

## STOVE MAINTENANCE

**5. Scour fuel line.**  
Remove cable from fuel line. Subborn cables can be loosened with a common lubricant.  
Wipe cable clean.  
Fully reinsert cable into fuel line.  
Move cable in and out, using 5-inch strokes, 20 times.  
Flush fuel line.  
Remove cable completely.  
Insert the fuel line into the pump and secure catch arm on fuel pump groove.  
Pressurize the fuel bottle with 15 strokes.  
Open control valve fully to flush 2 oz. (3 tablespoons) of fuel through the fuel line into an appropriate container. Keep away from ignition sources. Safely dispose of fuel when flushing is complete.

**6. Reassemble stove.**  
If stove performance is still impaired, repeat steps 4 through 6.

**NEEDLE CLEAR THE JET WITH THE SHAKER**  
Deposits in the jet and fuel line reduce fuel flow and impair stove performance. Minor deposits in the jet can be cleared with the shaker needle. Major deposits may require extensive cleaning of the jet and fuel line.

1. Close the control valve and wait 5 minutes for stove to cool.
2. Shake the stove up and down.
3. Preheat and run stove. Extensive cleaning of the jet and fuel line. If performance does not improve, perform

**EXTENSIVE CLEANING OF THE JET AND FUEL LINE**

1. Remove the flame spreader.
2. Unscrew the jet using the jet & cable tool.
3. Remove the jet and shaker needle.
4. Clear the jet orifice with the jet cleaning wire.

## PUMP MAINTENANCE

**SEALS**  
Replace O-rings that are dry, cracked or torn. Replacement O-rings and pump seals can be found in the Annual Maintenance Kit or the more comprehensive Expedition Service Kit, purchased separately from an MSR Dealer.

1. Remove plunger. Align, twist, and pull.
2. Remove the fuel tube bushing and O-ring. Remove the O-ring with the end of the fuel line or a safety pin.
3. Inspect O-ring.
4. Replace O-ring. If needed, a spare fuel tube O-ring is provided.
5. Lubricate Pump Cup. Use a drop of pump cup oil or any mineral-based oil.
6. Insert Plunger. Align plunger/bushing Arrow 1 with holes in pump body. Push the plunger/bushing into the pump body until it snaps in place.

**CONTROL VALVE O-RING**

1. Unscrew the stop nut 2 turns.
2. Unscrew the control valve 6 turns.
3. Unscrew the stop nut completely and remove the control valve.
4. Inspect O-ring.
5. Replace O-ring if damaged.

**PUMP SEAL**  
Inspect pump seal and replace if damaged.  
Remove O-ring.  
Disassemble control valve assembly.

**CLEANING THE CHECK VALVE**

1. Remove the check valve assembly.
2. Clean any debris from the check valve and pump cavity.
3. Reinsert the check valve assembly.

**Remove Check Valve Assembly**

**Remove Pump Seal**

**Unscrew the Stop Nut**

## HOW THIS STOVE WORKS

MSR® stoves are uniquely designed and engineered to be reliable even in the most extreme environments. The MSR blue flame is our trademark for performance and is recognized throughout the world.

To prepare the stove for operation, a preheating or “priming” step is required to heat the generator tube to operating temperature. To preheat, release a small amount of fuel into the burner cup, light the fuel, and allow the resulting flame to burn for about two minutes. Once the generator tube is heated, pressurized liquid fuel passes through it and is vaporized or converted to a gaseous state. As the gas passes into the burner cup it is mixed with oxygen and creates a hot blue flame. Finally, the flame spreader holds and spreads the flame out so that heat is concentrated onto the cookware.

## DANGER

### CARBON MONOXIDE, FIRE & EXPLOSION HAZARD

This stove consumes oxygen. Using it in an enclosed area will cause carbon monoxide poisoning and death. For outdoor use only. Do not use stove in a tent, car, house, or inside any enclosed area.

This stove uses highly flammable fuel. Leaking fuel can easily ignite and cause fire, serious burns, property damage, personal injury, and death. Do not use a stove that has a fuel leak.

This stove uses a sealed fuel bottle that can explode when exposed to extreme heat. An explosion can cause serious burns, property damage, personal injury, and death. Keep fuel bottle away from stove burner and other heat sources.

**READ, UNDERSTAND, AND FOLLOW ALL instructions and warnings in this manual before using this stove.**

Failure to follow all warnings and instructions can result in property damage, serious injury, or death.

**See inside for detailed instructions.**

### LIMITED LIFETIME WARRANTY/LIMITATIONS OF REMEDIES AND LIABILITY U.S.A. and Canada

**Grant of Limited Warranty.** Cascade Designs, Inc. (“Cascade”) warrants its enclosed products to be free from defects in materials and workmanship under normal use and maintenance for the life of the product. This limited warranty does not cover and does not apply to any Cascade product (i) altered in any way or used for purposes inconsistent with the product design as provided, (ii) improperly maintained, (iii) failure to follow the product instructions or warnings, (iv) subjected to misuse, neglect or accidents, (v) when the user fails to follow the product instructions or warnings. During the warranty period, all original parts subject to this limited warranty and determined by Cascade or its agent to be defective in materials or workmanship, will either be repaired or replaced, at its sole option, by Cascade or its authorized agent. Cascade reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function. Products for which replacement is made shall become the property of Cascade.

Except for the limited warranty expressly provided above, to the maximum extent permitted by applicable law, Cascade, its affiliates and their suppliers make no warranties, express or implied, and disclaim all warranties, duties and conditions, whether express, implied or statutory, with respect to the products, including, without limitation, any implied warranties of merchantability, against latent defects, fitness for a particular purpose, or correspondence to description.

**Warranty Service.** In order to obtain service under this limited warranty, the Cascade product, must be presented to an authorized Cascade product dealer. For limited warranty return service details, please go to [www.msrgear.com](http://www.msrgear.com). In the U.S.A. and Canada, you may also obtain warranty service by calling 1-800-531-9531 [M-F, 8:00-4:30, PDT]. The purchaser is responsible for all shipping and handling to Cascade for returned product, and Cascade the shipping and handling for any product returned to purchaser under this limited warranty.

**Limitation of Remedies.** In the event of a breach of the limited warranty set forth above, Cascade or its authorized agent will only be obligated at Cascade’s sole option to either repair or replace the failed product. If after written notice to Cascade of each defect, malfunction or other failure and a reasonable number of attempts to correct the defect, malfunction or other failure and the remedy fails of its essential purpose, Cascade will refund the purchase price paid to Cascade in exchange for the return of the sold good(s). Said refund shall be the maximum liability of Cascade. THE FOREGOING REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF THE PURCHASER AGAINST CASCADE, ITS AFFILIATES AND THEIR SUPPLIERS, REGARDLESS OF THEORY, WHETHER ARISING IN CONTRACT, BREACH OF ANY WARRANTY, TORT, INCLUDING STRICT LIABILITY OR NEGLIGENCE, OR OTHERWISE.

**Limitation of Liability.** In all cases, the maximum liability of Cascade, its affiliates and their suppliers shall be limited to direct damages only in an amount not to exceed the original purchase price of the product. To the maximum extent permitted by applicable law, Cascade, its affiliates and their suppliers expressly disclaim and exclude any liability for any incidental, special, indirect or consequential damages resulting from any reason whatsoever. This exclusion applies to all legal theories under which damages may be sought. This exclusion and limitation shall apply even if any remedy fails of its essential purpose.

This limited warranty gives you specific legal rights and you may also have other rights which may vary from state to state. Always carefully refer to and follow all use, safety, operation and maintenance instructions for Cascade products. European Union customer statutory rights are not affected.

FOR OUTDOOR USE ONLY

For product service and information contact:  
**Cascade Designs, Inc.**  
4000 First Avenue South, Seattle, WA 98134 U.S.A.  
Phone: 800.531.9531 or 206.505.9500  
[www.msrgear.com](http://www.msrgear.com)

# INSTRUCTION MANUAL

**MSR**  
MOUNTAIN SAFETY RESEARCH®

**ENG**

## XGK EX™

119324-1

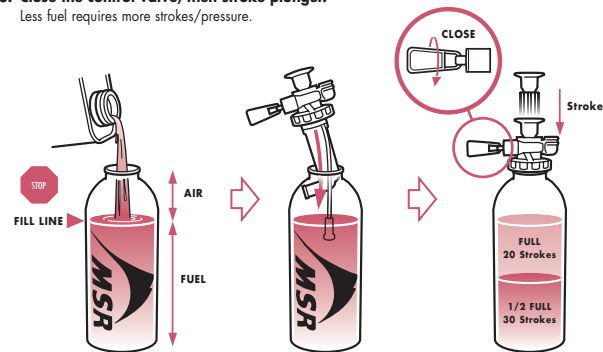
# XGK EX™ OPERATING INSTRUCTIONS

READ, UNDERSTAND, AND FOLLOW ALL instructions and warnings in this manual before using this stove.

## 1 PREPARE FUEL BOTTLE

The XGK EX burns a variety of fuels. See *Fuel Information*.

- Fill fuel bottle to fill line only.**  
Air space is necessary for fuel expansion.
- Insert pump into fuel bottle and firmly tighten.**
- Close the control valve, then stroke plunger.**  
Less fuel requires more strokes/pressure.

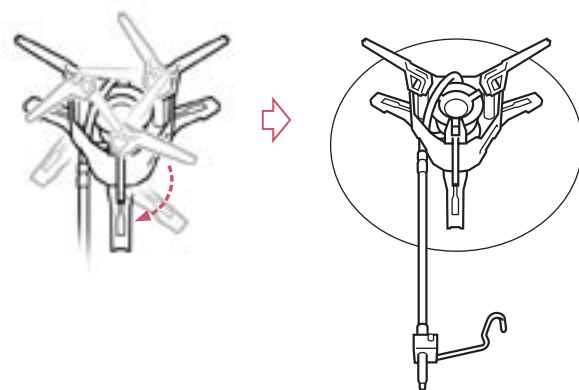


### ⚠ WARNING

Use MSR® fuel bottles only. Non-MSR fuel bottles may leak fuel, resulting in fire and injury. Keep children away from stove and never leave a burning or hot stove unattended.

## 2 SET UP STOVE

- Rotate the stove legs and pot supports.**
- Place stove on the center of heat reflector.**

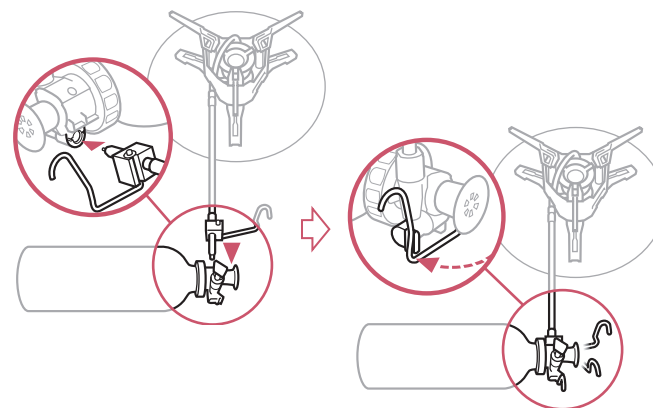


### ⚠ WARNING

This stove can ignite combustible materials. Keep combustibles at least 4 feet away from the top and sides of a burning stove. This stove is for cooking food and boiling water only. Never use it for any other purpose. When temperatures are below -24o C (-10o F), O-rings can be stiff and prone to fuel leakage. Use extreme caution in subzero temperatures.

## 3 CONNECT STOVE AND PUMP

- Insert the fuel line into pump.**  
With fuel bottle on its side, control valve points up.
- Secure the catch arm on fuel pump groove.**  
Keep fuel line straight for safety.

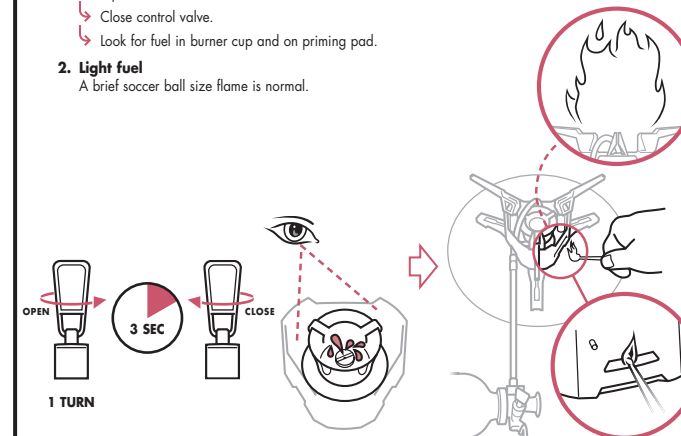


### ⚠ WARNING

Leaking or spilled fuel can ignite and burn you. Before every use, look for fuel on the fuel bottle, pump, fuel line, and burner. If you see or smell fuel, do not light the stove. See *Troubleshooting*. Never disconnect the fuel line, pump, or fuel bottle when the stove is in use or fuel will leak, ignite, and burn you.

## 4 PREHEAT STOVE

- Release only 1/2 tablespoon of fuel.**  
Open control valve 1 turn and let fuel flow for 3 seconds.  
Close control valve.  
Look for fuel in burner cup and on priming pad.
- Light fuel**  
A brief soccer ball size flame is normal.

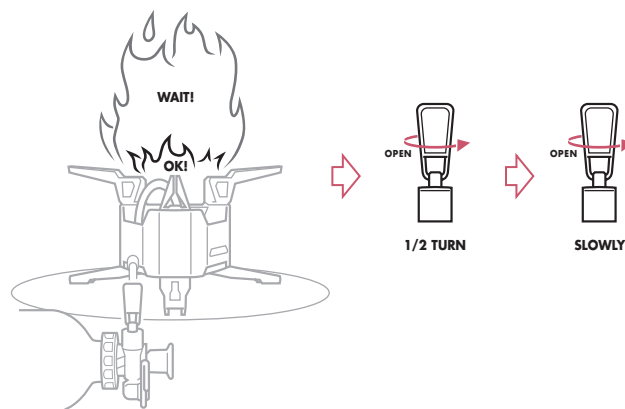


### ⚠ WARNING

Leaking or spilled fuel can ignite and burn you. Before lighting, look for fuel on the fuel bottle, pump, and fuel line. If you see or smell fuel, do not light the stove. See *Troubleshooting*. Never place your head or body above the stove when lighting it or while the stove is burning. Never use excess fuel while preheating.

## 5 TURN STOVE ON

- Wait for preheat flame to reduce in size.**
- Open 1/2 turn and wait for steady blue flame.**
- Slowly open control valve.**

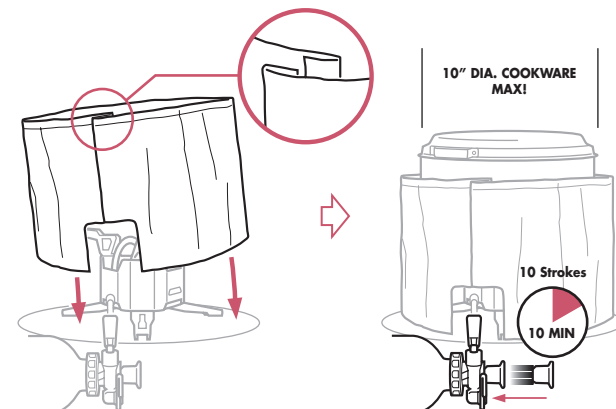


### ⚠ WARNING

Relighting a warm stove can result in large flames that can burn you. Never light a warm stove. Let the stove cool 5 minutes before relighting. Accessible parts may be very hot. Never move a hot or burning stove.

## 6 USE STOVE TO COOK

- Set up windscreen.**  
Use windscreen to improve performance in all conditions. Leave a 1" gap between windscreen and pot for optimal performance.
- Maintain fuel bottle pressure.**  
To maintain performance add 10 strokes every 10 minutes.



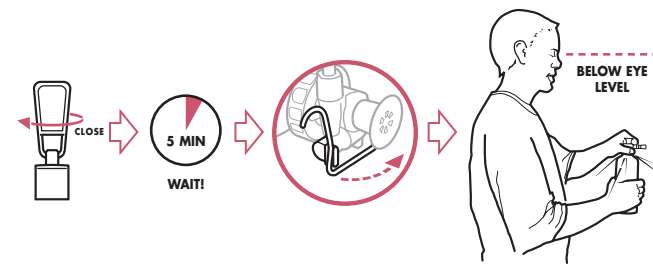
### ⚠ WARNING

An overheated fuel bottle can explode and burn or injure you. Keep it away from heat sources, such as the stove burner. Separate burner and fuel bottle with the windscreen. Large cookware reflects excessive heat. Never use cookware with a diameter greater than 10 inches. Never operate stove with empty or dry pots. Never use aftermarket heat reflectors or diffusers.

## 7 TURN STOVE OFF

- Close control valve.**  
Because of residual fuel in the line, the stove will continue to burn with a small flame.
- After flames are out, wait 5 minutes for stove to cool.**
- Unlock catch arm and remove fuel line from pump.**
- Depressurize bottle and repack stove.**  
Hold the fuel bottle upright, away from your face and any sources of heat or ignition.  
Slowly unscrew pump to depressurize bottle.

To transport or store the fuel bottle, the pump may be left inside a depressurized fuel bottle. The pump can also be removed and replaced with the fuel bottle cap.



### ⚠ WARNING

Use extreme caution when storing stove fuel. Do not store fuel bottle near heat or ignition sources, such as water heaters, stoves, pilot lights, furnaces, and electrical devices. Keep the fuel bottle tightly closed in a cool, well-ventilated place.

## TROUBLESHOOTING

| Problem:                           | Cause:                                  | Solution:                    |
|------------------------------------|---|------------------------------|
| <b>Leaking Fuel</b>                |   |                              |
| At Pump and Fuel Bottle Connection | Damaged or Missing Pump Seal            | Replace Pump Seal            |
| At Pump and Fuel Line Connection   | Damaged or Missing Fuel Tube O-ring     | Replace Fuel Tube O-ring     |
| At Control Valve Stem              | Damaged or Missing Control Valve O-ring | Replace Control Valve O-ring |
| In Pump Plunger Chamber            | Obstructed Check Valve                  | Clean Check Valve Cavity     |

| Problem:                          | Cause:                   | Solution:                     |
|-----------------------------------|--------------------------|-------------------------------|
| <b>Poor Performance</b>           |                          |                               |
| Erratic Yellow Flames             | Improper Preheating      | Repeat Preheating Stove       |
| Pump Not Pressurizing Fuel Bottle | Damaged Pump Cup         | Replace Pump Cup              |
| Plunger Hard to Pump              | Dry Pump Cup             | Lubricate Pump Cup            |
| Diminished Flames                 | Low Fuel Bottle Pressure | Pump the Plunger              |
| Slow Boil Times                   | Clogged Jet or Fuel Line | Clear Jet and Clean Fuel Line |
| Diminished Flames at Altitude     | Insufficient Airflow     | Open Windscreen Slightly      |

## FUEL INFORMATION

The XGK EX™ stove burns a variety of fuels by using two different Jets.

1. The GK Jet is used for white gas, kerosene, unleaded auto gas, and aviation gas. This Jet is preinstalled in your stove.

2. The X Jet is for jet fuel, and diesel. This Jet is included in the parts kit with your stove.

Use MSR® SuperFuel™ for optimal performance. It is the highest-quality fuel available for your stove. Fuels other than MSR SuperFuel lead to rapid stove clogging, requiring more frequent Jet and Fuel Line cleanings. The fuels chart below is a guide to help you find white gas when traveling internationally. Do not use leaded fuels.

For more information on international fuel names go to [www.MSRGEAR.com](http://www.MSRGEAR.com)

| U.S.A./UK/Canada      | Germany/Switzerland         | Japan     | France                        | Holland               | Spain                 |
|-----------------------|-----------------------------|-----------|-------------------------------|-----------------------|-----------------------|
| White gas/<br>Naphtha | Kocherbenzin/<br>Reinbenzin | White gas | Pétrole à brûler/<br>Esence C | Wasbenzine            | Bencina blanca        |
| Kerosene              | Petroleum Kerosin           | Toh-yu    | Pétrole                       | Petroleum<br>Lampolie | Parafina              |
| Unleaded auto<br>gas  | Autobenzin                  | Gasoline  | Esence sans<br>plomb          | Benzine               | Gasolina sin<br>plomo |
| Diesel                | Diesel                      | Diesel    | Diesel                        | Diesel                | Diesel                |