

6 – Nine Steps to Basic Ski Tuning

Introduction

This article provides general information about basic ski tuning principles and techniques. Coaches at the entry level should be well aware that entry level participants do not require “world cup” tuning. This resource material is intended to help coaches expand their knowledge about the sport of alpine skiing/ski racing.

Equipment plays a tremendous role in Alpine Ski racing, and there are many factors that must be taken into consideration: Strength, experience, and ability - just to mention a few.

As a coach on hill, you will provide your athletes technical and tactical training, which so often is not effective due to improper equipment. Whether it is the boots (canting, stiffness, or fit), or the skis (kind, structure, length, torsional stiffness), it is important that you as a coach set up each individual racer with the equipment they need. The problem with many racers today is that they want top of the line equipment, which they do not have the strength, power, or skills to work with. It is important that the skis are not too long, too stiff, or too sharp and that the boots allow lateral movement and are not too stiff.

Tools for Tuning

- Good set of ski tuning vices (very important to do the job right!!!)
- Flat block
- Elastic for holding the brakes
- Fibertex
- Horsehair brush
- P-tex candles
- Silicon sand paper (#100 #150 #200)
- Metal scraper
- Plastic scraper
- File cleaner
- Body file
- Chrome files
- File Guide (2 degrees)
- Masking tape (1/2 inch wide)
- Straight edge
- Diamond stone (or finishing stone)
- Iron or waxer
- Wax
- Plastic wraps

Step One

Before you start to tune the skis, look at the sidewall, and the top sheet condition. There should not be any nicks or deep marks on the top edge, sidewalls as during a turn not only the edge runs in the snow, but also the sidewalls, the corner edge, and the topsheet will be dragging in the snow. If these surfaces are rough, they will interfere with the ski and slow it down. Use a file, or sandpaper to smooth out these surfaces.

Step Two

Securely place the ski in the vice. The brakes should be clearly out of the way for both the work on the base and the work on the sidewall. Look at the base for any gouges. Use a P-tex candle to fill the base. When dripping the P-tex into the grooves, ensure that you do not drip carbon onto the base. Constantly keep the flame clean by dripping "dirty" p-tex onto an extra metal scraper. Let the P-tex cool, then scrape using a sharp metal scraper to level the repair with the base. A body file may also be used for this purpose.

Step Three

Use a straight edge to check how flat the bases are. The base should be flat. If it is not, wrap the #100 sandpaper around the flat block and sand with even strokes until the base becomes flat. It is important that while you are doing this, you keep checking with the straight edge to see how much sanding is really needed. Remember that while you are doing this process you also texture the base! Once the base is flat, use the brass brush to clean the base, this will also cut the extra fibres that are left from the sandpaper. Use the Fibertex (wrapped around the flat block) and the brass brush again and again: The more you brush and Fibertex a ski the faster the ski will get!

It is very important for the entry-level athlete to have skis which are flat, or which have a slight bevel. This will facilitate turning. If skis are checked with a true bar occasionally, then convex or concave (railed) skis will not interfere with skill development.

Step Four

To make the ski turn easier and to eliminate the "grabby" feeling that sometimes occurs, you will need to bevel the base edge. To do this, take your role of 1/2 inch masking tape and wrap 2 or 3 layer thickness around a file. Place the file almost across the ski - 90 degrees (NOTE: not 45 or 60 degrees). The file should be perpendicular to the edge. It is important that you do one edge at a time. Please note: Depending upon the location of the tape on the ski, it will change the angle of the bevel. A good trick is to mark the edge with a felt pen so that you can see how much edge you are taking off. When finished check again with a straight edge.

Step Five

Place the skis securely on the side in the vice, with the base facing away from you. To bevel and sharpen the side edge, take your file guide and with consistent strokes begin to file. It is best to pull the file towards you, rather than push the file away from you. If the skis are new and the edges are at 90 degrees, to do the first initial filing, replace the normal file with the body file. Once the edge has been taken down, finish with the regular file.

Step Six

Once you have achieved the sharpness that you want, use the polishing stone to smooth the edge off, and also to take the burrs off the edge.

Step Seven

Now you must de-tune the skis to meet the needs of the individual racer. To do this, consider the ability and strength of the racer, and also the conditions of the snow. Some racers will require a short de-tune, for others they will need a longer de-tune....this will require the coach to watch the athletes ski and train. To de-tune you can use a stone, or emery cloth.

Step Eight

Once you have cleaned off all the filings and excess it is time to wax. To ensure that you "hit" the wax it is important to consider the snow temperature, the air temp and finally the humidity of the air. It is very often that the snow temp and the air temp will be very different. When waxing ensure that the iron is not too hot and loosen off the vices to allow the skis to expand with the heating of the bases. The wax should puddle on the base, but should not smoke. Allow skis to cool completely before scraping (approx 20 min).

Step Nine

Once you have scraped the skis, texture the wax using the horsehair brush. Ensure that all excess wax has been removed from the sidewall, edges, tip and tail of the ski to ensure smooth running. Place Plastic between the skis before taping or strapping.