



## CMAC 2015/16 Tuning Standards

To help ensure **all our racers** have gear that is properly setup and tuned for their level of ski racing and training, CMAC is publishing Tuning Standards for use by our racers, parent/tuners, and local shops. There are **3 levels** of tuning standards: **Mighty Mite** (up to age 12), **Junior** (12-16), and **FIS**. And there are also **2 types** of tune: **Initial Prep** and **Maintenance**. Initial prep should only be required once per season, per pair of skis. These are recommendations, not requirements- but (if followed) they will maximize fun and minimize frustration. (See tables below and on page 2)

### Mighty Mite Tunes:

This standard will provide an easy turning, fast gliding ski with good edge hold and excellent forgiveness. It is what **this age level needs to learn proper ski technique**, and this tune will help extend ski life as well- since many junior skis are handed down or resold.

### Junior Tunes:

Junior tunes increase the performance potential of the ski, at the expense of some ski life and forgiveness. Skis should **still last at least 1 season** when tuned to this standard unless they suffer heavy rock damage or hard crashes.

### FIS Tunes:

This is an all-out tune intended to **maximize** speed, edge hold and carving ability but with a (sometimes considerably) **shortened ski life**. Speed skis will still last multiple seasons, but Slalom and GS skis may not make it all the way until spring. This tune is intended for **Sponsored Athletes** and/or those families more concerned with podiums than with cost.

### Initial Prep vs. Maintenance:

Initial Prep is the beginning of the season and/or new ski tune including a grind and full base prep. Most families **hire shops to do this tune**, but the specs are provided for the advanced home-tuner as well. Maintenance tune is just that- a daily/weekly level of tune intended to keep skis in top-notch condition.

Mighty Mite Tuning	Initial Prep	Maintenance by hand only
<b>Base flatten/Structure</b>	NW universal grind 0.0005 inch flatness tolerance, usually done by machine, hand finish	Touch up structure & maintain flatness with sandpaper & planer
<b>Edge Bevel</b>	Base= 1 degree, side = 2 degrees by machine or by hand using guides	Using guides, stone base edge, hand stone or file side edge as required
<b>Side wall and Top edge</b>	Back-file/relieve side wall to allow easy sharpening, removing minimal material	Smooth top edge and maintain side wall relief/back file
<b>Base Cleaning</b>	Wax remover and/or Warm Scrape as required preferring warm scrape whenever possible	Warm Scrape and/or brush cleaning,
<b>Waxing</b>	Hot wax with hydrocarbon wax, full scrape, brush and polish	Cork, Wax Wizard or hot wax, full scrape brush and polish
<b>Optional</b>	Repeated wax, scrape, polish cycles	Low Fluro Wax.



**Note:** Most new FIS level skis are shipped quite flat and with a very good structure, so a full-grind may be neither needed NOR desirable. Please evaluate existing ski condition before beginning work.

<b>Junior Tuning Masters Tuning</b>	<b>Initial Prep</b>	<b>Maintenance</b> by hand only
<b>Base flatten/Structure</b>	NW universal or chevron grind (tech), or speed grind 0.0005 inch flatness tolerance, usually done by machine, hand finish	Touch up structure & maintain flatness with hand tools
<b>Base Bevel</b> (degrees)	SL = .7(u14) .5(u16), GS = 1(u14) .7(u16), SG/DH = 1 w/ 1.5 12" from shovel and 6" from heel.	Using guides, hand stone base edge to remove damage and burrs.
<b>Edge Bevel</b>	SL and GS= 3 degrees, SG and DH= 2 degrees	Using guides, hand stone or file side edge as required.
<b>Side wall</b>	Remove with sidewall planer, back filled at 7-10 degrees, blend and smooth. Moderate material removal to preserve edge strength.	Minimal additional sidewall work to maintain access to the side edge
<b>Top Edge</b>	Add shape and round top edge and tip/tail protectors	Maintain smooth round top edge
<b>Base Cleaning</b>	Multiple Warm Scrape cycles	Brush clean and/or Warm Scrape
<b>Waxing</b>	Hot wax with Prep Wax, full scrape brush and polish, finish with Low Fluro wax	Cork, Wax Wizard or hot wax, full scrape brush, polish use low fluro
<b>Optional</b>	Multiple wax cycles and hotboxing	Waxing with High Fluro waxes

**Note:** Most new FIS level skis are shipped quite flat and with a very good structure, so a full-grind may be neither needed NOR desirable. Please evaluate existing ski condition before beginning work.

<b>FIS Tuning</b>	<b>Initial Prep</b>	<b>Maintenance</b> by hand only
<b>Base flatten/Structure</b>	NW universal or chevron (tech) or speed grind, 0.0005 inch flatness tolerance, usually done by machine, hand finish	Touch up structure & maintain flatness with hand tools
<b>Base Bevel</b> (degrees)	Slalom = .5, GS = .7, SG/DH = 1 progressive 1.5 12" from shovel and 6" from heel.	Using guides, hand stone base edge to remove damage and burrs.
<b>Edge Bevel</b>	SL and GS= 3 degrees, SG and DH= 2 degrees Optional: Slalom = 4 degrees	Using guides, hand stone or file side edge as required.
<b>Side wall</b>	Remove with sidewall planer, back filled at 7-10 degrees, blend and smooth. Radical material removal to maximize carving performance.	Re-plane, blend and smooth side walls every few days. Wax side wall prior to races.
<b>Top Edge</b>	Radically Shape and round top edge, particularly tip and tail protector to maximize carving power.	Maintain smooth round top edge
<b>Base Cleaning</b>	Multiple Warm Scrape cycles	Brush clean and/or Warm Scrape
<b>Waxing</b>	Hot wax with Prep Wax, full scrape brush and polish, finish with Low Fluro wax	Cork, Wax Wizard or hot wax, full scrape brush, polish use low fluro
<b>Optional</b>	Multiple wax cycles and hotboxing	Waxing with High Fluro waxes and pure fluro speed wax

Cap skis and laminate skis require slightly different preparation techniques. For more details, see <http://www.cmacskiracing.com/Tuning>