

## Ski Boots Align and Adjust

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If your ski boots are uncomfortable, don't flex adequately, and/or your feet are out of alignment, your performance and technique will be adversely affected. In addition, foot comfort and alignment are critical for expert skiers, since they affect the ability to maintain a balanced stance, as well as a flat ski.

With regards to the aspiring all-terrain skier who is contemplating a new pair of boots, we'll take a look at a number of different boot manufacturers and models in a future article. The ski boots we examine will be geared to the expert skier.

First, we need to cover the following topics:

- Internal Alignment of the Foot
- External Lateral Cuff Adjustment of the Lower Leg
- External Forward Lean Adjustment of the Shin
- External Heel Lift Adjustment of the Foot
- External Forward Flex Adjustment of the Shin

In this way, you'll be knowledgeable about foot alignment, lateral cuff, forward lean, heel lift, forward flex, and associated terminology when you approach your local boot fitter.

### Internal Alignment of the Foot

Expert skiing depends on a balanced stance, and balance begins with the feet. Foot comfort and alignment are crucial. Most skiers need specialized boot alignment to achieve a stance that allows easy balance over one foot, and one ski at a time. From the Stance Test in the first article entitled *Ski Boots: Testing 1,2,3* we found that a strong, stable foot that's properly balanced makes for a strong skier.

In addition, from the Knee Tracking Test in the same article we discovered that ideally you want your knees to track straight when you flex forward. If they don't, it's a sign that you need the support offered by a foot bed, which is a custom insole molded for your particular foot.

During the boot fitting process, internal foot alignment woes can be minimized or even eliminated with the help of a pair of foot beds. The top part of each bed is molded to the shape of your foot, while the bottom part of each insole is designed to keep your foot aligned within the boot so it won't collapse.

So, with foot beds you get the best of both worlds. Foot comfort is achieved by having insoles that are molded to the shape of your feet. On the other hand, proper alignment of the feet stems from the bottom of the foot beds. When you flex forward your knees should now track straight. With the correct internal alignment you can establish a stance that is now balanced and stable.

After the foot beds are molded, you need to remove the insoles that came with your boots and replace them with the foot beds.

### External Lateral Cuff Adjustment of the Lower Leg

If you are an aspiring expert, proper alignment is essential. Put another way, a strong stable foot that's properly balanced makes for a strong skier. From the Stance Test in the previous article we found that a slightly knock-kneed stance is considered to be the best for downhill skiing. However, too much knock is not good. In addition, all bow-legged stances make it difficult to accurately pressure the edges of your skis.

Aside from the internal foot alignment from the use of custom foot beds, most boots are equipped with dual, external, upper-cuff adjustments to help you achieve the proper alignment and establish a balanced and stable stance. The cuff adjustments allow the upper part of the boot to be shifted laterally, which compensates for the angles of the bones in the lower leg.

A knock-kneed or bow-legged person can make adjustments that are geared to his or her particular lower body. The inclination of the cuff can be adjusted toward the lateral side, as well as toward the medial side, as necessary.

#### External Forward Lean Adjustment of the Shin

Many of the newer boots on the market now come equipped with external devices to control the forward inclination of the shin while you ski. This adjustment is usually located on the outside of the boot near the ankle.

Control of the forward inclination of the shin will determine at what angle your leg is held within your boot. It can also be described as the amount of bend at the ankle and knee that produces a given amount of forward lean in the shin.

If you feel your boots are keeping you from establishing a neutral, athletic stance, or restricting your range of motion, you can experiment with the forward lean adjustment, providing your boots are equipped with such a device.

Although you can adjust this control yourself, it's best to have this shaft alignment and adjustment done by a good, boot fitter. Make sure you have the forward inclination set initially by the boot fitter in the ski shop after you've purchased new boots. If you have any alignment problems during the season bring your boots back to the shop for a fine tuning.

#### External Heel Lift Adjustment of the Foot

Many of the newer boots on the market now come equipped with an external device to control the canting of the foot while you ski. The control is located on the outside either behind the heel or near the arch.

Adjustment of the heel lift in the foot will change the angle at which your foot rests in the bottom of your boot. This works to get you centered over your skis by shifting your center of mass either further ahead or further behind depending on which way the screw is turned.

However, the heel lift is not a common adjustment because not many boots are equipped with this device. If you don't have this adjustment screw on your boots, you can insert a tapered shim to increase the angle under the foot on the inside of the boot near the back.

#### External Forward Flex Adjustment of the Shin

From the Ankle Flexion Test in the first article, *Ski Boots: Testing 1,2,3*, we discovered that if you can flex the front of your knees forward to a point between the base of your big toe and approximately one inch beyond it, you have a good range of flexion.

However, if your knees stop at your instep or go way past the big toe, you need to have your boots flex-tuned for your particular lower body.

If your boots are equipped with such a device, a 2-position flex adjustment will be located on the outside of the boot near the ankle. This control alters the amount of resistance to the forward movement of your shins due to the bending in your ankles.

An all-terrain skier who does a lot of mogul or powder skiing may need to increase the forward flex in his or her boots to make them less stiff. The skier with softer-flexing boots will adapt much better because his or her boots will work to absorb such variations in the terrain or soft snow. Therefore, much of the energy of impact is not transferred directly to the skier.

#### **Short note about the author**

Jim Safianuk is a certified ski instructor and writer of the downhill skiing lessons in the course *Skills of the Expert Skier*. If you are interested in becoming an expert skier and/or you want to find out when the next article about ski boots will be published, visit this URL: <http://www.becomeanexpertskier.com/>

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