



The Ins and Outs of XC Ski Equipment

Cross country skiing can be a confusing sport with the different binding types, ski types, waxing and terminology. At Boulder Nordic Sport East our goal is to make it easier to understand while making sure that people get the absolute best fit equipment. With this in mind this is a guide to explain some of the hard to understand concepts.

There are two different disciplines in XC or Nordic skiing. Classic is the traditional in track type where you use sticky kickwax on the base of the skis to give you the grip to propel yourself down the trail. Skating is the newer technique (developed in the late 70's and early 80's) where the skier uses a more side to side body shifting motion and glide wax on the base of the skis to go down the trail.

There are two different binding systems that attach to skis and interface with boots: SNS and NNN. Salomon Nordic System was developed by the French company and currently fits only Salomon and Atomic boots. Salomon classic bindings are called Profil or Propulse and their skate bindings are called Pilot. The New Nordic Norm system was developed by Norwegians and currently fits Alpina, Fischer, Madshus, and Rossignol boots. NNN calls all of their bindings either R3 or Xcelerator. The R3 bindings are traditional bindings that you screw into a ski, and the Xcelerator bindings use a screw-less plate system to attach to the ski. Both of these bindings come in a classic and a skate version. Is it necessary to have two binding systems in a small niche sport like Nordic skiing? Absolutely not, but the French and Norwegians are not going to give up the money that comes with having their own systems, so we have to deal with it.

There are essentially three types of skis: skate, classic, and combination or combi skis. It is *very important to get a ski that fits precisely to the skier, especially in classic*. Skis are flexed for certain weight ranges and all skis have an individual flex rating or a flex rating range. For skate skis they need to be flexed between 110 and 125 percent of a skier's weight. This means that skate skis when picked correctly are likely to last as a skier gains weight, i.e. if a freshman in high school weighs 115 pounds and gets a ski flexed at 125% of body weight then that ski should last through multiple seasons and probably 20 pounds or so of weight gain. The reason that skate skis are picked stiffer than body weight is to help act like a leaf spring when the skier pushes off each stride, helping to propel the skier down the trail.

For classic skis the acceptable range is much smaller in terms of percentage of body weight. A classic ski has to be dead on flex-wise or the individual skier will either not be able to get the kickwax to the snow (too stiff) or the kickwax will be dragging constantly on the snow (too soft). We pick classic skis for high school and middle school kids at 50-54% of their body weight. Skis that are stiffer than this will not go to the snow completely and the skier will be frustrated with not having kick. Any softer and the skier will be very slow as their sticky kickwax constantly drags along the snow. At BNS East we find that having the wrong classic skis is a huge reason kids get frustrated with the sport or have poor results in classic. We urge you to get the right skis and flexes for your XC skiers, otherwise the sport is very frustrating and the skier will not be able to achieve their true potential in both results and enjoyment.

Combi skis are the worst of both worlds. You now know that skate skis must be stiffer and classic skis must be softer. Thus, there is no possible way to make a combination of these two and have it be any good. That is the simple fact. Combi skis are frustrating because they either don't work for classic at all or they are really slow when skating. In addition, having to switch wax from day to day from classic to skate is a burden and time consuming for either the skier or their parents. We highly recommend steering clear of combi skis if you want the skier to enjoy the sport.

Waxing is a part of the sport that can be mystical and confusing but certainly doesn't need to be. There are three types of wax: glide, kick, and klistar. Glide wax is used on the entire length of a skate ski (or downhill ski or snowboard for that matter), or on the tips and tails of a classic ski. Glide wax is temperature specific and it essentially is put on and scraped off to treat the base so that it glides faster over the snow. Kickwax and klistar are used in the middle area of classic skis to help get grip on the snow so the skier can kick firmly. This allows the skier to propel themselves swiftly down the trail. These are also temperature and snow type specific. Kickwax is used in newer snow or snow that has not gone through a freeze/thaw cycle. Klistar is used in older snow and snow that has been through a freeze/thaw cycle.

Feel free to email or call us with any questions that you may have about equipment, waxing, clothing or XC skiing in general. We are a XC ski specific shop-that is all we do. We love the sport and are here to help in any way possible including offering team pricing year round to high school and middle school athletes.

Think snow!