

# WHAT IS YOUR FLEX?

By Frank Lundeen      *CONTRIBUTING EDITOR FOR THE MASTER SKIER*

*Frank Lundeen is an avid skier from Spooner, WI where he manages Riverbrook Bike and Ski and is a member of the Toko Tech Team.*

What is your flex? This may sound like a strange question for a Master Skier, but I'm referring to ski flex which is the main thing that affects ski fit. For any skier, ski fit is the single most important factor when choosing skis. If the ski doesn't fit properly and the way it was designed to fit a skier, it simply can not perform at it's potential! I tell my customers that I would rather ski on an entry level ski that fits than a top of the line ski that doesn't. Properly fit skis will help your ski technique and may even help you rid yourself of some bad technique habits.

## HOW TO FIND SKIS THAT FIT

Usually the best place to find skis that fit properly is at a shop that emphasizes ski fitting and is willing to spend some time with you in your selection of equipment. Shops have various ways of fitting skis and testing flex.

Many shops have a tool called a flex tester. The flex tester is usually a great tool to get a good idea on how a ski may fit a given skier. The flex tester is also a useful tool in determining the grip zone of a classic ski.

The standard way of testing ski fit is by doing a paper test. In doing a paper test the shop will have a flat fitting block. The skis are placed on the fitting block, next the skier will stand on top of the skis with their toes usually placed near the balance point. The ski technician will then use a fitting card (sometimes a feeler gauge) and move it under the ski (between the fitting block and the ski base). Depending on what type of skiing the customer will be doing (skate or classic, soft snow or hard packed conditions) the technician will make a decision on which pair of skis is the perfect fit.

## KEY POINTS OF SKI FIT

First of all, skate ski fit and classic ski fit are two entirely different things. For this reason, most "combi skis" compromise performance in both disciplines of skiing.

**Skate ski fit** is something that has evolved over the past several years.

If a skate ski is too soft (not enough camber), the ski will be squirrely and very unstable. Expanding on this, with a skiers weight on a soft ski, the entire base of the ski is compressed against the snow and a large amount of pressure is directly under the foot of the skier. With all of this pressure under foot in the center of the ski, this center point becomes a literal pivot point and the ski becomes very unstable and unpredictable, especially in hard pack conditions.

On the other hand if skate skis are too stiff (too much camber), all of the skiers weight is near the ends of the skis. Usually if this happens the ski performs very poorly

in undulating trail conditions, climbing, and in soft snow conditions. An overly stiff ski will feel as though you are skiing into a hill rather than over it. Expanding on this, with all of the pressure (skier's weight) near the ends of the skis, the ski will go through (plow) the snow rather than flowing over the snow.

For proper **classic ski fit**, when a skier has equal weight on both skis, the grip zone of the ski should not be touching the snow. Then as the skier transfers weight to one foot and finally to the ball of the foot the entire grip zone should be contacting (punched down) the snow. Simply put when classic skis meet these two requirements the skis will glide well as when you are gliding the grip zone is not gripping, but when you "punch down" the ski the grip zone will grip.

With both classic and skate skis, fit can be adjusted according to skier ability and the anticipated conditions the skis will be used in. Generally speaking an elite racer requires a slightly stiffer ski (more camber) than the average skier. Furthermore, if a skier plans on skiing in mainly very soft, new snow conditions the ski sometimes should be a bit softer (less camber) while if the skier plans on skiing in hard packed, icy conditions the ski could be a bit stiffer (more camber).

## **PRESSURE DISTRIBUTION**

Pressure distribution is a literally un-thought of concept in ski fit, yet is a key component of a fast ski. If pressure distribution is ignored, it is possible for a ski that has been perfectly fitted and tuned to always be a shoddy performer. If you have a pair of skis that is always slow, no matter what you do to them, there is a good chance that the pressure distribution is poor.

Pressure distribution is as important in classic ski fit as well as skate ski fit. Pressure distribution is usually checked when doing the "paper test". During the paper test, while the skier is standing with equal weight on both skis, the ski technician will begin to slide the fitting card from the tip of the ski toward the tail of the ski. The very tip of the ski should be somewhat flexible providing very little resistance to the fitting card. As the technician slides the fitting card back the pressure should gradually build to a maximum pressure. After passing through the maximum pressure range, the pressure should gradually decrease until the pocket region is reached in the center portion of the ski. The key here is very smooth transitions. If the pressure distribution is smooth, the ski will float over soft conditions, irregularities in the trail, will flow much better over climbs, and will probably be a very fast ski.

Realize that certain skis are designed to fit differently than others so always heed to the manufacturer's recommendations regarding fit. Always make sure to look at new skis with an open mind. Some of the new technology is very different but provides big performance benefits.

This fall as you are contemplating that new set of skis, make sure to think about ski fit. It can really make all the difference in the world!