

MSR® TENTS AND SHELTERS

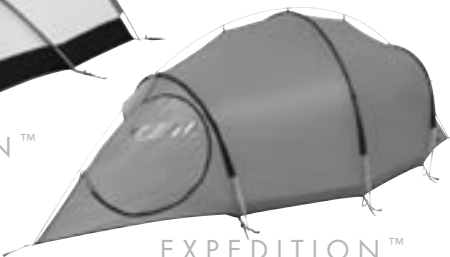
# OWNER'S MANUAL



FAST & LIGHT®



ALL-SEASON™



EXPEDITION™



WINGS™

  
**MSR**  
MOUNTAIN SAFETY RESEARCH

## **WARNING!**

### **KEEP ALL FLAME AND HEAT SOURCES AWAY FROM THIS TENT FABRIC.**

This tent is made with flame-resistant fabric that meets CPAI-84 specifications. It is not fireproof. The fabric will burn if left in continuous contact with any flame source. The application of any foreign substance to the tent fabric may render the flame-resistant properties ineffective.

### **DO NOT OPERATE ANY DEVICE THAT BURNS FUEL INSIDE THIS TENT.**

Combustion consumes oxygen and can produce dangerous levels of carbon monoxide, which can lead to serious injury or death.



**NO FIRE** Never place your stove, campfire, or other flame source in or near your tent or shelter. Never cook, light, or refuel a stove or any other heat source inside your tent or shelter. Death by suffocation and/or serious burns are possible.

#### **VENTILATION**



Maintain adequate ventilation inside your tent at all times. Death by suffocation is possible.

#### **CAMPSITE CHOICE**



When choosing a campsite, carefully consider the possibility of falling rocks or tree limbs, lightning, flash floods, avalanches, strong winds, and other potential hazards to reduce the risk of loss or injury to the tent or occupants.



#### **ANCHOR**

Anchor your tent properly at all times to reduce the risk of loss or injury to the tent or occupants.

## TENTS AND SHELTERS

Congratulations on purchasing your new MSR® tent, shelter, or Wing™. MSR makes some of the most innovative, livable, and dependable shelters on the market today. Whether you are planning to camp for long periods of time, move far and fast, or do a little of everything, MSR has a shelter that's right for you.

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### Fast & Light® Tents

Ultraight without Compromises

These featherweight tents, hybrid tarps, and modular shelters offer maximum livability in incredibly light packages. Built with spring, summer, and fall in mind, some of these tents are also suitable as wintertime shelters when combined with the right skills and equipment. However, these tents are not just for fast and light backpacking. Roomy interiors, large vestibules, and full-featured detailing mean these are all-around tents that just happen to be ultralight.



**Hubba™:** Freestanding livable tent and/or tarp shelter for one person. 3 lbs. (1.3 kg)



**Hubba Hubba™:** Freestanding livable tent and/or tarp shelter for two people. 4 lbs. 2 oz. (1.8 kg)



**Trekker Tent™:** Trekking-pole-supported, "pop-up-style" livable tent and/or tarp shelter for two people plus gear. 4 lbs. (1.8 kg)



**Missing Link™:** Trekking-pole-supported, vented single-wall tent shelter for two people, with awning. 3 lbs. (1.3 kg)



**Twin Peaks™:** Trekking-pole-supported full-coverage tarp shelter for two people. 1 lb. 12 oz. (.8 kg)



**Trekker Wing™:** Trekking-pole-supported tarp shelter for two people plus gear. 1 lb. 12 oz. (.8 kg)



**MicroZoid™:** Non-freestanding sleep tent for one person. 2 lbs. 5 oz. (1.1 kg)



**Zoid 1™:** Non-freestanding comfortable tent for one person. 2 lbs. 14 oz. (1.3 kg)



**Zoid 2™:** Non-freestanding roomy tent for two people. 4 lbs. 1 oz. (1.8 kg)

### All-Season™ Tents

Go-Anywhere, Do-Anything Technical Tents

Tough enough to handle a mountain storm, spacious enough for multi-day comfort, and airy enough for hot summer nights, these versatile tents are made for the person who wants one tent that can do it all. Each is designed with zippered panels that can be opened or closed for optimal comfort in any season and any climate.



**Fusion 2™:** Sturdy two-person tent with pullout vestibule. 6 lbs. 13 oz. (3.1 kg)



**SuperFusion 3™:** Roomy three-person tent with two doors and large skylight vestibule. 10 lbs. 6 oz. (4.7 kg)



**Velo™:** Comfortable two-person tent with two large doors and a very large vestibule. 8 lbs. 11 oz. (3.9 kg)

### Expedition™ Tents

Livable, Dependable High-Mountain Shelters

Intended to provide maximum protection and livability in even the harshest conditions, our Expedition tents are built to withstand whatever Mother Nature can throw at them. Terrific for extended camping trips, these proven all-weather tents are at their best in winter but suitable for harsh conditions any time of year.



**Fury™:** Two-person, one-door, one-vestibule, extreme-weather tent. 6 lbs. 12 oz. (3.1 kg)



**StormKing™:** Four/five-person, two-door, one-vestibule, extreme-weather, base-camping tent. 14 lbs. 2 oz. (6.4 kg)



**Wind 2™:** Integrated double-wall, two-person, two-door, two-vestibule, extreme-condition tent; wind-tunnel rated for 106 mph. 7 lbs. 6 oz. (3.3 kg)



**Wind 4™:** Integrated double-wall, four-person, two-door, two-vestibule, extreme-condition, base-camping tent. 14 lbs. (6.3 kg)

### Wings™

Lightweight, Versatile Weather Protection

Lightweight and versatile, Wings offer ideal protection for larger groups from rain, sun, and wind. Their durable catenary-cut designs shed water and wind like no other shelters, ensuring maximum performance in nasty weather. Combine them with any of our tent bodies to create the ultimate hot-condition system, with unbeatable ventilation and shade.



**19' ParaWing™:** Lightweight, versatile wind, sun, and rain protection. 5 lbs. 4 oz. (2.4 kg)



**OutfitterWing™:** Lightweight, wind, sun, and rain protection for large groups. 5 lbs. 8 oz. (2.4 kg)



**Pavilion™:** Extra-large, full-coverage group shelter. 13 lbs. 11 oz. (6.2 kg)

## ACCESSORIES AND MAINTENANCE KITS

### Maintenance Kits

MicroMesh™ Maintenance Kit, Fabric Maintenance Kit, Tent Maintenance Kit, Zipper Maintenance Kit, Reflective Zipper Pull Kit

### Cord & Pole Kits

Reflective Cord Kit, Small Cord Tensioner Kit, Medium Cord Tensioner Kit, 1' 9"-5' 4" Telescoping Pole

### Stake Kits

Summit™ Stake Kit, Ultralight Needle™ Stake Kit, Blizzard™ Stake Kit, GroundHog™ Stake™ Kit

## SHELTER AND TENT SETUP TIPS

These are general tips for setting up and caring for your MSR® tent or shelter. More specific instructions are included for Fast & Light® models on p. 12 and Wings™ on p. 13. For detailed setup instructions on your specific tent model, please refer to the Tyvek tag sewn into the tent stuff sack.

### Know Your Tent or Shelter

Before going on a trip, learn the basics of your tent or shelter by pitching it at home. Now is the best time to attach your guy cords and make sure that you have everything you need. Being familiar with your tent or shelter will help if you have to set it up in the dark or in adverse conditions. Some MSR tents and shelters are innovative, hybrid tarps and single-wall shelters that do not set up like traditional tents. So it is especially important to practice setting up these shelters before heading out into the field.

### Selecting a Site

Select a site that is level, will drain well if it rains, and is protected from wind and other elements. Clear the area of sharp stones, sticks, and other debris, both for comfort and to protect your floor. Avoid low spots where rain can pool or where you see watercourses. In order to minimize your impact on the environment, please follow “Leave No Trace” camping guidelines.

### Using Tent Poles

Many of our Fast & Light shelters use trekking poles or guy-out lines instead of traditional tent poles to support the shelter structure. Please see p. 12 for additional Fast & Light setup instructions. Most of our Expedition™ and All-Season™ tents use traditional-style, lightweight DAC FeatherLight™ tent poles. These ultralight poles are strong enough to provide a lifetime of trouble-free use if properly cared for. For best results:

- Handle poles carefully. Unfold them one at a time, starting from the center to reduce the length the shock cord needs to stretch to fold the poles. When unfolding and folding, do not allow the shock cord to pull the pole ends together. This can damage the pole ends and result in breakage when the pole is tensioned.
- Always push your poles through the pole sleeves, during both setup and takedown. Do not pull your poles through the sleeves. Pulling the poles will cause sections to separate and potentially damage the pole or your tent fabric. Don't force the poles when threading through pole sleeves. If you feel resistance, find the snag and work the poles through it.
- A light coat of silicone lubricant will prevent corrosion and keep poles from freezing in extremely cold temperatures. In strong-saltwater environments, use silicone frequently and rinse poles in fresh water when you return from your trip.

- In extremely cold weather or after extended use, the shock cord can lose some elasticity. In cold weather, simply pull the end pole section quickly back and forth to create enough heat to loosen the cord. If more tension is needed, unscrew the end tip, pull a few inches of cord and, tie a new knot in the cord. (See Figure 1.)
- In severe winds, guy-out your tent to relieve stress on your tent poles and provide more stability.

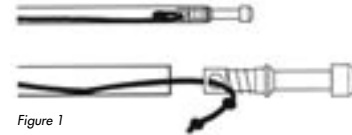


Figure 1

### Placing Poles into Stake Loop Grommets

Fabric expands and contracts in varying climates. To pitch the tent tight in a variety of climates, many MSR tents have two grommets in the stake loops. Use the outer grommet in dry climates when fabric is tight. The inner grommet is for humid climates when fabric is looser.

### Using Guy-Out Lines

It is important to tightly tension your shelter via the guy-out lines. This will increase the structural stability of your shelter, reduce fabric droop, and prevent rainwater from pooling. Guy-out lines can also be used instead of poles with MSR Wings (see p. 13) and some Fast & Light shelters (see p. 12).

To guy-out your shelter, attach a cord from the shelter's guy-out grommet through the metal tensioner. Pass the cord around the stake and back through the tensioner, keeping the curved side of the tensioner toward the tent. Tie a knot at the end of the cord. To tighten cord, pull the tensioner up along the cord and release. (See Figure 2.) This process can also be done in reverse to allow for adjustability at the tent rather than the stake.

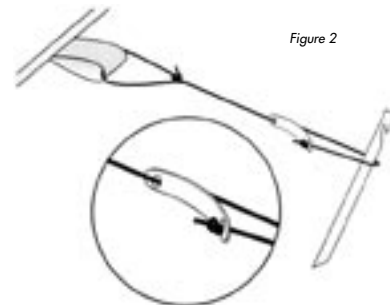


Figure 2

## Staking

As with any tent, always anchor your MSR® tent or shelter to the ground with stakes. This will prevent it from blowing away in the wind and maintain the tent's structural integrity in foul weather. Most MSR tents and shelters have additional stake loops to increase security in windy conditions.

Because of varied ground and the tension needed to keep your shelter tight, stakes need to be firmly planted. MSR supplies general-purpose stakes that work well in hard ground. For snow, soft or sandy ground, or high winds, you may need to supplement the holding power of the stakes with rocks or by using larger stakes. MSR also offers specialized stakes that are best for those conditions.

## USE AND CARE

### Preventing Mildew

One of the easiest ways to damage your tent or shelter is by not drying it as quickly as possible when it gets wet. Storing a wet tent for as little as 24 hours in warm weather is likely to start the process of mildew forming on the fabric. Mildew can permanently damage the waterproof coatings by causing them to separate from the fabric, but mild to severe staining is more common. Mildew stains are permanent. They cannot be removed without potential harm to the fabric coatings, and they are not covered by warranty. Even when your tent or shelter appears to be dry after use, it is always best to unfold at home and make sure it is completely dry before storing. Pitch your shelter, hang it outside, or even leave it loosely clumped in your house for a few days. After a day or two, turn it inside and out to ensure that it has dried everywhere. Never machine dry your shelter, as the heat can melt the fabric.

### Storing

Store your shelter in the stuff sack and place it in a cool, dry area out of sunlight and away from heat sources and rodents. Open and air out your shelter at least every six months to prevent odor buildup and fabric deterioration.

### Cleaning

Cleaning your shelter is not necessary unless it has an offensive odor or becomes heavily soiled. If heavily soiled, the pressure from a regular garden hose will remove most loose dirt. For more serious cleaning, set up your shelter and hand wash it with warm water, a sponge, and mild, non-detergent soap. Do not use dishwashing liquid, detergent, bleach, pre-soaking solutions, or spot removers. Rinse well. Dry your tent or shelter by pitching or line dry. Never dry clean, machine wash, or machine dry your shelter. Any of these methods can remove all the waterproof coatings from the fabric.

## Sun & Ultraviolet Rays

UV light is one of the most damaging elements for your tent or shelter. Though shelters are often used in the sun, extended and prolonged exposure will cause fabrics to fade, lose strength, and eventually tear. The effects are more rapid at higher elevations. If possible, pitch your tent or shelter out of direct sunlight and use your rainfly to help protect the more fragile netting and uncoated nylon. UV damage is not covered by warranty.

## Animals

To prevent damage from animals chewing holes in the fabric, never store food in your tent.

## Seam Sealing

Superior fabrics and construction make MSR tents and shelters extremely waterproof. The rainfly and floor are factory seam-taped or have a binding tape, so seam sealing is not necessary or recommended. If any problems develop, seam seal the specific area only. Follow the instructions on the seam-sealer tube. Seam seal the inner, coated, shiny side of the area only. Use a syringe for accuracy. Allow the seam sealer to dry, then apply baby or talcum powder to prevent the seam sealer from sticking to the rest of the shelter.

## Condensation

Condensation is the buildup of moisture inside your shelter due to differences between the inside and outside temperature. In your shelter, it is caused by three main sources:

- Weather conditions: High humidity, low temperatures, and rainy conditions create the most condensation.
- People: We produce about 1-2 pints of moisture in a night through breathing and skin evaporation.
- Wet environment: Wet ground or wet gear stored inside the shelter will increase condensation.

The key to reducing condensation is ventilation. Fresh air has to flow into your shelter, and warm, moist air has to escape. MSR has designed a variety of features and options that allow for interior ventilation. First, tent bodies and ceilings are made of breathable fabric and MicroMesh™. This allows moisture to escape, so condensation will be on the waterproof rainfly, not inside the tent. In addition, many MSR tents and shelters have a peak vent, which provides protection from the elements but still allows essential free-flowing, fresh air into your tent. Guying-out your tent with the guy-outs will also increase ventilation in hot or humid conditions. Unfortunately, no tent design will totally eliminate condensation in all conditions, but providing good ventilation using any of the above tips will help in reducing it.

## Zippers

Environments where sand and grit get in the zipper teeth can cause abrasion and damage to your zipper sliders. If you use your shelter in these conditions, keep the zipper teeth clean by rinsing them out with water. The pressure from a regular garden hose will push out small sand particles from inside the zipper coil. Handling your zipper slider with care can also prolong the life of the zipper. Just like a zipper on a duffle bag or piece of luggage, align the tracks before sliding the zipper. If you do not camp in the type of conditions described above, your zippers should last indefinitely.

## Fabric & MicroMesh™ Tears

Unfortunately, sometimes damage does occur to your shelter. You can do minor repairs in the field using one of several options. MSR® offers waterproof, self-adhesive patches (*sold separately*) for all the fabrics and MicroMesh™ on your shelter. Seam sealers are also a good option for small holes, and duct tape can be used for minor, temporary field repairs. If you use duct tape, be sure to remove it as soon as you are through with your trip. Otherwise, the adhesive will eventually eat away at the fabric and you will end up needing a larger patch. We recommend carrying at least one emergency repair item as a precaution. If you have a large tear, the MSR Product Service Center can also fix your shelter after you return from your trip.

## Pole Repairs

If a tent pole breaks, you can make a temporary splint with the pole-repair sleeve. Slide the repair sleeve over the broken section (see Figure 3) and tape or wedge it in place to hold it secure.

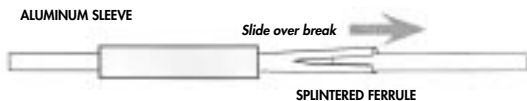


Figure 3

## Fire

Our shelters meet the strict fire-resistant standards set for every state in the U.S. and Canada. But, shelter fabrics are flame-retardant, not fireproof. Shelter material will melt if exposed to open flame or high heat. Never use fueled appliances or flame-producing items of any kind inside your tent. Position your shelter away from camp stoves, campfires, or other flame-producing items.

## TENT TESTING

*At MSR, we've been wind testing our tents since 1973. Of course back then we didn't have access to a wind tunnel, so we simply set up our tents on the back of a flatbed truck and hit the highway. Today, in addition to countless hours of field testing, we utilize the University of Washington's wind tunnel, as well as our own in-house computerized stress-testing, cold-weather chamber, UV-tester, and tear-strength testers to make sure that our tents will stand up to the rigors of backcountry use.*

## Wind Tunnel vs. Real World

There are many factors that influence field performance of tents as compared to performance in a wind tunnel. Nevertheless, wind-tunnel testing is valuable both for comparisons and absolute measures of performance. The obvious factors influencing real-world performance but not present in a wind tunnel may include:

- **Turbulence:** More turbulence will be a result of ground-surface roughness and local vegetation, and can create slightly higher forces on the tent.
- **Gustiness:** This is a major factor that may result in earlier collapse, increased stress on seams and attachment points, increased bending loads, etc. as compared to a steady wind velocity.
- **Environment friction effects:** Any roughness in the terrain, vegetation (even if just sparse grass), or being downwind of an upslope in terrain will greatly decrease the applied wind load. Tents typically present the largest horizontal exposure at ground level, so wind-tunnel loads are a worst-case scenario in this respect.
- **Changing impingement angles:** The University of Washington Kirsten Wind Tunnel, because of its size, generally allows testing only with the smallest tent cross section into the wind. Obviously higher loads on the tent will be encountered with different exposures. Failure modes will likely be different as well, depending on the pole configuration and presence of guylines. No effect is expected due to dynamically changing impingement angles.
- **Tent contents:** A tent with people and gear inside will have the floor restrained over a much larger area than occurs in the wind tunnel with a "body" in the tent. The field condition should reduce airflow under the tent and perhaps give partial support to the tent walls.
- **Air density:** Altitude effects, and to a lesser extent temperature effects, on air density are not present in the wind tunnel. For example, at 15,000' elevation, the air density is one half that of sea level, so the wind load would also be reduced by half at the same velocity.
- **Flatness of tent site:** A field tent site may not be as flat as the wind tunnel or may not have ideal guy-out locations. Both of these could result in a less taut pitch, which could reduce the tent performance.

## Wind Tunnel Ratings

- Missing Link™: 50 mph
- Trekker Tent™: 50 mph
- Trekker Wing™: 50 mph
- Twin Peaks™: 50 mph
- Hubba™: 40 mph
- Hubba Hubba™: 40 mph
- Wind 2™: 106 mph

### Wind Tunnel Testing

A prototype of the new MSR® Wind tents withstood blasts up to 106 mph—conditions far more severe than most users are likely to encounter in real life.



## FAST & LIGHT® SHELTER AND TENT SETUP TIPS

### About MSR Fast & Light Shelters

MSR Fast & Light tents and shelters are innovative, hybrid tarps and single-wall shelters that offer the ultimate in livability and dependability, without all the extra weight. Most do not set up like traditional tents, and instead offer a variety of setup options. These are general tips for setting up your Fast & Light shelter. For instructions on your specific model, refer to the Tyvek tag sewn into the stuff sack.

### Pitching with Other Poles

Many of our Fast & Light shelters can use trekking or other poles to support the shelter structure instead of traditional tent poles. If your poles are adjustable, it can be helpful to mark them at the appropriate length (noted in your shelter's instructions), using tape or permanent marker. This will improve setup time in the field. In the event that your poles are not tall enough, you may also simply guy-out the peak points to a tree or other overhead object instead of supporting the shelter with poles.

### Using Guy-Out Lines

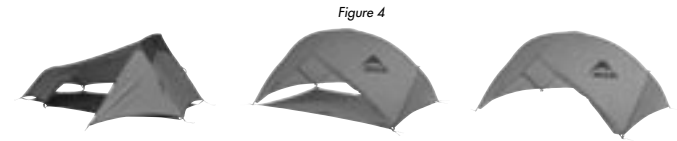
Many shelters come with more than the minimum number of guy-out lines required to set up the shelter. These extra lines can be used to increase the versatility of your shelter by allowing for more setup options, or they can be used for support in place of poles by guying the peak points to a tree or other overhead object.

### Footprints

Footprints (*sold separately*) are available for Zoid 1™, Zoid 2™, Hubba, and Hubba Hubba tents. These can be used to protect the floor of your tent or as ground protection when using the fly-only setup option. Footprints are designed to attach to the tent poles via corner grommets for optimal coverage.

## Tarp-Only Setup

MSR's MicroZoid™, Zoid 1, Zoid 2, Hubba, and Hubba Hubba tents are all extremely versatile and can be set up in multiple configurations, depending on conditions, for maximum weight savings. Each can be set up using the complete tent and fly or by combining the fly, poles, and optional footprint for increased protection. The Hubba and Hubba Hubba give you the additional option of saving weight by setting up just the fly and poles.



## MSR WING™ SETUP TIPS

### About MSR Wings

MSR Wings are proven to be the strongest, most stable tarp shelters in the world. What makes them so different are the parabolic curves and catenary cuts used in the design and manufacturing. These allow you to tension the entire fabric structure, making the Wing stronger and more stable as more tension and force are applied. With proper setup and care, your Wing will be a dependable wind- and rain-shedding shelter for many years to come. These are general tips for setting up your MSR Wing. For instructions for your specific model, refer to the Tyvek tag sewn into the stuff sack.

### Wing Setup Tips

Lay your Wing out flat and cinch all guy cords in to their shortest length. Stake out loop end of guy cords. Loosen guy cords half way and place support pole(s) underneath Wing in desired location, inserting the tip into a pole grommet or pocket. Adjust guy cords to tension Wing completely.

The OutfitterWing's 7-point design has a both a "flat" and a "pointed" end. (See Figure 5.) For all setup configurations, the "pointed" end should always be used as the highest supported point. The opposite "flat" end, which consists of three points, can be stretched tightly and attached to a shelter, car rack, or even the pole-supported vestibule of a tent to form a protected area. Experiment and be creative!

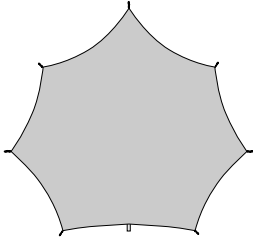


Figure 5

### Tension

It is very important to tension your Wing™ tightly via the guy-out lines! Once your Wing is loosely erect, proceed as follows:

- For maximum headroom, start by tensioning the pole guy-out lines, followed by the lower non-pole guy-out lines.
- If you prefer a lower Wing profile, tension the lower guy-out lines first and high-point guy-out lines last.
- Poles should be angled 15-20 degrees away from the Wing for maximum effectiveness.

### Staking

Because of the varied tension needed to keep your Wing tight, stakes need to be firmly planted. MSR® supplies general-purpose stakes that work well in hard ground. For soft or sandy ground, or high winds, you may need to supplement the holding power of the stakes by stacking rocks on top of them or by using larger stakes.

### Paddle & Line Pockets

There are “pockets” at each corner of your Wing. These pockets are for both storing the guy-out lines when the Wing is put away and for placing paddles, hiking sticks, etc. when used in place of poles. Adding extra poles to corner of Wings also allows you to add more headroom while sacrificing little stability.

### Other Wing Accessories

- Wing Pole
- Reflective Cord Kit
- Cord Tensioner Kit

### MSR Materials & Workmanship Guarantee

MSR warranties, to the original owner, the materials and workmanship of every MSR tent we make. If your MSR tent has received proper care but fails due to a defect in manufacturing, the tent will be repaired or replaced at our discretion. Repairs due to accident, improper care, or negligence where MSR is not at fault—including material breakdown due to sun degradation, mildew, and natural aging, as well as wear and tear due to hard use—will be performed at a reasonable charge.

### MSR Lifetime Pole Guarantee

MSR offers a lifetime warranty, to the original owner, on all MSR tent framework. If your tent pole breaks, MSR will repair or replace it, free, for the lifetime of the tent, upon postage-paid delivery to the MSR Product Service Center.

### Repair Procedures

If your MSR tent or shelter needs repair, please do the following:

- In North America, contact MSR customer service at 1-800-531-9531 for a Return Authorization (RA) number and shipping address. For customer service outside of North America, refer to the dealer locator on the MSR Web site ([www.msrgear.com](http://www.msrgear.com)) for a repair facility near you.
- Return only the part needing repair. Please clean it before shipping it to us. Dirty products will not be processed.
- Clearly mark or tag the area on the product in need of repair.
- Include a note regarding reason for return along with the date and place of purchase, your name, your phone number, the RA number from Customer Service, and your physical address. MSR will not ship to a P.O. Box.
- Ship item prepaid and labeled “MSR tent repair.”

Register this product online at [www.msrgear.com](http://www.msrgear.com).





**MOUNTAIN SAFETY RESEARCH®**

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)