

# **GUIDE TO PREPARING & WAXING CROSS-COUNTRY SKIS**

**2<sup>nd</sup> Revision Jan 2014**

By Mike Stern

## **Introduction**

If you are feeling a bit daunted about knowing how to wax your skis, here are some easy steps to follow for glide waxing your skis and adding grip wax. This guide is intended for **novice and recreational skiers** who want to achieve a bit more out of their waxes. I've used this method for a number of years and found it works well even over long distances. Using these techniques, I've never run out of grip wax skiing long distance events like the Birkebeiner. I may have run out of grip because I've been tired and not been transferring my weight properly, but when I've checked my skis at the end I found that I still had wax or klister remaining.

As a quick reminder on **waxable classic skis**, there are two areas where you need to apply waxes. **Grip wax** is applied to the area under your foot from near the base of the heel to about 30 cm in front of the binding. The distance will vary from one set of skis to another depending on the camber of the ski, your weight and your skiing ability. The tip & tail portions of the ski are treated with glide wax. Skate skis are easier in that you only need to apply glide wax to the entire base of the ski.

I am often asked how often you need to apply glide wax. Well, it depends on several factors but my rough rule of thumb is every 50 – 100 km under normal conditions. This distance, of course, can be much less if the snow is very abrasive or if the temperature changes a lot or if you are preparing for a loppet or race.

I strongly recommend sanding the grip area & ironing in a base binder wax if you plan to go out on longer distances of 15 - 20 km or more. This method helps bind the grip waxes to the base. However, if you only plan to do short skis of a few km then these steps can be left out.

Remember, you want to get out & spend your time skiing not waxing. Also, I have not found it necessary to use the really expensive glide & grip waxes for recreational skiing. If you get into more serious racing then that is a different matter.

A very useful reference is the Swix Waxing Guide for Skating & Classic Skiing. This is available free of charge at some ski retail outlets. Swix on their website at [www.swixschool.com](http://www.swixschool.com) also have a series of helpful instructional waxing videos which I highly recommend watching. Similarly Toko on their website at [www.tokoUS.com](http://www.tokoUS.com) also have some waxing videos.

I have included in Appendix II at the end a list of the tools & materials needed together with the approximate costs to set yourself up to wax your own skis.

### 1. Prepare the Grip Area (Classic skis only)

- Use a good (preferably) plastic scraper to remove any old grip wax that remains.
- Scrape from the tip towards the tail
- Soak the end of an old rag in some base cleaner and rub it over the grip area to remove the rest of the grip wax or klister. If it is really stubborn soak a piece of Fibretex in some base cleaner & rub vigorously. (A flat nylon scotch pad from a supermarket will do instead).
- Remember to remove any grip wax or Klister from the groove in the base
- Avoid getting the base cleaner over the glide area of the ski
- When dry take a piece of fine sand paper (e.g. 80 - 100 grit) & lightly sand over the grip area in a longitudinal direction. You can wrap the sand paper around your cork to get a more even finish.
- The grip area is now ready for the grip waxes

### 2. Prepare the Glide Area

- Use a **sharp** plastic or Perspex scraper to remove any summer protective glide wax that you may have applied. (You did remember to put it on last season to prevent the bases from drying out?)
- For classic skis scrape from the centre out & for skate skis scrape from the tip towards the tail
- Wipe off the surplus wax with a lint free cloth such as Fibrelene or a blue Shop Towel
- Take a bronze or metal brush or a piece of Fibretex and make 5 or 6 passes over the glide area of the ski to clean & prepare the base ready for the new glide wax
- **It is not necessary to use base cleaner to remove the old glide wax**
- On classic skis use masking tape to separate the glide area from the grip area.

### 3. Apply Hot Glide Wax

- Select a glide wax in the temperature range you require
- Use a special waxing iron. Note: old clothing irons are not recommended because the temperature settings may not be accurate & you can burn the base of the skis.
- Set the iron to the correct temperature for the wax. Some glide waxes such as those made by Swix have the temperature settings on the package. You will know if the iron is too hot if the wax starts to smoke. Conversely, if the temperature is too low the wax will not melt easily.
- There are a couple of ways to apply the hot wax:
  - The old way is to drip the wax onto the glide area of the ski on either side of the groove but this can be messy & wastes wax.
  - A much more efficient way is to turn the iron upside down and lightly place the corner of the iron on the ski & move it

along the ski melting the wax in a streak on either side of the groove. The streak should be the width of a piece of fettuccini pasta.

- Iron the wax in using light pressure & **always** keep the iron moving from tip to tail to avoid damaging the base. Three passes are usually sufficient.
- Avoid getting glide wax onto the sanded grip area
- Note that colder waxes require higher temperatures to melt, so to avoid damaging the ski make two passes with the iron and allow the ski to cool before making two more passes.

#### 4. Remove the Glide Wax

- Allow the new wax to solidify and then take a groove scraper & first remove all the wax from the groove or grooves
- Wait 10 – 20 minutes for the skis to cool
- Run the scraper along each edge of the ski to remove the wax from the edges
- Using the plastic scraper & applying even steady pressure, scrape off the wax moving from tip to tail for skate skis & from the centre out on classic skis.
- Assuming that your scraper is sharp and you have an even ski base, four passes with the scraper should remove most of the glide wax.
- Never push with the scraper as this can damage the base (see photo)
- Wipe the ski clean with a lint free cloth as before



#### 5. Condition the Glide Area

- Take the bronze or metal brush & brush the glide area lengthways from tip to tail about 20 times. Work the brush into the groove. This removes the surplus wax & will give better glide
- Then take a nylon brush & brushing lengthways 20 – 30 times polish the ski so that you can see the structure in the base. (Only really noticeable in dark coloured bases).

#### 6. Apply Base Binder Wax to Grip Area (Classic skis only)

To apply a hard wax base binder effectively, you need to apply some heat to melt the wax a little. There are two ways of doing this either by using a waxing iron or using a heat gun (or hairdryer):

- First crayon a thin, even layer of base binder onto the sanded grip area. Avoid globbing the wax.

- If using an iron, clean it first with a rag dipped in base cleaner to remove the glide wax. (Make sure to turn the iron off before you clean it).
- Set the iron temperature to 110° & iron in the base binder over the grip area. Three light passes with the iron should be enough to just melt the wax. Alternatively just melt the wax with a heat gun. Always keep the iron or heat gun moving to avoid damaging the ski base. The heat gives a better bond between the wax & the base.
- It is not necessary to apply a thick layer of base binder
- Cork the wax binder in so that the entire sanded grip area is covered with a thin even layer
- Avoid getting the wax into the groove
- Allow the ski to cool before applying any more layers of grip waxes.

## 7. Apply Hard Grip Waxes (Classic skis only)

It is better to apply a series of thin even layers than a few thick layers. Two methods are described.

### 7.1 Traditional Method

- Apply the wax of the day in a series of thin layers. The number of layers required depends on the type of wax, the nature of the snow & the distance you plan to ski.
- For example, for the basic Swix range of waxes I use one layer for every 3 – 5 km and for the more expensive Swix VR waxes & Toko waxes I use one layer for every 8 – 10 km under normal snow conditions.
- Crayon each layer of wax in evenly to within a 2cm of each end of the grip area
- Cork the wax well in so that it covers the entire grip area
- Apply the next layers in the same way, as required
- However, a **minimum of four layers** is usually recommended.

### 7.2 Alternative or Pyramid Method

This method is recommended by many of Canada's top waxing experts. They also recommend that each time you ski you remove **all** the old grip wax then sandpaper the grip area again & re-apply the grip wax but this is really overkill for most recreational skiing. (You have to decide how much time you want to spend waxing versus skiing).

- Apply between 4 – 10 layers in a pyramid shape
- Crayon on the first layer to the end of the grip zone & cork to get a smooth even layer
- Crayon on the second layer but bring it in to within 1 cm of the ends of the first layer & cork as before
- Apply additional layers each time bringing it in about one cm from the ends of the previous layer, so that the last layer will just extend to either side of the apex of the ski.

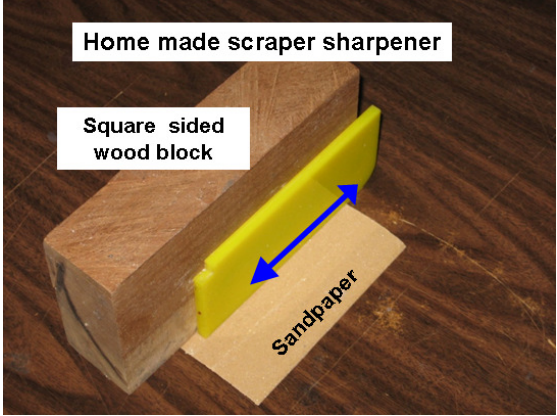
## Some tips on Using Grip Waxes

Not sure, what temperature wax to apply? Here are a few tips:

- Some waxes have two temperature ranges on them. One is for new snow i.e. that is snow that is usually less than 24 hours old & is usually indicated by the whiter more fluffy snowflake symbol. The other temperature range is for old or transformed snow & is usually indicated by a darker more solid snowflake symbol.
- Be aware of what the temperature range on the wax indicates, e.g. on Swix waxes it means air temperature in the shade while older Toko waxes use snow temperatures in the shade.
- You can put colder waxes on top of warmer waxes. Think about it. If you plan to ski for several hours and the temperature is expected to warm up. Apply the warm waxes first and then the colder waxes on top appropriate for when you start. I often mix two waxes together in the same layer when transitioning from one wax to another.
- The ski tracks are usually slicker than the surrounding snow & may require a warmer wax than the air or snow temperature indicates.
- When out skiing always take a few extra grip waxes plus a cork & scraper with you. Take at least one warmer wax & one cooler wax than the wax you have started out on.
- If you are struggling for grip when other people using the same wax are not, then assuming it is not your technique, extend the grip area in front of your foot by a few cm.
- In colder weather e.g. below -15 having sufficient grip is not usually a problem. Most grip waxes rated at -10 or below should work. So keep warm & apply the grip wax at home.
- If after applying the base binder you are not planning to use your skis immediately or you are travelling some distance to the ski area, a good tip is to apply a thin layer of protective grip wax. After the ski has cooled cork in a thin layer of blue wax, e.g. Swix V40 or Blue Extra. This wax is not as sticky as the base binder and will not attract as much dust and dirt. Then when you are ready to ski apply the layers of grip wax as required.

## APPENDIX I

### SOME DO'S & DON'TS

- **Don't** use an old clothing iron to apply waxes unless you want to damage your bases.
  - **Do** keep your plastic scrapers **sharp**. (A simple sharpener can be made by holding the scraper up against a small square-sided block of wood which is placed on a piece of 80 – 100 grit sandpaper. Then move the scraper from side to side across the sandpaper, at the same time keeping it flush against the block of wood). I recommend sharpening the scraper at least every other time you prepare a pair of skis.
- 
- **Do** use a base binder for your grip waxes if planning to ski more than say 10 km. If you are only ever going to ski a few km at a time then you can skip both sanding the grip area and using a base binder.
  - In more abrasive snow conditions **do** use a very **thin** layer of base Klistar ironed on instead of the base binder. Then freeze the ski outside for 15 minutes & apply layers of hard grip wax on top. In very abrasive or icy conditions, a layer of ordinary Klistar may have to be applied instead of the hard grip waxes. To avoid sticking when you start off, cover the Klistar with a layer of grip wax.
  - **Do** wear old clothes & or an apron to protect your clothes from hot wax stains when preparing your skis.
  - **Do** place tubes of Klistar inside a zip-lock plastic bag in case they leak.
  - **Don't** leave your skis unprotected during the summer months. **Do** iron on a layer of soft (warm) glide wax to the glide areas of the ski. **Don't** remove it until ready to use the skis next season.
  - **Do** decant some of your base cleaner into a smaller container in case of spills.
  - **Don't** use paint stripper or similar chemicals such as Varsol to clean the bases of your skis. They can damage the bases.

## APPENDIX II

### RECOMMENDED LIST OF ITEMS NEEDED TO CARRY OUT YOUR OWN GLIDE & GRIP WAXING

ITEM	SUBSTITUTE	USE	APROX. COST
Base cleaner		Cleaning old wax from grip area	\$15 - \$30
Lint free cloth e.g. Fiberlene	Blue "Shop Towels" from Canadian Tire	Cleaning skis, wiping off excess glide wax etc.	\$4 - \$10 / roll
Fibertex Pads	Flat nylon Pan scourers e.g. "Scotch Pads"	Preparing base of ski for glide wax	\$10 for 3 pack
Synthetic Cork		Applying hard grip waxes	\$5 - \$8
Thick Plastic or Perspex Scraper		Removing excess glide wax	\$7 - \$10
Groove Scrapers		Removing excess glide wax from grooves	\$3 - \$4
Scraper Sharpener	80 – 100 grit sandpaper & wood block	Sharpening scrapers	\$35 - \$55
Bronze or Metal Brush	Combination bronze/nylon brush	Preparing glide areas before & after wax application	\$15 - \$25
Nylon Brush	Combination bronze/nylon brush	Final conditioning of glide area of ski after waxing	\$15 - \$25
Fine Sandpaper (80 - 100 grit)		Roughing up grip area for base binder	\$1 - \$2 / sheet
Waxing Iron		Applying glide wax & base binder	\$50 - \$120
Waxing form/frame	Clamps & table/workbench	Hold skis firmly for removal & application of waxes	\$120 - \$250
Heat Gun	Hairdryer	Melts in base binder or Klusters	\$15 - \$25
Base Binder	Spray on base binder	Helps grip waxes adhere to ski	\$15 - \$20
Grip waxes		Helps ski go uphill in normal conditions	\$8 – \$20 each
Klister	Spray or roll-on Klusters	Used alone or with grip waxes in icy or abrasive conditions	\$10 - \$15 each
Glide waxes	Roll-on waxes	Improves glide of ski	\$10 - \$30 each

**Note:**

- 1) A good starter grip wax set for example is made by Swix and contains red, blue & green waxes plus a plastic scraper & a cork in a zip bag & costs about \$30. To this I would recommend adding a violet and a purple wax.
- 2) For recreational skiing I have found that I normally do not need to use the expensive fancy glide waxes. I use universal glide waxes for most of my recreational ski outings. These days I only use the more expensive waxes if I am competing in Loppets or going on really long skis.
- 3) To set oneself up with a waxing frame, waxing iron with basic tools and waxes will cost around **\$300** or more.
- 4) Roll-on glide waxes and base binders are normally not as durable as most hard wax versions.

Mike Stern  
 ENSC, 23/11/08  
 File: Method for waxing skis rev2.docx  
 2<sup>nd</sup> Revision 20/01/14