

SKI BARTLETT GUIDE TO... SKI SERVICING TOOLS

Confused as to which tools you should be using and what each tool does?

The following servicing kit checklist, has descriptions of each tool to help you understand their uses, avoid confusion and help you make better buying decisions...

START MAKING YOUR SERVICING LIFE A WHOLE LOT EASIER WITH A BENCH AND VICE:

- ❑ **Cookski Bench** – A quick to assemble bench to mount vices on to hold skis safely whilst servicing.
- ❑ **Holmenkol Professional Waxing Table** – Very solid table style workbench with larger work area. Extendable end supports. Ski storage rack.
- ❑ **Ski Vices Pro** – Wider centre jaws to clamp skis securely, with adjustable end supports, better for multiple length skis and also more stable.
- ❑ **Ski Vices Compact Trio** – Compact and lightweight, ideal starter vice or more compact and lighter option than the Pro for flying. Narrow centre jaw and non-adjustable end supports.

EDGE SHARPENING ESSENTIALS

SIDE EDGE FILE GUIDES - holds files and diamonds at fixed angle for accurately sharpening side edges

- ❑ **Aluminium file guide + crocodile clip pincer** OR **screwclamp** to hold file
- ❑ **Ski Man Race Guide Plus with integrated screw clamp**
- ❑ **Wintersteiger Discman Ceramic Edge Sharpener** – Electronic rechargeable cordless edger

All side edgers are available in 89, 88, 87, 86 degree angles.

The following angles are recommended:

89 degrees – Children racing / Recreational skiers children and adults. Most recreational skis are tuned at 89 degrees from the factory.

88 degrees – Older children racers who are getting more angulation onto their edges. Also, experienced junior racers for GS, SG and DH.

87 degrees – Higher level junior racers who are getting good angulation on their skis. Generally used more in slalom and GS.

86 degrees – High level junior racers who are very experienced and get a lot of angulation on their skis - Only used in slalom.

Both the aluminium file guide and 'Race Guide Plus' work well with all files, diamonds and stones.

Discman electronic edgers cut accurately and smoothly with a rotating ceramic disc. These are quicker to use if you're sharpening multiple pairs of skis, or pressed for time.

BASE EDGE FILE GUIDES - holds files and diamonds at fixed angles for accurately tuning base edges

- ❑ **Base Bevel Guide Adjustable Angle**
- ❑ **Base Bevel Guide Fixed Angle**

The adjustable tool is variable between 0.5 to 1.75 degrees and the fixed tools are available as 0.5 or 1 degree. The base edge requires less work less sharpening than the side edge and can usually be bevelled approximately 1:6 times of edge sharpening.

The following angles are recommended:

0.5 degrees – used for all junior racers for Slalom, Giant Slalom.

0.7 degrees – used if you desire less aggressive Slalom/GS skis, Super-G, Downhill, snowboards, freeride and all-mountain skis. Also used in Ski-X to allow quick movements and changes of direction.

1.0 degree – for easier steering AND/OR used at the tip and tail of skis for easier turn initiation and edge changing. Better for younger racers and recreational skiers who need a more forgiving feel and the ability to slide and roll onto an edge. Also used in Ski-X to allow quick movements and changes of direction.

1.5-2.0 degrees – extreme bevels to stop catching on rails and boxes for freestyle.

TIP: The base edge must be bevelled after the ski has been base-ground or stoneground to avoid edges catching.

TIP: If you're struggling to get your side edge sharp your base edge may be rounded from wear on the ground. Unless you sharpen the rounded base edge your side edge will never feel sharp!

TIP: Adding a higher degree of base bevel at the tip of the ski will give you a smoother cleaner roll onto the edge at the start of the turn.

TIP: To make sure you only sharpen the edge and don't take off any base material you can use an Alu-oxide stone to sharpen the base edge instead of files. It will take a bit longer but will give you a good finish and the ability to easily stop before you start to take off any base material.

TIP: Once you get the desired edge angle, keep them sharp with Diamond files and stones.

EDGE FILES - For sharpening edges, use with side edgers and base bevellers above:

- Short chrome and non chrome file** – Side edging
- Long non-chrome file** – Base bevelling
- PRO Racer file** – Professional side edging
- Alu Oxide Stone** – Removing burrs from the edge and removing case hardening
- Solda Steel Jet Paste** – Final smoothing and polishing paste for a real sharp finish
- Solda Metal Jet Liquid** – Reduces friction build up from the metal edge

Files come in 3 cuts – Bastard, 2nd cut and fine/smooth:

Fine/Smooth gives the smoothest finish and removes a small amount of material at a time. Best used when servicing regularly for every training session so you prolong the life of your ski edge. Finish with a diamond stone.

2nd Cut is a coarser grade than the Smooth so works well when your edges have got rounder and will need more than just a top up. Use in moderation and finish with a smooth cut file and a diamond stone. Also good for base bevelling as the smooth file can get clogged too quickly with base material.

Bastard is the coarsest option and is good when edges need a lot of work due to damage or if excessively rounded. Use in moderation and finish with a smooth cut file and a diamond stone.

TIP: Use a couple of passes with a smooth or 2nd cut file and finish with diamonds and stones to give a good quality finish.

TIP: Non-chrome files have sharper teeth, but will rust if they get wet. Chrome files are resistant to rusting but are not as sharp.

TIP: Files only cut in one direction – pulling a file towards you will give you much more control than pushing.

TIP: PRO Racer files are machined more accurately and therefore their teeth cut much cleaner, resulting in less burrs and a sharper edge. Made of hardened steel these files will last much longer than a standard edge file.

TIP: After finishing with a diamond file, to get an even sharper and more polished edge, use Solda Steel Jet Paste with a felt block. The paste smooth's and polishes the edge to give a much finer finish. Follow with Solda Metal Jet liquid to reduce friction and base burn caused by the metal edges – great for dryslope, hard icy pistes and aggressive man-made snow.

TIP: If you have a section of the edge that the file slips over and looks shiny, this is called case hardening. At

some point the edge has heated up (often due to hitting small stones) and will not sharpen until you remove the case hardening. Use an Alu Oxide stone along the edge until you can see there is no shiny sections, the edge should now sharpen.

DIAMOND FILES – For sharpening and smoothing edges, use with side edgers and base bevellers above:

Diamond files remove burrs in the edge giving you a smoother faster finish. Once the edge has been cut to the desired angle using a file, the edge can be maintained using Diamonds taking off less metal edge. Diamond Stones cut in both directions and only work when used wet. These must always be used in conjunction with Honing oil or water otherwise the diamonds will wear out quicker. Work the files back and forth with honing oil and you will create a polishing paste that will sharpen and smooth the burrs from the edge.

Diamond files are available in grits 200 Course, 400 Medium, 600 Fine, 1000 X-Fine and are ideal for polishing edges, touching up in between sharpening with a file. Which you buy is dependent on the use and quality of finish you are after.

- ❑ **Diamond Files** – Side and base edge sharpening
- ❑ **Arkansas Stone** – Polishing side and base edge
- ❑ **Ceramic Stone** – Polishing side and base edge
- ❑ **Honing Oil** – Creating a polishing paste, to use with all diamond files and stones
- ❑ **Diamond Eraser** – Cleaning diamonds, stones and ceramics

200 Coarse – good to use instead of a file and will remove less metal edge. Great for using before any other diamond or file to remove burrs, helping the next file/diamond cut better and last longer.

400 Medium – the best all rounder from one diamond file, it will sharpen similar to a smooth cut file, but also polishes the edge at the same time. Good for touch up sharpening.

600 Fine – a more polishing diamond stone combined with a bit of cut at the same time. Good for touch up sharpening and smoothing after a coarser diamond or file.

1000 X-Fine – the polishing diamond to give you the ultimate smooth finish. Use after a coarser diamond stone or after filing.

TIP: Diamond stones work great for touching up edges in between race runs and each day on ski trips.

TIP: Diamond stones smooth small burs on your edges created by filing. The smoother the edge the longer it will stay sharp and the fast it will run.

TIP: For an even finer finish follow up diamond sharpening with an Arkansas stone; it will "hone" the edge surface rather than "sand" it. When you work with a diamond stone you are still slightly "roughening" the edge surface; removing this roughness with a fine hard stone is honing and will give you a polished edge that will stay sharper longer and run quicker.

SIDEWALL REMOVERS - For removing material from sidewall of skis to allow sharpening of edges otherwise files will clog up with sidewall material.

- ❑ **Compact Sidewall Remover** – Good for occasional use
- ❑ **Heavy Duty PRO Sidewall Remover** – Heavier duty. Precision cutting. Easiest to use

We recommend these as both have a cutting blade with round and square sides making it useable for both sidewall and cap construction sidewalls.

TIP: Use a round blade for cap-constructed skis and a square blade for sidewall-constructed skis.

TIP: After sidewall removing, smooth the sidewall with base sandpaper. This will stop the sidewall catching and make it easier for subsequent sidewall removal.

EDGING ACCESSORIES

- ❑ **Abrasive Rubber (Gummy Stone)** - For removing small areas of surface rust and for deburring.
- ❑ **Brake Retainers** - Rubber rings to pull and hold ski brakes up and out of the way while tuning.
- ❑ **File Brush** - For cleaning filings out of files whilst in use.
- ❑ **Servicing Cut Proof Glove** - To stop injuries on the inevitable slips!

WAXING ESSENTIALS

IRON - *melting and spreading wax*

- ❑ **Compact Smart Waxer** – Good entry level iron
- ❑ **Toko T8 Iron**
- ❑ **Toko Digital Iron**
- ❑ **Holmenkol Digital Racing Waxer Iron**

All entry-level irons use an easily adjustable dial to select the appropriate temperature for different waxes.

Digital irons are ideal for more accurately setting the temperature for higher performance fluorinated waxes where temperature control is important.

TIP: *DO NOT USE DOMESTIC IRON or TRAVEL IRONS! Household irons fluctuate up and down in temperature to maintain the set temperature. The sudden high heats these reach can damage the ski base material. Ski irons use a different heating element to evenly heat the thicker metal iron base.*

PLASTIC SCRAPERS – *for removal of excess wax*

- ❑ **Standard 3mm thick plastic scraper**
- ❑ **Heavy Duty 5mm thick plastic scraper**
- ❑ **Snowboard Scraper** – 5mm thick but longer length

Personal preference, but the thicker 5mm scrapers don't bend when you push on them, keeping the bases flatter.

TIP: *Thicker 5mm scrapers make it easier to scrape hard waxes.*

- ❑ **Toko Scraper Sharpener**

There's nothing worse than slogging away trying to scrape a ski with a blunt scraper. The scraper sharpener uses ceramic inserts to recut the edge of the scraper when it has become blunt.

TIP: *The sharper the scraper the better the finish.*

BASE BRUSHES - *For opening up the structure of the base before waxing. For smoothing, structuring and polishing bases post-waxing.*

Brushes are available in 3 forms – Oval, Flat, Roto

- ❑ **Tampico Nylon Brush** - Base cleaning Brush and for polishing hard / very cold wax
- ❑ **Brass Brush** - Base Structuring pre-waxing and after waxing hard / very cold wax
- ❑ **Nylon Brush** - Base smoothing after waxing

- ❑ **Horsehair Brush** - Final polishing after waxing
- ❑ **Steel Structure Brush** – Used for restructuring the base after base grinding, P-tex repairs.
- ❑ **Roto Handles** – Single Roto, Double Roto

The Flat and oval brushes are used by hand. Oval brushes are larger and have hand straps for easier use. Roto brushes are drum versions that attach to any cordless drill. These work with a rotating handle available in single (one roto) and double (two rotos) options. Rotos give a much better finish to the base than hand brushes. Rotos are also a lot quicker when you're time pressed or servicing multiple pairs of skis.

TIP: *If the ski base looks grey you renew the base with a Steel Structure Brush to open the structure and then wax a number of times with soft base wax to re-fresh the base material. Molybdenum graphite renewal waxes work brilliantly for this use.*

WAXING ACCESSORIES

- ❑ **Fiberlene lint-free cloth** – Great for cleaning debris from the ski base in between filing and waxing. Anti-static so will not attract dirt and dust to the ski base. More porous than tissue.
- ❑ **Metal scraper** – Ideal for scraping P-Tex after base repairs. Cleaning wax off scrapers, sidewalls, topsheets. Removing old wax and filings left on the base before waxing. If you've damaged the base a metal scraper works well to cut off any base material that is proud of the base.
- ❑ **Fibretex** – For removing microscopic hairs from the base after filing, grinding, or any base work, and to reapply microstructure. Comes in different grades, coarse medium and fine. Work through the grades to get the best finish.
- ❑ **Wax remover** – For removal of wax from bases, topsheets and tools. Used prior to doing any P-Tex repairs to the base. Used with Fiberlene.

TIP: *We prefer to hot scrape to remove old wax and dirt from the base as it stops the bases drying out. Hot wax with a warm base wax and scrape immediately while wax is still warm. This will pull all the old wax, filings and dirt from the ski and will prep the base ready for final waxing. Repeat several times until wax comes out clean.*

TIP: *Fiberlene works brilliantly to help reduce base burn whilst waxing and also helps spread the wax evenly. Put a layer of Fiberlene against the base of the iron and drip and iron the wax as usual.*

SKI WAX – *The higher the fluorine content in the wax, the more water repellent and therefore faster the wax will run.*

Base Wax

- ❑ **Base Prep Cleaning Wax** – Great for cleaning dirt from the ski base before waxing. A good all purpose wax for travel waxing and summer storage waxing.
- ❑ **Molybdenum Graphite Base Renewal Wax** – renews tired, grey and dry bases.

Hydrocarbon Training Wax – Temperature specific for faster running skis at an economical price.

- ❑ **Techno Red Cold Wax** - Snow training Indoor + Outdoor
- ❑ **CH4 Extra Hard Dry Slope Wax** – Good for stronger/heavier racers for dryslope training and racing.
- ❑ **Solda Techno Green Hard Dry Slope Wax** – Good for smaller/lighter racers for dryslope training and racing.

Fluorinated Race Waxes – Available in multiple temperature options from all wax manufacturers.

- ❑ **Solda Performance Red Low Fluoro Wax** – Basic race wax for cold snow + Indoor Racing
- ❑ **Solda Performance Yellow Low Fluoro Wax** – Basic race wax for warm snow
- ❑ **Low Fluorinated Race Wax** – The most economical of the fluorinated waxes, making a good starter race wax. Used under higher fluorinated waxes as a base wax.

- ❑ **Medium Fluorinated Race Wax** – the next step up in performance from low fluoro waxes. Use a low fluoro wax as a base wax underneath.
- ❑ **High Fluorinated Race Wax** – higher performance for those of you needing the extra speed to gain those few hundredths of a second.
- ❑ **Fluorinated start accelerators and additives** – these can be added on top of the higher fluoro waxes as start accelerators and additives can be used to change the waxes original make-up.
- ❑ **Dryslope start accelerators – Hydrazorb and Clearglide** – the two most commonly used. Used at the start of the race to gain quick acceleration and reducing friction heat up.
- ❑ **Zardoz Notwax Liquid Teflon Puck** - For use under and on top of all iron on waxes to reduce friction and make the wax last longer. For snow and dryslope.

TIP: *The more fluorines in the wax the faster it will run, but they're also more susceptible to wearing off quicker. You must layer with lower fluoro waxes under higher fluoro waxes.*

BASE REPAIR ESSENTIALS

I haven't included in this list any type of p-tex for filling of base scratches and imperfections but normally this is the next step in the chain. Also we have a lot of other bits and pieces to help tuning but I have tried to keep this list as short and precise as possible. If you would like any more advice please just ask.

- ❑ **P-Text Repair Rods** – Drip-in P-tex
- ❑ **P-Text Repair Gun** – Stronger bonding meaning repairs last longer. Quick and easy to use.
- ❑ **Metal Scraper** (Also listed previously) – For removal of proud base material before repairing and for carefully shaving off and smoothing the P-Text repair.
- ❑ **Wax Remover** (Also listed previously) – for cleaning gauges before repairing.
- ❑ **Fiberlene lint free cloth** (Also listed previously) – Use with wax remover for above. This lint free cloth will stop fibres contaminating the repair.
- ❑ **Base Sandpaper** – used to smooth the base after repair.
- ❑ **Fibretex** (Also listed previously) – for restructuring and smoothing the base repair.

P-Text Repair Guns create a much stronger bond to the base material as they use harder materials similar to the original base. Standard drip-in P-Text rods have wax added to them to allow them to be melted and therefore are not so strong.

Base Sandpaper and Fibretex will smooth the base repair and give the repair material a structure similar to the rest of the base.

TIP: *If you have a number of small fine scratches, too small to P-Text, sandpaper works well to smooth the base of the ski.*

TIP: *Fibretex works great to renew shiny bases, called 'base burn'. Fibretex will open the structure of the ski to allow wax to penetrate.*

If you need any ski servicing equipment, or need any help or advice...
Please call in to our shop on the Uxbridge Road, Hillingdon, West London
Buy online 24/7 at www.skibartlett.com | Call for mail order on 020 8848 0040

**Ski Tuning courses are also available, individually, as a group, or at your club
Please contact us to make an appointment**



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