



ALPINE SKI & SNOWBOARD PREPARATION RACING

SWIX[®]
SCHOOL



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COVER:
AKSEL LUND SVINDAL, NORWAY
Photo: Hook BADERZ/AGENCE ZOOM



Telenor is the main sponsor
of Aksel Lund Svindal and
the Norwegian Alpine Team.

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Photos: Swix Sport AS, Esben Haakenstad,
AGENCE ZOOM.
Printed on recycled paper in Norway
by BK Gruppen.

This manual is made for racers and people who demand the absolute best performance from their skis and snowboards.

The information in this booklet is based upon feed back from our highly successful 2015-2016 World Cup Racing Service Team. Swix takes part in the most important competitions with our own test team and service people. Testing and product development is done together with the ski and snowboard factories and their service technicians leading to new and better products.

STRUCTURE

When the base of a snowboard or ski has a certain surface structure, or texture pattern, the gliding performance is improved compared to a completely smooth base surface.

Prior to setting edge angles on a ski/board (new or old) it is a good idea to have them ground so we are starting with a truly flat edge. It is important to realize that even new skis are not always flat. Stone-grinding will secure a flat base. You can at the same time choose a preferred structure for the conditions the skis are most likely to be used.

It is impossible to classify the infinitely variable types of snow and the unlimited number of possible structure patterns. However the three most common structure types are:

- Linear structures
- Cross structures
- Broken structures



Structure Patterns

Today almost all base structure patterns are created by the stone grinding process. Stone grinding machines have become amazingly sophisticated. The ability to control grinding parameters, and to duplicate specific structure patterns has greatly improved.

LINEAR STRUCTURES

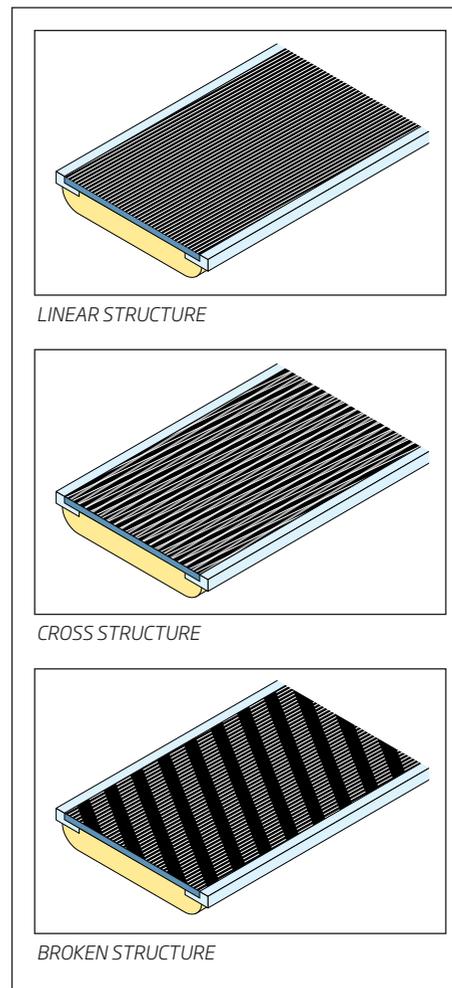
Fine Linear structures work well for colder, drier snow conditions.

CROSS-STRUCTURES

The most often used structures are diagonal structures, stone-ground to cross type structures. They work better for snow with medium to higher moisture content and coarse snow crystals. This structure has an optical diagonal banding appearance that runs at an angle across the base. Too deep, coarse structures will affect the turning ability.

BROKEN STRUCTURES

There are also numerous "broken" structure combinations produced by stone grinders or imprint tools. These vary in gliding property and turning ability.



PREPARING EDGES ON SNOWBOARDS

IN GENERAL

The set-up of the edges depends upon the type of board, properties of the board, usage of the board, the snowboarder's technical skills and the ability to feel the kind of snow he/she is on. The set-up of the edges must be adapted to each individual. The best results will be achieved through testing and experiencing different snow conditions. Both edges of the snowboard should be treated equally and can be adjusted later when the board has been tested on snow. To make sure that the board performs perfectly on snow and ice, the edge has to be even and polished without scratches or other damage. If the board has been used on rails, the edge could be tempered and almost impossible to file. In this case, stone grinding is highly recommended. To ensure optimal glide and to benefit from the properties of the board, the base-side edges has to be even with the base. If the base of the board is not completely flat, a qualified technician can do this with a good stone grinding machine. The right tools are important and practical for a good result. Top quality snowboard-vises like the Swix SB031NO are a good start in combination with other tools. This will be mentioned later. Keeping your work place and tools clean is essential for the best results. Procedures and the use of different tools are described step by step from page 37.

BASE-SIDE EDGES - PREPARATION AND FILING

To make the snowboard easy to use, the edge has to be beveled. This means that we give the base-side of the edge a certain, fixed angle (see illustration page 9).

By beveling the edges, will give the following benefits:

- The edge has a slight angle to the surface and will carve more progressively.

- The board will be easier to turn and control.
 - The edge will be less aggressive sideways towards the snow. The result will be less risk of catching an edge and losing control. This is very important.
 - Rotations will feel easier and the ride will have a better flow.
- Tools that are used for preparing the base-side edges are Swix TA05N, Swix TA075N, Swix TA010N or Swix TA0520.

PLANING AND PREPARING THE BOARDS SIDEWALLS

The sidewall of a snowboard normally has a thin plastic directly above the steel edge. This needs to be removed in order to do get the best results after filing on sidewall-side edges. By removing a small portion of this edge with a specialized planer, the risk of getting plastic in the files is reduced. This small plastic side-edge gives support to the steel edge and it is important that it is removed gradually. There may be a thin sheet of metal above the steel edge on some snowboards, This is removed together with the plastic with the same tool. We recommend using the specially designed planer for this. The planer blade is either round or square. Swix TA100R (round) is normally used on boards with a cap construction, while the Swix TA100SB (square) is used on traditional sandwich constructions. Use the "panzer" file Swix T0108 to get a smooth and even surface on the sidewall. To finish off, use a fine Swix T0350 silicone-carbide paper # 180 and Swix Fibertex T0264. This is exclusively done on the sidewalls and not on the steel edges. (See illustration page 39.)

FILING AND PREPARING THE SIDEWALL-SIDE EDGES

The sidewall-side of the steel edge is also beveled to give better grip on hard snow and ice.

The sharper the angle between the sidewall-side and the base-side of the edge, the more "aggressive" the grip on the snow will be.

Normally 2 - 3 degrees are used. Tools for this use are Swix TA587, Swix TA687 and Swix TA3008/TA3007. (See pictures page 10.)

DEBURRING THE BASE-SIDE AND SIDEWALL-SIDE EDGES

There will always be small burrs after working with the file on the edges. To prevent the edge from getting dull because these burrs tend to break away the point of the angle causing the edges to become dull sooner. By using the Swix coarse diamond stone Swix TAA200N or the Swix rubber stone, Swix T0995, these small burrs are easily removed. (See page 39.)

DAILY MAINTENANCE

Small adjustments and improvements can be obtained by polishing the edges. Edges that are polished are faster, sharper and will stay sharper longer.

Polishing the edges after each day so that the board is ready for the next day, means less time is spent on maintenance. On icy conditions, it could be necessary to bring a file holder for the sidewall-side edge with a diamond stone to polish the edges between each run.

Polish back and forth along the steel-edge (see illustration #4 page 42). Next, the base-side of the edge is polished (see illustration #6 page 39).

If this is not enough to make the edges sharp, a new base prep is needed. Do as described earlier. Finish of the new base prep by polishing the edges.

DETUNING AND ADJUSTING STEEL EDGES

To get the full benefit of modern boards, it is recommended that the edges are sharp across the full length of the edge. This ensures a good carve from the tip to the tail of the board. On steep slopes, a little extra pressure on the nose will start the turn more easily. To achieve this, the nose needs to be sharp. If the board feels too aggressive into the turn or it is difficult to finish the turn, (the same thing also happens when you are in the



T-BAR 500 BOARD-FREERIDE VISE (SB031NO)

Light and compact quick fix vise for snowboards and skis.



halfpipe), try either of the following.

First, choose 0.5 degree more beveling of the base-side of the edge or if this is not enough, use the Swix rubber stone Swix T0992 or Swix T0994 to gently dull the edge. Put the rubber stone on the edge and move it back and forth. A little bit at the time (5 cm). Up to 25 - 30 cm from the nose and backwards and up to 25-30 cm on the tail.

TREATING SCRATCHES AND DAMAGED STEEL EDGES

If an edge has hit a rock, this can temper the steel edge. These areas need to be removed with a stone such as the Swix T0240 before you can continue with a file. If this is not done, the file will "skid" over the hardened area, resulting in a damaged file and uneven sharpening of the edge. Removing the damaged area is necessary and easy, using the Swix T0240 stone. After removing the area with the Swix T0240 stone, filing the edge can continue and it will be much easier. (See illustration #4 page 37.)



COMPACT ECONOMY WAXING TABLE

(T00754)

Table top: 96 x 45 cm.

SNOWBOARD TABLE (T00758)

The board can be put in vertical and horizontal position. Adjustable heights from 98 to 71 cm.

COMPACT AND COMFORTABLE POCKET SCREW DRIVER (SB102NO)

PREPARING EDGES ON ALPINE SKIS

IN GENERAL

The set-up of the edges depends upon the type of ski, properties of the ski, usage of the ski, the skier's technical skills and the skier's ability to feel the kind of snow he/she is skiing on. The set-up of the edges must be adapted to each individual skier. The best results will be achieved through testing and experiencing different snow conditions. Both edge on each ski has to be treated equally and can be adjusted later when the skis have been tested on snow. To make sure that the skis perform perfectly on snow and ice, the edge has to be even and polished without scratches or other damage.

To ensure optimal gliding and ski-ability, the base-side edges has to be even with the base.

The right tools are important and practical for a good result. Top quality vises like the Swix T0149-50 is a good start, combined with other tools that will be mentioned later.

Keeping your workplace and tools clean is essential for best results. Procedures and the use of different tools are described step by step from page 37.

BASE-SIDE EDGES - PREPARATION AND FILING

All racing skis today use beveled edges. This means that we give the base-side of the edge a certain fixed angle (see illustration page 9).

By beveling the edges, we get the following benefits:

- The edge has a slight angle to the surface and will carve more progressively.
- The ski will be easier to turn and control.
- Both edges of both skis will be less aggressive sideways towards the snow. The result will be less risk of catching an edge and losing control. This is very important, especially in speed events like Super-G and Downhill. In slalom, some racers prefer 0 degree beveling. This means the ski will be precise and feel more aggressive. This demands a

stronger and more technically skilled racer.

Tools that are used for base-side preparation are Swix TA05N, Swix TA075N, Swix TA010N or Swix TA0520. (Read more about the tools on page 10.)

PLANING AND PREPARING THE SKIS SIDEWALLS

The sidewall of a ski normally has a thin plastic (sometimes aluminum) edge directly above the steel edge. This needs to be removed in order to do get the best results after filing on sidewall-side edges. By removing a small portion of this edge with a specialized planer, the risk of getting plastic in the file is reduced. This small plastic side-edge gives support to the steel edge and is important that it is removed gradually. There might be a thin sheet of metal above the steel edge on some skis. This is removed together with the plastic with the same tool. We recommend using a specially designed planer for this. The planer blade is either round or square. Swix TA100R (round) is normally used on skis with a cap construction, while the Swix TA100SB (square) is used on traditional sandwich constructions. Use the "panzer" file Swix T0108 to get a smooth and even surface on the sidewall. To finish off, use the fine Swix T0350 silicone-carbide paper # 180 and Swix Fibertex T0264. This work is done exclusively on the sidewalls and not on the steel edges.

FILING AND PREPARING SIDEWALL-SIDE EDGES

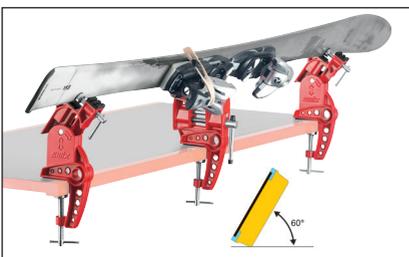
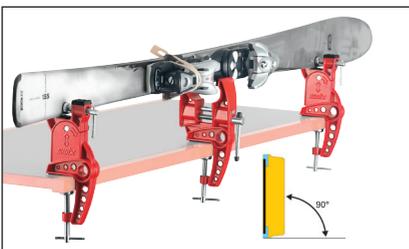
The sidewall-side of the steel edges are also beveled to give better grip on hard snow and ice. The sharper the angle between the sidewall-side and the base-side of the edge, the more "aggressive" the grip on the snow will be. This angle depends upon the following factors:

The ski's properties, the skill level of the skier, the skiing discipline (SL, GS, S-G or Downhill) and the type of snow. Kids and junior level skiers may use between 2 - 3 degrees, World Cup skiers up to 5 degrees. Tools for this use are Swix TA587, Swix



WORLD CUP SKI VISE (T0149-50)

Swix three piece vise with wider jaws 50 mm for better grip and stability when working on carving skis and radial alpine skis. 40 mm to 95 mm.



TA687 and Swix TA3008/TA3007. (See illustration page 9.)

DEBURRING THE BASE-SIDE AND SIDEWALL-SIDE EDGES

There will always be small burrs after working with the file on the edges. To prevent the edge from getting dull because these burrs tend to break away the point of the angle causing the edges to become dull sooner. By using the Swix coarse diamond stone Swix TAA200N/TAA100N or the Swix rubber stone, Swix T0995, these small burrs are easily removed. (See page 39.)

DAILY MAINTENANCE

Small adjustments and improvements can be obtained by polishing the edges. Edges that are polished are faster, sharper and will stay sharper longer.

Polishing the edges after each day so that the skis are ready for the next day, means less time is spent on maintenance. On icy conditions, it could be necessary to bring a file holder for the sidewall-side edge with a diamond stone to polish the edges between each run.

Polish back and forth along the steel-edge (see illustration #4 page 42). Next, the base-side of the edge is polished (see illustration #6 page 39).

If this is not enough to make the edges sharp, a new base prep with filing is needed. Do as described earlier. Finish of the new base prep by polishing the edges with a stone.

DETUNING AND ADJUSTING STEEL EDGES

To get the full benefit of modern skis, it is recommended that the skis are sharp across the full length of the edge. This ensures a good carve from the tip to the tail of the ski. On steep slopes, a little extra pressure on the tip will make the ski start the turn more easily. To achieve this, the tip needs to be sharp. Likewise, a little extra pressure on the tail at the end of the turn makes the transition into the next turn easier and faster. If the skis feels too aggressive into the turn or it is difficult to finish the turn, try either of the following.

First, choose 0.5 degree more beveling of the base-side of the edge or if this is not enough, use the Swix rubber stone Swix T0992 or Swix

T0994 to gently dull the edge. Put the rubber stone on the edge and move it back and forth. A little bit at a time (5 cm). Up to 25 - 35 cm from the tip, backwards and up to 5 cm on the tail.

TREATING SCRATCHES AND DAMAGED STEEL EDGES

If an edge has hit a rock, this can temper the steel edge. These areas need to be removed with a stone such as the Swix T0240 before you can continue with a file. If this is not done, the file will "skid" over the hardened area, resulting in a damaged file and uneven sharpening of the edge. Removing the damaged area is necessary and easy, using the Swix T0240 stone. After removing the area with the Swix T0240 stone, filing the edge can continue and it will be much easier. (See illustration #4 page 37.)

HERE ARE SOME GENERAL GUIDELINES USED ON THE WORLD CUP:

SL base edge = 0 to 1 degree bevel

SL sidewall-side edge = 3 to 5 degree bevel

GS base edge = 0.5 to 1 degree bevel

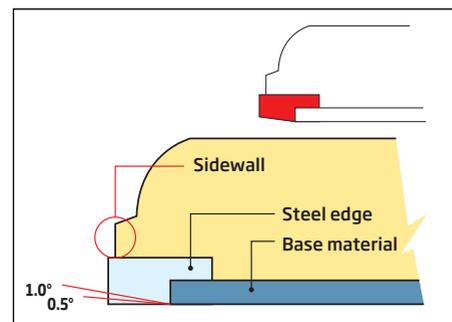
GS sidewall-side edge = 3 degree bevel

SG base edge = 0.5 to 1 degree bevel

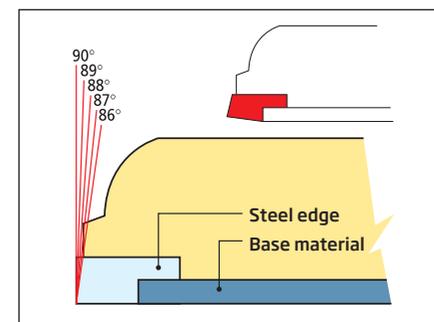
SG sidewall-side edge = 3 degree bevel

DH base edge = 0.5 to 1 degree bevel

DH sidewall-side edge = 3 degree bevel



Base Edge Bevel - Usually 0.5 to 1 degree.



Side Edge Bevel.

EDGE PREPARATION PRODUCTS

The Swix File & Stone Product group is designed specifically for edge work on skis and snowboards. The files' details such as chroming hardness and thickness, cutting tooth angle, depth, and teeth per centimeter, all are based upon expert advice from World Cup technicians and file producers. The line of stones is to-the-point to get the job done accurately and without confusion.



World cup base edge file holders

Precise and light weight. Stainless steel all the way. No plastic. No parts to be replaced. The most precise Base Edge File Holder on the market. 0.5° (TA05N), 0.75° (TA075N), 1° (TA10N), 1.5° (TA15N), 2° (TA20N)



Professional Base-Edge Bevel File Sleeves

0.5° (TA005N), 0.75° (TA0075N), 1° (TA010N)



Adjustable Base Edge File Holder (TA0520)

0.5° to 1.5°.



Sidewall Cutter Aluminium (TA104)



Side Edge File Guides

- for skis and snowboards.
88° (TA688), 87° (TA687), 86° (TA686),
85° (TA685)



Swix Phantom R Edge File Holder (TA3008)

Economy edge sharpener with rollers and 80 mm file. Easy adjustment from 85 to 90 degrees. Ergonomic, longer holder for stability and good grip. Protects the hand. Takes files and stones up to 6 mm thickness. Easy tightening of files.



Ski brake retainers (T0165)

RACING PROFESSIONAL FILES

The Swix file program offers specialized files of the highest quality. The files are made to our own specifications to meet the demands of World Cup Service Technicians.



WC Racing Pro Fine File (T0103X100B)

4"/100 mm. 17 Tpi. Stainless steel. Extremely sharp fine high quality file for edge geometry set up. New generation of files that reduces the need for second use of files for finish. Lasts 10 times as long as regular files.



WC Racing Pro Medium File (T0102X100B)

4"/100 mm. 13 Tpi. Stainless steel. Extremely sharp high quality file for edge geometry set up. New generation of files that reduces the need for second use of files for finish. Lasts 10 times as long as regular files.



Racing Pro Fine File (T104RS)

4"/100 mm. 16 tpcm. Sharp. Non chromed.



Racing Pro 2nd Cut File (T106RS)

4"/100 mm. 13 tpcm. Sharp. Non chromed.



Racing Pro Bastard File (T107RS)

4"/100 mm. 10 tpcm. Sharp. Non chromed.



Swix Fine File (T104X)

6"/15 cm. 20 tpcm, fine cut. Chromed Finishing File. Durable.



Swix 2nd Cut File (T106X)

8"/20 cm. 16 tpcm. Chromed all purpose file. Best all round shop/consumer file produced by Swix. Side beveling, base beveling set up before diamond work. Durable beyond all other files offered. A retail must for consumers.



Bastard File (T107X)

8"/20 cm. 13 tpcm. Chromed Bastard removal/setup file. Best file for setting side angle. Non-tang files offer a truer, flatter file for exact degree application. Best file for initial side bevel.



Specially designed Panzer file (T0108X)

12"/30 cm anti-rust treated file. Coarse, 13 tpi. Perfect for removing excess base material after repair. Can also be mounted to the waxing table for sharpening acrylic scrapers.

STONES

Diamond Files offer the special option of having the cutting ability of a file and the deburring and polishing ability of a stone all in one tool. The Diamond Files are perfect to carry in the pocket for quick removal of the fines burrs created on the edge when ski or riding on aggressive man-made snow. Just a couple of quick passes with the Diamond File on the side-edge will cut away the burrs for smoother turning. Will fit into the Swix file holders for the most accurate results.



SWIX/DMT Diamond Stone (TDM200)

Red Coarse, 100 mm.

A deburring and maintenance diamond stone. One of two stones that can do it all, deburr and sharpen.



SWIX/DMT Diamond Stone (TDM400)

Yellow Medium, 100 mm.

The Medium stone maintains a smooth edge. This is your 2nd "must have" stone.



SWIX/DMT Diamond Stone (TDM600)

White Fine, 100 mm.

Great stone for finishing all skis.



Diamond Stone (TAA100N/TAA100NS)

X-Coarse 100 grit. Deburring and sharpening diamond stone. Works great for removing case hardening in the tip and tail from grinding stone entry and exit of the ski at the manufacturing facility, and from hitting rocks. 100 mm/70 mm.



Diamond Stone (TAA200N/TAA200NS)

Coarse 200 grit. Deburring and maintenance stone. One of two stones that can do it all in the diamond category. Works great for maintaining sharpness and smoothness. 100 mm/70 mm.



Diamond Stone (TAA400NN/TAA400NNS)

Medium 400 grit. 2nd in your must have diamonds to maintain a smooth and sharp edge. Starts to bring out that high polish shine. 100 mm/70 mm.



Diamond Stone (TAA600N)

Fine 600 grit. 100 mm/70 mm.



Diamond Stone (TAA1000N)

X-Fine 1000 grit. Final diamond polish when looking for that mirror finish. Extremely exact edge accuracy. Used on alpine skis to achieve that super smooth finish. 100 mm/70 mm.

GUMMY & CERAMIC STONES

Gummy Stones are an efficient way to detune (slightly dull) the tip and tail area, and to remove micro-burrs from filing. Ceramic Stones offer that final polish that will help maintain the ski edge geometry.



Gummy Stone (T0992)

Soft, for prepping and de-tuning tips and tails.



Gummy Stone (T0994)

A hard gummy for polishing and light to medium edge clean up. Can be used after filing to remove micro burrs.



Ceramic Stone Fine (T0998)

For final polishing of the edge.



Pocket stone (T0240)

Fine and coarse. Coarse side for removing hardened steel and burrs after hitting rocks. Fine side for polishing after use of file.



Gummy Stone (T0995)

Extra hard. Used after filing to remove micro burrs.



BASE BRUSHING

The Swix Brush Programme in General

The Swix Brush Program is subject to continuous development based on feedback from the Swix Racing Service Department that serves World Cup technicians, athletes, and teams throughout each season. As a result, Swix customers are guaranteed the highest quality products taking into account the latest developments and methods of World Cup technicians.

Swix Brushes are divided into three main categories of use, plus the economy line.

- The Swix "Pre-Wax" Brushes are designed to use before waxing for base restoration ("freshening") by removing the burnish and oxidization from the base surface, and brushing old wax out of the structures (base patterns) in ski and snowboard bases to clean and "open" the base for better wax absorption.
- The Swix "Post-Wax" Brushes are for use after waxing and scraping to brush the wax out of the base patterns. To many, these brushes are the most important. The base must be waxed, yet the structure patterns must also be revealed to minimize friction. The brushes in this category are designed to be efficient at removing wax but gentle enough to not have a base scratching effect.
- The Swix "Cera F" Brushes have the purpose of "application brushing" and final finish brushing. Professional technicians reserve these brushes just for use with Cera F so the final waxing result cannot be compromised with wax other than Cera F.



For each of these categories the Swix brushes are carefully selected with special qualities in mind. Swix selects not only the specific material for each purpose, but also the certain length of each fiber, a certain thickness and stiffness for each fiber, and lastly, the bristle density. By specifying the characteristics thoroughly, each of the Swix brushes has its own "personality" and fulfils a specific purpose.

Most of the Swix brushes come in two sizes. The smaller rectangular are easy in use and convenient when travelling. The larger oval brushes are suited for efficiency and comfort when preparing multiple skis.

Brushes after waxing and scraping

T0179B/T01790 Steel Brush (or T0162B/T01620 Bronze Brush)

A medium coarse steel or bronze brush to use after waxing and scraping. 10-12 strokes. Can also be used before waxing to clean and "open" the base.

T0160B/T01600 Blue Nylon Brush

A fine soft nylon brush for polishing. 4-5 strokes.

T0191B Steel Brush Ultra Fine

An ultra fine steel brush for renewal and cleaning of bases. Also used as second brush on wax.

Brushes for Cera F Powder

T0194B/T01940 Stiff Nylon Brush

For "brush up" (not away) of Cera F powder after ironing (and before ironing FC7 and FC0078 the second time). 4-5 strokes back and forth.

T0157B/T01570 Horsehair Brush (or T0164B/T01640 Wild Boar Brush)

Second brush on Cera F powder. An "animal" brush for brushing powder away. 10-12 strokes.

It is recommended to use separate brushes for the waxes from the brushes used for Cera F.

Wax Brushes



T0179B WAX 1



T01790 WAX 1



T0162B WAX 1



T01620 WAX 1



T0160B FINNISH



T01600 FINNISH



T0191B WAX 2



Cera F Brushes



T0194B CERA F 1



T01940 CERA F 1



T0164B CERA F 2



T01640 CERA F 2



T0157B CERA F 2



T01570 CERA F 2



ROTO BRUSH PROGRAM

Use of a Roto Brush is a great way to save time when there are many skis or boards to prepare. For club team racers where coaches and parents are preparing the skis for the entire team, a Roto Brush is almost a necessity. Even many top level technicians will use Roto Brushes for initial brushing after scraping, and then usually finish with hand brushing. Also Roto-Fleece is often the preferred way to apply Cera F Powder, Solids and Liquid.

RPMs from about 1000 to 2000 are used for brushing.

T0016M Horsehair

The initial brush on all waxes. Used on regular waxes and Cera F. (Do not use the same brush on regular wax and Cera F.) 100 mm wide.

T0016P Wild boar brush

Special first brush for wax on alpine skis. 100 mm wide.

T0017W White or Blue Nylon

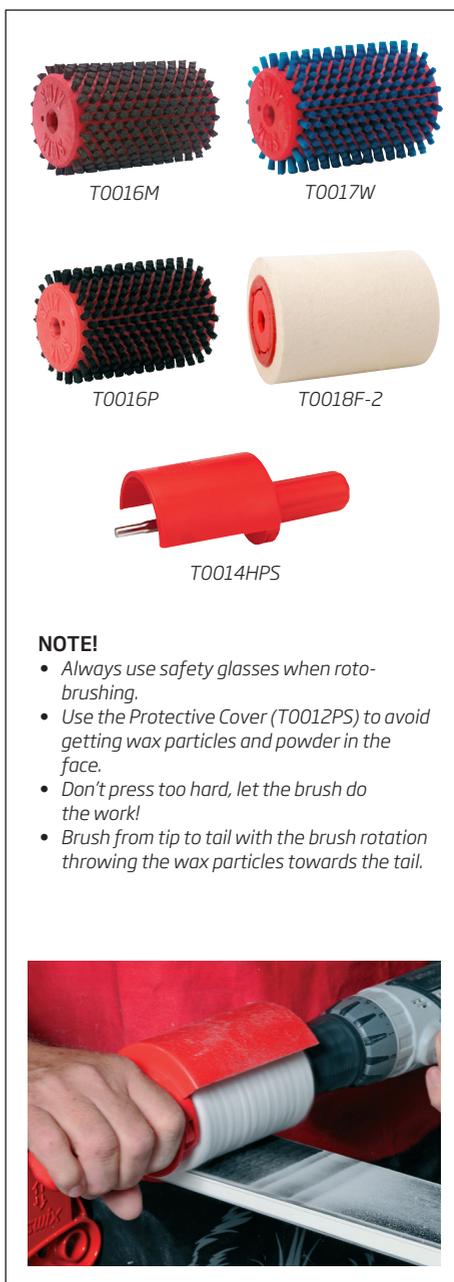
Polish brush for wax and Cera F. Also preferred by some as "all round" brush. 100 mm wide.

T0018F-2 Fleece

The Roto-Fleece improves Cera F performance. Apply the Cera powder to the base with a wax iron first. The Roto-Fleece should be used a couple of times to get optimal performance. NB! Use separate Fleece brushes for each type of Cera F. 100 mm wide.

T0014HPS

Handle with 100 mm driveshaft and protection cover.



FACTORS INFLUENCING WAXING

Temperature

The temperatures shown on the Swix wax products are air temperatures in the shadow. Taking a reading of the air temperature in the shade is the first basic starting point for wax selection. This should be done at several points along the course especially keeping in mind where the most critical point is, such as a flat section. Snow temperature at the surface can also be helpful. But remember that once the temperature reaches the freezing point (0°C or 32°F), snow will remain at that temperature regardless of rising air temperature. At this point it is best to use air temperatures and focus on the proper steps for dealing with the increased water content of the snow.

Humidity

Humidity is important, but more as a local climate trend rather than a need to measure every percentile. It is important to know if the competition is taking place in a dry climate, meaning average humidity below 50%; a normal climate of 50% to 80%, or a high humidity climate 80% to 100%. Beyond this, of course, is adjusting to the situation of falling precipitation.

Snow Granulation

The appearance of the snow crystal and consequent snow surface is important for wax selection. Falling, or very fresh new fallen snow is the most critical situation for waxing. The sharp crystals require a wax that will resist snow crystal penetration, but at warmer temperatures must also have the ability to repel water. It is in this special, critical waxing situation that Cera F excels.

Man-made snow is today the most common snow in racing situations. Freshly made snow at cold temperature definitely require the addition of synthetic paraffin such as with CH04X, LF04X, HF04X and CH06X, LF06X, and HF06X. After man-made snow has "settled" for some days and the surrounding atmosphere has affected the

snow surface, the gliding characteristics of the snow improve and normal waxing considerations return.

At rising air temperatures above 0°C (32°F) the snow temperature still remains at 0°C (32°F). The water surrounding the snow crystals increases until the snow pack becomes saturated with water. Waxes that are highly water repellent and coarse base structures are needed.

Snow Friction

The friction on ice and snow is a mixed friction. It means that it is neither a true dry friction nor a true fluid friction. The contact is partly dry, partly wet. At very low temperatures the frictional mechanisms gradually might be described by laws governing dry friction.

At intermediate freezing temperatures, around -4°C to -10°C (25°F to 14°F), the water film between the frictional partners has the optimal thickness to create low kinetic friction.

Approaching the freezing point, the water film increases in thickness, and when conditions for melting is present, free water enters the system.

The contact area between ski and snow increases and the friction will increase. Suction gradually builds up as the amount of water increases.

SWIX

HIGH PERFORMANCE GLIDEWAX

Cera Nova X

FC 1

100% Fluorocarbon



With fluorinated compounds from **Miteni** (Italy)

-12°C / -32°C -8°C / -14°C -5°C / -10°C -2°C / -8°C -4°C / 4°C 0°C / 10°C

BW 2

High Fluorocarbon



HF 3

High Fluorocarbon



LF 4

Fluorocarbon



CH 5

Hydrocarbon



www.swixschool.com

SWIX

Cera Nova X

THE STORY

Over 19 years ago, one year after the 1994 Winter Olympics in Lillehammer, Swix launched the Cera Nova wax system. This was a result of comprehensive testing performed before and during the Olympics that made it possible to put together a unique and logical wax system based on four different temperature ranges. Ranging from hydrocarbon- to high fluor waxes, the Cera Nova System covered all the needs of a serious skier for both training and high-level competition. By its intuitive build up, the skier could easily find the right choice for their needs within the range. For the first time, Alpine and Nordic (both for skating and classic) skiing were under one unique wax system.

Since that launch, Cera Nova has been the best selling wax system in the world. Its popularity stretches from World Cup Racing Service Technicians to skiing enthusiast. The system has been the recipe of success in all major championships over the last two decades and anchored by our famous Cera F, the wax that has won more Olympic and World Championship medals than any other wax in the world.

Over the years the system has been through several updates and modifications, all necessary in order to keep up with the advancement of raw materials, synthesis of fluoro and the development within waxing, in order to maintain the undisputed position as the world's best wax system.

Even with this successful history, Swix decided to launch a new wax project 3 years ago. The total Project Team was comprised of over 20 members ranging from Product Developers, Scientist from R&D, World Cup Racing Service Teams, and wax technicians from around the world. The mission was clear, we didn't just want to introduce a few new waxes or make visual changes to the existing line, we wanted to completely renew the existing Cera Nova line, and the new project was given the name Cera Nova X!

The project was divided into three sub projects: Testing, Packaging and Design. Among them, there was no doubt that discovering better performing wax

formulations was the biggest task. We wanted to challenge existing wax formulations in the Cera Nova system in order to evaluate and conclude if changes were required. To get the assessment basis for this job we performed over 800 clinical tests at major ski destinations all around the globe, in all temperature ranges, both for Nordic and alpine skiing. This was the one and only way of putting the old system to the ultimate test and it required a tremendous effort from our Racing Service team and our R&D department. In order to keep viable statistics as the basis of the project, we started off with an advanced test plan for everyone to follow. This was key to discovering which original waxes could stay in the system and which waxes required improvement. From the ski tunnel in Torsby (Sweden) to Sochi (Russia) and Canmore (Canada) our Racing team has delivered test reports in all kinds of snow conditions more or less throughout the whole year.

In addition to our internal testing, project test waxes have been tested on the World Cup circuit for the past two years. The close collaboration with the service men and their valuable test feedback has contributed as a quality assurance of our own internal testing.

In the history of Swix there has never been a similar test effort before. A huge number of glide tests have been performed, analyzed, and compiled into our massive database; all for the purpose of finding the small margins that make the whole difference.

During the spring of 2014 the first deliveries from the Cera Nova X will leave our production facilities at Lillehammer, Norway. Our production team is highly experienced, and every new wax leaving our production facility will be of outstanding quality. It will be filled in a new innovative package, which includes inner marking, stronger side support and a hinged lock.

With a complete new design expression, inspired by the X in our brand name, we believe the final product will meet the highest expectations from the market and set a new standard for ski wax during the next decade.

ENJOY SKIING WITH CERA NOVA X WAX - YOUR WINNING MARGIN!

SWIX CERA NOVA X

Category 1:
100% Fluorocarbon

Cera F Powders

Cera F Powders - 100% fluorocarbon
Swix Cera F reigns as the glide wax of choice when there can be no compromise in performance. Exclusively formulated for all high quality skis and snowboards. Swix introduced the first Cera F wax to the market in 1987 creating a wax revolution.

These waxes have a unique combination of characteristics for providing:

- Very high degree of purity
- Very low surface tension
- Friction reducing lubricating power
- Exceptional water repellency
- High resistance to dirt and oils
- Chemical inertness and stability
- Thermal stability

In short, this means the fastest gliding for the longest duration due to the resistance of contamination from dirt/pollution in the snow being greater than regular paraffin waxes. Cera F Waxes do not contain CFC's and is not harmful to the environment.



Safety reminder

Neither Cera F powder or its vapor from ironing should be exposed to temperatures above 300°C (570°F). Therefore avoid exposure to torches, heat guns, space heater, and cigarette smoking.

Recommended ironing temperatures for Cera F are approximately 160°C/165°C (320°F/330°F) which are far below the level for Cera F decomposition.

FC04X

Temperature range from -10°C to -20°C (14°F to -4°F).

Recommended iron temp: 165°C (329°F).

A cold powder that works great in all snow conditions and perfect to minimize dry friction. This powder is brand new for the Cera Nova X launch and well tested over the last few years. It has proven itself in cold conditions at world cup destinations both in cross country and alpine and is the servicemen's choice when the temperature drops low. Suggested base waxes are HF04X, HF04BWX or LF04X.

FC05X

Temperature range from -3°C to -15°C (27°F to 5°F).

Recommended iron temp: 160°C (320°F).

Identical to our traditional FC100 powder, a cold powder that has shown great results for many years, and an absolute winner in cold conditions. Tests have shown best results in transformed and old snow, but it can also be used with great result in new snow. Easy to apply with a lower melting point. Suggested base waxes are HF05X, HF05BWX or LF05X.

FC06X

Temperature range from -1°C to -10°C (30°F to 14°F).

Recommended iron temp: 165°C (329°F).

A powder for new and fine-grained snow, but is also performing well in transformed snow. Developed for the Cera Nova X line and has shown great performance in tests over the last 3 years. Already a favorite among several servicemen. Lower melting point makes it easier to apply. Suggested base waxes are HF06X, HF06BWX or LF06X.

FC07X

Temperature range from +2°C to -6°C (36°F to 21°F). Recommended iron temp: 160°C (320°F).

A powder developed for normal winter conditions from around freezing and colder. From the cold side this powder performs well until you have a "suction" feeling in the track, then the FC08X is a better choice. Suggested base waxes are HF07X, HF07BWX or LF07X.

FC08X

Temperature range from -3°C to +4°C. (39°F to 25°F).

Recommended iron temp: 165°C (329°F).

Our classic and best selling FC08X powder is continued in the new line. A quite easy decision as we haven't found a better powder during our test period. It has just confirmed to us that this powder is performing extremely well, and is well deserved a spot in the new range. A versatile powder which performs well in all snow conditions on both sides of the freezing point. A safe choice that never disappoint you! Suggested base waxes are HF08X, HF08BWX or LF08X.

FC10X

Temperature range from 0°C to +15°C (32°F to 59°F).

Recommended iron temp: 170°C (338°F).

A continuation of FC010X which is performing to well to be dropped in the new line. The strength of the powder is in wet conditions from 0°C and warmer. Used a lot during spring season with melting snow or falling wet snow. It performs well in all snow conditions.

Suggested base waxes are HF10X, HF10BWX or LF10X.

FC0078 - Super Cera F Powder Old Snow

A special racing powder for transformed, old snow +10°C to -10°C (50°F to 14°F).

Used often in World Cup alpine because of high durability when man made snow.

Recommended base wax alternatives; HF05X, HF05BWX, HF06X, HF06BWX, HF07X, HF07BWX, HF08X, HF08BWX.

High melting point. Recommended iron setting 165°C (320°F) or higher. A quality iron is required to get a good result.



ALPINE WORLD CUP TABLE (T0077)

*Solid and stable. With ski rack.
Prolongment for long skis.
For professional alpine servicemen.
Practical: All parts to be packed into table for
easy traveling.
Delivered with traveling bag.
Net. weight 22 kg/48.4 lbs.*

Application of Cera F Powder by ironing and corking

Swix Waxing Techniques are also available on the Swix Website in video form in "The Swix School".

Cera F is applied using an iron more often now due to increasingly aggressive characteristics of man-made snow for top level races. For natural snow, or normal (less icy) man-made snow, Cera F can still be applied just by corking.

IRONING

1. Set the iron temperature to the maximum setting, FC04X: 165°C, FC05X: 160°C, FC06X: 165°C, FC07X: 160°C, FC08X: 165°C, FC10X: 170°C, FC0078: 165°C.
2. Apply an even layer of the powder on the base. Or, if using Cera F Solid, apply an even layer of the block form. Lightly touch the iron along the base to stick the powder to the base.
3. Iron the powder into the base. Make just one pass with the iron taking not more than 4 - 5 seconds to go the length of the ski or board. In the case of snowboards, make one pass on each half of the board.
4. Use a stiff Nylon Brush (T0194) to "brush-up" the powder. Use a firm back and forth scrubbing motion.
5. Continue with a Wild Boar (T0164) or Horsehair Brush (T0157). 10-15 strokes.

6. Finish by brushing with a Blue Nylon Brush (T0160), using about 10 strokes of the brush. Use firm short strokes working your way along the base from tip to tail. Lightly wipe off any remaining powder dust with Fiberlene. Further polishing is not necessary.

Note:

It is not recommended to use brushes with metal bristles when working with Cera F powder or Cera F Solid.

CORKING

1. Sprinkle an even layer of powder on the base. When corking, less powder is needed than for ironing. A layer of Cera F can also be applied by rubbing on a layer using Cera F Solid.
2. Polish the powder into the base using the Swix Natural Cork (T0020). Use firm pressure back and forth so the cork will generate heat causing the powder to form a way film.
3. Use the Horsehair Brush (T0157) or Wild Boar Brush (T0164). Use a firm back and forth scrubbing motion to further polish the powder into the base pattern.
4. Brush the excess powder off the base with the Blue Nylon Brush (T0160). 10-15 strokes.

Waxing and personal protection level

Swix has a wide product range. Within the two main categories "kick" and "glide" we offer products for world cup athletes as well as recreational skiers, and all levels in-between. You can choose between products according to your needs and waxing competence level. "Swix School" provides easy access to how to apply the products.

The majority of our products do not require any special precautions. This goes for all products in the "kick" category such as hard waxes and klusters. The only "kick" products where we recommend some precaution are liquid products on aerosol bottles, which preferably should be applied outside or in a ventilated room. The same precaution is recommended for our aerosol liquids within the "glide" category.

For glide waxing using an iron we recommend some additional precautions. What precautions you should take, and what kind of personal protective equipment you should wear is related to the frequency of waxing you are doing. Differentiation between user groups according to the exposure level is a good principle of occupational health.

The "Protective recommendations for ski waxers" are a guideline on how to protect yourself against vapor and dust when hot waxing. It describes 5 categories in which cover the typical levels of ski waxers.

Protective recommendations for ski waxers

Professional waxer:

You have waxing as your profession and spend most of your days in the wax cabin during the winter season. You probably work for a national/professional team, or work backshop at a sport retailer. You typically spend 4-7 days a week in the wax cabin during the winter.

Recommended protection: T317590, protection mask for pro waxers. This is a Scott Autoflow mask Swix is offering to the profession segment

PROFESSIONAL WAXER



T317590

WAX VENT

HEAVY WAXER



T4277

T317590

REGULARLY WAXER



T4277

If you use a mask from other vendors, make sure it's that the protection level is minimum A2 (solvent/aerosols) and P3 (particles). For all masks, note the expiry date and make sure that you follow the cleaning and storage instructions on the packaging/packing insert.

of ski waxing. It is a full face mask battery driven mask and protects both against iron vapor/gases and dust particles.

An alternative solution for this segment is a fully ventilated wax bench. Together with Total Miljø AS Swix is offering the solution WAX VENT.

Heavy waxer:

You have waxing as your hobby or passion. You might be a waxer within your club or just wax for yourself and/or family members who are into racing. You typically spend 1-3 days a week in the wax cabin during the winter.

Recommended protection: T4277, Protection mask for waxing. This is a 3M mask Swix is offering to heavy/regularly waxers. It protects both against iron vapor/gases and dust particles. Both a good and economical solution.

An alternative is the T317590 protection mask for pro waxers. This is a Scott Autoflow mask Swix is offering to the profession segment of ski waxing. It is a full face mask battery driven mask and protects both against iron vapor/gases and dust particles.

Regularly waxer:

You like to take care of your own and/or your family's skis. You could have children who are into racing, or you might participate in citizen races yourself. If not, you just have a passion for waxing, and like to have great performing skies for training. You typically spend time in the wax cabin once a week during the winter.

Recommended protection: T4277, Protection mask for waxing. This is a 3M mask Swix is offering to heavy/regularly waxers. It protects both against iron vapor/gases and dust particles. Both a good and economical solution.

An alternative and a minimum is a good ventilated wax room where the air is being replaced frequently. An option, if you only apply fluorinated powders once or twice each season, a good affordable option is the 3M Aura 9330+ mask (not sold by Swix).



Category 1: 100% Fluorocarbon

Cera F Liquid

Swix Cera F Liquid products, HVC and Rocket, are designed for use as the final layer when waxing for top-level competitions. Based on Cera F technology, Swix Cera F Liquids offer the same high performance quality as the Cera F Powder Waxes. It is based on pure Cera F, Fluorocarbons. Its liquid state guarantees a perfect distribution on the ski.

Quick and easy to apply, Cera F Liquid is also ideal for the quick performance fix at events with multiple runs.

The fluid will dry quickly. When the base has dried, there is no need for further polishing or brushing. On the contrary, brushing and other finishing can influence the result negatively.

HVC is applied after brushing Cera F and structuring. Important to apply thin layer for best result.

FC60LC HVC Cold

50 ml.
+2°C to -10°C (36°F to 14°F). Liquid topping for racing. Very easy to apply with the felt applicator. No brushing is required, so after application the skis are 100 % race ready.

For new and old snow.

HVC Cold is working best in air humidity above 70 % and on top of Cera F powder, but can also be used with an HFX or LFX wax with very good result.

One bottle is enough for 6-8 pairs of alpine skis or snowboards.

FC80LC HVC Warm

50 ml.
-2°C to +10°C (28°F to 50°F). Liquid topping for racing. Very easy to apply with the felt applicator. No brushing is required, so after application the skis are 100 % race ready.

For new and old snow.

HVC Warm works best in high humidity on the cold side, but on the warm side it performs great in all humidity's. It performs best on top of Cera F



powder, but can also be used with an HFX or LFX wax with very good result.

One bottle is enough for 6-8 pairs of alpine skis or snowboards.

FC6AC Cera F Cold Rocket Spray

70 ml.
Liquid fluorocarbon topping for colder conditions +2°C to -10°C (36°F to 14°F). Rocket Cold works best when high humidity.

Used on top of Cera F powder or mixed with the powder. Can also be used on top of HFX, HFBWX and LFX waxes with good results.

Less expensive than HVC.

FC8AC Cera F Cold Rocket Spray

70 ml.
Liquid fluorocarbon topping for -2°C to +10°C (28°F to 50°F). For transformed and fine grained snow.

Used on top of Cera F powder or mixed with the powder. Can also be used on top of HFX, HFBWX and LFX waxes with good results.

Less expensive than HVC.



Use of Cera F Liquid as the final layer will absolutely assure that there are no voids in the pure fluorocarbon wax layer resulting in the highest possible speed performance.

Category 1: 100% Fluorocarbon

Cera F Solid Turbo

The Solid versions of Cera F Powder are 100% fluorocarbon powder pressed under very high pressure into solid 20 g. blocks. Great for on the hill application when you cannot return to the waxing room when competition require more than one run. The new Turbo Solid blocks are easier to apply.

- 1: Rub on a thin even layer.
- 2: Cork into the base with a cork (T0020 or T0196B).
- 3: Brush the base with a Horsehair brush (T0157).
- 4: Finish with Blue Nylon brush (T0196B or T0160).



FC6XS Cera F Solid Cold Turbo

20 g.
+2°C to -15°C (36°F to 5°F). 100% fluorocarbon solid block. For all cold snow conditions. Used alone or as the final "accelerator" layer. Easy to apply.

FC8XS Cera F Solid Warm Turbo

20 g.
-2°C to +15°C (28°F to 59°F). 100% fluorocarbon solid block. Wide range covering all normal snow conditions. Excellent in wet and moist snow. Used alone or as the final "accelerator" layer.



Category 2:

HFBWX Waxes - High Fluorocarbon & BW

Swix BW (Black Wolf) Waxes contain solid lubricants as additives which gives advantages during

- Coarse grained snow
- Dirty snow
- Man-made snow
- Dry friction (very cold temps)

The BW additive has considerable lower coefficient of friction compared with previous additives. Has been tested on World Cup alpine and XC with excellent results.

HF04BW

Temperature range from -12°C to -32°C (10°F to -25°F).

Recommended iron temp: 155°C (311°F).

A new special wax for extreme cold conditions with BW solid lubricant additive that reduces the dry friction in very cold snow. HF04BW can be used as a race wax alone or as a base for Cera F cold powder, such as FC04X.

HF05BW

Temperature range from -8°C to -14°C (18°F to 7°F). Recommended iron temp: 150°C (311°F).

The 5 series is brand new for the Cera Nova X line, and fulfill a hardness gap between the 4 and the 6 series. It was a demand from alpine and has been used with great success in World Cup over the last two seasons. The lower melting point compared to the 4 series makes it easier to work with, without sacrificing the good glide properties in cold conditions.

HF05BW is a new special wax with BW solid lubricant additive that reduces friction when very cold snow and dry friction conditions. HF05BW can be used as a race wax alone or as a base for Cera F powder, such as FC05X.

HF06BW

Temperature range from -5°C to -10°C (23°F to 14°F). Recommended iron temp: 145°C (293°F).

Our std. HF6BW recipe has proven to be too good to be dropped and is therefore continued as HF06BW in the new Cera Nova X range. The BW solid lubricant additive reduces the friction in cold conditions and in contaminated snow. It's a very popular wax both in alpine and cross country and has shown good properties on artificial snow in addition to natural, transformed older snow.

HF06BW can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC06X.

HF07BW

Temperature range from -2°C to -8°C (28°F to 18°F). Recommended iron temp: 140°C (284°F).

A new wax with an improved recipe, proven to be significant better than the old HF7BW. A versatile wax suited for normal winter conditions below the freezing point. Its hardness makes it convenient to work with and easy to get a good end-result. The BW solid lubricant additive reduces the friction in cold conditions and in contaminated snow. It's a very popular wax both in alpine and cross country and has shown good properties on artificial snow in addition to natural, transformed older snow.

HF07BW can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC07X.

HF08BW

Temperature range from -4°C to 4°C (25°F to 39°F). Recommended iron temp: 130°C (266°F).

A new wax for the Cera Nova X line made harder than the old HF8BW. The BW solid lubricant additive reduces the friction in contaminated snow. The adjusted hardness makes the wax more durable and absorbs less dirt. Excellent results in artificial snow as well as natural transformed older snow, especially noticeable when used alone.

HF08BW can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC08X.

HF10BW

Temperature range from 0°C to 10°C (32°F to 50°F). Recommended iron temp: 120°C (248°F).

A new wax for the Cera Nova X line made harder than the old HF10BW. The BW solid lubricant additive reduces the friction in contaminated snow. The adjusted hardness makes the wax more durable and absorbs less dirt. Excellent results in artificial snow as well as natural transformed older snow, especially noticeable when used alone.

HF10BW can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC10X.



Category 3:

HFX Waxes - High Fluorocarbon

HF stands for High Fluorocarbon. There are 6 main waxes in this category, which are fluorinated hydrocarbon blends having a high percentage of a low melt point fluorocarbon additive - a result of Cera F technology.

The waxes are unique because they provide fast acceleration, have proved effective in a wide range of temperatures, and are durable and dirt resistant.

HFX waxes are excellent when used alone, but ideal when used in combination with Cera F as an over layer. Conditions of high humidity are optimal for HFX waxes.

HF04X

Temperature range from -12°C to -32°C (10°F to -25°F).

Recommended iron temp: 155°C (311°F).

A new cold wax with nano technology specially developed for dry friction conditions. The advantage of fluor in these temperatures is most present when the air humidity is high, meaning above 80 %.

HF04X can be used as a race wax alone or as a base for Cera F powder, such as FC04X.

HF05X

Temperature range from -8°C to -14°C (18°F to 7°F). Recommended iron temp: 150°C (311°F).

The 5 series is brand new for the Cera Nova X line, and fulfill a hardness gap between the 4 and the 6 series. It was a demand from alpine and has been used with great success in World Cup over the last two seasons. The lower melting point compared to the 4 series makes it easier to work with, without sacrificing the good glide properties it has in cold conditions.

HF05X can be used as a race wax alone or as a base for Cera F powder, such as FC05X.

HF06X

Temperature range from -5°C to -10°C (23°F to 14°F). Recommended iron temp: 145°C (293°F).

Our std. HF6 recipe has proven to be too good to be dropped and is therefore continued as HF06X in the new Cera Nova X range. It's a very popular wax both in alpine and cross country and has shown good properties on artificial snow in addition to natural snow.

HF06X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC06X.

HF07X

Temperature range from -2°C to -8°C (28°F to 18°F). Recommended iron temp: 140°C (284°F).

A new wax with an improved recipe, proven to be significant better than the old HF7. A versatile wax suited for normal winter conditions below the freezing point. Its hardness makes it convenient to work with and easy to get a good end-result.

HF07X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC07X.

HF08X

Temperature range from -4°C to 4°C (25°F to 39°F). Recommended iron temp: 130°C (266°F).

A continuation of the classic HF8 which is a legendary wax within racing. Over the last decade this wax has contributed to a numerous of Olympic and WC medals in all ski disciplines. It's softness and high fluoro content makes it perfect in conditions on both sides of the freezing point.

HF08X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC08X.

HF10X

Temperature range from 0°C to 10°C (32°F to 50°F). Recommended iron temp: 120°C (248°F).

A new wax in for the Cera Nova X line made a little bit harder than the old HF10. Our test result shows that a slightly harder wax performs better in this area compared to the old classic, especially noticeable when used alone. The adjusted hardness is also making the wax more durable than before.

HF10X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC10X.

Category 4:**LFX Waxes
- Fluorocarbon**

These are fluorinated hydrocarbon waxes having a lower percentage of low-melt point fluoro additive.

They are used as training waxes, or as racing waxes with Cera F as a final layer, or alone as a race wax at very low temperatures.

The temperature ranges and wax colors of the LFX waxes coincide with the HFX category, however they are distinguished from the HFX waxes by the 60 gram bar size. LFX waxes are lighter coloured than CHX.

LF04X

Temperature range from -12°C to -32°C (10°F to -25°F).

Recommended iron temp: 155°C (311°F).

A new cold wax for dry friction conditions, which can perfectly be used alone as a race wax when the air humidity is low. It performs very well on artificial snow and has a great durability.

In the warmer part of the temperature range, and when high air humidity, Cera F powder, such as FC04X will increase the performance.

LF05X

Temperature range from -8°C to -14°C (18°F to 7°F).

Recommended iron temp: 150°C (311°F). The 5 series is brand new for the Cera Nova X line, and fulfill a hardness gap between the 4 and the 6 series. It's easier to apply than the 4 series, but provides outstanding glide properties within its temperature range, and has a great durability.

LF05X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC05X.

LF06X

Temperature range from -5°C to -10°C (23°F to 14°F).

Recommended iron temp: 145°C (293°F). Our std. LF6 has been one of the greatest successes in the old Cera Nova system, and through comprehensive testing we haven't found anything better.

This wax is very versatile. Its area of use stretches from base for Cera F powder, racing wax and base prep wax for cold skis. LF06X has a good durability and offer great performance on artificial snow.

When used as a base for Cera F, we recommend the new FC06X powder.

TIP: LF06X is a popular travel and baseprep wax in World Cup Racing.

LF07X

Temperature range from -2°C to -8°C (28°F to 18°F).

Recommended iron temp: 140°C (284°F). A new and improved wax that performs great in normal winter conditions below the freezing point. Its hardness makes it convenient to work with and easy to get a good end-result.

Can be used as a racing wax at low air humidity, but will also serve the purpose as a brilliant training wax. When used as a base for Cera F, we recommend the new FC07X powder.

LF08X

Temperature range from -4°C to 4°C (25°F to 39°F).

Recommended iron temp: 130°C (266°F). A continuation of the std. LF8, a great wax for both base prep and training. It can also be used as a race wax, preferably with Cera F powder on top. Easy to melt and very convenient to work with.

When used as a base for Cera F, we recommend the FC08X powder.

LF10X

Temperature range from 0°C to 10°C (32°F to 50°F).

Recommended iron temp: 120°C (248°F). A new wax in for the Cera Nova X line made a little bit harder than the old LF10. Test result shows that a slightly harder wax performs better in this area, especially noticeable when used alone. The adjusted hardness is also making the wax more durable than before. It's a good wax for base prep wax, but also a great training wax. For racing we recommend to go with high fluoro wax in this temperature area, but with a powder on top LF10X can be used with a good result. The FC10X powder would then be the natural choice.

LF03X

LF03X Cold Powder.

Temperature range from -12°C to -32°C (14°F to -25°F).

A very hard powder wax having a high content of fluorocarbon material. Used when the snow is very fine-grained and very cold. Easy to iron and scrape. Also helps to reduce base abrasion on cold, aggressive snow.

Category 5:**CHX Waxes
- Hydrocarbon**

CHX stands for Hydrocarbon. This category has no fluorocarbon material in the blends. They are 100% high performance hydrocarbon paraffins. Although they can be looked upon as an economical racing wax group, the colder waxes perform very well alone, and the warmer waxes make an acceptable base layer for Cera F.

Their colors and temperature ranges coincide with the HFX and LFX Waxes. The CHX waxes can be distinguished from the LFX waxes by their darker shade of color.

CH04X

Temperature range from -12°C to -32°C (10°F to -25°F).

Recommended iron temp: 155°C (311°F).

A new cold hydrocarbon wax for extreme cold conditions, which can perfectly be used alone as a race wax when the air humidity is low. It performs very well on artificial snow and has a great durability.

In the warmer part of the temperature range, and when high air humidity, Cera F powder, such as FC04X will increase the performance.

CH05X

Temperature range from -8°C to -14°C (18°F to 7°F).

Recommended iron temp: 150°C (311°F). The 5 series is brand new for the Cera Nova X line, and fulfill a hardness gap between the 4 and the 6 series. It's easier to apply than the 4 series, but provides outstanding glide properties within its temperature range, and has a great durability.

CH05X can be used as a race wax alone, but is often used as a base for Cera F powder, such as FC05X.

CH06X

Temperature range from -5°C to -10°C (23°F to 14°F).

Recommended iron temp: 145°C (293°F). Our std. CH6 has been a success in the Cera Nova system, and through comprehensive testing we have not found anything better.

It is an economic training and racing wax as well as a base prep wax for cold skis. CH06X has high durability and offer great performance in most snow conditions as well as on artificial and glacier snow.

CH07X

Temperature range from -2°C to -8°C (28°F to 18°F).

Recommended iron temp: 140°C (284°F). A new and improved wax that performs great in normal winter conditions below the freezing point. Its hardness makes it convenient to work with and easy to get a good end-result.

It is an economic training and racing wax as well as an all round base prep wax.

CH08X

Temperature range from -4°C to 4°C (25°F to 39°F).

Recommended iron temp: 130°C (266°F). A continuation of the std. CH8. An economic training and racing wax as well as base prep wax for warm skis. Easy to melt and very convenient to work with.

CH10X

Temperature range from 0°C to 10°C (32°F to 50°F).

Recommended iron temp: 120°C (248°F). A new wax for the Cera Nova X line made a slightly harder than the old CH10. Test results show that a harder wax performs better in very wet saturated snow. The adjusted hardness makes it more durable than before. Good wax for base prep and training. For racing we recommend to go with fluoro wax in this temperature area.

CH03X

CH03X Cold Powder.

Temperature range from -12°C to -32°C (12°F to -26°F).

This is a special synthetic hydrocarbon powder wax to add to other waxes to increase their durability and to protect the base from ice abrasion. For especially abrasive snow, such as newly man-made snow, apply the wax of choice and then iron. While the wax is still in liquid form, or at least still warm, sprinkle CH03X over the wax. Even a generous amount will not affect glide. Then iron the CH03X powder into the wax layer. Allow cooling, then scrape and brush away the excess.



ellnor Telemor is the main sponsor of Aksel Lund Svindal and the Norwegian Alpine Team.

SWIX SUGGESTED RACING PROGRAM

T0076 Table
 T0149-50/SB031NO Visas
 T0076SH Ski Rack
 T0075-WH Waste Bag Holder
 T70-H2 Iron Holder
 T73110 Iron
 T0823D Scraper
 I62C Base Cleaner
 T0150 Fiberlene Cleaning Paper
 T0264 Fibertex Deburr Pad
 TA104 Side Wall Cutter

T107X Bastard File
 TAA200N Coarse Diamond Stone
 TAA600N Fine Diamond Stone
 TA005N Base Edge File Holder
 TA687 Side-Edge File Guide
 TA022 File Clamp
 T0179 Steel Brush
 T0160 Finish Nylon Brush
 R0271X Wax Apron
 T0165 Brake Holder
 R0392 Skistraps

SWIX
 SCHOOL

SWIX SPECIAL WAXES

How to avoid base burn on abrasive snow:

- 1: Sprinkle CH03X/LF03X powder along the base near the edges.
- 2: Use a scraper to push the powder in a row approx. one centimeter from the steel edge.
- 3: Iron carefully so the wax melts into the base along the steel edge.
- 4: Allow the base of the ski or board to return to room temperature.
- 5: Scrape and brush as usual.
- 6: The waxes of the day are applied as usual on top and on the rest of the base. In slalom on icy, abrasive man made snow, apply CH03X on the entire width of the base.

Base Prep Wax (BP088)

This is a special CH blend requested by World Cup technicians for use during initial base preparation and travel waxing. It is economical yet still made with a blend of the highest quality paraffins and microcrystalline waxes. 180 g.

Base Prep Cold (BP077)

This is a blend requested by World Cup Technicians for use on "cold" snow skis. Used on new skis and as travel wax. 180 g.



Travel Wax

Bases should not be left exposed to the air for extended periods of time without a protective layer of wax. Following the race or training, when travelling to the next site, it is a good idea to apply a ironed layer of wax. In this case scraping is not done until it is time to prepare the skis once again for racing or training. The wax layer prevents the base from oxidizing and from getting scratched or dirty.

A good choice of wax for storage or transport is BP088, BP077, CH07X, CH06X, LF07X or LF06X. These waxes have an intermediate range for temperature and use. It is easy and effective to adapt the base to warmer or colder waxes from the temperature range of "7". Also, sometimes, due to late arrival at the race site, there is not enough time to take all the steps for preparing the skis. By having a wax on the skis in the range of "7" all that is necessary is quick scraping and brushing and most conditions will be adequately covered.

IRONING

Important rules:

- 1: Using the proper iron that keeps a stable temperature.
- 2: Using the proper iron pass speed, like 5 to 6 seconds per length for Cera F.
- 3: Ironing at normal room temperature.
- 4: Having the proper ski base condition at the start of the process.
- 5: Don't hold the iron in one place for any length of time!
- 6: Keep the iron clean!
- 7: Adjust temperature down when not in use.



"T72" Racing Digital Iron (T72110)

110 Volt, 550 Watt.

A 12 mm plate gives optimal temperature stability. Temperature range from 100°C to 170°C. The iron is controlled by a micro processor and has digital temperature regulation. On the back, the heating plate has an angle to facilitate application of Cera F. In front it is straight to control glide zone waxing and classical skis. Wax-guide with the right temperature setting for Cera Nova waxes included.



"T71" Alpine World Cup Waxing Iron (T71110A)

For professional racing.

110 Volt, 1000 Watt.

50% of the plate is textured. This makes the iron "float" better when working with regular waxes on large bases. Angled in front and back. Rounded corners for smooth application. A 25 mm thick plate gives stable temperature and optimal control when applying Cera F. Temperature adjustment from 80°C to 180°C. Easy to set temperature with LED buttons.



"T73" Performance Waxing Iron (T73110)

110 Volt, 500 Watt.

8 mm plate gives a stable temperature. T73 has manual choice of temperature by indication of degrees and is simply done by an adjustment-wheel. Adjustment range from 100°C to 165°C. Wax-guide with the right temperature setting for Cera Nova waxes included.

MAINTENANCE OF WAXING IRON

It is important to take care of the waxing iron. Just a like a car or a bicycle, the iron needs to be maintained. This will secure better performance and longer life. If you do not follow these guidelines, the guarantee is no longer valid:

- Do not leave the iron at high temperatures when not in use. Adjust down to 120°C or turn it off. Particularly important after waxing with Cera F powders at high temperatures.
- Always clean the iron with fiberlene paper after use. If not, small wax particles will remain on the iron giving out fumes. Over time the wax particles will fasten to the iron and make it black.
- If the iron becomes black, polish the plate with orange fibertex.
- Try to avoid getting wax between the metal plate and the plastic top.
- When the iron is not in use keep it in upwards position: The upward position is important as it reduces the heating of the inside electronics.
- Place the iron where it is safe for not falling to the ground; The new iron holder for T70-H2 is recommended.
- If you have scratches in the base plate, use a fine sanding paper like grit 500.
- Be careful with use of solvents as this can have impact on the inside components.
- Hold the iron in the handle, never lift it by the cord.
- Avoid unnecessary bending of the cable, as it over time can lead to breakage of the cable.







● ● 160°C / 320°F
● ● 165°C / 330°F
● ● 170°C / 338°F
●



 150°C
 302°F



 155°C
 311°F



 150°C
 302°F



 145°C
 293°F



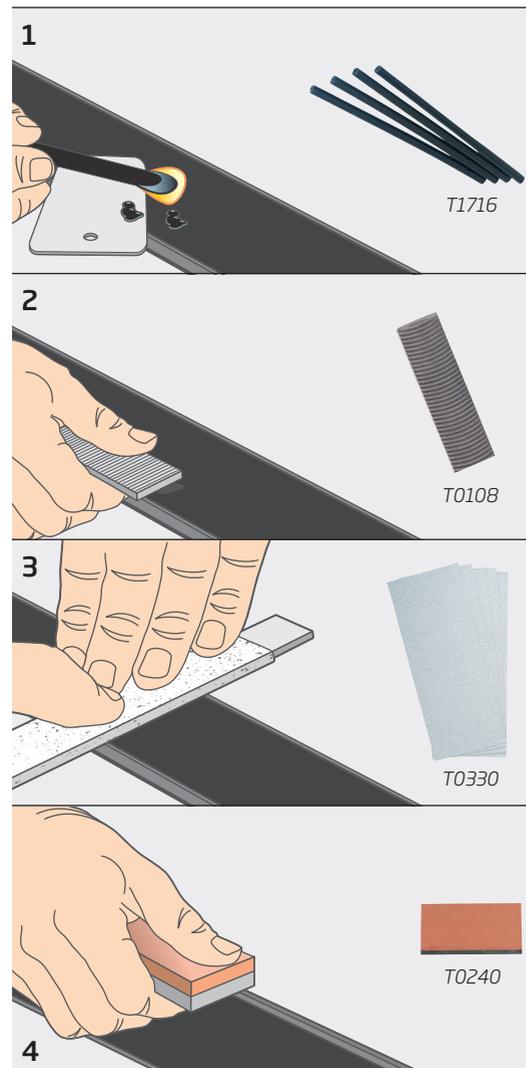
 140°C
 284°F



 130°C / 266°F
 140°C / 284°F



 120°C / 248°F
 145°C / 293°F



Repair base scratches and edges

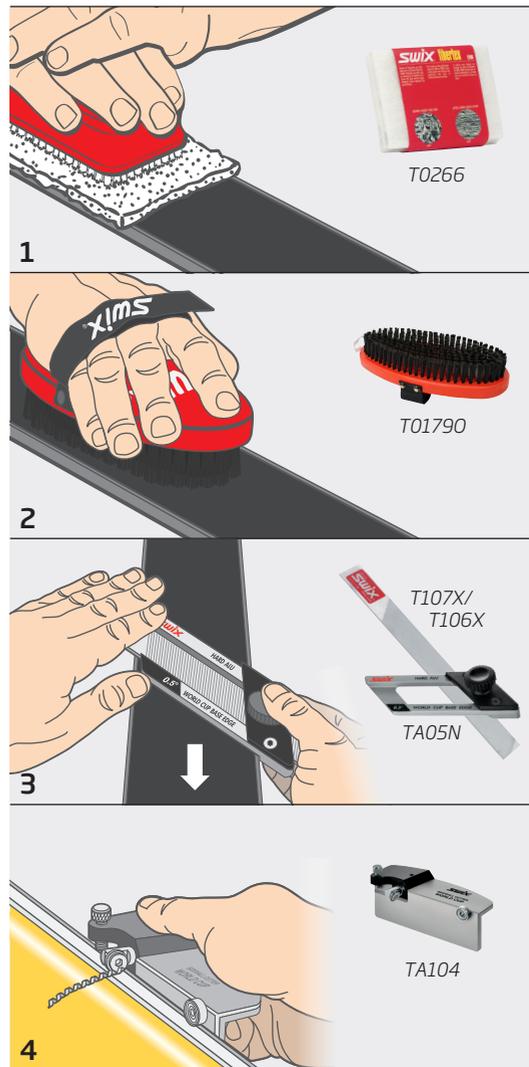
1. Repair base scratches by melting Polystick into the damaged part.
2. Remove excess repair material with a Panzer file (T0108).
3. Finish the repair area by sanding with #100 grit sandpaper.
4. Edges. If edges have damaged or case hardened spots, stone the edges with the Swix Pocket Stone (T0240), coarse side or a coarse Diamond stone/file (TAA100N).

Step by step treatment of boards and skis when new or after stone grinding

Skis or boards put through a stone grinder and structured by hand need accurate follow-up treatment for optimum performance. This process depends partly on the type of pattern given to the base.

Cold snow patterns need more extensive treatment than wet snow patterns. It is very critical that all micro-burrs are removed from the base, in cold snow conditions.

1. Work the base with Swix Fibertex T0266, both directions at least 50 times. This removes oxidation and polyethylene micro fibers (hairs) from the surface.
2. During the Fibertex treatment, use the Steel Brush (T0179) from time to time to help lift and expose fibers to be cut away with the Fibertex.
3. Base edge filing with Chrome file (T107X or T106X). Use Swix Base Edge File Guide (TA05N). 0.5° bevel is most common.
4. Sidewalls may need to have be cut back or planed to expose more steel edge before filing. Use the Sidewall Cutter (TA104 or TA103).



5. Side edge filing. Initial filing with Panzer File (T0108) one or two strokes is enough. Finish filing with Chrome File (T106X). Most used angles in SL and GS are from 2° to 3°.
6. Deburr the edge by running a fine stone along the edge. A smooth edge without burrs will keep its sharpness longer. Use the Swix Ceramic Stone (T0998) or a Diamond Stone (TAA1000N or TAA600N).
7. Moisten a piece of Fiberlene (T0151) with the Glide Wax Cleaner (I84C) and apply to the base.
8. Rub forward and backward a few times with a Nylon Brush (T0161).
9. Wipe off as much as possible with Fiberlene (T0151).

Let the ski dry for 5-10 minutes.

10.

Brush firmly with the Steel Brush (T0179 or T0162). The ski is now ready for application of new wax.

11.

Saturate the base with Base Prep BP088. The temperature of the waxing iron should be regulated to be hot enough to give immediate melting of the wax. Approximately 125°C (255°F).

12.

Scrape away after cooling to room temperature with a sharp plexi scraper (T0823D). Use light strokes, shaving away the excess wax.

13.

Brush with the medium coarse bronze brush (T01620) or Steel brush (T01790). Use the brush in tip to tail direction, approximately 5-10 times.

14.

Iron on the harder CH06X or LF06X. Just melt the wax on the base surface without heating the entire board or ski. The purpose is to lift and stiffen polyethylene micro-hairs to be more easily cut away with the scraper.



15.

Scrape away the layer of CH06X or LF06X after cooling to room to temperature. Use a sharp acrylic scraper (T0823D). Use light strokes, shaving away the excess wax.

16.

Brush the base using the Steel Brush (T01790), approx. 50 strokes.

17.

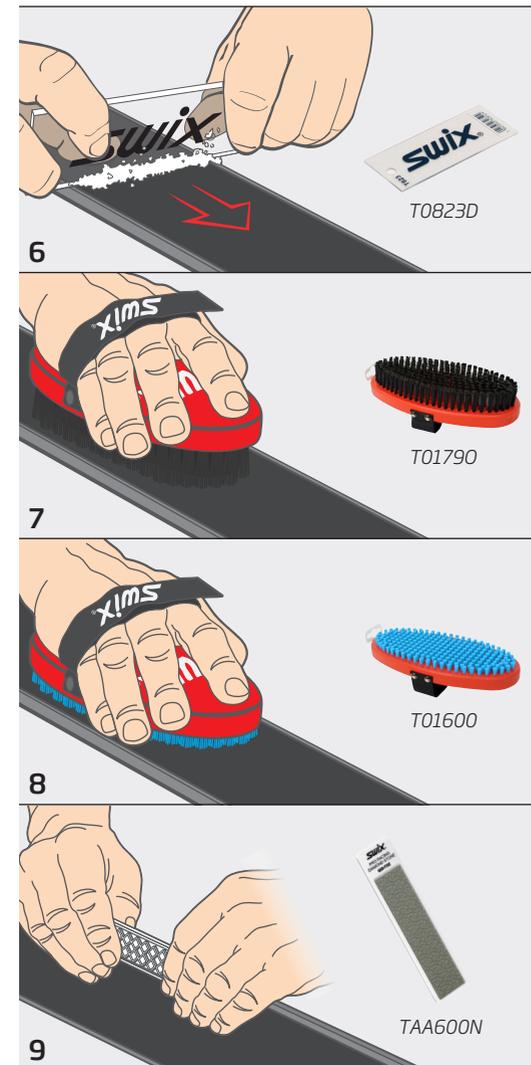
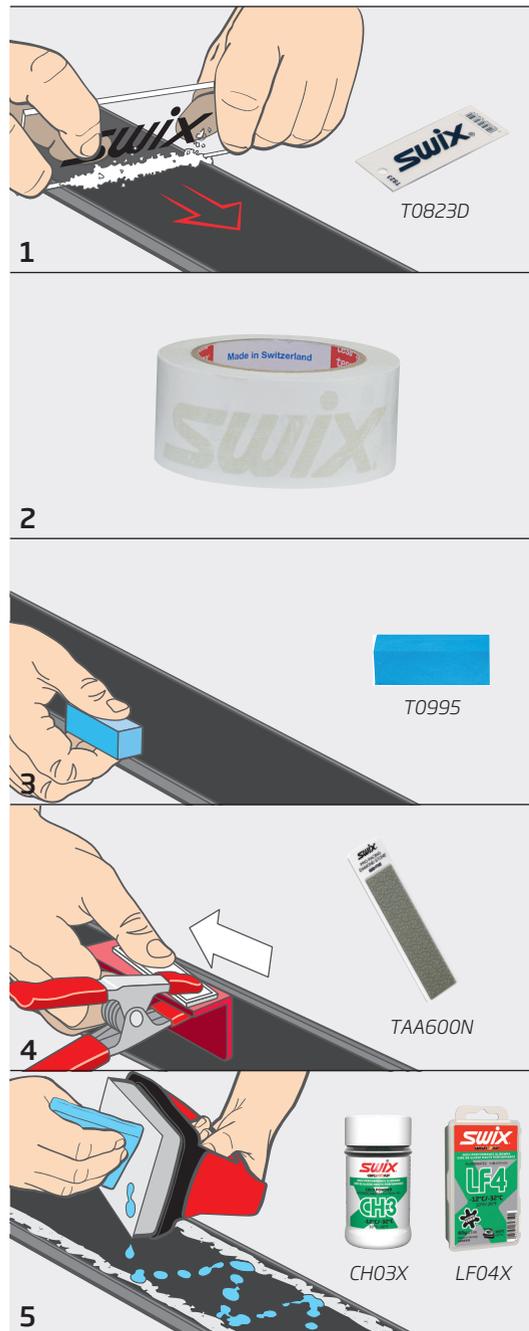
Saturate the base with BP088. Iron in five times with five minutes interval. Apply more wax if necessary. No scraping in between.

Continuous use of skis and boards, in between waxing, improves glide.

Step by step - race preparation

This is a general description used by top level technicians.

1. Scrape off travel wax with a plexi scraper.
2. Protect the base with R0386 tape.
3. Check the edges, file if necessary. Polish the base edges with a Hard Gummy Stone like T0994 or T0995.
4. Polish the side edges with a Fine Diamond Stone (TAA600N) or Ceramic stone (T0998).
5. Apply the race wax for the day. For cold conditions use first CH03X to protect base burn by the edge.



6. The wax should be scraped off after cooling to room temperature. Scrape off also the excess wax on the sides.
7. Brush the base with the Steel Brush (T01790). 10-20 strokes.
8. Continue with the Fine Blue Nylon Brush (T01600). 10 strokes.
9. Polish the edges once more with TAA600N Diamond Stone or T0998 Ceramic Stone.

ACCESSORIES



APRON (R0271X)
for professional waxers.



WORK PANTS (99998)
for professional waxers.



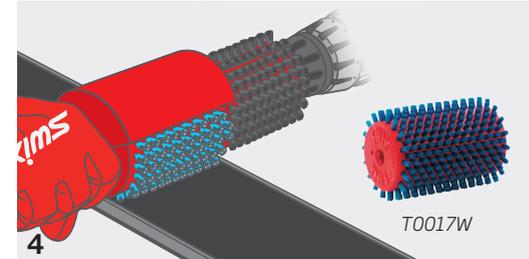
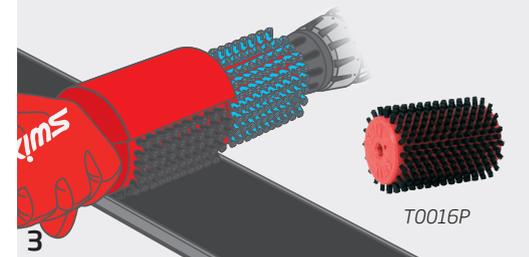
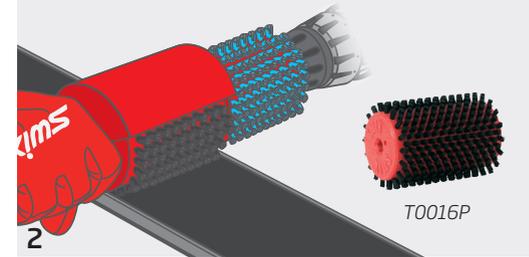
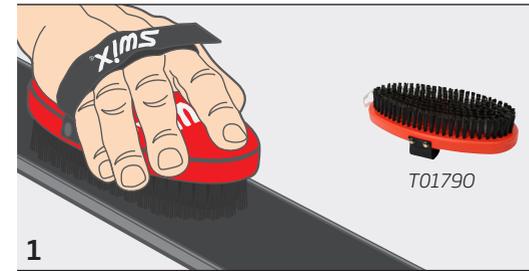
SKI STRAPS FOR RACING ALPINE SKIS (R0392)
With base protector. Takes skis 120 mm wide.



BASE PROTECTOR (RA045)
XS: 140 cm to 165 cm (SL).
S: 170 cm to 195 cm (GS).
D: up to 220 cm (DH/SG).



TUNING GLOVE (R0196)
Gives protection for hands when working on skis.



Roto brushing wax after scraping

When you have many skis to do Roto brushing can be timesaving.

You will need a drill that can do a minimum of 1000rpm and ideally up to 2000rpm or more. It is recommended to use protection eyewear.

1. Use the Steel Brush T0179 from tip to tail in one movement. Two repetitions.
2. Use the T0016P Wild boar Initial Roto Brush with a speed of 1000rpm to 2000rpm. Use light pressure. Start from the tip. Wax particles should be thrown towards the tail. Move the drill back and forth approx. a foot at the time as you gradually work your way towards the tail.
3. Continue to use the T0016P Wild boar Roto Brush (1000rpm/2000rpm) from tip to tail two more times in one continuous pass of three to five seconds.
4. Finish with the T0017W Blue Nylon Roto Brush, 1000rpm/2000rpm. Make a continuous pass three times from tip to tail in three to five seconds.

Now the ski or snowboard is ready or you can start with application of Cera F.

Corked application of Cera F powder

Complete edge filing and polishing. The base should be waxed and thoroughly brushed according to the steps outlined in the manual.

1.
Sprinkle an even layer of powder on the base. When corking, less powder is needed than for ironing. A layer of Cera F can also be applied by rubbing on a layer using Cera F Solid.

2.
Polish the powder into the base using a Cork (T0020) or Cera F Polisher (T0154) with Fiberlene. Use firm pressure back and forth so the cork will generate heat causing the powder to form a waxy film.

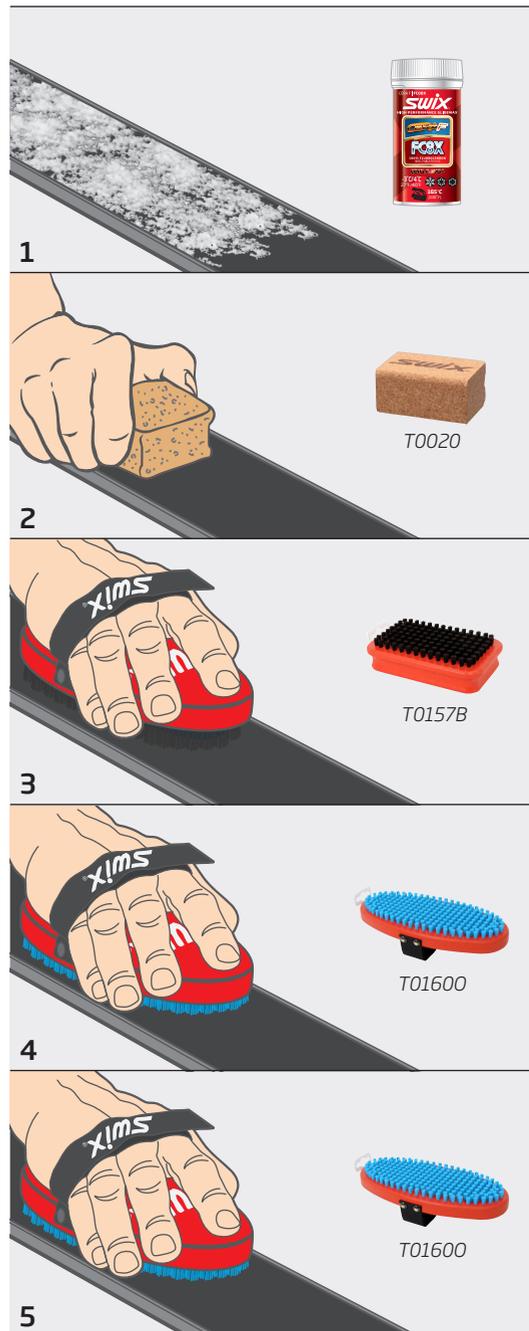
3.
Brush the powder out of the base with the Wild Boar Brush (T0164) or Horsehair Brush (T0157), 10-20 strokes.

4.
Follow with more brushing using the Blue Nylon Polishing Brush (T0160).

Lightly wipe the base with Swix Fiberlene.
5-10 strokes.

5.
Put the board or skis base down in the snow for a few minutes. This is usually done at the start site.

Brush once again with the Blue Nylon Polishing Brush (T0160) and lightly wipe with Fiberlene, 5-10 strokes.

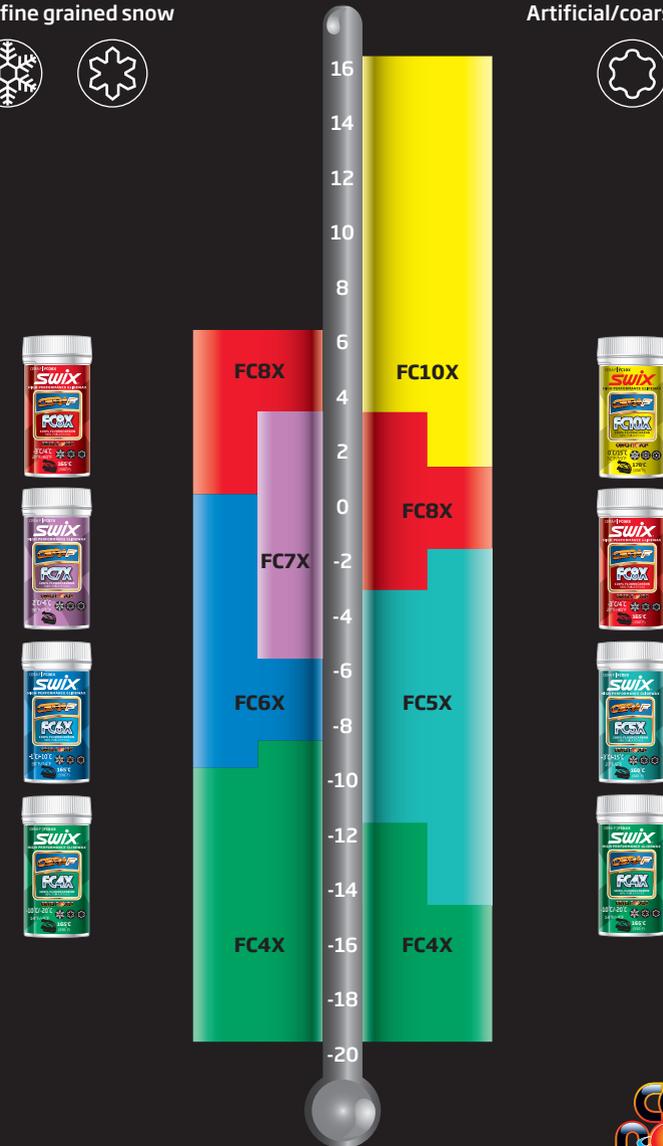


CERA F PERFORMANCE CHART

New/fine grained snow



Artificial/coarse snow



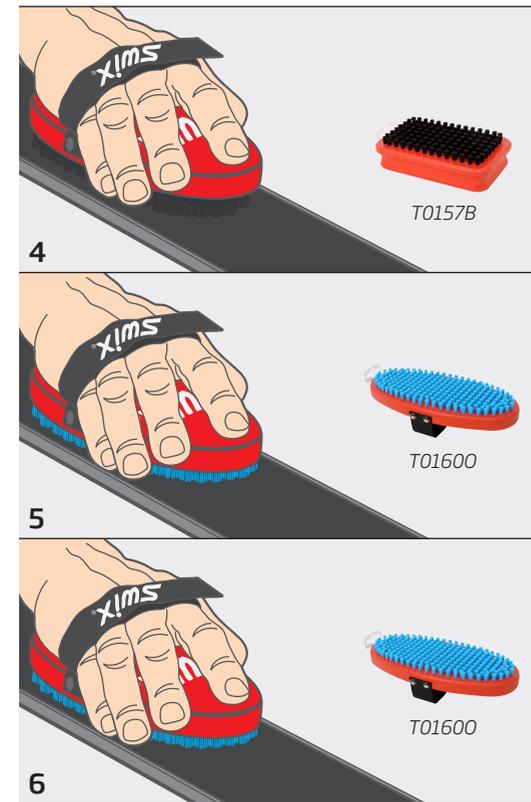
Cera F
NOVAX

Ironing application of Cera F powder

A standard package of 30 grams normally is enough to wax 2 to 3 pairs of Downhill skis. A sufficient layer of powder has to be applied. If the layer is too thin, the high temperature of the iron might destroy the base.

Before the application of Cera F, the skis have to be waxed with the actual, traditional wax for today's conditions.

- 1.** Distribute the Cera F powder evenly on the base. Don't forget to apply enough powder to protect the base from direct contact with the iron. Lightly touch the iron along the base to stick the powder to the base.
- 2.** Iron the powder into the base. Make just one pass with the iron, taking approx. 5 to 6 seconds. Recommended iron temperature setting for FC05X and FC07X is 160°C (320°F), for FC007B, FC04X, FC06X and FC08X it is 165°C (330°F), and for FC10X it is 170°C (338°F).
- 3.** After cooling to room temperature (5 min.) brush the powder up from the base with the stiff Black Nylon Brush (T0194). 10 strokes.



- 4.** Continue with the Wild Boar Brush (T0164) or Horsehair Brush (T0157). 10 strokes.
- 5.** Finish with the Fine Blue Nylon Brush (T0160). 3-4 strokes.
- 6.** At the start site place the board or skis in the snow. After the base has adjusted to temperature of snow make final brushing with the Blue Nylon Polishing Brush (T0160). 5-10 strokes.

Cera F powder Roto fleece application

The initial steps before Cera F Roto Corking are the same as for the ironing in method of Cera F.

It is recommended to have one separate Roto Fleece (T0018F-2) for each different Cera F.

Cera F applied with Roto Fleece is sometimes applied on top of ironed and brushed Cera F as a "topping".

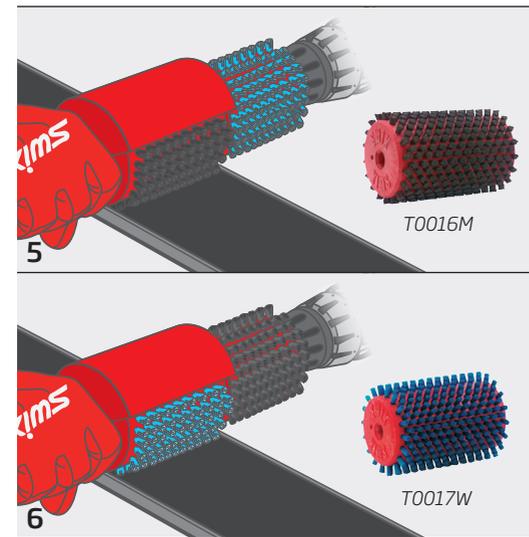
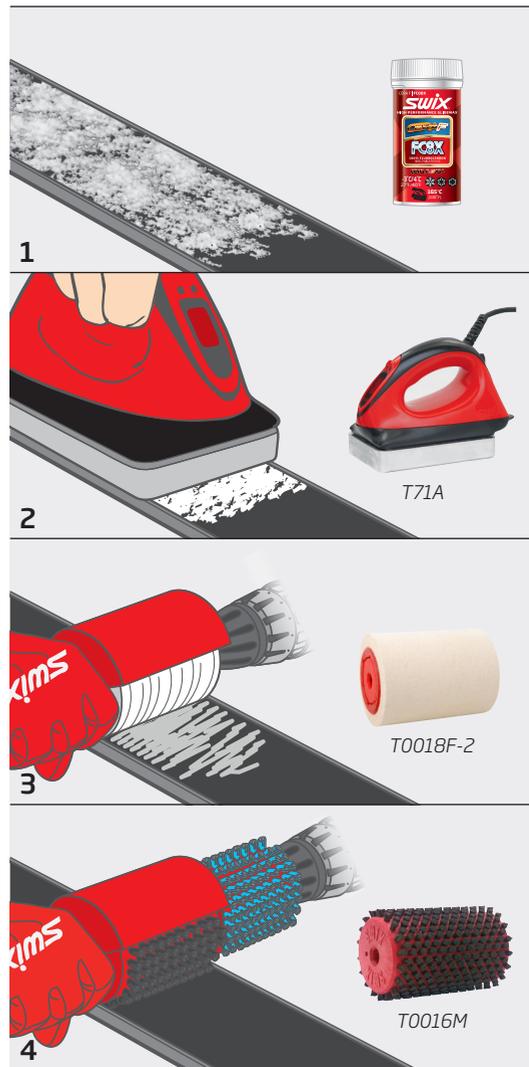
1.
Apply Cera F evenly.

2.
Use a waxing iron to fix the Cera F powder to the base. Iron temperature to be around 150°C to 155°C (300°F to 310°F). Iron quickly, 3 to 4 seconds for one ski or board.

After cooling brush the powder up from the base with the Horsehair Brush (T0157). Spray FC8AC into the powder and let it dry.

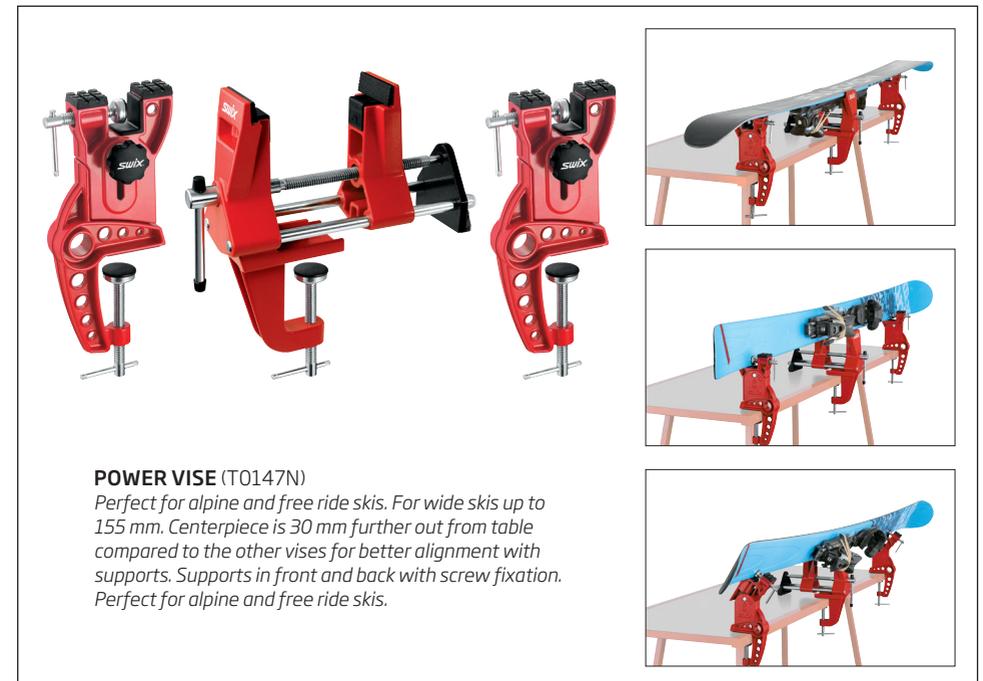
3.
Use the Roto Fleece (T0018F-2) at a speed of approx. 1.500 RPM. Start from the tip and work the Cera F powder into the base by moving the drill back and forth approx. a foot at a time as you work your way towards the tail. Use light pressure. Let the skis/snowboard rest for 5 minutes at room temperature.

4.
Use the Horsehair Roto Brush (T0016M) with speed 1000/2000 RPM. Start from the tip and move back and forth approx. a foot at a time towards the tail. (OBS! Do not use the same brush as for standard waxes.) Use light pressure.



5.
Continue with the Horsehair Roto Brush (T0016M) from tip to tail two more times in one movement of four to five seconds.

6.
Finish with the Blue Nylon Roto Brush (T0017W). Twice in one continuous pass from tip to tail in four to five seconds. Use light pressure. (OBS! Do not use the same brush as on standard waxes).

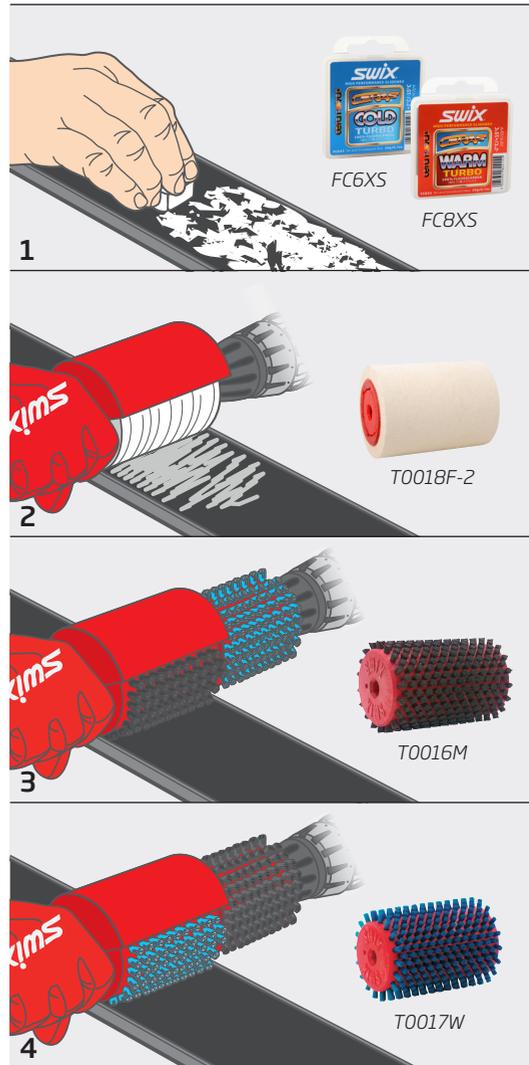


POWER VISE (T0147N)

Perfect for alpine and free ride skis. For wide skis up to 155 mm. Centerpiece is 30 mm further out from table compared to the other vises for better alignment with supports. Supports in front and back with screw fixation. Perfect for alpine and free ride skis.

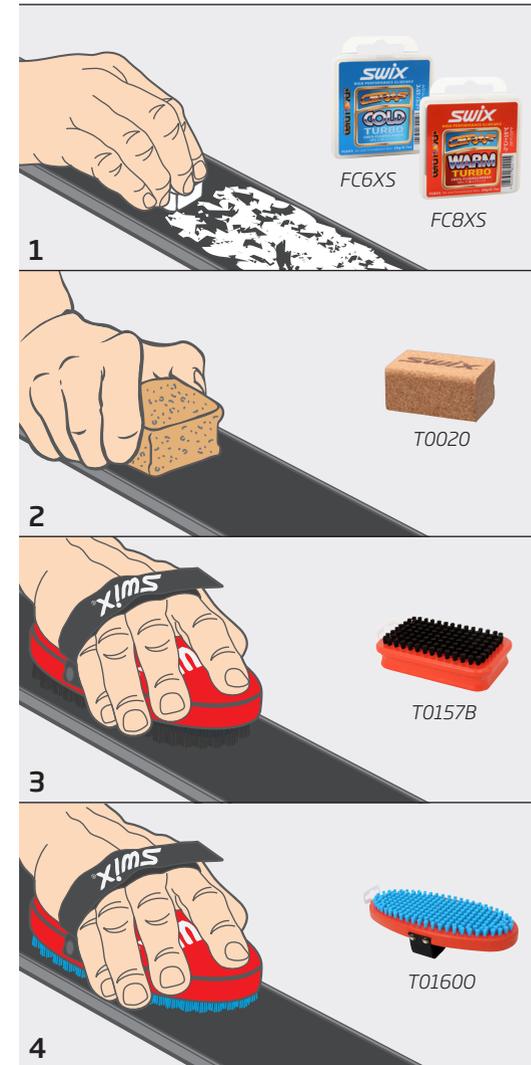
Cera F Solid Turbo Roto fleece application

1. Rub on an even layer.
2. Use the T0018F-2 Roto Fleece at a speed of approx. 1.500 RPM. Start from the tip and work the Cera F into the base by moving the drill back and forth approx. a foot at a time as you work your way towards the tail. Use light pressure.
3. Use the T0016M Horsehair Roto Brush with speed 1.500 RPM. Start from the tip and move back and forth approx. a foot at a time towards the tail. (OBS! Do not use the same brush as for standard waxes.) Use light pressure.
4. Finish with the Blue Nylon Roto Brush (T0017W). Twice in one continuous pass from tip to tail in four to five seconds. (OBS! Do not use the same brush as on standard waxes.) Use light pressure.



Cera F Solid Turbo hand cork application

1. Rub on an even layer.
2. Cork in with a Natural Cork (T0020).
3. Brush up and out of the base with the Horsehair Brush (T0157), 10-20 strokes.
4. Brush with the Blue Nylon Brush (T0160). Approx. 10 strokes.



Application of HVC

For best performance HVC should be applied on a ski base waxed with HF glider and Cera F powder. The powder should be brushed away as normal before HVC is applied. If use of a manual structure tool, this should be done before the base is treated with HVC.

1.

Shake the bottle for a few seconds, and then apply the HVC on the base. Use enough fluid to make the base wet, without exaggerating.

2.

Distribute the liquid on the ski base with the felt applicator immediately. Work on smaller areas at the time, approx. 1/3 of the ski base. No hard polishing is needed.

3.

The fluid will dry quickly.

OBS! When the base has dried, there is no need for further polishing or brushing.



Application of Cera F Rocket spray

1.

Spray on the FC8AC or FC6AC while pressing the button. Keep the nozzle 4-5 cm above the base.

2.

Work the liquid lightly into the base with a Fleece Cork (T0021).

OBS! When the base has dried, there is no need for further polishing or brushing.

SWIX GEAR



SWIX SLOPE PACK / NNT11

SWIX TECH PACK / RE010



COACH VEST II / RE013



COACH VEST II / RE012



SWIX ALPINE POLE BAG / NNT13



Cleaning the bases with wax

An important method for cleaning the bases on alpine skis and snowboards is to use wax instead of solvents. The following method also applies to cleaning the bases after using Cera F.

1. Start with firm brushing of the base with the Swix Steel Brush (T0179) to remove oxidation and to open the base structure from dirt and old wax.
2. Select a soft wax (lower melting point) such as BP088 (Base Prep), CH10X or CH08X. The iron temperature should be approximately 100°C to 120°C (212°F to 250°F). Iron the wax continuously moving the iron until the board or ski is thoroughly warmed and the wax remains in a liquid form on the base. The warming of the base and the liquid state of the wax will "open" the base surface microstructure and float contaminants away from the base into the wax.
3. While the wax is still in liquid form, scrape the wax off the base. It is possible to wipe the liquid wax off as well, followed by a few light passes with the scraper.

NOTE:

This is the same procedure that is used to condition the base to the wax selected to fit the day's conditions. For example, if LF08X is the wax choice, iron the wax into the base and scrape while it is still liquid or soft. Apply LF08X once more, iron, but then allow the base to completely return to room temperature before scraping. This will adjust and condition the base from the soft cleaning wax to LF08X.

Repeat if necessary. Following riding or skiing in very dirty conditions you may want to repeat the "hot-scrape" process 2 or 3 times with additional brushing with the Swix Bronze Brush in between wax applications.

The "hot scraping" method of cleaning avoids the "drying-out" of bases caused by some solvents.

Clean bases are faster bases!

SWIX
YOUR WINNING MARGIN

CLEANER FOR FLUOR GLIDE WAX & CONDITIONER FOR RACING SKIS

THREE EFFECTS IN ONE OPERATION

- Cleans
- Conditions
- Solves fluoro components

Cleaner for fluoro glide wax and CH wax. Improves glide and conditions the base. For glide sections on all racing skis and snowboards.

- Involves no hard mechanical treatment of the base.
- Does not dry out the base.
- No wearing of the stone grind pattern in the ski base.
- Makes the ski faster!

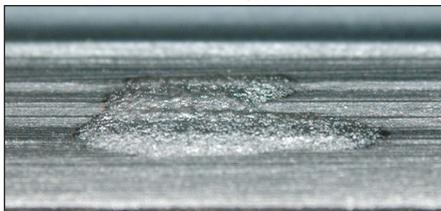


I84C
500 ml
17.5 fl. oz.

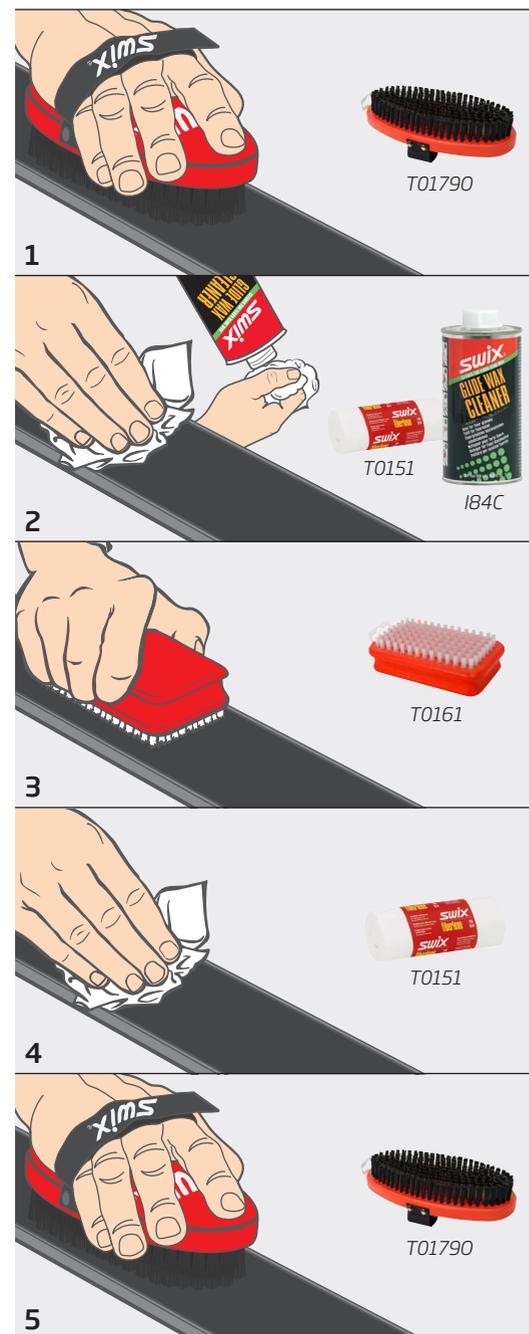
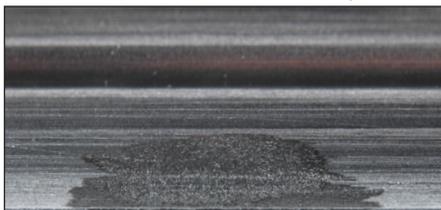
I84-150C
150 ml
5 fl. oz.

How does it work?

Untreated Base: The wax stays on top.



Base treated with I84C: Better wax adsorption.



The use of Glide Wax Cleaner (I84C)

1. Brush lightly with the Steel Brush (T0179).
2. Moisten a piece of Fiberlene (T0150) and apply to the glide zone of the base.
3. Rub forward and backward a few times with a Nylon Brush (T0161).
4. Wipe off as much as possible with Fiberlene (T0150).

Let the ski dry for 5-10 minutes.

5. Brush firmly with the Steel Brush (T0179 or T0162). The ski is now ready for application of new glide wax.



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SWIX MOLDED SHAFTS - IPM TECHNOLOGY

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- DH pole based on IPM technology.
- 3 times stiffer than DH poles in aluminum, giving a much more explosive start.
- 50% less wind drag than aluminum poles



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- Wing designed composite racing pole based on IPM technology.
- Super pendulum for a great feeling pole.
- For slalom, GS and free skiing.

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