaneous ignition, i.e., non-priming. Be sure to treat it carefully. Dropping or throwing may cause damage to the generator unit which may require a replacement. (Part#: OD-GRN).



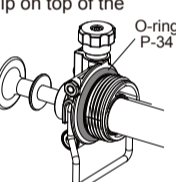
- The Muka Stove's flexible hose provides smooth and easy operation when setting up and stowing. NEVER bend the hose more than 90°. Failure to follow this instruction may cause a fuel leak. Stop using the stove when any fuel leak is found. Replace the hose unit (Part#: OD-HSN) if a fuel leak is found on the hose.



- Use only the SOTO Wide Mouth Bottle. Be sure to read instructions printed on the bottle before use.



- IMPORTANT!!! Always check the lip on top of the bottle and the O-ring P-34 on the Smart Pump for wear-and-tear, including dust, deformation, and cuts. This could cause the fuel to leak, resulting in fire, bodily injury, and even death. If dirty, clean the flat lip and the O-ring. Replace the O-ring if wear-and-tear has occurred. Replace the bottle if the flat lip is deformed and cuts are found.



- Always place the cap on SOTO's Wide Mouth Bottle when stowing or traveling.



- When separating the Smart Pump from a pressurized Wide Mouth Bottle, one side of the O-Ring may be pushed out by the compressed air. If this occurs, adjust the O-Ring before re-setting.

- Always store the Muka and pump separately when stowing for a long period of time.

Output: 4,000 kcal/h 4,650 W 15,800 BTU

Types of fuel: White gasoline, Regular unleaded gasoline

Duration: Burns approx. 1 hour at maximum output (1.5 hour at 2,500 kcal/h [10,000BTU]) using 480ml (16.3 oz.) regular unleaded gasoline.

Weight: 160g (5.6 oz.) without pump, 320g (11 oz.) with the pump.

Dimensions when in use (stove body only): 13.5 x 13.5 x 8.0cm (5.3 x 5.3 x 3.1 inches)

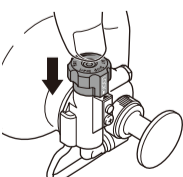
Dimensions when stowed (stove body only): 8.0 x 6.5 x 8.0cm (3.1 x 2.6 x 3.1 inches)

Applicable Fuel

Use either regular unleaded gasoline or white gasoline.

- Never use Premium or higher grade gasoline such as super unleaded gasoline as premium fuels. These fuels may contain additives that will cause the generator unit to clog.
- NEVER use any fuel or liquid other than those specifically indicated in this manual.
- NEVER cross-contaminate the stove/bottle unit with fuel/liquid that is not recommended. Be sure to use a clean vessel to carry the designated fuel. Failure to follow this instruction may clog the generator unit.
- The fuel used is highly volatile fuel. Be careful when handling such fuel.
- Do not use old fuel. Old fuel may clog the generator unit.

Regarding the Control Dial (CD)

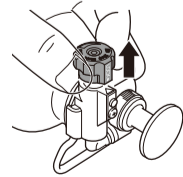


- ◆ **"LOCK" position:** The Control Dial will lock when it is pressed. The "LOCK" position will prevent accidental engagement of the operating mode. Always press the CD to the "LOCK" position when stowing the stove or when traveling.

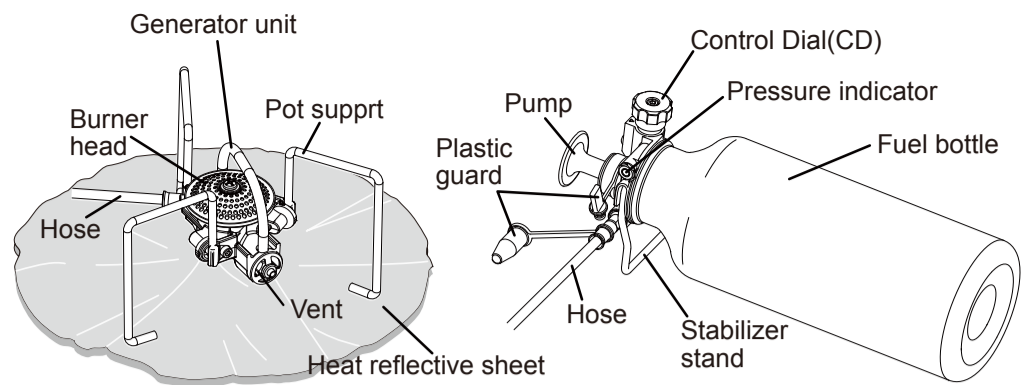
◆ Emergency Stop:

Place the CD in the "LOCK" position to extinguish the flame when an emergency arises. The "LOCK" position will cut off the fuel supply immediately but the residual fuel remaining inside the hose may take time to burn off.

- ▲ The proper procedure for extinguishing a flame is to turn the CD to the "AIR" position. The "AIR" position will cut off the fuel supply, allowing only air to release from the Wide Mouth Bottle. Simultaneously, the air cleans the fuel passageway. This procedure will also ensure a longer life for the generator unit.

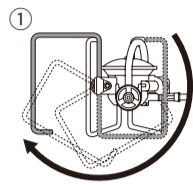


- ◆ **"UNLOCK" position or "OPERATING" position:** The "OPERATING" position will enable the dial to turn and engage the CD with the 4 positions: STOP, START, RUN, and AIR.



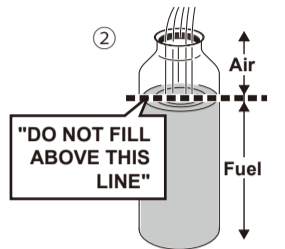
Preparing

- 1 Unfold the three pot supports as shown in the illustration.



- 2 Fill the fuel to the "DO NOT FILL ABOVE THIS LINE" mark.

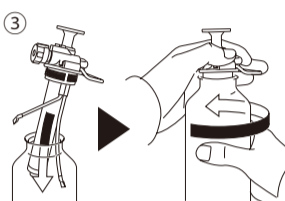
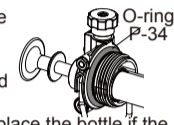
- ▲ When filling the bottle with fuel, keep the fuel and bottle far away from a lit stove, naked flame, or any heat source.
- ▲ NEVER fill fuel above the "DO NOT FILL ABOVE THIS LINE" mark as the system requires adequate air to ignite. A lack of air supply may result in failure to ignite.



- 3 Insert pump and screw down.

Do not connect the hose at this point.

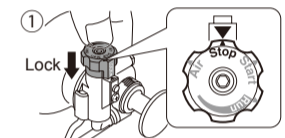
- ▲ When inserting the pump, carefully place it into the bottle to avoid damage of all pipes installed in the pump system.
- ▲ IMPORTANT!!! Always check the lip on top of the bottle and the O-ring P-34 on the Smart Pump for wear-and-tear, including dust, deformation, and cuts. This could cause the fuel to leak, resulting in fire, bodily injury, and even death. If dirty, clean the flat lip and the O-ring. Replace the O-ring if wear-and-tear has occurred. Replace the bottle if the flat lip is deformed and cuts are found.
- ▲ Check whether the Backflow Prevention Nozzle (Assembly Drawing 25) is loose. If loose, tighten with the Multi-tool.



- 4 Wipe off any spilled fuel with a clean cloth.

Pumping

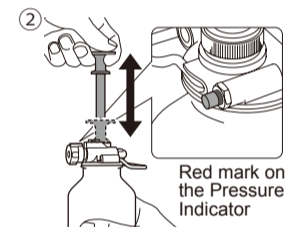
- 1 Make sure that the Control Dial (CD) is in the locked position (depressed position), and it is set at the "STOP" position.



- 2 Begin pumping using full strokes. When a red mark on the Pressure Indicator becomes visible, stop pumping.

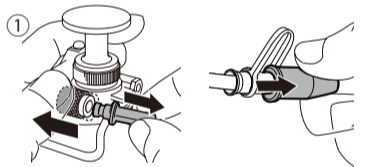
The red line on the Pressure Indicator means that optimal pressure has built up inside the bottle.

- ▲ CAUTION: Excess pressure may cause a leaping red flame at start up. Do not over-pressurize the bottle. Less pressure may cause a failure to ignite the flame properly.
- ▲ Pump approximately 40 times to obtain optimal pressure if fuel is at the FULL mark (line indicated on the bottle). If the tank is half full, then pump approximately 90 times to obtain optimal pressure.



Prepare the unit

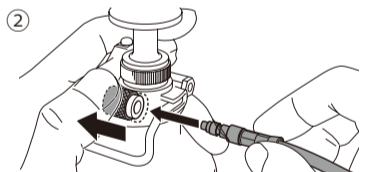
- 1 Remove plastic guards located at the end of the hose unit and at the connection on the Smart Pump.



- 2 Connect the hose to the Smart Pump.

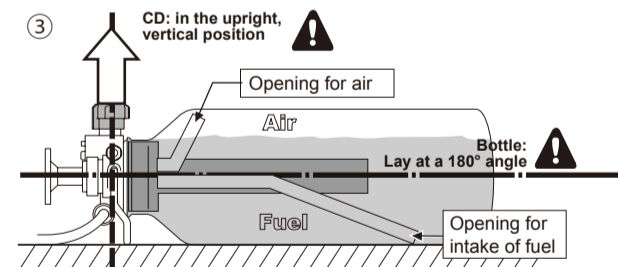
Confirm that the Smart Pump and hose sections are securely connected.

- ▲ Keep the Smart Pump and hose units clean and free from dust, sand, and other debris. Failure to heed this warning may cause a fuel leak.
- ▲ Fuel flow will be blocked when snow or ice is formed at the brass hose connections. Be sure to keep the connection areas clean and free of any water, snow, and ice to avoid the formation of ice which blocks the fuel flow. Should this occur, warm up the connection section, keeping it clean and free of ice.



- 3 Lay bottle down.

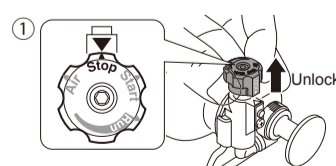
- ▲ ALWAYS lay the bottle down with the stabilizer downward. IMPORTANT: Be sure to lay the bottle at a 180° angle. (Refer to the illustration.)
- ▲ The Control Dial (CD) must ALWAYS be in the upright, vertical position when unit is in use. (Refer to the illustration.)



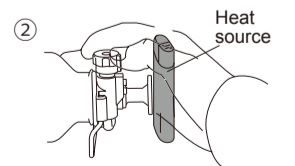
Ignition

- ▲ The low profile Muka stove produces a robust flame. The stove is intended for outdoor use ONLY. Never use the stove on a desk, counter-top, furniture, etc.
- ▲ Use of the reflective sheet in the snow: When used with the stove in the snow, the reflective heat may cause the snow to melt under the sheet, making the base unstable. Be sure to check snow conditions under the reflective sheet regularly to avoid potential sliding of pots which may be full of hot liquid or food.

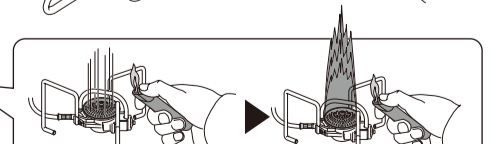
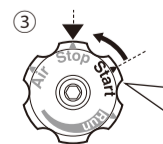
- 1 IMPORTANT: Confirm that the CD position is at the "STOP" position. Then, pull the CD upward to unlock and place it in the working position.



- 2 Prepare a heat source.



- 3 Turn the CD to the "START" position and ignite. Initial ignition may produce a strong red leaping flame.

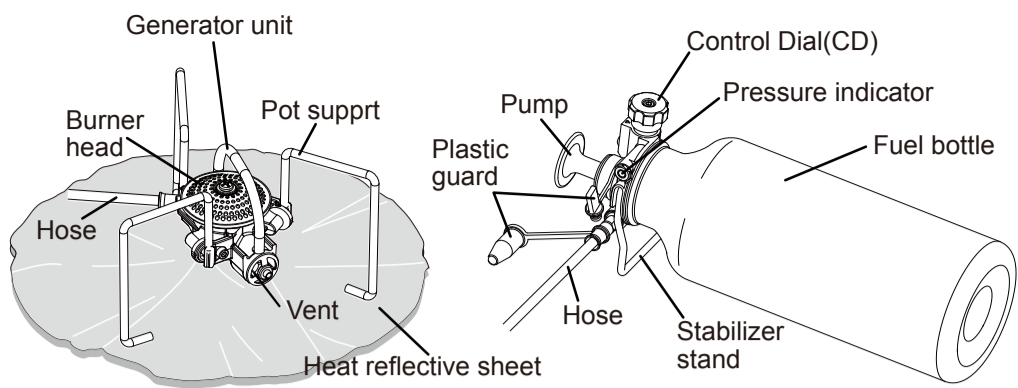


- ▲ Never place face or other body parts directly over the stove when lighting.
- ▲ This initial ignition will significantly reduce pressure built up inside the bottle. Always make sure to optimize the pressure inside the fuel bottle before igniting the stove.

Only air will be released during the initial 2 to 3 seconds

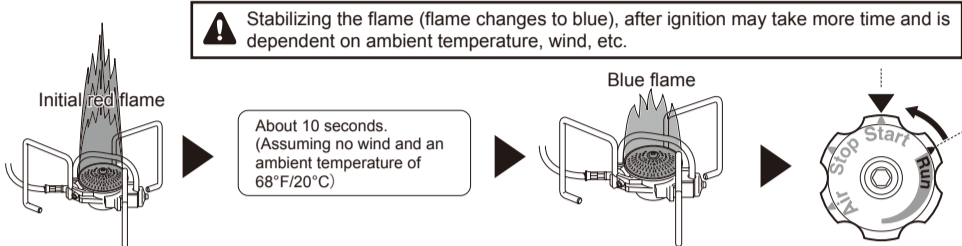
Ignite the gas mixture made up of fuel and air.

ATTENTION: Only air will be released during the initial 2 to 3 seconds after the CD is turned to the "START" position. Then fuel mixed with air will appear at the burner head.



Stabilizing the flame

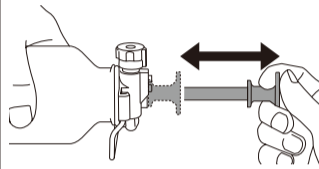
- When the initial red flame transforms into a blue flame, turn the CD to the "RUN" position.
CAUTION: Switching the CD from the "START" to "RUN" position prematurely may occasionally cause a flame to ignite between the burner base ring and the burner base. (see Assembly Drawing 4 and 5) Flame will extinguish in 20 seconds.



⚠ Stabilizing the flame (flame changes to blue), after ignition may take more time and is dependent on ambient temperature, wind, etc.

- Pump to increase pressure as necessary for continued use of the stove. Remember to stop pumping when the red mark on the Pressure Indicator becomes visible.

- The initial ignition will consume most of the pressure built up inside the Wide Mouth Bottle. Be sure to add adequate pressure when the CD is set to the "RUN" position.
- The red line on the Pressure Indicator means that the pressure has adequately built up inside the bottle. NEVER over-pressurize the bottle. DANGER: Failure to follow this instruction may cause the stove to produce a dangerous, raw flame.

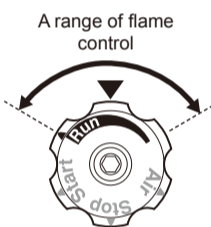


Flame Control

- Be sure to turn the CD to the "RUN" position. The "START" position allows a mixture of fuel and air to release. If the CD is left on the "START" position, the Wide Mouth Bottle will continue losing its built-up pressure.

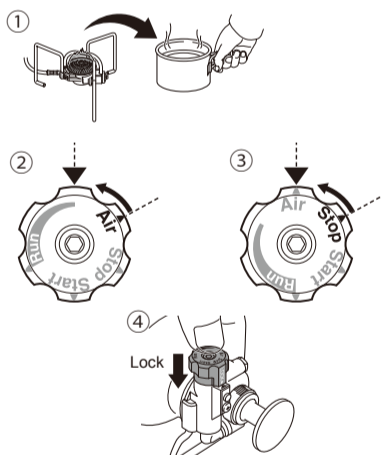
The "RUN" position offers a range of flame control. The operator can regulate the flame by adjusting the CD.

- There is a delay between adjusting the fuel control dial and the flame's response. IMPORTANT! Adjusting the flame to simmering: Observe the simmering flame until it is stabilized. Then it is ready for use.
- The flame may be extinguished when a large amount of liquid is spilled on the Generator unit.
- Under windy conditions, the vent on the stove body may draw in the flame, causing the stove to produce a red flame. To resolve this problem, turn the vent against the wind.
- The ability to simmer may be slightly affected by atmospheric temperatures as well as built-up pressure inside the bottle.



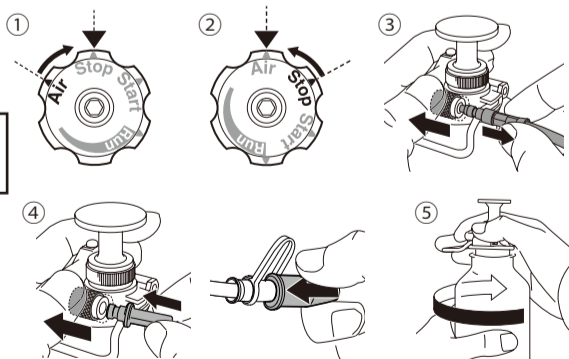
Extinguishing the flame

- Remove all cooking utensils from the stove.
- Turn the CD to the "AIR" position. This position allows air to flow inside the hose while shutting off fuel flow.
⚠ A large flame will leap out of the burner head when the CD is turned to the "AIR" position. The flame will be extinguished when all fuel is burned off.
- Turn the CD to the "STOP" position.
- The CD must be placed in the "LOCK" position to prevent any accidental fuel leaks.
⚠ Failure to set the CD to the depressed position or "LOCK" position cause a fuel leak during transportation of the unit.



Taking the Smart Pump out of the Wide Mouth Bottle

- Turn the CD to the "AIR" position to release the air pressure from the Wide Mouth Bottle before the Smart Pump can be unscrewed.
⚠ If there is any residual pressure left inside the bottle, unscrewing the Smart Pump from the bottle will be difficult.
- Turn the CD to the "STOP" position.
- Release hose from the Smart Pump.
- Place plastic caps on the Smart Pump connector and hose connections.
⚠ Always secure the plastic caps for the hose end and the connection on the Smart Pump when stowing and moving the Muka. If any section of the connection becomes scratched, it should be replaced. (Part#: OD-HSN)
- Unscrew the Smart Pump and extract the pump unit carefully.
⚠ Never screw or unscrew the Smart Pump and the Wide Mouth Bottle when the hose unit is attached.
⚠ Refer to the Smart Pump illustration in this section. Never hold the hose base (illustration A) or the pump connection (illustration B) to screw or unscrew the Smart Pump from the Wide Mouth Bottle. If the bottle is pressurized, the force will cause areas "A" and "B" to break.
⚠ NEVER separate the Smart Pump and Wide Mouth Bottle when there is residual pressure inside the bottle. Failure to observe this instruction will cause damage to the pump system. It may also cause fuel to spray out creating a potential fire hazard as well as bodily injuries.

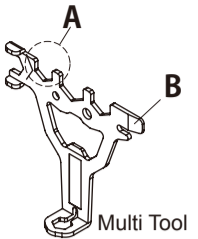


- Pot support is extremely hot during and after use. Completely cool unit before stowing.

Care and Maintenance

- Never disassemble any parts that are not described in this manual. Never modify any parts of the Muka, Smart Pump, or Wide Mouth Bottle.
- Always use original SOTO parts and replacements for safety. Use of non-SOTO parts will void the warranty. Alteration and modification will also void the warranty.
- Always carry the Multi-tool and replacement parts.

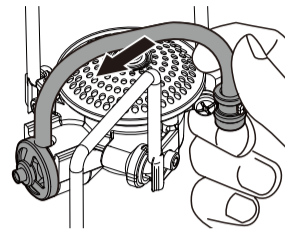
⚠ Continued use of the Muka will eventually reduce its flame output. Testing at SOTO's labs reveals that after continuous burning of 20 liters of fuel, output is reduced. This volume of fuel is equivalent to approximately 40 700 ml Wide Mouth Bottles. If the flame output appears to be weak, replace the generator unit (sold separately). Cleaning the spring (located inside the generator unit) and the nozzle will not resolve the burning performance.



Replacing the generator unit

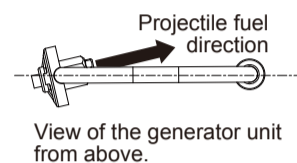
Be sure to follow this instruction when replacing the Generator Unit. Failure to follow this instruction may result in deforming the Generator Unit.

- Use part A of the Multi-tool to remove the Generator Joint (refer to Assembly Drawing 12).
- Use part B of the Multi-tool to remove Screw +/-M4 x 6 (refer to Assembly Drawing 7).
- To remove the Generator Unit, gently push the unit as shown in the right-hand illustration.
- Replace the old generator unit with a new generator unit. Secure with the "Screw +/-M4 x 6" shown in assembly drawing 6. Do not forget to replace the "M4 Spring Washer" shown in assembly drawing 5.
- Install the Generator Joint.



⚠ The generator pipe is made of soft material. NEVER apply excessive pressure or deform it when replacing or at any time.

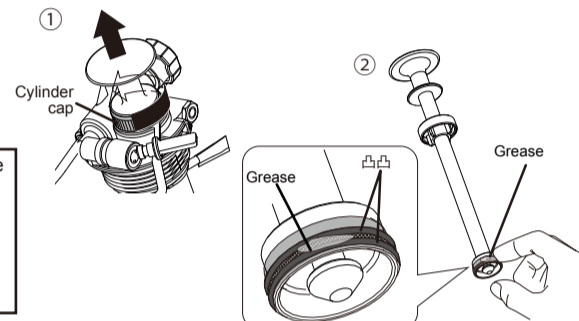
⚠ The generator unit means the unit combined with the generator pipe and the installed jet. The projectile direction of the fuel from the nozzle is set at a specific angle. Do not bend or press to modify the generator pipe and the jet. Do not attempt to unscrew the jet from the generator unit.



Maintenance for the replaceable pump shaft gasket

- Turn the cylinder cap as shown in the drawing. Then, take the pump shaft.
- Apply grease to the replaceable pump shaft gasket.

⚠ CAUTION: Apply a small amount of grease at the valley between the two projected dents located on the side wall of the gasket. Excess grease may cause it to overflow into the Wide Mouth Bottle, contaminating the fuel. Combustion problems may also occur when grease seeps into the bottle.



- Return the pump shaft to the pump cylinder and cap tightly.

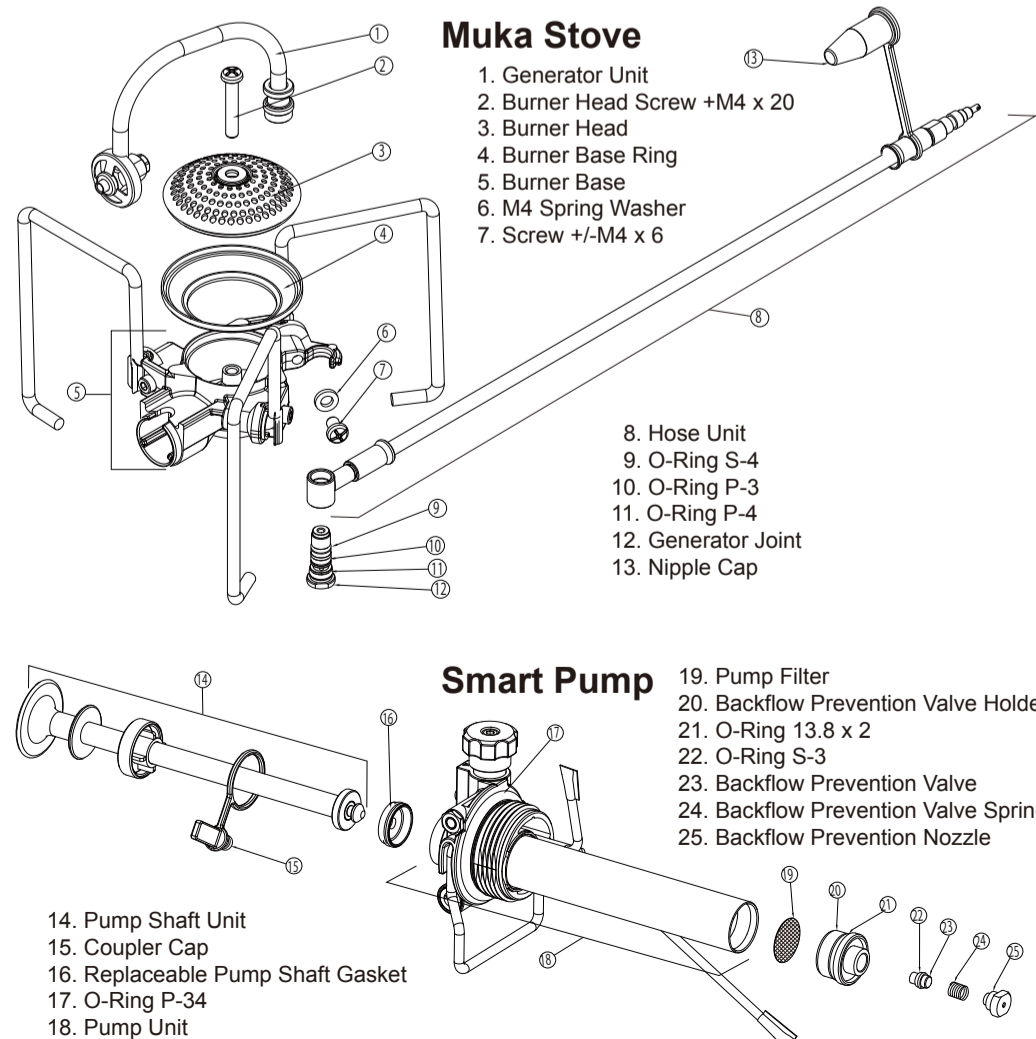
Cleaning the Burner Head

- Use a Phillips screwdriver to unscrew the Burner Head Screw +M4 x 20. Caution: The Multi-tool does not have a Phillips driver head.
- Hold the burner head and use a soft brush to lightly brush the burner head. If necessary, submerge the burner head in warm water, then use a soft brush to clean. NEVER forcefully clean the burner head as it may cause the burner head to deform.
- Return the burner head to the stove and screw into place. Never over tighten the screw. Failure to observe this instruction may cause deformation of the burner head.

Parts Kit (Sold separately)



Assembly Drawings





M U K A P R O

WINDSCREEN

Patent Pending

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Instruction Manual

Be sure to follow the written instructions in the Manual for optimal use of the windscreen.

!!!WARNING: USE EXTREME CAUTION when using this product!

The Muka Pro Windscreen controls airflow to the Muka Stove. This versatile windscreen allows the operator to open or shut vents in various locations and under a variety of atmospheric conditions.

- 1) This windscreen is useful for most backcountry stove/pot setups. Be sure to test it before use in the field.
- 2) Before lighting stove, arrange the windscreen into a cylindrical shape to fit the stove and pot set. Ignite stove according to the Muka Stove Manual instructions. Place pot on top of the stove. Place the cylindrical windscreen around the stove/pot set.
- 3) Windscreen should sit so the vents are closer to the ground.
- 4) Close vents with the windscreen on the upwind side. All other vents should be folded slightly outward before operating the stove.
- 5) Use the clip included in the kit to secure the overlay area of the windscreen walls.
- 6) Do not adjust vents while stove is in use. The Muka Pro Windscreen is extremely hot during and after use. Never touch the windscreen until it is completely cool.
- 7) Stowing the windscreen: Never fold the windscreen as this may damage the vents. Always roll the windscreen when stowing.

!!!WARNING: Edge of the windscreen is sharp. Use extreme caution to avoid cuts.