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
Base flatten/Structure	NW universal grind 0.0005 inch flatness tolerance, usually done by machine, hand finish	Touch up structure & maintain flatness with sandpaper & planer
Edge Bevel	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
Side wall and Top edge	Back-file/relieve side wall to allow easy sharpening, removing minimal material	Smooth top edge and maintain side wall relief/back file
Base Cleaning	Wax remover and/or Warm Scrape as required preferring warm scrape whenever possible	Warm Scrape and/or brush cleaning,
Waxing	Hot wax with hydrocarbon wax, full scrape, brush and polish	Cork, Wax Wizard or hot wax, full scrape brush and polish
Optional	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.

Junior Tuning **Masters Tuning**	**Initial Prep**	**Maintenance** by hand only
Base flatten/Structure	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
Base Bevel (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.
Edge Bevel	SL and GS= 3 degrees, SG and DH= 2 degrees	Using guides, hand stone or file side edge as required.
Side wall	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
Top Edge	Add shape and round top edge and tip/tail protectors	Maintain smooth round top edge
Base Cleaning	Multiple Warm Scrape cycles	Brush clean and/or Warm Scrape
Waxing	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
Optional	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.

FIS Tuning	**Initial Prep**	**Maintenance** by hand only
Base flatten/Structure	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
Base Bevel (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.
Edge Bevel	SL and GS= 3 degrees, SG and DH= 2 degrees Optional: Slalom = 4 degrees	Using guides, hand stone or file side edge as required.
Side wall	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.
Top Edge	Radically Shape and round top edge, particularly tip and tail protector to maximize carving power.	Maintain smooth round top edge
Base Cleaning	Multiple Warm Scrape cycles	Brush clean and/or Warm Scrape
Waxing	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
Optional	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