

Other MSR Products

MSR offers a wide range of high quality, innovative gear for the outdoors. Here are just a few of our other products:

- **MSR Alpine Cookware** - High quality, durable stainless steel 1.5 & 2.0 liter pots with tight fitting lid and PanHandler pot lifter.

- **MSR BlackLite Cookware** - This blackened, non-stick cookset makes cleaning a breeze. It's also 30% lighter than stainless steel.



- **MSR Heat Exchanger** - Save weight, fuel, and improve efficiency up to 25%. Fits any MSR 1.5 & 2.0 liter pot.



- **MSR White Gas** - Your stove will clog less, burn longer and create less soot with MSR White Gas. It's specially blended pure and clean.

- **MSR MiniWorks & WaterWorks II water filters** - Remove protozoa (including Giardia) and bacteria. Easy to use, fast water flow and long lasting.

- **MSR Dromedary Beverage Bags** - Bags fold up to a pocket sized square, but have big capacity with sizes from 2 to 10 liters. Great with the Shower Kit.



- **MSR Alpine Kitchen Essentials** - Prep, cook and clean with ease using these essentials. Fits inside any MSR 1.5 liter pot. Sold as a set & separately.



- **MSR Denali Snowshoes** - Winner of Backpacker Magazine's 1997 Editor's Choice Award, these innovative snowshoes feature aggressive crampons, traction bars and they're extendable so you can adjust them to fit conditions. Available in kids models, too.

For more information, contact your MSR dealer, visit our web site at <http://www.msrcorp.com> or call MSR at 1-800-877-9677 or (206) 682-4184.

Troubleshooting

Problem Solution

Fuel Leaks at:

- On/ Off Valve**
 - Replace worn or damaged On/ Off Valve O-Ring.⁽²⁾
 - Damaged or stripped Pump threads from over tightening the On/ Off Valve. Contact MSR retailer or MSR Product Service Center for repairs.

Pump / Fuel Bottle Connection

- Replace worn or damaged Fuel Bottle O-Ring.⁽²⁾
- Dented or damaged Fuel Bottle or use of a non-MSR Fuel Bottle. Replace Fuel Bottle. **Use only MSR Fuel Bottles.**

Fuel Line / Pump Connection

- Replace worn or damaged Fuel Tube O-Ring.⁽³⁾ Note: The Fuel Tube O-Ring has a green coating that wears off with use. This does not affect performance.
- Replace damaged or missing Fuel Tube Bushing.

Fuel Line

- Damaged Fuel Line. Contact MSR retailer or MSR Product Service Center for repairs.

Flame Adjuster Nut

- Replace damaged Flame Adjuster O-Ring/s.⁽³⁾

Shaker Jet

- Ensure Shaker Jet is snugly installed and the Flame Adjuster is off.⁽²⁾
- If fuel leaks through the Shaker Jet when the On/ Off Valve is off, the Pump is damaged from over tightening the On/ Off Valve. Contact MSR retailer or MSR Product Service Center for repairs.

Erratic Performance

Erratic Yellow Flames

- Insufficient priming (See "Priming").
- Too much pressure in the Fuel Bottle from pumping Plunger too much. Turn Flame Adjuster down.
- Poor quality or old fuel. Filter fuel that looks cloudy or has sediment at bottom of container. Use fresh, clean fuel and store it in airtight containers.
- Wrong Jet installed (See "Before Assembling the Stove").
- Weather conditions cooling Burner. Always use Windscreen and Heat Reflector to keep burner hot enough to vaporize fuel. Prevent stove and Windscreen from melting into snow or ice.
- Less oxygen at high altitudes. Use lower pressure in the Fuel Bottle and open the Windscreen.
- Sooty burner. Wipe soot off Flame Spreader and burner.

Reduced Performance

Low Flame or Slow Boil Times

- Not enough pressure in the Fuel Bottle. Pump the Plunger until firm resistance is felt when pumping down on plunger.
- Clogged Shaker Jet and/ or Flame Adjuster (See "Burner Maintenance"). Persistent/ frequent clogging is caused by poor quality or old fuel. Change your fuel and clean the Jet & Flame Adjuster. To prevent deposits from building up, clean at least once a year.
- Replace clogged Fuel Line Filter.⁽³⁾
- Wrong Jet installed (See "Before Assembling the Stove").
- Fuel is low in Fuel Bottle. When melting snow, roughly 8 oz. of fuel per person per day is needed; when heating water about 4 oz. is needed.

Pump Not Pressurizing



- Dry Leather Pump Cup (See "Pump Maintenance").⁽²⁾
- Dirt in Check Valve Assembly (See "Pump Maintenance").

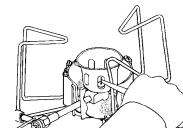
⁽²⁾ These parts are in the DragonFly Maintenance Kit (sold separately). If you need help diagnosing a problem or maintaining your stove, contact your nearest MSR retail dealer or call MSR Customer Service.

⁽³⁾ Included in small parts kit with your stove. Also in the DragonFly Maintenance Kit.

Burner Maintenance

Clearing the Shaker Jet

1. Deposits in the Fuel Line and Jet reduce fuel flow and stove performance. To clear, **turn the On/ Off Valve off**  **and Flame Adjuster**  **off.** Wait for the stove to cool, then shake it to clear the Jet. If still clogged, rotate the burner upright and insert the Jet Cleaning Wire to scour the Jet. If performance is still poor, clean the Jet and Flame Adjuster.



Cleaning the Shaker Jet & Flame Adjuster

1. Remove the Flame Spreader. Unscrew the Jet using the Jet & Cable Tool. Use a spoon through the slot if you need more leverage (See Figure). Poke the Jet with the Jet Cleaning Wire, then hold it up to a light source to see that the hole is clear and round.
2. Using the Jet & Cable Tool, unscrew the Flame Adjuster Nut counterclockwise until loose, then turn the Flame Adjuster until it comes out of the Fuel Line (See Figure). Using your thumbnail, clean the three, long grooves at the end of the Flame Adjuster. Reassemble, then use the Jet & Cable Tool to tighten the Flame Adjuster Nut. If still clogged, replace the Fuel Line Filter (Figure 7).⁽³⁾
3. To remove the Fuel Line Filter, insert the safety pin through the middle of the Filter and pry it out. Place the new Filter onto a hard surface. Push the Fuel Line down onto the Filter until it's flush with the end of the Fuel Line. Wipe off any excess Filter material around the edges of the Fuel Line.

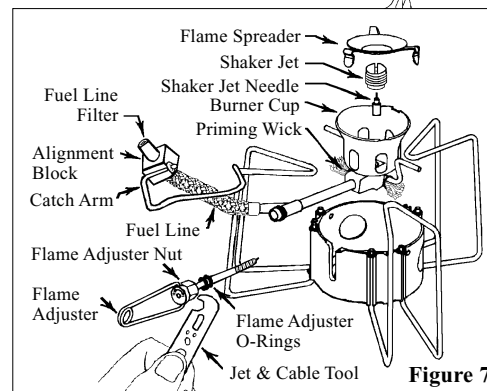
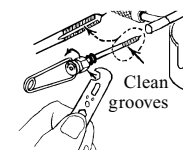
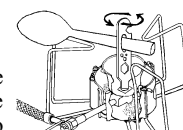
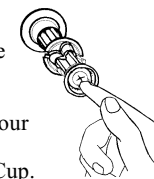


Figure 7

Pump Maintenance

Leather Pump Cup (on Pump Plunger)

If the Pump will not pressurize the Fuel Bottle, oil and stretch out the Leather Pump Cup. Turn the shaft of the Pump Plunger and pull the Plunger out (Figure 8). Rub MSR Pump Cup Oil (saliva or other mineral-based oil) into the Pump Cup until soft and pliable. Rotate your finger inside the Pump Cup to expand its diameter. Reassemble. If pumping still does not pressurize the Fuel Bottle, replace the Pump Cup.



Check Valve Assembly

If the Pump does not hold pressure in Fuel Bottle, clean the Check Valve Assembly. Turn the Check Valve Plug counterclockwise. Remove the Check Valve Ball and Spring and wipe with a cloth. Reassemble.

O-Rings

To prevent fuel leaks, inspect the O-Rings regularly for cracks or damage. Inspect the Flame Adjuster O-Rings, Fuel Bottle O-Ring, then remove the Fuel Tube Bushing to inspect the Fuel Tube O-Ring. **If an O-Ring is cracked, pitted or damaged, replace it before using the stove.**⁽²⁾

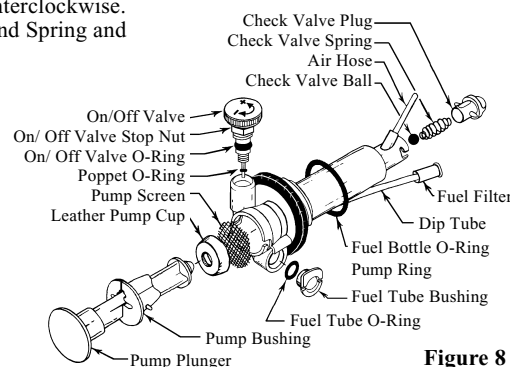


Figure 8

Limited Warranty

This MSR stove has a five year limited warranty. Should this product fail during the five year warranty period, return it to one of our authorized repair facilities. We will repair or replace it at our option, free of charge. Repairs required due to improper use or care, negligence, product modification, or accident are not covered under this warranty agreement, but will be performed at a nominal charge upon request.

This warranty applies only to the original purchaser. Proof of purchase is required. Products purchased from an independent dealer should be returned to the dealer for forwarding to MSR. Shipping cost to MSR is the responsibility of the purchaser. Return postage will be paid by MSR.

Except as provided herein, MSR makes no warranties, express or implied including but not limited to the implied warranties of merchantability and fitness for a particular purpose. MSR shall not be liable for any consequential or incidental damages whatsoever.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations or exclusions of implied warranties, so the above exclusion and limitation may not apply to you.

For more product or safety information, contact MSR Customer Service. MSR will also service your stove or send replacement instructions on request.

Mountain Safety Research
P.O. Box 24547
Seattle, WA 98124 USA

Customer Service: (206) 624-7048
USA Toll Free: 1-800-877-9677
FAX: (206) 224-6492

This chart will help you find fuels when travelling internationally. If you can't find stove fuel in backpacking or sporting goods stores, try gas stations, hardware stores, or general merchandise/ drug stores.

Germany	USA	U.K.	Australia	France	Italy	Spain	Sweden
Reinbenzin	white gas	white gas	shellite	essence c	benzina bianca	bencina blanca	Ren Bensin
Petrol	kerosene	paraffin	kerosene	petrole	kerosene	keroseno, petroleo	Fotogen
Diesel	diesel	diesel	diesel	gas oil	gasolio per autotrazione	gasoleo automocion	Diesel
Autobenzin z.b.	automobile gas	petrol	petrol	essence normale	benzina per autoveicoli	gasolina automocion	Bil bensin
Super, Bleifrei				essence sans plom			Blyad, Blyfri

MSR® DragonFly™ Stove



TO AVOID INJURY, read, understand, and follow all instructions and warnings in this manual before using the stove. (#119841-1.2)

⚠️WARNING: TO AVOID INJURY, read, understand and follow all instructions and warnings in this manual before using the stove.



Use **only** MSR Fuel Bottles with this stove. Non-MSR Fuel Bottles may not seal properly with the Pump causing fuel leaks. Fuel may ignite resulting in fires, injury, or death.

Do not light or use indoors, in a tent, vehicle or other enclosed areas. A fire or carbon monoxide poisoning could cause injury or death.



Always check for spilled fuel and fuel leaks before lighting stove. If leaks are found, **DO NOT USE STOVE**. Repair it or send it to MSR retailer or MSR Product Service Center for repairs.

Never put your head or body above stove when priming, lighting or burning. Keep clothing and other materials that may catch fire away from stove.



Never unlock the Catch Arm or disconnect the stove, Pump or Fuel Bottle when the stove is lit, warm from recent use or near any flame or heat source.

Do not relight a warm stove. Warm stove parts may vaporize liquid fuel and cause a dangerous "fireball" when relighting.

Do not shake or move an operating stove.



BELOW about -24° C (-10° F) O-Rings may become stiff and can leak or break causing a fire.

Do not place heavy or large capacity cookware on the stove (Maximum weight: 8 lbs, maximum pot diameter: 9").

DO NOT use more than one stove under the same piece of cookware, in close proximity to another stove, or near any heat, fuel or ignition source.



USE ONLY DragonFly parts with the DragonFly stove and Simmer Pump. MSR DragonFly parts and Simmer Pump parts are **NOT** interchangeable with other MSR stoves.

ALWAYS check the Fuel Bottle/ Pump assembly connection and ensure it is tight before pressurizing the fuel bottle and operating the stove.



Never leave a burning or hot stove unattended. **Never** allow children to use stoves. **Always supervise children in the vicinity of the stove.**

Do not use the stove in any way other than as described in these instructions. **Do not** alter the stove or use non-MSR DragonFly parts. **Do not** disassemble beyond what is described in these instructions.



Before taking the stove on a trip, check for fuel leaks and practice using and maintaining it.

Failure to follow these warnings and instructions could result in fire, property damage, serious injury, or death!

⁽¹⁾ Fuels & Stove Performance

Stove performance is affected by the type and quality of fuels you use:

DG Jet Fuels

• White gas is typically the fuel of choice for MSR stoves. Also called "pressure appliance fuel," common brands include MSR® White Gas, Coleman® Fuel and CampLite®. Good quality white gas burns clean and leaves few deposits in the Fuel Line.

• Automobile gasoline is very volatile and contains additives that can corrode the stove and clog the Fuel Line frequently. Use auto gas for short-term only.

• Piston engine airplane fuel or aviation (AV) gas has additives that clog the stove frequently.

DK Jet Fuels

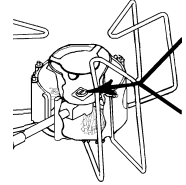
• Kerosene is inexpensive and readily available worldwide, but it burns with more soot, is more difficult to prime, and can cause frequent cleaning.

• Commercial jet fuel or "Jet-A" is similar to a high quality kerosene. It can be a good alternative fuel source when travelling internationally.

• Diesel fuel creates a lot of soot, is hard to prime, and requires frequent cleaning.

Before Assembling the Stove

Ensure the correct Shaker Jet is installed:

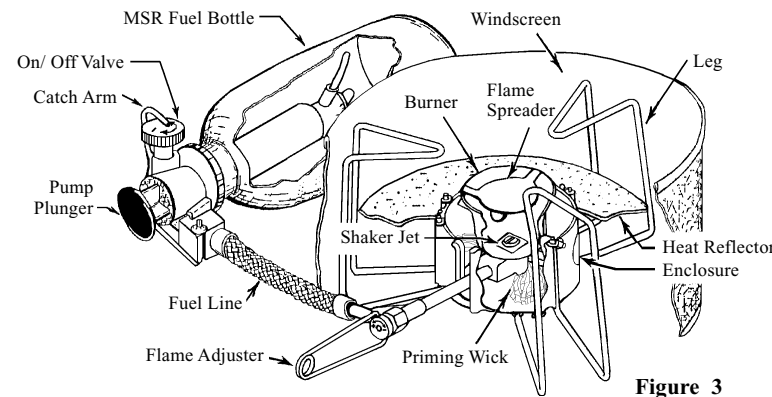
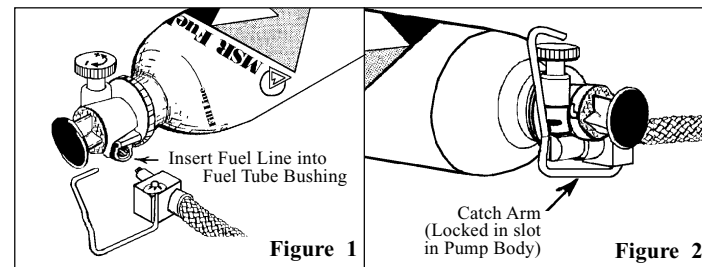
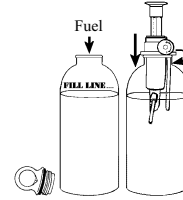


Use the DG Jet for white gas, automobile gasoline and aviation (AV) gas.⁽¹⁾ The DG Jet is pre-installed in the stove.

Use the DK Jet for kerosene, jet fuel and diesel.⁽¹⁾ The DK Jet is in the parts kit included with your stove. To change Jets, see "Burner Maintenance."

Assembling the Stove

1. Fill an MSR Fuel Bottle to the 2 inch Fill Line.
2. Screw the Pump snugly into the Fuel Bottle.
3. Make sure the On/Off Valve is off.
4. Pump the Plunger 20-25 strokes. If the Fuel Bottle is half full, pump the Plunger 40-55 pump strokes, or until firm resistance is felt when you push down on the Plunger. *The less fuel in the Fuel Bottle, the more Pump strokes needed to pressurize it for proper stove operation.*
5. Straighten the Fuel Line, then open the stove Legs until they snap into place.
6. Rotate the Burner/ Fuel Line assembly down until it snaps into the Enclosure.
7. Unfold the Flame Adjuster.
8. Make sure the Flame Adjuster is off .
9. Lubricate the end of the stove's Fuel Line lightly with MSR Pump Cup Oil (saliva or other mineral-based lubricant), then insert it into the Fuel Tube Bushing on the Pump (Figure 1).
10. Snap the Catch Arm securely into the slot on the Pump Body (Figure 2).
11. Place the Heat Reflector onto the rim of the Enclosure (Figure 3).



Operating the Stove

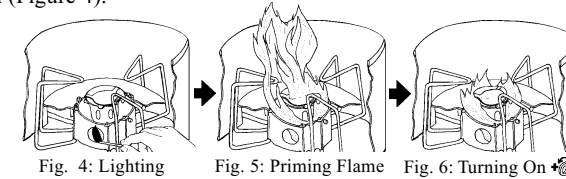
Before lighting the stove check that:

- Stove, Pump and Fuel Bottle assembly have no fuel leaks.
- Catch Arm is locked and stove is properly assembled.
- Area is clear of flammable material and spilled fuel.
- Correct Shaker Jet is installed.

Priming

The stove must be preheated or "primed" to burn properly. Priming heats the burner to turn the liquid fuel into a vapor (Figure 5). Insufficient priming may result in flare-up with large, yellow flames.

1. Open the On/Off Valve .
2. Open the Flame Adjuster 1/2 turn until fuel flows through the Jet for 3 - 5 seconds. In cold weather, when using kerosene or other DK Jet fuels, open the Flame Adjuster for 5 - 7 seconds.
3. **Turn the Flame Adjuster off** .
4. Check for leaks at the On/Off Valve, Flame Adjuster, Pump, Fuel Bottle, Jet and Fuel Line. **If leaks are found, DO NOT USE STOVE** (See "Troubleshooting").
5. Light the priming fuel (Figure 4).
6. Fold the ends of the Windscreen together, then place it around the stove.



Turning the Stove On

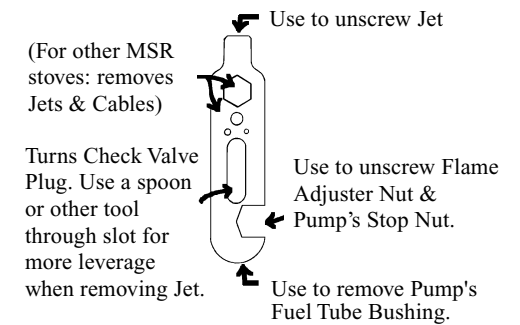
1. When the priming flame is down to a small flame (about 30 - 60 seconds), slowly open the Flame Adjuster 1/2 turn (Figure 6).
2. If the stove:
 - Goes out, turn the Flame Adjuster off . After the stove cools, return to "Priming."
 - Burns with erratic yellow flames, but the priming flame is still burning, turn the Flame Adjuster off and pre-heat longer.
 - Burns with a blue flame, wait 1 minute then slowly open Flame Adjuster to desired setting. *Note: Quick flame adjustments can cause flaring, especially after long simmering. Slowly open the Flame Adjuster 1/4 - 1/2 turns.*
3. To maintain stove performance, pump the Plunger 3 - 5 strokes as needed to keep enough pressure in the Fuel Bottle. You should feel firm resistance when you pump down on the Plunger. The less fuel in the Fuel Bottle, the more Pump strokes needed to pressurize it for proper stove operation. Do not over-pressurize. Fuel Bottle pressure that is too high causes erratic flames. Fuel Bottle pressure that is too low causes low flames and very slow boil times.

Turning the Stove Off

1. Turn the On/ Off Valve off . Wait 20 seconds, then turn the Flame Adjuster off. **Wait** for the stove to cool before disassembling.
2. To depressurize the Fuel Bottle: unlock the Catch Arm and pull the Fuel Line out of the Pump/ Fuel Bottle assembly. **Away from heat, sparks or flame**, hold the Fuel Bottle upright, turn the Pump/ Fuel Bottle away from you, and unscrew the Pump to release pressure.
3. You can leave the Pump in the Fuel Bottle during your trip or replace it with the Fuel Bottle Cap. When packing, always make sure the Fuel Bottle is depressurized and the On/Off Valve and Flame Adjuster are securely off.
4. To pack: turn the stove upside down. Rotate the Burner/ Fuel Line assembly down. Fold Flame Adjuster. Rotate the legs until snug against Enclosure. Latch the Catch Arm.

Tips

- Always use the Windscreen and Heat Reflector. This reduces fuel use 20 - 50%, depending on wind and weather conditions. For best performance, leave 1/2" to 1" gap between the Windscreen and the pot.
- To reduce soot when priming, use priming paste on the Priming Wick instead of fuel. Priming paste also makes priming heavy fuels, like diesel and low quality kerosene, much easier. It's available at most backpacking stores.
- How much fuel do you need? Here are rough estimates:
 - Heating water: 4 oz. of fuel per person per day
 - Melting snow: 8 oz. of fuel per person per day
 - Trekking in Antarctic: 15 oz. per person per day
 Since fuel use can vary a lot depending on temperature, altitude, fuel bottle pressure and other factors, always bring extra fuel along.
- When melting snow, add a little water to the pot before adding snow to keep the pot from scorching.
- Use a tight fitting lid on your cookware for faster boil times.
- The Jet & Cable Tool included with your stove has several handy uses:
- Exposure to air degrades fuel. If a fuel is stored



over 6 months with a loose sealing cap, a lot of air space in the can, is discolored, or has sediment in the container, it can affect stove performance. MSR Fuel Bottles seal air tight and are excellent containers for storing fuel.

- At sub-zero temperatures, O-Rings in the Pump may become stiff and leak. Fuel impurities can also freeze, clogging the Valve and Fuel Tube. In extreme conditions, keep the Pump/ Fuel Bottle assembly warm at night by sealing it in a plastic bag at the foot of your sleeping bag.