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How to fit a backpack

Once you're hiking the trails with your pack of gear strapped on your back, you'll be glad that you took the time to make sure you had the right fit. Fitting your backpack is a very important step, and it'll help make your trip more comfortable, and consequently, more enjoyable.

The steps you take to fit your pack depend on whether you're using an internal or external frame pack. Follow these easy guidelines to ensure the right fit:

Internal Frame

1. Before you do anything else, determine your torso length. It's best to get a friend to help with this part. Using a soft tape measure, have your friend measure from the 7th vertebrae (base of the neck) down along the contour of your spine to the shelf of your hips. Slide your hands along your sides (fingers forward, thumbs behind you) until they hit the top of your hips. There will be an invisible line connecting to the point where your thumbs would meet. This is your finishing point. So you'll measure from the base of the neck to this invisible finishing point. Your measurement determines the suspension size you'll need. If your torso length is 18" or smaller, you'll need a size small; 18 - 20" torso length requires a medium; 21" torso length or larger will need a large.
2. Before you put the pack on, loosen all straps. You have to tighten the straps in a specific order to get a good fit, so if you leave one strap partially tightened, it'll affect the fit of the other straps.
3. Now load the pack with the gear that you intend to take on your trip. If you fit the pack while it's empty, you'll just have to readjust and refit it once you load it with gear. You should avoid using sandbags or weights as a filler when fitting the bag. It's better to use the actual gear you'll be hauling so that you can get a realistic idea of the density and volume. After the bag is filled, put it on.
4. Adjust the hipbelt first. Remember, it's a hipbelt, so it should rest on your hipbone, not your waist. Position it so that your hipbone is centered in the middle of the belt. Then tighten it as much as possible. If the hipbelt bunches when you tighten it, it may be too small.
5. Next, adjust the shoulder straps so they're at the correct height for your torso length. The straps are designed to wrap over and back down your shoulders by at least 1 1/2" to as much as 3" down the back. The straps should fit snugly against your body with no gaps. Shoulder straps should rest comfortably around the crest of your shoulders. Using either a mirror or a friend, note how far down from the shoulders the straps are positioned. You need to remove the pack in order to reposition the shoulder straps.
6. Put the pack back on. Retighten the hipbelt. Then tighten the lower shoulder strap webbing. The straps should conform to your body shape. If not, reposition them.
7. Adjust the load lifting straps. They pull the weight towards your shoulders and help keep the load balanced. The load lifting straps should leave the shoulder straps either directly from the top of the shoulder or just slightly forward, toward the collar bone. Ideally, the load lifting straps will form a 45 degree angle with the shoulders and the top of the stays. Pulling on the load lifting straps will pull the load closer to your center of gravity, but it puts a lot of weight onto the shoulders. Loosening the straps will put more weight onto the hips. When hiking, you'll regularly tighten and loosen these straps to shift the weight around, so make sure you're familiar with how they work.
8. Position the sternum strap in the center of the breast bone. It should be just a few inches below your collar bone. The sternum strap is designed to keep the shoulder straps from sliding off the shoulders. If you're in a situation where the pack may need to be removed quickly, it's a good idea to have the sternum strap unbuckled.
9. Tighten the compression straps on the hipbelt. This will prevent swaying.
10. Check the aluminum stays. If they don't follow the contour of the back, they can be bent. Stays are designed to be removed but are often over-bent. Therefore, it's suggested that the stays remain in the pack and someone else push or pull on the pack at specific points that feel out of alignment.

External Frame

1. Before you do anything else, determine your torso length. It's best to get a friend to help with this part.

Using a soft tape measure, have your friend measure from the 7th vertebrae (base of the neck) down along the contour of your spine to the shelf of your hips. Slide your hands along your sides (fingers forward, thumbs behind you) until they hit the top of your hips. There will be an invisible line connecting to the point where your thumbs would meet. This is your finishing point. So you'll measure from the base of the neck to this invisible finishing point. Your measurement determines the suspension size you'll need. If your torso length is 18" or smaller, you'll need a size small; 18 - 20" torso length requires a medium; 21" torso length or larger will need a large.

2. Before you put the pack on, loosen all straps. You have to tighten the straps in a specific order to get a good fit, so if you leave one strap partially tightened, it'll affect the fit of the other straps.

3. Now load the pack with the gear that you intend to take on your trip. If you fit the pack while it's empty, you'll just have to readjust and refit it once you load it with gear. You should avoid using sandbags or weights as a filler when fitting the bag. It's better to use the actual gear you'll be hauling so that you can get a realistic idea of the density and volume. After the bag is filled, put it on.

4. Adjust the hipbelt first. Remember, it's a hipbelt, so it should rest on your hipbone, not your waist. Position it so that your hipbone is centered in the middle of the belt. Then tighten it as much as possible. If the hipbelt bunches when you tighten it, it may be too small.

5. Check the curves in the aluminum frame. The curves should follow the contour of the back. The points of the shoulders should be at the bend in the frame. If not, the hipbelt can be moved up or down until the frame curve aligns with the back.

6. Next, adjust the shoulder straps so they're at the correct height for your torso length. The straps are designed to wrap over and back down your shoulders by at least 1 1/2" to as much as 3" down the back. The straps should fit snug against your body with no gaps. Shoulder straps should rest comfortably around the crest of your shoulders. Using either a mirror or a friend, note how far down from the shoulders the straps are positioned. You need to remove the pack in order to reposition the shoulder straps.

7. Put the pack back on. Retighten the hipbelt. Then tighten the lower shoulder strap webbing. The straps should conform to your body shape. If not, reposition them.

8. Adjust the load lifting straps. They pull the weight towards your shoulders and help keep the load balanced. The load lifting straps should leave the shoulder straps either directly from the top of the shoulder or just slightly forward, toward the collar bone. Ideally, the load lifting straps will form a 45 degree angle with the shoulders and the top of the stays. Pulling on the load lifting straps will pull the load closer to your center of gravity, but it puts a lot of weight onto the shoulders. Loosening the straps will put more weight onto the hips. When hiking, you'll regularly tighten and loosen these straps to shift the weight around, so make sure you're familiar with how they work.

9. Position the sternum strap in the center of the breast bone. It should be just a few inches below your collar bone. The sternum strap is designed to keep the shoulder straps from sliding off the shoulders. If you're in a situation where the pack may need to be removed quickly, it's a good idea to have the sternum strap unbuckled.

10. Reposition and/or tighten the backbands (as needed).

11. Adjust the hip width. Where the plastic hiparms connect to the frame there is an aluminum fitting above them. Both the hiparm and the fitting are angled where they fit together, and if the fitting is not rotated to the proper hip width position, you'll be fighting against the weight of the pack as it forces the hiparms into the preset position. Put on the pack with the hipbelt centered at the hipbone and tighten. Have another person loosen the screw on the hiparm fitting, rotate the fitting until it is flush with the hiparm and retighten the fitting.

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