



## **Community Coaching Fundamentals**

# **Step 7: Base prep, glide and kick waxing**



**Reference Material**



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Patrimoine canadien

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Coaching Tip: Encourage the education of the skier. Do not do everything for them, but progressively develop their ability to look after themselves.

This section on Equipment Selection and Ski Preparation complements the information provided in section 3 of the Introduction to Community Coaching material, and is directed primarily at supporting you in your role as a coach working with children in the FUNdamentals stage of development.

This section will also provide you with materials that will assist you if you choose to work with athletes in the Learning to Train (L2T) stage and beyond.

### 7.3 Base Preparation, Glide and Grip Waxing

#### **Ideal Tool Box for Coaching Children in the FUNdamentals Stage of Development**

- ✓ a solid bench; portability is desirable
- ✓ a ski form that will hold the ski securely
- ✓ clamps
- ✓ extension cord
- ✓ good iron (controllable heat)
- ✓ heat gun and/or torch
- ✓ scrapers - metal, plastic, and groove scrapers
- ✓ brushes
- ✓ container for hot water
- ✓ corks
- ✓ wax remover
- ✓ fibertex
- ✓ fiberlene
- ✓ paper towels
- ✓ fiber paper (waxing paper)
- ✓ file and sandpaper
- ✓ miscellaneous: tape, basket, screws, flex plate for binding etc.

#### 7.1.1 Base Preparation

New skis usually come with bases prepared for waxing. If this is the case, follow the instructions under “Application of Glide Wax”.

If your skis did not come fully prepared, or if you are preparing used skis for waxing, follow these fundamental steps:

- First, inspect the ski. Hold it up to the light and look down the base. Look for bumps, gouges, etc.
- Place the ski securely in the form.
- If there are bumps, tears, etc., choose one of the following:
  - ✓ take the ski to a place that does ski grinding and have the base ground;
  - ✓ make passes from tip to tail, in a continuous motion, with a metal scraper. This exercise requires a steady hand and some experience. If you haven't done it before, you should begin by practicing on a pair of old skis before you try it on your good skis; or
  - ✓ use a sanding block with 100 grit sandpaper and sand the ski base from tip to tail until it is flat. Make sure the sanding block is long enough to bridge any discrepancies in the base. Repeat this process using graduated versions of sandpaper (up to 300 or 320 grit) until the ski smooth.
- Take some fibertex and make a few passes from tip to tail.
- Generally, the ski will now be ready to wax.

## 7.12 Factors That Affect the Performance of Waxes

Keeping up with all the new wax products can be time consuming and expensive for a club coach, and this is not necessary. By using a fairly complete selection of one - and at most two - of the major wax brands, you can get good performance in almost all snow conditions. The wax box for a coach can be reasonably simple. For grip waxes, include a base binder, a green range, an extra blue range, a violet range, and a special red range. For klisters, include purple (or a binder for icy conditions), special red (for damp conditions), red (for slush) and universal. For glide, include a few non-fluoro paraffin glide waxes. A coach should be able to cover most situations with this collection of waxes.

Factors that affect the performance of all waxes are:

- Trail Conditions.** The starting point for determining which wax to use is the ski trail itself. How well packed is it? How long has it been since it was groomed? How many skiers have skied on the tracks?
- Air and Snow Temperature**
  - ✓ Manufacturers normally identify snow type and the air temperature range on their wax products. The next step for determining which wax to use is to take a reading of the air temperature in the shade.
  - ✓ If you are waxing for an important competition, you would take a reading at several points along the course, including the highest and lowest points.
  - ✓ If you plan to use snow temperature, keep in mind that it will remain the same once it reaches the freezing point (zero degrees Celsius), regardless of rising air temperature. When this happens it is necessary to switch to using air temperature.
- Humidity.** Humidity is a critical factor influencing waxing decisions. Usually this information is

included in the local weather forecast. If you are waxing for a competition, your club may have its own equipment for taking humidity readings, to complement what is provided by the weather forecast.

- ❑ **Type of Snow.** As snow ages, the points of the snowflake become rounded. The more rounded the snowflakes, the softer the wax that is needed. Snow also ages as a result of skier traffic. The more the trail is used, the softer the wax that is needed.
- ❑ **Application.** Care must be taken when applying wax. It must be applied in smooth, even layers. If the wax is lumpy, performance will decrease and grip waxes will be prone to icing.

For future reference, you may wish to routinely record snow conditions, air temperature, how you applied the wax and how the wax worked.

### 7.3.3 Application of Glide Wax

The first step in preparing skis is to get the work area set up. Make sure your scrapers are sharp, your brushes are clean, there is good lighting, etc.

#### **Waxing and Safety**

- ❑ When ironed-in heating of either fluorocarbon or non-fluorocarbon glide waxes is required, the process must be conducted in a well-ventilated area.
- ❑ Excessive heating of the products must be avoided. The application temperature should be less than 115 degrees Celsius.
- ❑ Reliable respiratory protection in the form of a canister mask for organic vapours and dusts must be used by persons within the application area.

Place the ski in the ski form.

- ❑ Make certain the ski is fastened down.
- ❑ Preheat the iron and let it stabilize. Make sure you have enough cord length.
- ❑ The iron should be hot enough to melt the wax, but not hot enough that it begins to smoke.
- ❑ Clean the ski by using wax remover or hot wax and a sharp, plastic scraper.
- ❑ To clean a ski with hot wax, first melt a layer of soft glide wax onto the ski, and then scrape it off with a plastic scraper while it is still molten. For scraping the flat surface of the ski, use the regular, sharp edges of the scraper, but for scraping the sides of the ski, use the ends of the scraper or you will damage it.
- ❑ If the ski is dirty, you need to brush on wax remover, and then remove it with a plastic scraper before it evaporates.
- ❑ When the ski is clean, you can begin glide waxing.

- ❑ Lay a thin bead of glide wax on both sides of the groove. If you are preparing a classic ski, do this in the glide zone only, not in the grip zone.
- ❑ When melting wax, ensure there is good ventilation in the waxing room. Do not allow the wax to become so hot it “smokes”.
- ❑ Melt the beads of wax with one or two passes of the iron from tip to tail. Use long, continuous strokes (no pausing) from tip to tail. The long strokes prevent the ski from becoming too hot. Do not allow the iron to stop in one place, or use a “scrubbing” motion.
- ❑ Scrape the groove and the sidewalls of the ski before it cools. Become familiar with using a round groove scraper for scraping the grooves.
- ❑ Let the ski cool to room temperature. This will take 20-30 minutes.
- ❑ Scrape the ski with a plastic scraper until all visible wax is removed.
- ❑ Brush with a nylon brush in order to remove any excessive glider from the base.
- ❑ If you are using a fluoro wax, the use of Fiber Paper (waxing paper) between the ski and the iron is recommended. Waxing paper allows you to use less wax (i.e. saves money), assures good distribution of the wax, and provides a buffer between the iron base and the ski base (it provides a better buffer than fiberlene because it is thicker):
  - ✓ Crayon a thick layer of wax onto the ski base.
  - ✓ The iron needs to be hot enough to melt the wax when the waxing paper is between the iron and the ski.
  - ✓ Begin at one end of the glide zone, and go slowly to the other end. Usually you will hold the waxing paper with one hand, and pull it along with the iron. However, when the iron is set to the correct temperature, you should be able to move the iron along by pulling the waxing paper. In this case the iron is floating on the molten wax layer.
  - ✓ Remember that you should not “scrub” with the iron.
  - ✓ After the first pass, check to see if the base has a complete cover. If not, touch it up now. Altogether, you should make two or three passes with the iron/waxing paper.
  - ✓ Always check that the base is not overheating. If you can’t hold your hand on the base, it is too hot.
  - ✓ Remember that you will get better wax absorption using as high a temperature as possible (without actually “smoking” the wax). On the other hand you can sear a base with excessive heat if you are not careful.
  - ✓ As long as the waxing paper is clean you can continue to use it for the same wax type.
  - ✓ Usually the iron has to be set 20 degrees warmer for the same wax type if you are using waxing paper.
  - ✓ You do not need to use the waxing paper for the paraffin glide wax or for powders.
- ❑ Non-fluoro (paraffin) waxes cover a range of temperatures. If you are using a warmer non- fluoro wax, follow the application directions at the beginning of this sub-section, and make sure the wax layer is thick enough to completely cover the ski when it is being ironed in. Scrape when the wax has cooled.

- ❑ If you are using colder non-fluoro wax, use the same application process as you did above, but the removal of the wax will be different because of the chipping that occurs when the wax hardens. In this case, do the initial scraping while the wax is still warm. This will help to prevent chipping. When the ski has cooled, scrape and brush as normal.

### 7.3.4 Application of Grip Wax

- ❑ If skis have been glide waxed previously, the glide zones need to be scraped and brushed.
- ❑ Always scrape and brush from the border of the grip zone to the tips and tails of the ski. The reason for scraping and brushing in this manner is to keep the grip zone free of any material that could interfere with the adhesion of the grip wax.
- ❑ When the glide zones are finished, clean the grip zone with wax remover. Be careful not to get any wax remover on the glide zone.
- ❑ When the grip zone is dry, abrade it with sandpaper, using longitudinal strokes moving from the ends of the grip zone, and working towards the middle. Use 80 grit sandpaper for abrasive snow. Use 120 grit sandpaper for non-abrasive snow.
- ❑ Using a sharp plastic scraper, remove any hairs that might be attached to the base.
- ❑ If needed, a base binder can be applied now:
  - ✓ If you are planning to use a binder, it should be left outside freezing while you are getting ready to use it. Freezing the wax allows it to be rubbed on in thin layers, and avoids the big lumps that are difficult to spread with a cork.
  - ✓ Next, warm the ski with a heat gun or iron and spread the binder. It is best to use a cork and work the binder into the base for better adhesion.
- ❑ If you are planning to use hard klister as a binder, keep the ski at room temperature and warm the klister:
  - ✓ To warm up the klister and still keep it at a workable consistency, place the tube in a can of warm water (or use a heat gun). Another is to place it in the sun when the sun is sufficiently strong. Be careful that the klister doesn't become too warm or it will run everywhere.
  - ✓ Next, apply a thin layer of klister using the same procedure mentioned above for a base binder, and spread it over the grip zone.
- ❑ Before applying the grip wax over the binder, allow the binder to cool down outside:
  - ✓ Rub 3-4 thin layers onto the grip zone of the ski, smoothing out each layer with a cork as you put it on.
  - ✓ It is best to start at the outer ends of the zone and work towards the centre.
  - ✓ If the camber is correct, *and if the camber is marked correctly*, that will be enough.
  - ✓ If you do not have adequate grip, add one or two more layers.
  - ✓ If you have to build up a number of layers, it can be helpful to take the ski outside after the first few layers to cool it down. Then finish the job.
  - ✓ If you still do not have adequate grip, the next step is to apply a warmer wax in the centre

of the wax pocket.

- ✓ If the warmer wax proves to be too sticky, cover it with a thin layer of the grip wax that was used originally.
- ✓ Finally, if the grip is still inadequate, you should scrape it all off with a plastic scraper and repeat the process with a softer wax (klister).

### **Application of Klister**

- The first step is to clean the grip wax pocket of the ski with wax remover.
- Next, warm the klister tube (use warm water in a can, your hand or a heatgun).
- Poke a small hole in the top of the tube.
- Squeeze short, thin strips on both sides of the groove, in a uniform manner, in the grip zone of the ski.
- The strips should be horizontal, from the groove out, rather than running the length of the ski. The wax will smooth out better if it is applied this way.
- Duplicate the amount of klister on the second ski.
- Spread it evenly using your thumb, a klister brush or the klister spreader that comes in the box.
- If the layer looks too thin, you can always add some more. However, keep in mind that klister is easier to add than remove.
- When the klister application is finished, allow the ski to cool for at least 10-15 minutes before using it. Perhaps the greatest cause of problems with klister is inadequate cooling and the subsequent icing.

### **7.3.5 Waxing Skis for Children**

It is necessary for parents to prepare the skis for younger children.

Children six years of age and older can begin to prepare their own skis, but only under the close supervision of an adult.

By eight years of age, children should be learning to apply their own kick wax. If they have acquired basic waxing and ski preparation knowledge by ten years of age, they can also be introduced to klister.

However parents need to take responsibility for the glide waxing of the skis. If a parent is unable to prepare the skis themselves, a ski friend with waxing experience or a local ski shop should be able to provide assistance. For skiers at this level, glide waxing should be done at least twice a ski season. It should be done before the first ski session and then again during the middle of the ski season. If the skis receive a lot of use, they may require glide waxing more often.

Note that a wax kit that meets the needs of a young skier can be simple and still cover all snow situations.

### **Recommended Wax Kit**

Cork and plastic scraper.

Paper towel.

Grip wax: one package of a recognized brand that covers the full temperature range (approximately six grip waxes).

Klister: universal klister.

Glide wax: one warm range and one cold range non-fluoro paraffin glide waxes.

The "kit" can be a small plastic box with a lid, a little cloth bag, a fanny pack, etc. This kit helps to reduce the chance of items being lost in the wax area during the ski session or workshop.

## **REFERENCES**

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