

## Base Flattener Patent # 4,884,343

A ski base must be flat for optimum ski performance. The Base Flattener is a powerful planing tool designed to quickly flatten a ski base with a minimum of effort and potential for error.

The tool features a hardened hi speed steel blade which simultaneously cuts the metal edges and the base plastic and a medium stone blade which cuts and structures the base plastic and a magnetic strip which picks up the metal shavings preventing them from getting ground into the plastic base.



We recommend that the Base Flattener be pushed from tip to tail direction only.

The Base Flattener is used by making a forward driving stroke with downward pressure primarily on the rear hand so that you feel the cutting action of the blade on the ski. You can use overlapping strokes (but don't pressure the backstroke or you will dull the blade) or a single stroke down the ski base.

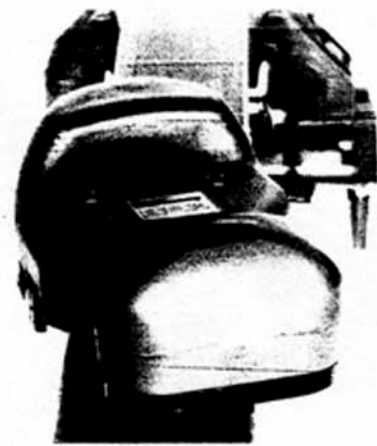
When applying downward pressure, direct the pressure towards the middle of the base so that the tool is used flat against the ski base without any side to side rocking. With practice this soon becomes automatic.

The grit of the stone blade gives the blade the ability to cut base plastic and therefore keeping the grit clean and exposed is important. Use the metal brush that is included with the tool to remove plastic from the pores of the cutting edge after each pass down the ski.

If you are using the steel blade and it skips leaving skip marks on the base it means you are pushing the tool too hard, too fast, your blade is dull and needs sharpening, or, you have a rock damaged edge section (hardened and/or damaged edge) next to the skip mark that needs to be polished out so that the steel blade can cut the metal edge rather than causing it to glide and skip.

If you put skip marks in the base with the steel blade (the stone blade will not put in skip marks) you can erase the skip marks by angling the Base Flattener left and right so that they are cut out at a different angle than you were using when you caused the skip marks. See the picture before **Base Structure** for an example of a left angle. Also, alternating between a coarse or extra coarse stone blade and the steel blade can help quicken the process.

You may notice that you have difficulty tuning a new ski. This usually occurs where the base is concave and the edges were hardened by the stone grinder at the factory when the grinding machine was used with too much pressure and too quickly. You will either have to ski off the hardened sections over time, or, polish them out very aggressively before the Base Flattener can cut the over-hardened steel edges. Tuning new skis can be very difficult.



### Stone Blades and Base Structure

Structuring a base is the process of roughening it to reduce surface tension and improve glide. The stone blades also help to open base pores for better absorption of wax.

You may like the look of a smooth polished base that you get with the steel blade, but the ski will glide poorly and act sluggish. Structure the base with the stone blade for improved glide.

The Base Flattener comes with a medium stone blade which is good for average snow conditions.

For fresh, cold snow a very fine structure works best. You can get such a structure by lightly de-structuring a medium stone structure with the steel blade, or, you can use the optional 5 inch fine stone blades, or, you can make fine blades out of your old stone blades (see blade care below).

For old, wet snow a coarse structure is best, use the optional 5 inch coarse stone blades for those conditions.

An extra coarse 5 inch stone blade is also available to very aggressively flatten convex (base high) bases, it is not a structure blade, it is like coarse belt sanding your base, which quickly removes excess plastic but leaves your base very rough. Use with light pressure, sparingly, alternate frequently with the steel blade and check frequently with your true bar.

### Blade Care

The stone blades wear down from rubbing on the metal edges and must be re-flattened or replaced periodically. Also, don't use them on newly waxed skis, the wax clogs the stone pores.

To flatten and recondition the stone blades, lap each side of the stone with a diamond file until it is flat and clean being very careful to keep each edge true. You will notice that the stone blade grit gets progressively finer and produces a finer structure.

The steel blade must be kept sharp. The easiest way is to use a coarse bench stone and lap each side of the steel blade. It is very important to use a cutting fluid when lapping, a readily available, clean and easy to use fluid is rubbing alcohol, keep the stone wet while lapping.

### Safety Rules

It is **very important** to polish off the burr that is left whenever you work on metal ski edges, a burr makes the skis over-sharp and dangerous. We recommend our Ski Sharp or you can polish the edges with a stone.

The steel blade falls from its seat when loosened. It is sharp and heavy and should be done over your bench carefully.

Maintain a firm grip on the tool when running it off the tail of the ski so you don't drop it.

Keep your fingers on the tool out of the way of the sharp metal ski edges. Your ski must be held in a ski vise when using the Base Flattener.

Questions? Problems? E-mail me at [msewell1@pacbell.net](mailto:msewell1@pacbell.net). I can answer any base flattening or structuring question.