



# NORDIC TECHNICAL BOOK



**VOLA**  
RACING

FLY TO SUCCESS



## Welcome

The preparation of his skis and snowboard is an essential act to keep them in good condition and above all, to enjoy it pleasantly.

VOLA is a French company based in Passy, in the heart of the Alps in the Chamonix valley. Since 1935, VOLA develop and produce the most sophisticated wax, distinguished in the most prestigious competitions.

This manual aims to present all the products of the VOLA nordic range as well as their use and application protocol.

### THE GOLDEN RULES

- #1 The more you put on your skis, the more they will slide, whatever the conditions and the type of snow.
- #2 Sharp and well-maintained edges allow a more precise, more pleasant and safer practice.
- #3 Regularly prepared skis and snowboards last longer.

---

Page 4 to 11 ▶ **Everything about the maintenance of your equipment**  
Page 13 to 26 ▶ **The ranges of wax**  
Page 27 to 35 ▶ **The instructions for use**





# ALL ABOUT MAINTENANCE OF EQUIPMENT

**SHARE  
YOUR PASSION**

**f #volaracing i**



## BRUSHING

Carefully selected and developed, VOLA brushes allow effective brushing and excellent grip. When it comes to the maintenance of your brushes, store them in a place where you do not risk damaging the hair.



© Patrick C.

## WHAT TYPE OF BRUSHES TO USE ?

### #1 BRUSHES

#### Bronze Brush

Long, fine bristle brush. This is the most «aggressive» of the VOLA series. It allows to work the structure, clean the sole before waxing and clean the excess wax immediately after scraping. However, one or more hot scrapings at R021 are often necessary to complete the deep cleaning of the sole (especially for skis with thin structures).

#### Performance Red Brush

Nylon brush with short and rigid bristles for polishing hard waxes of the Race range. To use after the bronze brush, the short bristles of this brush remain perpendicular and allow an effective action up to the bottom of the structure.

#### Fine Steel Brush

Extra long bristle brush made of ultra-fine steel, is used mainly with liquid waxes. It can also be used as a

cleaning brush before waxing. The relationship between the fineness of its hair and its aggressiveness allows to completely clear the structure of wax residues after scraping. It is also ideal for brushing molybdenum waxes.

Small tip: after each use, surround the brush Fine Steel plastic tape so as not to damage it because its bristles are very thin.

#### Nylon Brush

Medium and wide-bristled polyamide brush. To be used as a second brush after scraping. It allows the wax to be polished and given a smooth appearance in order to reduce friction with snow. Thanks to its antistatic properties, this brush improves the coefficient of friction.

#### Horsehair Brush

Short fine bristle brush. Finishing brush to be used last position. Its horsehair composition allows the wax to be polished.



Ref. 012035  
Bronze

Ref. 012085  
Performance Red

Ref. 012033  
Fine Steel

Ref. 012034  
Nylon

Ref. 012058  
Nylon Soft

Ref. 012046  
Horsehair

× 6 ×

### Rotating brushes

VOLA offers in rotary format brushes nylon, bronze, horsehair, Fine steel and cork (the latter being intended for application of powders). The rotary machine allows for greater efficiency and efficiency compared to manual brushes.

#### Note on the use of rotary brushes

- The rotary brushes are mounted on one axis (with protective cover. Ref. 012051) with hexagonal tip that fit on most electric or portable drills and screwdrivers.
- The speed of rotation can vary between 800 and 1500 revolutions/min and must not exceed 1500 revolutions/min.
- Apply low pressure.
- Brush from the tip to the tail. The rotation direction should be made in such a way that the wax particles are projected towards the tail of the ski.
- Bring protective gloves and goggles.
- Once the roughing is done using the rotary brushes, it is important to always finish the preparation of the sole by manual brushing which gives a much higher quality of finish.

### #2 WAX IRONS

#### > VOLA waxing iron

Ref. 012017

Excellent quality/price ratio. Due to its ergonomics, it is easily transportable.

#### > Digital VOLA waxing iron

Ref. 012015

Electronic temperature control, degree-accurate up to 200°C.

#### > WC waxing iron VOLA (digital + 35mm sole)

Ref. 012068

Electronic temperature control, degree-accurate. Thicker pavement for more inertia and temperature control up to 200°C.



Ref. 012080 Iron holder

× 7 ×



REF. 012053 Bronze 140mm\*

REF. 012052 Nylon 140mm\*

REF. 012054 Horsehair 140mm\*

REF. 012101 Red 140mm

REF. 012070 Nylon Soft 100mm

REF. 012069 Fleece 100mm

REF. 012023 Liege

\* Rotating brush also available in 100mm

### #3 THE PROTECTIVE MASKS

When waxing skis, an overheated wax can release fumes that it is advisable to protect yourself. VOLA offers two types of protection:

#### 1 For one-time use:

Half-mask with facial part made of light and odourless thermoplastic elastomer. The filters are positioned in a recessed position to allow the user to breathe in less contaminated air, which optimises the life of the filters. Comes with two A1B1E filters.

#### 2 For intensive use:

Intelligent assisted ventilation breathing apparatus. Sound and visual voltage of filters clogging and battery discharge. Comes with battery, charger, face mask and two A1B1E filters.



1

2



## STRUCTURES

The structure corresponds to the pattern(s) drawn on the surface of a ski sole. The ski glides on snow. The movement creates a heat by sliding, melting the snow crystal and turning it into a film of water on the sole surface. It is exactly this water film that allows the skis to slide and that you have to manage as well as possible.



## HOW TO CREATE A STRUCTURE

Depending on the conditions and shape of the snow grain, the melting phenomenon is not the same and will not cause the same amount of water to the surface of the sole.

By choosing the right structure tool and the right pattern, it is possible to influence these parameters and thus reduce friction or suction coefficients to obtain the most slippery skis possible.

There are several types of devices to be structured:

**#1 The mechanical grinding wheels** work by removing material and «carve» the pattern into the sole. The principle is to draw a pattern on a wheel with a diamond, which will then print it on the sole of the ski. The structures are permanent. This is the process used on new skis when they leave the factory. Specialist shops are usually equipped with this type of machine.

**#2 The tools to structure manual** Draw the patterns by twisting the sole with metal blades or rollers. Easy to use, these devices create temporary structures that are easily modified to suit the conditions. Simply waxing your skis gives the sole its original look. At a high level, technicians use these hand tools almost systematically because they allow them to adapt quickly to changing conditions and to refine

the initial mechanical structure.

The **Speedy Ski Roller Kit\*** is made by a Finnish company that produces high quality tools for structures.

The Speedy Ski Roller Kit consists of two kits including 3 or 4 rollers structure and the device on which the rollers are fitted.

The strength of this kit lies in the quality and diversity of its rollers but also in the drive system of these. The base consists of two axes driven together by a gear system. The first consists of a rubber core which, when rotating, takes the structure roll. This allows the ski to be structured in the direction of glide and not in the opposite direction as is the case with the structureuse without gear.



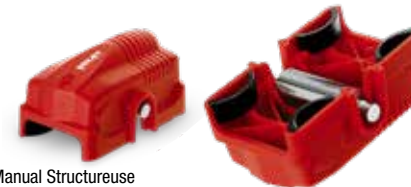
**KIT A**  
Z1N-40  
Polyvalent, -15°C/3°C  
0,30mm

**KIT B** Idem Kit A, with:  
W75-24  
High humidity, -2°C/4°C  
0,75mm

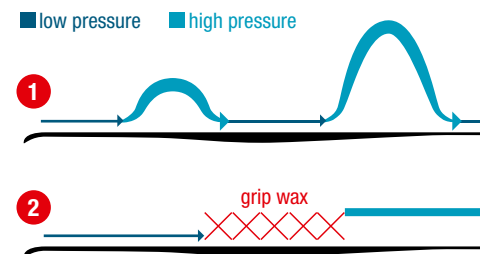
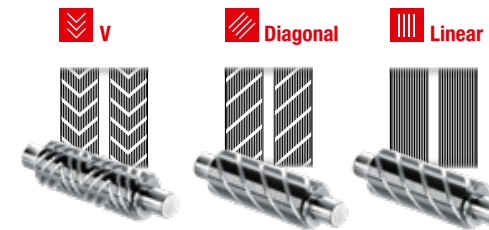
Z2N-33  
Large grain, -8°C/4°C  
0,50mm

Z1N-36  
Fine grain, -17°C/4°C  
0,30mm

More information on [skiroller.fi](http://skiroller.fi)



Manual Structureuse  
Ref. 012036



	Air humidity < 50%		50% < Air Humidity < 75%		Air humidity > 75%	
	Fresh snow	Old snow	Fresh snow	Old snow	Fresh snow	Old snow
-8° / -20°C	fine	fine	fine	medium	medium	fine
-2° / -10°C	fine	fine	medium	medium	medium	medium
-4° / +10°C	fine	fine + fine	fine	coarse + medium	coarse	coarse + coarse

We can list up to 25 different rollers to adapt to the various snow conditions.

The differences between the rollers lie in the pattern (linear, needle of fir, diagonal, double diagonal...) but also in the spacing and depth of the grooves applied on the sole of the ski. The rollers are chrome-plated, drawing very precise structures with rounded ridges lines much more slippery than most patterns drawn by other builders. In addition, the Speedy Ski Roller is the only system with a roller that offers the possibility to structure the center groove of cross-country skis.

The **VOLA structureuse** offers 9 different rolls. 3 patterns (V, Diagonal, Linear) each composed of 3 depths and widths (fine, medium, coarse). The unit (ref. 012036) is delivered with the Diagonal medium roller.

The manual structure application is the last step in preparing a pair of skis. It occurs after brushing a solid wax or powder. Indeed, the structure being temporary, the simple act of scraping, brushing or heating with iron changes the relief of applied motifs.

1. Select the appropriate roll(s) for the conditions of the day. If you are combining several rollers, always apply the coarsest first.

2. Make at least 2 passes from the tip to the tail.

- ① Pressure for a skating ski.
- ② Pressure on a classic ski.

3. Finish by brushing with horse hair brush or soft nylon.

## THE KICK WAXES

The application of the retention wax is the most experience-intensive phase in the field of cross-country ski preparation. The wax promotes the glide of products (soles) on which it is applied. If the sole is raw and unmaintained it does not help to put wax. The sole must be cleaned with R021 and waxed regularly.



## HOW TO DETERMINE THE AREAS ?

**The preparation of the kick wax in classic style is above all a story of compromise between glide and grip. It is therefore essential to maintain a database in order to enrich its knowledge in this area.**

First of all, it is necessary to determine the area where the retention wax will be applied which will correspond to the pushing area. This area is commonly called « wax chamber »: it starts at the tail and continues about 30cm in front of the attachment. To determine the weight, specialist stores usually have a «marble» that can be used to pressure the ski according to your weight. We then pass a laminate between the ski and marble which allows to feel the areas of support. The wax chamber is the area under the foot where the laminate does not feel any pressure.

Some ski manufacturers offer advice to help you make your choice. It can be used as a guide, but it is advisable to always check the wax chamber as indicated above.

If you do not have the possibility to determine your wax chamber with marble, wax your skis by voluntarily extending the length of the waxing room in front and behind the attachment. Ski for about ten kilometers.



at the end of your outing, the wax will have migrated and disappeared on the areas not to be waxed in the dam.

**The area where the wax will still be present will then correspond approximately to your wax room.**

After determining the wax chamber, it must be prepared to receive the hold wax. For the best hold-up wax to adhere to the sole, we need to make it rough. For this purpose, sandpaper (grain 100 or 120) is used and rubbed by moving back and forth along the length of the wax chamber. Ideally, the sandpaper should be fitted to a cork in order to stay in the most level position possible. This preparation is to be repeated before each hold-wax. It is necessarily longer when preparing new skis or freshly structured skis with the mechanical wheel.

### Note

Never wax the holding area with a slip wax or you will see the hold wax's adhesion decrease (use a paper tape to protect the wax chamber when applying slip waxes). As such, sandblasting must always be carried out after the preparation of the sliding areas.

**The kick wax consists of 2 main families, the kick wax and the Klisters:**

/ **Kick wax**, harder looking, used in new and/or unprocessed snow conditions where the grain forms sharp crystals.

/ **Klusters**, of softer consistency, allow the snow grains rounded by transformation to penetrate into the surface of the klister and thus to hang skis.

This is a general rule. Experience in choosing the right product is paramount and careful analysis of conditions is essential to ensure a performance waxing.

### Storage

Never leave a ski unwaxed to avoid deterioration and drying of the sole.







EST. 2018  
**VOLA**  
**ROCKET**  
*Team*

D'année en année,  
vous nous faites vibrer.  
Suivez les aventures  
de ces athlètes  
hors du commun.  
**#rocketteam**



—  
**FLY TO  
SUCCESS**  
—



**VOLA**  
**RANGES**



# The wax made in France since 1935



E-Wax/ Uni / MX-E / Race Wax  
Air temperature indicated on the box.  
Propulseurs / Accélérateurs  
Snow temperature indicated on the box.

## VOCABULARY

### RACE Range *Fluor free racing wax*

The principle of a racing wax is to evacuate as quickly as possible the water droplets that form between the sole and the snow, to increase the glide and speed up the ski. The active ingredient of the range is hydrophobic, which allows a strong acceleration. The additive used is characterised by an extremely low coefficient of friction, which provides a higher glide quality. The RACE range is available in several temperature ranges for greater efficiency.

**Liquid wax** has excellent glide quality and accelerates faster than a hot-applied wax. It also allows to change a waxing during a change of weather conditions. These waxes are used in addition to the Bases. Very efficient, these waxes are complementary to hot waxes but should not be substituted from them because they do not maintain and protect the sole.

### What is a molybdenum-containing wax for?

Molybdenum is a chemical compound close to graphite with very interesting properties on certain types of snow, such as the so-called transformed snow (with eroded crystals). Molybdenum placed in VOLA waxes, offer very good performance in snow conditions with a high coefficient of friction (artificial snow, frozen, injected). In addition, molybdenum has

a strong lubricating power while repelling dirt thanks to its static electricity properties. Requires the use of ultra fine steel brush (fine steel) after scraping.

### How to use a graphed wax?

Graphite is one of the dry lubricants. Used in mechanics in many assemblies to limit friction, it is used in Vola waxes for these same properties. The graphite waxes are used on snow with a high abrasive power such as injected or frozen snow, on highly transformed so-called spring snow, or on glacier snow. Graphite is sensitive to static electricity, it should be avoided on fresh or falling snow. Graphite is a wax that is generally used mixed with a base.





— — — — —



— — — — —

# ALL RANGES

— — — — —

*E-Wax*

FLUOR FREE



**UNI**  
UNIVERSAL WAX

No Fluor APPROVED



**MY-E**

No Fluor APPROVED



*TOURING*

No Fluor APPROVED



BASES

No Fluor APPROVED



**RACE**

No Fluor APPROVED



TOP FINISH **RACE**

No Fluor APPROVED



NORDIC CLASSIC WAX

No Fluor APPROVED



**SKI WAX**  
*remover*

No Fluor APPROVED





## MAINTENANCE WAX

# NO FLUOR

VOLA has been developing and offering bio-based waxes since the launch of Ewax in 2009. We make every effort to offer demanding skiers a range of waxes more concerned with man and the environment, with performance comparable to conventional hydrocarbon based waxes. Fluoride-free, these waxes incorporate up to 100% of raw materials of natural origin. Liquid versions of these waxes use an alternative solvent and are not classified as hazardous products, allowing for easy and safe application.



### Ewax



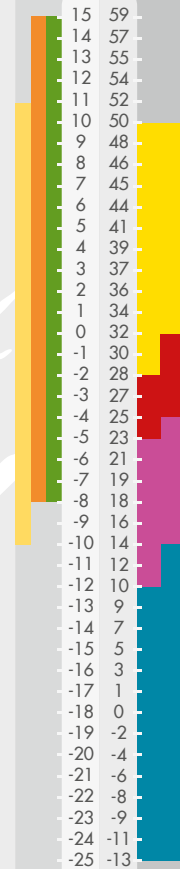
### UNIVERSAL WAX



### TOURING



### MX-E



Air°C Air°F





# RACING WAX BASES

The Bases are developed for competitors. Thanks to 3 levels of hardness, soft/medium/hard, and different specifications (graphite, additive or not, etc...) these waxes meet all needs: protection or impregnation of the sole, performance on hot, cold, dry and/ or old snow. This range of advanced waxes, rich and varied, allows to target the necessary product according to the practice (alpine, nordic, hiking, ski jumping, races or training) to prepare your equipment in an optimal way.

**No Fluor**  
APPROVED

## **SKI TOURING BASE** (80g / 200g / 500g / 60ml / 75ml)

Waxes intended for ski touring, both for leisure and the competition.



## **JUMPING BASE** (200g)

Special Ceramic wax for ski jumping on synthetic ski jumps.



## **GRAPHITE BASE** (200g)

Sole care wax. To be used in training (or running for small U10). To be used every 5-10 waxing.



## **GRAPHITE RACE BASE** (80g / 200g)

Graphite base, to be used as an antistatic base.



## **PREMIUM MX901 BASE** (200g / 500g / 250ml)

Multi-purpose Base, ideal for training. Specially developed to prevent the soles from bleaching. Also suitable for impregnation of new skis with a Thermojomax cover.

## **X-HARD BASE** (200g)

Very hard wax. Can be used alone (ski jumping) but is usually used as a base hardener (on very abrasive snow).

## **MEDIUM BASE** (250ml / 80g / 200g)

To be used alone or as a first layer, the Base Medium combines good acceleration and acts at high speeds.









# RACING WAX

## **RACE** TOP FINISH

Vola has worked to offer you Top Finish ranges that meet your needs.

### Race Propulsor:

Blue, for cold snows =  $-12^{\circ}\text{C} > -5^{\circ}\text{C}$  /  $10^{\circ}\text{F} > 23^{\circ}\text{F}$  (snow T°)  
 Yellow, for warm snows =  $-5^{\circ}\text{C} > 0^{\circ}\text{C}$  /  $23^{\circ}\text{F} > 32^{\circ}\text{F}$  (snow T°)  
 Moly version for old, dirty and artificial snow.  
 To lightly brush with a pencil and polish with a cork or felt.  
 Finally brush with a horse hair brush.

### Race Accelerator:

The M23 is a highly additive product from the Race range. Used as a top finish, it will give you optimal acceleration. Fluoride-free, the M23 is sprayed under 4 temperature ranges (blue, purple, red yellow) and comes with a mixed felt/nylon brush.

### Sidewall Oil:

Universal oil to be applied on the edges of speed skis. Do not apply to the sole.

**No Fluor**  
APPROVED

## **RACE PROPULSOR**



Mrace Propulsor Yellow Moly  
Mrace Propulsor Yellow



Mrace Propulsor Blue Moly  
Mrace Propulsor Blue

## **RACE ACCELERATOR**



Yellow



Red



Purple



Blue

AIR °C

## **RACE OIL**

Sidewall Oil



## KICK WAXES



### Kick wax 45g

The Strollers were created to provide for fresh snow. That is, all snow without freezing/thawing. All as the Klister, the different colors correspond to the different snow temperature bands.

**P40** -5°C / -11°C

**P41** -1°C / -5°C

**P42** 0°C / -2°C

**P43** -10°C / -20°C

**P44** Universel

**P45** -5°C / -11°C

**P46** -1°C / -5°C

### Klister 50g

Our range of Klister, developed for Nordic skiing, will adapt perfectly to icy, transformed and artificial snows. The different colours correspond to the different snow temperature bands.

**K40** -5°C / -14°C

**K41** -3°C / -6°C

**K42** 0°C / -3°C

**K43** -10°C / -20°C

**K44** 0°C / -1°C

**Skin Glide**

## SKI WAX REMOVER



Maintain your skis with the R021.

Vola is the only wax manufacturer to offer this product for cleaning your sole. This wax is specifically designed to remove dirt from the sole.

Paraffin to be dewaxed R021. Very soft wax composed only of paraffins at very low melting temperature giving it an exceptional fluidity. Used in hot scraping, the R021 allows for deep cleaning of the sole and dilating of the sole pores to increase the retention of glide waxes. Can be used before each waxing.

Also discover the liquid wax remover :  
Pure, Standard, Glide Cleaner and Pro.



#### Pure

Liquid wax remover classified as non-hazardous, more responsible for the health of users and the environment.



#### Standard

Slow-evaporating liquid wax remover for general purpose.



#### Pro

Fast-evaporating liquid wax remover.



#### Glide Cleaner

For a reset of the skis after waxing with additive waxes.





# TIPS



Find all the tutorial videos on YouTube, Instagram and vola.fr



vola.fr > **VOLA**Advice



© Quentin Iglis

## Fundamentals



Scan the QR Code & discover the video!

The sole corresponds to the polyethylene part under your equipment.  
When the snow is in contact, droplets form, the purpose of waxing is to evacuate them as quickly as possible.  
Wear gloves and aprons to protect yourself.  
Use a stable support to keep your equipment safe.  
Always dry your soles before waxing.  
To avoid soiling the sides and your fasteners, tape the fields.  
The more regularly you do this, the more you will slide.





## Apply a solid wax

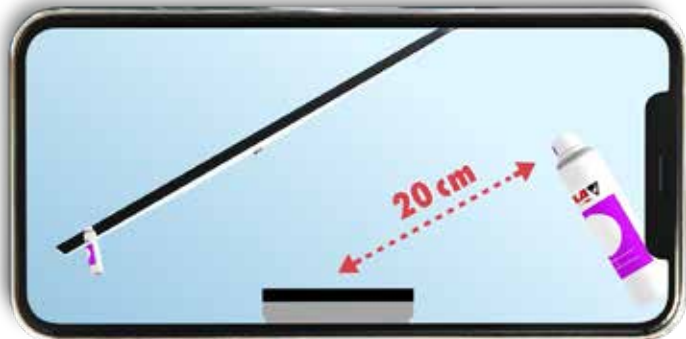


Scan the QR Code & discover the video!



Dry the sole and clean it with a bronze brush from the tip to the tail.  
Set the wax iron to the temperature marked on the wax label.  
When the temperature is reached, put the wax and iron in contact.  
Do a round trip on the sole to deposit wax droplets.  
If smoke is released when you do this, your waxing iron is too hot.  
Place the iron on the sole and spread out the wax with back-and-forth motions.  
It takes time for the wax to soak into the sole.  
Don't go too fast but never stop moving.  
When the wax is evenly distributed, make 2 round trips without stopping to have a successful finish.  
Clean the iron with a cloth after use. Be careful not to burn yourself.  
Wait 2h for the wax to cool and soak the sole.

## Apply a liquid wax



Scan the QR Code & discover the video!



Dry the sole and clean it with a bronze brush from the tip to the tail.  
If your liquid is a Quickboost > Press and squeeze the can to release the liquid.  
Move the wax around the entire sole.  
If your liquid is bottled > Take a cloth and soak it with liquid wax.  
Place the cloth on the sole and move back and forth.  
If your liquid is in spray form > Shake and spray lightly and evenly, about 20 cm from the sole.  
Let dry for 15 minutes.

× 30 ×

## Scrape



Scan the QR Code & discover the video!



Once your sole is waxed, let cool for 2 hours for a good impregnation then scrape the wax.  
Firmly press the scraper on the sole, from the tip to the tail.  
Always scrape in the direction of glide.  
Scrape until there is no longer any apparent wax.  
As the scrapings, your squeegee will become desharpened.  
Consider sharpening it regularly with a squeegee sharpener for optimal use.

## Brush



Scan the QR Code & discover the video!

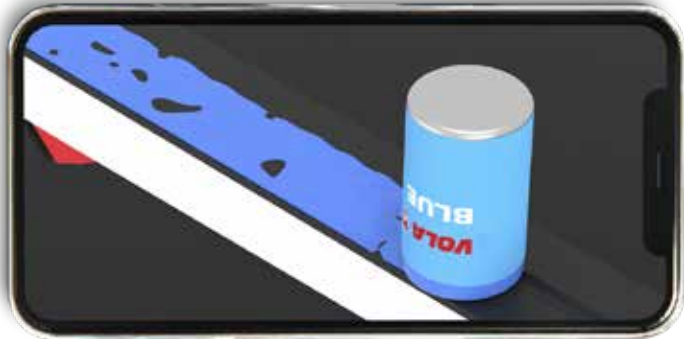


Once your sole is scraped off, you should brush it to bring out the structure.  
As with scraping, always brush from the tip to the tail.  
Never brush in the opposite direction of the slide.  
First use a nylon brush to polish the sole.  
Make 5 passes.  
Then, finish with a horse hair brush to polish the sole.  
Make 5 passes. Your equipment is ready!

× 31 ×



## Apply a stroller



Scan the QR Code  
& discover the video!



The kick wax is to be used on classic skis when the snow is fresh. Put your skis flat on the Nordic screeds. Apply the stroller to the holding area in the center of the ski, in medium and homogeneous layers. Take a cork and do several back-and-forth on the application area. The kick wax will then heat up and adhere to the sole. Several layers of kick wax can be applied successively to achieve the best compromise between grip and glide. Remove the excess from the groove with a Nordic scraper. Your skis are ready !

## Apply a klister



Scan the QR Code  
& discover the video!



The klister is to be applied on classic skis when the snow is wet or processed. Put your skis flat on the Nordic screeds. Tape your area of kick wax. Place a V-shaped layer on each side of the groove and spread it with palms or thumbs. Several layers of klisters can be applied successively in order to obtain the best compromise between grip and glide. Let the layers cool between each application to avoid mixing of waxes. Remove the excess from the groove with a Nordic scraper and remove the tape. Let the skis cool for about 10 min. Your skis are ready!

## Structuring a cross-country ski



Scan the QR Code  
& discover the video!



For optimal practice, your sole needs a suitable structure. This is the last step in preparing for a cross-country ski. To create a structure, use a roller. There are several types with different depths that must be adapted to the conditions of the day: temperature, humidity and snow grain. Lay your equipment flat on Nordic vice. Take the structureuse and place the roller on it. Put the tool on your sole. Make 2 passes in the direction of the slide, without going back, By applying light pressure. Your sole is structured!

## Summer maintenance



Scan the QR Code  
& discover the video!



Winter is over and it's time to put your gear in the closet. To properly store your equipment, here are some tips:

- Brush with the bronze brush to clean the sole.
- Coat with a MX-E type wax, without fluoride.
- Do not scrape the sole but remove the wax from the edges using the edge of the scraper.
- Store your equipment in a place where the temperature does not vary too much.
- Before the first outing next winter, scrape. Then, do your usual preparation according to snow conditions. Happy summer season to all !



© Valence Zoom



PARTNER OF FEDERATIONS & TEAMS



Instagram Facebook YouTube @volaracing\_sports

37, avenue de Saint-Martin / 74190 Passy / FRANCE  
 ☎ +33 (0)4 50 47 57 20    @ vola@vola.fr    🌐 vola.fr

Vola Racing.ch / Route de Chandoline 27B / 1950 Sion / SWITZERLAND  
 ☎ + 41 27 203 03 30    @ sales@vola-racing.ch    🌐 vola-racing.ch

C/ Avd. De Francia, 16 / 17520 Puigcerda (Gerona) / SPAIN  
 ☎ +34 609 75 05 06    @ sales@vola-racing.es    🌐 vola-racing.es

