Snow Ski Technical Manual

Revision: 081117X

Contents

CARBON INNOVATION

Dear GOODE Skier:

In 1995, I set out to build skis that were faster, lighter in weight, more powerful, easier to turn, and more fun than any snow ski ever built. I knew that in order to build the best possible skis, I would need to reinvent the way skis were designed and manufactured.

My research led me to select CARBON FIBER as the main ingredient. CARBON FIBER has over six times (6X) the strength-to-weight ratio over fiberglass/Titanal, the stuff (materials) used to build all other skis. CARBON FIBER skis are not only stronger, but lighter, and more reactive.

However, as with anything, there are trade-offs. CARBON FIBER is expensive, has longer molding cycles, and needs to be processed by hand. I realized GOODE Skis could never be mass-produced.

So, today we build each GOODE Ski by hand, one at a time, with the same passion that my staff and I share for skiing. Our small production team takes pride in the quality of their work. We're proud to be building the only all CARBON FIBER skis built in the world.

I hope you enjoy your skis.

Sincerely,

Dave Goode
President/Founder
GOODE Ski Technologies USA
www.goode.com

PS. Feel free to contact me at goode@goode.com .

GOODE Skis

Attributes

- Unique Construction- built like no other ski in the world.
- ALL CARBON Fiber construction, including the core (no wood).
- Lighter – up to 50% the weight of conventional skis. Less weight – easier to turn.
- Stronger – CARBON at less than ½ the weight and has over 2X the strength.
- High Flex/Torsion Ratio – The softer flex allows for easy turning. The stiffer torsional flex allows the ski to hold better.
- Smooth/Quiet – 5 full length dampening ribs deliver a smooth/quiet glide.
- Performance Sidecut – Engineered to provide great all-mountain performance.
- Hand Built – Each pair of skis is built by hand (not mass produced).
- Satisfaction Guaranteed
- 1 Year Warranty

NOTES:

Snow Ski Terminology

Base - the bottom surface of the ski that aids in gliding.

Camber - the curvature of the ski's base that helps distribute the skier's weight over the length of the ski. Camber is the internal arc that is built into the ski.

Cord length - the overall length of the ski.

Dampening - the reduction of ski vibration or "chatter".

Edge - the metal surface on the ski that aids in snow holding.

Flex/Torsion Ratio - the relationship of a ski's longitudinal flex to its torsional flex. Softer longitudinal flex and stiffer torsional flex provide more stability.

G-SPT - GOODE's Patent Pending "**S**ki **P**erimeter-weighting **T**echnology" increases the skis rotational inertia, giving the skis more stability.

Length - the measurement in centimeters (cm) from the ski's tip to its tail.

Longitudinal flex - the measured amount in which the ski flexes along its length.

Profile - the outline of the ski when viewed from the top or bottom.

Running surface - the total area of the ski that contacts the snow's surface when the ski is flat.

Side cut - the "hourglass" shape a ski has as a result of a wide tip and tail and a narrow waist. Tip, waist and tail are measured in millimeters (mm).

Swing weight - the rotational mass of the ski - a lower swing weight allows quicker turn initiation.

Tail - the rearward most part of the ski.

Tip - the forward most part of the ski.

Torsional flex - the measured amount in which the ski flexes along its width or the amount in which the ski "twists".

Weight - the physical mass of the ski.

Binding Installation

Quality binding installation is essential for maximizing ski performance and ensuring proper binding function. The following instructions are recommended for all GOODE skis.

Normal Binding Installation Procedure:

1) Adjust the binding installation jig to the boot and lock in position per the binding manufacturers instructions.
2) The CARBON series skis are mounted at a **mid-sole** position. Position the mounting jig so the boot mid-sole is aligned with the “MID SOLE” mark on the binding platform. Mounting position for female skiers can be up to 2cm forward for optimal turn initiation performance.
3) Use a 3.5~3.8 mm diameter drill bit 9.5mm long. Do not drive the shoulder into the binding platform, as this could make the hole too deep.
4) Thoroughly clean debris out of the hole and scrape or file off any material sticking above the top of the hole.
5) Partially fill the holes with a waterproof glue (white glue) that is not water-based, or epoxy, before installing the screws. This will seal the hole. We recommend Gorilla Glue which is available at most hardware stores and Home Depot.
6) Drive all screws into the ski as recommended by the binding manufacturer to a torque value of 4 N-M. Double check to make sure the screws and binding are fully seated on the ski. Do not over torque the screws.
7) Inspect the final installation per the binding manufacturer procedures.

Special Binding Mounting Considerations: (mainly for Randonee, BC and Tele)

1) If the hole is damaged it must be repaired before binding installation. Fiberglass or Carbon wool and epoxy is recommended. Re-drill and tap the hole after the hole is filled and the epoxy has cured. Drilling a larger hole for repair is not recommended.
2) Removal of the binding plate for binding or riser plate mounting can be done. You can use a citrus based adhesive remover then clean with ski top with alcohol. If removal is necessary make sure the ski is at least 12 mm thick where a standard binding mounting screw is installed. If the ski is thinner the screw and drill bit must be at least 3 mm shorter than the full ski thickness. Drilling the hole deeper or using a longer screw could damage the lower laminate and significantly reduce the strength of the ski.
3) Special care and inspection must be performed when mounting a telemark or 3-pin binding. The screws must be of adequate thread thickness for screw retention strength. Replace the screws with a proper length alpine binding screw if the threads are thin in comparison. Measure to make sure the screw does not project more than 8.5 mm below the binding. 3-pin toe pieces with a tight cluster of screw holes must not be directly mounted to the ski. Mount the toe piece onto a riser or adapter plate with screw holes at least 7 cm apart along the length of the ski. Mounting a 3-pin toe piece with a tight cluster of screw holes directly onto the ski is not advised and may void the warranty for related damage.
4) When mounting a telemark or randonee binding check to make sure all holes line up with the binding platform before drilling. Adjust the position as necessary. Use a two-part high quality epoxy on all screw locations. With Dynafit style bindings, add epoxy glue under the toe piece.
5) Drilling extra holes or re-mounting a binding may void the warranty for related damage. Extra holes must be at least 2 cm apart, as measured down the length of the ski. Drilling extra holes less than 2 cm apart may dramatically reduce the strength and durability of the ski.

Wide Ski Special Warning: Be sure that you have ski brakes wide enough to accommodate the ski's width. Appropriately sized binding installation jigs must be used to insure proper centering of the binding.

Ski Spec and Binding Mounting

Special Warning: *Double check Mid-Sole mark on binding plate prior to mounting. All dimensions are measured from the tail of the ski. Double check screw length.*

Ski Model Specifications	Ski	Length	MM				M Turn	Mounting Location	
Model	Color	CM	Tip	Waist	Tail	Sidecut	Radius	Inch	CM
C64		155	116	64	101	22	10.5	27.0	68.5
C64P-FIS		166	109	64	100	22	11.8	28.3	72.0
C64		166	117	64	100	22	11.8	28.5	72.5
C64		175	110	66	96	18	16.5	30.1	76.5
C64		185	101	64	91	21	11.8	32.1	81.5
C64P-FIS		191	91	65	81	17	27.0	0.0	0.0
C68		155	113	68	102	20	11.3	27.0	68.5
C68		165	114	68	101	20	13.1	28.3	72.0
C68		175	114	68	101	20	15.0	30.1	76.5
C68		185	115	68	100	20	17.0	32.1	81.5
C68L		155	113	68	102	20	11.3	27.6	70.0
C68L		165	114	68	101	20	13.1	28.9	73.5
C74		154	117	74	103	18	12.3	26.8	68.0
C74		164	117	74	103	18	14.2	28.1	71.5
C74		174	118	74	102	18	16.3	29.9	76.0
C74		184	119	74	101	18	18.5	31.9	81.0
C74L		154	117	74	103	18	12.3	27.4	69.5
C74L		164	117	74	103	18	14.2	28.7	73.0
Randonee Race		160	92	64	78	10	23.0	27.2	69.0
C82 & BC82		156	119	82	109	16	14.2	26.6	67.5
C82 & BC82		166	119	82	109	16	16.4	28.0	71.0
C82 & BC82		176	120	82	108	16	18.8	29.7	75.5
C82 & BC82		186	120	82	108	16	21.3	31.7	80.5
C95 & BC95		162	125	95	113	12	20.7	27.8	70.5
C95 & BC95		172	125	95	113	12	23.8	29.5	75.0
C95 & BC95		182	126	95	112	12	27.0	31.5	80.0
C95 & BC95		192	126	95	112	12	30.5	33.5	85.0
C106 & BC106		167	133	106	117	12	27.0	28.3	72.0
C106 & BC106		177	133	106	117	12	28.0	29.7	75.5
C106 & BC106		187	133	106	116	12	29.0	32.1	81.5
163 C116 & BC116		163	138	116	124	8	32.2	28.0	71.0
183 C116 & BC116		183	139	116	123	8	42.1	31.7	80.5
Scoop		193	143	120	127	8	46.8	34.1	86.5
Scoop		183	141	118	125	8	37.3	32.3	82.0
Scoop		173	126	95	113	12	28.0	30.5	77.5
STR8		181	140	135	130	0	0.0	31.3	79.5
Monstro		186	143	120	127	8	46.8	30.7	78.0
Monstro		176	141	118	125	8	37.3	28.7	73.0
Vision 95		195	126	95	113	12	28.0	33.9	86.0
Vision 95		185	126	95	113	12	24.7	32.3	82.0
Vision 95		175	125	95	114	12	21.6	30.5	77.5
Pash 80		188	117	80	106	16	20.2	32.7	83.0
Pash 80		178	117	80	106	16	17.7	30.1	76.5
Pash 80		168	117	80	106	16	15.5	28.9	73.5

Tuning

All GOODE Skis are factory tuned to the recommended specifications. These tuning specifications are only for GOODE Skis. It is better to have the skier try the skis on the hill with the factory tune specifications than to modify them to other specifications. Changes to the factory tune should be justified based on skier performance feedback. The base is an ultra-high molecular weight sintered graphite race quality base material. General Tuning Specifications are as follows:

Property	Value	Comments
Base Edge Bevel	1 degree	Full edge width only. If customer notes excessive grabbiness, 1. Check for burrs, 2. Check angle consistency, 3. Polish edge.
Side Edge Bevel	2 degree	
Base Finish	Medium	Adjust for local and seasonal conditions
Tip Edge Bevel	None full sharp no burrs	Adjust per customer specifications. De-tune as a last resort.
Tail Edge Bevel	None full sharp no burrs	Adjust per customer specifications. De-tune as a last resort.

Base Flatness

Generally the base must be stone-ground as flat as possible. Slight concavity in the shovel area is not a cause for concern unless, after skiing, a negative performance attribute is related to the concavity. Burrs or edge curl should be the first area of investigation for grabby or control issues.

Base Finishing

The factory base structure is a very versatile multi-condition finish. Adaptations can be made to match local conditions and seasonal variation. For specific finishing machine set-up conditions consult your tuning equipment manufacturer's specifications.

Base Edge and Side Edge Tuning

Refer to the above specifications for proper edge angles. These specifications in conjunction with a full-length sharp edge that is smooth or polished will provide excellent performance.

The combination of specific fiber orientation and the extremely high modulus of carbon fiber allows us to design skis with very aggressive edge hold at the tip and tail. The torsional stiffness of many of our skis is greater than high performance and racing stock aluminum (sometimes referred to as titanium) skis. The very light weight of carbon skis also increases their reactivity and responsiveness. The flex profile tuning of all GOODE Carbon Fiber Skis was chosen to provide the best all around performance. Some tip de-tuning may be desirable for skiers wanting a smoother and less aggressive feel. Adjust only as needed, after slope testing, to address any negative performance related issues that can be associated with a sharp tip or tail.

Because of the high torsional stiffness and relentless edge hold of a GOODE Ski the main edge tuning issue is removal of burrs on the edges from tuning, handling, or slope damage. Burrs or edge curl should be the first area of investigation for grabby or control issues.

Wax

Wax is good. Use it as often as possible to maximize the performance and fun of skiing.

Download the most current revision of this manual at: www.goode.com/ssbindings.html

GOODE's - G-SPT™
Ski Perimeter-weighting Technology™
For Increased Stability and Control.

Weights on skis?

Your lightweight Carbon-Fiber skis will still be nimble and quick underfoot, but will have improved tracking & stability when you ski in crud or uneven snow.

How does it work?

Let's skip the engineering jargon and look at an example. A figure skater or freestyle skier can control how fast they spin by extending or retracting their arms. Similarly, by placing small (75-gram) weights at the tip and tail of the ski we can make the ski more resistant to rotation. It will have the stable feeling of your old Volkls or Volants in the crud, but still have the incredible lightweight performance that is only available with aerospace-quality carbon fiber.

Why don't other skis have this?

Ski manufacturers have tried various, add-on stability / anti-vibration systems in the past. However, none truly lived up to the promises made. The ***G-SPT™*** system works because of the inherent light-weight of an all Carbon-Fiber ski. We have only added 12.5% to the weight of the ski and yet it is still far lighter than anything on the market. Traditional wood/fiberglass ski manufacturers achieve their stability by just making the ski heavy.

Any other benefits to a Carbon Ski? Two words: Torsion and Flex!

Torsion (torsional stiffness) means a resistance to twisting. When carving at speed across a "firm" surface, the ski's torsional stiffness is what allows your edges to hold you in your turn. **Flex** (bending stiffness) is how most people check ski stiffness. Most skis have to be stiff to achieve high torsional stiffness. Carbon is different: we can arrange the fibers so that the ski is 2-4X stiffer torsionally and yet easy to bend, yielding a forgiving, high performance ski for all conditions.

Bicycles, tennis racquets, aircraft, and a myriad of other performance-oriented products have made the switch to Carbon Fiber. The Patent Pending ***G-SPT™*** system takes full advantage of *GOODE's* lightweight Carbon Fiber construction and utilizes perimeter-weighting to allow a skier to make efficient turns with minimal effort in even the most challenging snow conditions.

Warranty

GOODE skis carry a limited warranty for one year from the date of purchase. This limited warranty is void unless registered with GOODE. GOODE will replace (at GOODE's option) the skis if found to be defective as to workmanship or material. This warranty does not extend to damage resulting from misuse, neglect or abuse, normal wear and tear, accident or exterior appearance or color, breakage (except breakage resulting from manufacturing defects), improper dealer service, or improper mounting of bindings.

This limited warranty extends only to the original consumer who purchased new skis from an authorized GOODE ski dealer, that also mounted the bindings onto the skis. In the event the bindings are changed within the one year period, they must be remounted by a GOODE dealer.

In no event shall GOODE be liable for incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation exclusions may not apply. All implied warranties or merchantability or otherwise are limited in duration to one year following the date of purchase.

If a defect arises in the skis within the limited warranty period, the user should promptly return the product to the authorized GOODE dealer from whom they were purchased. GOODE will not be responsible for any costs, such as, but not limited to, removing bindings, remounting bindings, handling, shipping or insurance. If the skis are replaced, the replacement product is covered only for the remainder of the original limited warranty period dating from the purchase of the original skis.

Furthermore, if skis that need to be replaced are a discontinued model, they will be replaced with skis of comparative performance. Please allow four weeks for completion of repairs or of replacement and return of your product. This limited warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Warranty Procedures

Warranty service is very important to everyone concerned. Therefore, we ask that you comply with the following procedure to ensure efficient service or replacement. No returns will be accepted without prior return authorization from GOODE. Compliance with these procedures will ensure the quickest possible resolution of your warranty claim.

To Obtain Return Authorization

An authorization number may be requested by email at goode@goode.com or phone: **801-621-2300**

Be ready to provide the following information:

a. Purchaser's name, shipping address, email address and phone number.
b. Model of skis
c. Length
d. Serial number of ski
e. A brief description of the damage
f. Record the Return Authorization Number which is assigned to your warranty return.

To Return Warranty Skis

1. Attach a copy of the PROOF OF PURCHASE to the skis.
2. Package the skis carefully to prevent further damage.
3. Write the RETURN AUTHORIZATION NUMBER clearly on the outside of the carton being returned.
4. Ship the skis FREIGHT PREPAID to:

GOODE Ski Technologies, 2450 Wall Ave., Ogden, Ut 84401

 Revision: 081117X