Spike snow

User Manual for Spike Snow (seated)

Made by SmartGroup AS

Safety

- Use of Spike beyond what is presented in this manual may result in a risk and is not recommended.
- Be aware of your ski pole usage near other people, the danger of hitting bypassers with your poles or getting hit by other's poles in the ski tracks.
- Take into account your own skill level when planning your Spike rides.
- Ensure that screws and nuts are tightened in accordance with chapter 4.1 before use.
- Be aware of the risk of clamping your fingers, especially during assembly / disassembly, see chapter 6.4.
- Use a helmet if using Spike Snow on ice.

User Manual

SPIKE SNOW
(seated)

Here at SmartGroup, we have always enjoyed being physically active, and it's our wish to bring that enjoyment to more people.

Working closely with athletes, we developed Spike Snow to create opportunity and help fulfill wishes and dreams.

We hope you love it as much as we do.

Enjoy!

CE

Spike is CE-marked by Medical Devices Regulation ((EU) 2017/745) in relation to NS-EN 12182:2012 and NS-EN 14971:2012

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1 INTRODUCTION

Read the User Manual before using Spike Snow. This will ensure safe use of the product. Read especially chapters 1, 2 and 3 before using the product for the first time. Use procedures in chapter 4 every time the product is to be used.

Digital manual available (www.smartgroup.no). This will be regularly updated with eventual revisions. Users are therefore encouraged to keep themselves updated on new developments.

Especially important information in this manual is marked with:

1.1 Safety warning

SmartGroup has the following introductory recommendations for users:

1) Use of Spike Snow outside what is presented in the manual can lead to risk and is not advised. Before use, note especially chapter 2 in this manual for safety.
2) Wear and bring enough warm clothing when riding Spike Snow.
3) Bring your cell phone when riding Spike Snow so that you can call for help if necessary.
4) Be aware of symptoms of hypothermia and frostbite when riding Spike Snow in cold conditions. The product can get cold surfaces when stored outside or in cold conditions.
5) We strongly discourage riding Spike Snow in traffic or on other surfaces than groomed ski trails.
6) Be alert when using poles around others, and the risk of hitting passers-by with the poles or getting hit yourself.
7) Be aware of your own capabilities and adapt to your activities.
8) Check that screws and bolts are securely tightened, belts intact and that the skis are properly attached as described in chapter 4 before use.

9) Pay attention to avoid trapping fingers, especially during assembly/disassembly, see chapter 6.4.
10) Use a helmet when using Spike Snow on ice, and handle ice skates with care because of the sharp blades.

1.2 Intended use

1.2.1 Target audience

The target audience for Spike Snow are:

- people with permanent handicaps in the lower half of their body.
- people with temporary injuries in the lower half of their body.
- people looking for alternative ways to exercise.

Spike Snow is firstly made for exercise and staying active where the duration of the activity is dependent on the user's physical capability. This product is not considered a replacement for a wheelchair, prosthetics or similar equipment the user relies on in everyday life.

1.2.2 Application and usage

Spike Snow is designed to be used for cross country skiing on groomed trails. The Spike Snow athlete is positioned with belts over the hips, thighs and ankles. The upper body is used to create forward propulsion by using ski poles, in the same way as standing cross-country skiing.
Controlling Spike Snow is done by placing your weight on the side which follows the tracks or by "twisting" against the ground, thus changing direction. When changing ski tracks, the poles are placed in the ground and the athlete "lifts" himself and Spike Snow out of the track. Using ice skates Spike Snow can be used on ice tracks and trails.

1.2.3 User requirements

In order to use Spike Snow, the following user requirements are demanded:

- Spike Snow must only be used by people who understand how getting on and off, steering and braking are executed.
- Spike Snow has a maximum user weight of 110 kg or 240 lbs.
- The user must have adequate motor skills to handle the use of poles.
- The user must have adequate motor skills in their upper body to handle steering and maneuvering of Spike Snow.

1.2.4 Disclaimer

As Spike Snow is supplied today it is not intended, tested or approved for any of the following uses. SmartGroup can not be held responsible for use or damage caused by the following activities or conditions:

- Riding down a slalom hill or similar steep declines, summer or winter, also known as Downhill.
- Riding at speeds above 25 km/h. This may lead to lack of control and dangerous situations.
- Used in relation to kiting or subsequent sails leading to excessive speed and other dangerous situations.
- Equipping Spike with a motor of any kind. The product is only tested for non-motorised riding.
- Making alterations from the original version or installing other equipment, parts or components than those provided by SmartGroup or approved by SmartGroup.
- Repairs or alterations on Spike that are not executed or approved by SmartGroup. All warranty repairs should be executed by SmartGroup Technologies or a service partner approved by SmartGroup.
- Circumstances where Spike is used by someone other than the owner/user, unless otherwise agreed upon with SmartGroup.

- Usage under the influence of alcohol, recreational drugs or other strong medication, as this affects your responsiveness and focus which can potentially harm the user or bystanders.
- Cleaning with products containing acid or alkaline, and cleaning with a pressure cleaner or similar high powered equipment.
- Weight exceeding 110 kg or 240 lbs.
- Riding with draft dogs.

1.3 Main components

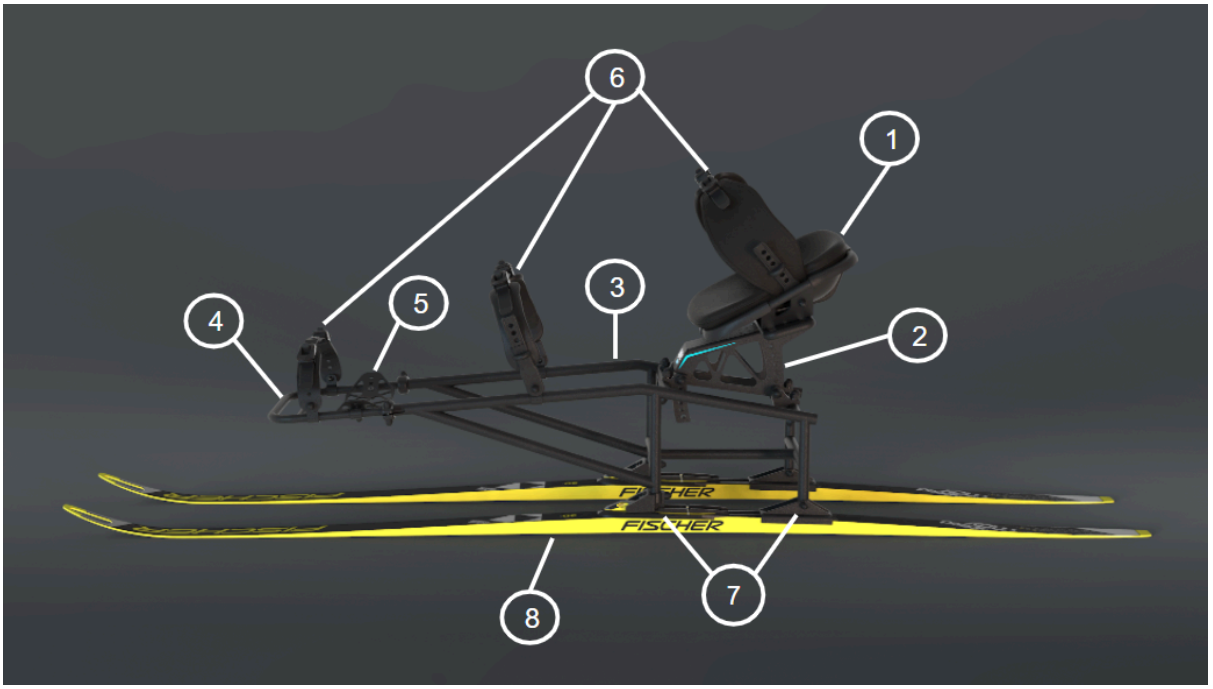


Figure 1.3 - Spike Snow.

1. Adjustable seat w/cushion
2. Seat arm with brackets
3. Aluminum main frame
4. Footrest
5. Foot support
6. Belts for hips, thighs and ankles.
7. Ski attachment
8. Skis*

**Fischer skis and Swix poles can be added for an additional amount.*

1.3.1 Technical data

Technical data	
Weight	5,1 kg or 11,2 lb (without skis)
Measurements	H: 476 mm B: 370 mm L: 1075 mm
Max user weight	110 kg or 240 lb
User height	150 - 200 cm or 4’9” - 6’5”

Table 1.3 - Spike Snow data.

1.4 Shipping and handling

The following is standard delivery:

- Spike Snow including seat cushion and belts (see ch. 1.3 for illustrations and lists over main components*)
- Extra rubber knobs
- User manual
- Spike Performance T-shirt

**Swix poles in the recommended length and Fischer skis with the recommended length and tension can be added for an additional amount.*

Chosen extra equipment based on personal price quote (see ch. 3.5)

SmartGroup AS delivers Spike Snow to the user partially assembled (skis and poles are sent separately), and to the users address unless otherwise agreed upon. Spike Snow can be adjusted to the user by SmartGroup before shipment, or after by the user themselves through SmartGroup guidelines and video tutorials.

1.5 Warranty

SmartGroup warranty is only valid if the product is used in accordance with its intended use and the instructions listed in this manual. Spike Snow has a 2 year warranty and 5 year lifetime with the exception of considered natural wear and tear from use. *5 years lifetime is assuming the product has been maintained according to the manual.* Parts **without** a 2 year warranty and is considered expected consumables are:

- Poles (incl. ferrule rollers and hand straps)
- Skis
- Bindings

If Spike Snow's functioning is not satisfactory, contact your relevant distributor if bought through a distributor or SmartGroup directly.

SmartGroup AS can be contacted by emailing **post@smartgroup.no** or find contact information to our employees here:
https://smartgroup.no/en/about/#team

2 SAFETY

This chapter covers the general and special safety instructions. It is very important that Spike Snow users read the safety instructions before use to reduce risk of accidents and injuries.

2.1 General safety instructions

As with other physical activity, there is a degree of risk when using Spike Snow. It is important for you, as the user, to familiarize yourself with the dangers and take the correct precautions stated in this manual. Here are some general safety instructions the user should be aware of on what can occur when using Spike:

- Spike Snow must only be used in accordance with the instructions provided in this manual.
- Spike Snow can tip over. Familiarize yourself with the use of weight distribution, and be especially aware of this when riding in rough terrain. Get to know how to get up on your own in case you are riding by yourself and are tipping over.
- Spike Snow must only be used by one person at a time.
- Spike Snow must not be used in stairways.
- Spike Snow must not drive over obstacles in steep declines. High speed and running over obstacles can create stability changes and lead to tipping or crashing.
- Avoid getting in and out of Spike Snow in hills.
- Seat cushions are flammable, and must therefore not be near open flame.
- If parts of Spike Snow are damaged or worn out, they must be changed before continuing use to avoid damages on people and material.
- Engaging in physical activity while strapped in can provoke spasms. We therefore recommend people who often experience spasms to contact a doctor, physical- or occupational therapist before use.
- Avoid storing Spike Snow in direct sunlight, and be aware that use in direct sunlight can lead to hot surfaces.

- Spike Snow is not testet for riding behind a dog team or dog drafts, avoid this.
- Be careful when using Spike Snow in cold temperatures in regards to freezing. Remember to wear enough clothes and change for longer trips. Bring your seat cushion indoors or store Spike Snow indoors to prevent the seat cushion from freezing.

2.2 Special safety instructions

This chapter presents four special safety instructions that we ask you, as the Spike Snow rider, to read carefully before use. These are instructions that may be new to many and concern **1)** Pressure ulcers, **2)** Use of poles, **3)** Hypothermia and frostbite

2.2.1 Especially important - pressure ulcers

People who often experience getting pressure ulcers should consult with their doctor or occupational therapist (OT) before using Spike. Factors that are likely causes of pressure ulcers are listed below:

- **Time** is a deciding factor for the formation of pressure ulcers, and the likeliness increases when sitting in the same position over an extended period of time. Spike can be equipped with pressure-easing cushions and pads (see list of extra equipment), but with people who have high risk of getting ulcers we recommend consulting with an OT or doctor before use. Based on experience and user testimonies for Spike Snow, 20-180 min is considered to be a natural duration per session.

- If Spike Snow has been exposed to rain or moisture, we ask the user to make a precautionary assessment of whether or not the product can be used. **Moisture** can raise the risk for ulcers if the skin is exposed over

longer periods. The same applies to sweat or wet clothes, the user is therefore recommended to use dry clothes when able.

- **Friction** can be a likely cause for ulcers developing. To avoid unnecessary friction, Spike is equipped with strong straps that can be tightened well. Meaning that the user can strap themselves in a way that creates minimal movement between the body and Spike Snow. This will contribute to reducing the likelihood of ulcers developing.

- **Cold temperatures** are also an important factor to be aware of. Frostbite can occur due to poor clothing or long exposures to freezing temperatures. Be aware that the cushions can become hard if Spike Snow is stored outdoors during cold temperatures. Therefore, always store the cushions indoors when you're not using Spike Snow. (See ch. 2.2.3 Hypothermia and frostbite)

2.2.2 Especially important - Use of poles

To create forward propulsion, the poles are planted in the ground simultaneously on each side of Spike Snow. The user should only use poles in safe and sound conditions. The poles have sharp spikes for optimal surface grip, which also demand caution to avoid injury, see figure 2.2.2.

If the user is riding in crowded areas we recommend practicing caution and lowering speed, as others can be struck. When passing people the poles must be held backwards to avoid injuring others. This also goes the other way around, be careful and aware of others' use of poles. The user should not use poles where the spikes can damage the surface, for example on an indoor course. When transporting Spike it is recommended to blunt the spikes to avoid accidents.

Figure 2.2.2 - Ferrule with spike

2.2.3 Especially important - Hypothermia and frostbite

When being outdoors in cold environments it is important to be aware of the danger of hypothermia and frostbite. Being fastened in Spike Snow can affect the blood circulation in your legs and feet and the user should check for symptoms during riding. Proper clothing and the ability to contact help in the event of an accident are considered the most important measures a practitioner can take to prevent hypothermia and frostbite.

2.3 Nuts and bolts

As a safety precaution we recommend checking that nuts and bolts are securely tightened. Over time it is natural that screws and bolts can loosen from vibrations and during assembly/disassembly. Particularly important screws and bolts are described in chapter 4.1 so the user can check these each time before use.

2.4 Serial Number Sticker

Spike Snow has an unique serial number which can be found underneath the main frame profile, see figure 2.4. This says something about which parts and from which deliveries Spike Snow is made up of which gives the athlete safety if the need to replace specific parts from specific deliveries occurs.

Figure 2.4a - Serial number sticker

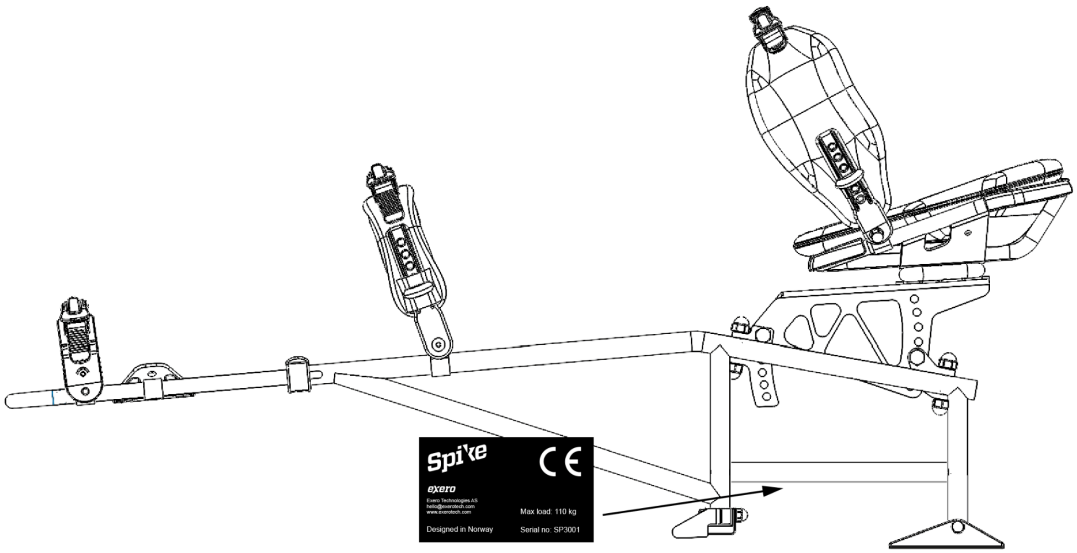


Figure 2.4b - Placement of serial number sticker

3 BEFORE FIRST USE

Before using Spike it must be inspected and checked that it is complete. All screws must be tightened and checked up against the safety instructions in chapter 4 of this manual.

3.1 Tools

The following tools are necessary to adjust and maintain Spike Snow as described in the following chapters:

Figure 3.1 - tools for adjusting Spike Snow

1. Pump for adjusting seat cushion (additional equipment)
2. Wrench 10 mm
3. Wrench 13 mm
4. Adjustable spanner
5. Swix-tool for poles

3.2 Spike Snow adjustments

When adjusting Spike Snow to the user the following must be considered:

- Body length and weight (max capacity 110 kg or 240 lbs)
- Physical and mental condition
- Ski tension

Spike Snow can be adjusted in several ways and both the sitting position and belts can be adjusted. With all adjustments where nuts and bolts are loosened, ensure that they are securely tightened before use.

If skis are purchased with Spike Snow, these will be recommended and delivered based on the user's weight and height for the correct ski tension. If poles are purchased, these will be recommended and delivered based on the users height and preferences.

In the following paragraphs we cover the various adjustments.

3.2.1 Adjusting the sitting position

3.2.1a) Seat width

Your seat width should be adjusted according to your hip width. First, remove the seat cushion and the black, plastic seat shells by pulling apart the velcro connections. Then, loosen the four nuts underneath the seat, see figure 3.2.1a below. Use a **10 mm** wrench. Nuts must be completely loosened and bolts removed. Align the two holes on the seat frame with two of the seven holes on the adjustment frame. There are five different combinations. Right and left sides of the seat are adjusted separately, but should be mounted with equal distance to center for correct balance of the product. When each part is in its desired position, push the bolts back in the track and tighten the nuts (Torque = 8Nm). Attach the plastic seat shells and seat cushion back in place.

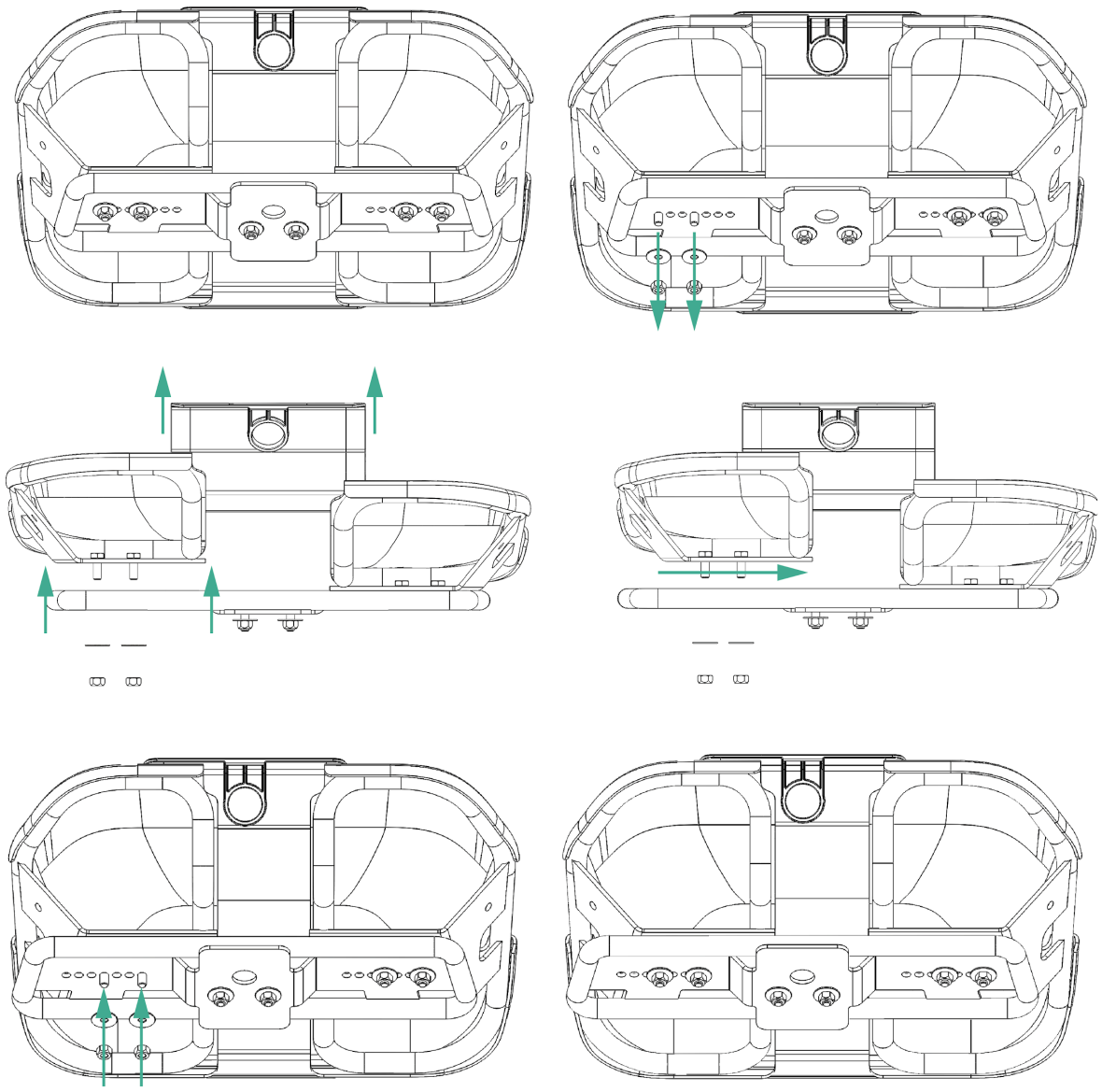


Figure 3.2.1a - Seat width adjustments (Torque = 8Nm)

3.2.1b) Seat length: the seat's location on the seat arm

There are 2 different ways to adjust the distance from the seat to the foot supports: by adjusting the seat placement or by adjusting the placement of the footrest and foot support, see chapter 3.2.1c. We recommend prioritizing adjustment of the footrest, and only adjust seat location when absolutely necessary. By adjusting the seat length it is important to consider your center of gravity to get the best out of your skis tension. This will be individual for every rider and we recommend that you try different positions to get an ideal result.

Tips for finding your ideal center of gravity:

- See how and where the ski wax wears off. Ideally it should wear equally in the front and back of the skis.
- If the ski wax wears faster in the front of the skis than the back, it is an indication that your center of gravity is too far back.

The seat's placement can be adjusted by the user. The adjustments are done by loosening 2 nuts, see figure 3.2.1b. Use a 10 mm wrench. The entire seat will be in the free position to be moved in different positions. When the seat is in the desired position, push the bolts into the holes and tighten the nuts (T=8Nm).

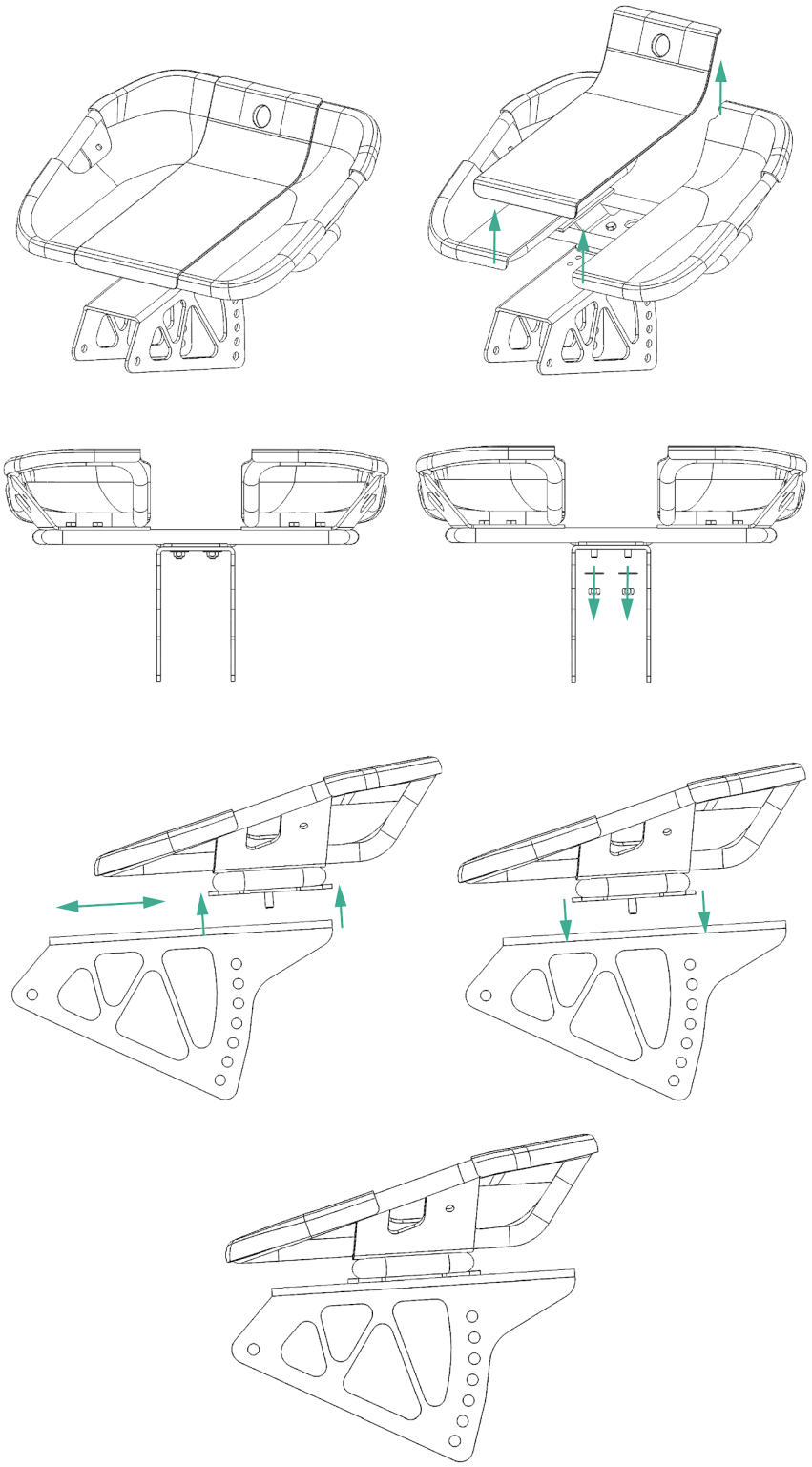


Figure 3.2.1b - Seat length adjustments (Torque = 8Nm)

3.2.1c) Seat length (Footrest and foot supports adjustments)

There is an adjustable footrest and a foot support in the front of the Spike Snow. These can be adjusted to fit different leg lengths and to provide support where needed.

Loosen the bolt on both pipe clamps without removing them completely (8mm socket). Then pull the footrest to the desired position. Tighten the both bolts (Torque = 8Nm).

Figure 3.2.1c.1 Loosen/Tighten bolt on pipe clamp (Torque = 8Nm).

Figure 3.2.1c.2 Footrest adjustments.

Figure 3.2.1c.3 Foot support adjustments.

3.2.1d) Seat angle and height adjustment

The seat angle and seat height can be adjusted to the athlete's sitting position. A steeper angle and increased seat height provide a more active sitting position that is more challenging for balance and core muscles. A lower angle and a lower placed seat provide a more passive position that does not challenge the balance and core muscles to the same extent.

Advantages and disadvantages of different seat angles are explained in chapter 5.2. The seat angle and seat height are adjusted by loosening the M8 bolts that attach the seat arm to the brackets. Adjust the angle and height to the desired position and re-insert the bolts. Make sure that the bolts are tightened (Torque = 5Nm). Tighten all four bolts gradually at the same time, to ensure a centered seat arm.

Figure 3.2.1d - Seat width and height adjustments (Torque = 5Nm).

3.2.1e) Seat cushion (additional equipment)

Spike Snow is delivered with a vacuum seat cushion, see figure 3.2.1e.1. The cushion is customizable to each individual user. The cushion's surface is made of neoprene, making it waterproof and soft. The cushion is fastened with velcro, making it easy to put it on and remove it. The cushion forms to the user's rear by the help of vacuum. This means that it is adapted to the individual and contributes to pressure relief and stabilization in the seat.
a

Figure 3.2.1e.1 - Vacuum seat cushion

Adjusting the seat cushion

The cushion's hardness and shape is regulated by adjusting the vacuum. Adjusting the cushion should happen after the sitting position has been adjusted.

1. When adjusting the seat cushion, it must be filled with air so that the cushion becomes shapeable and forms to your body. This is done by mounting the adapter to the air spout without attaching the pump and waiting 10-15 seconds so the cushion is loose and shapeable, see figure 3.2.1.5b and figure 3.2.1.5c.

Figure 3.2.1e.2 - Adapter to mount on the seat cushion.

2. Remove the adapter and attach the cushion to the seat with the velcro so the air spout is sticking out of the hole in the back of the seat.

3. Sit down in Spike and adjust the cushion to your body. Get assistance from a partner to drain air with the pump so the cushion shapes itself around your body, see figure 3.2.1e.3. Remove pump and adapter, and screw the lid on the air spout.

4. Optimal adjustment should make the cushion hard, but shaped perfectly after the user's body.

5. The process can be repeated whenever, and is recommended to revisit every season.

Figure 3.2.1e.3 - Pump and adapter mounted for draining air.

3.2.2 Adjusting belts

3.2.2a) Hip belt

The hip belt should be adjusted to the user's *waist* and *stabilizing ability* and is fastened to the seat, see figure 3.2.2a The hip belt is fastened by threading each end of the ladder straps to the bindings. The hip belt is tightened and opened.

Figure 3.2.2a - Hip belt.

3.2.2b) Thigh belt

The position of the thigh belt is adjusted by loosening the screws that attach the belt to the aluminum frame without unscrewing the screws completely. Slide the thigh belt into the desired position and tighten the screws.

The thigh belt is tightened and loosened in the same way as the hip belt by adjusting the bindings. The thigh belt can also be made longer or narrower by adjusting the attachment points on a lower or higher hole.

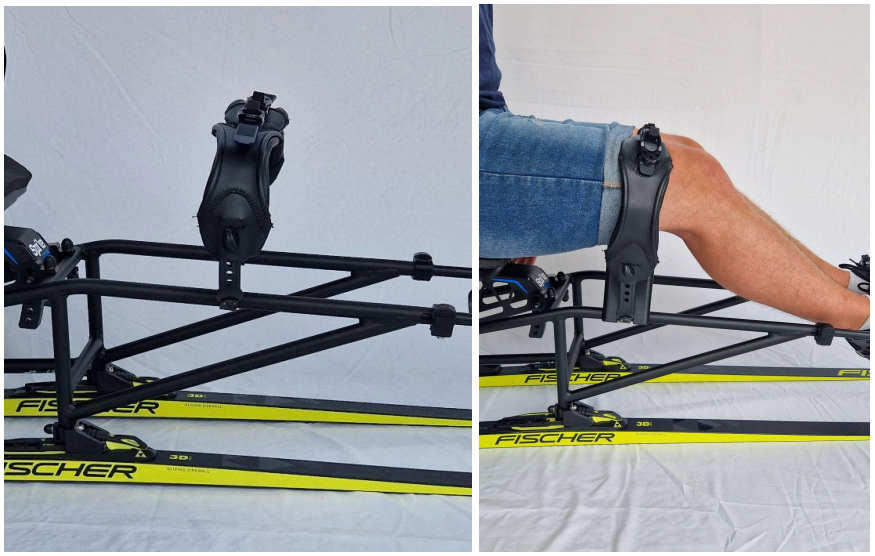


Figure 3.2.2b - Thigh belt.

3.2.2c) Foot belt

Spike comes with a foot belt that opens and closes in the same way as the hip and thigh belts. You can adjust where the foot belt is located on the footrest, and you can adjust how tight you want it.

It can be difficult to take on and off the foot belt alone. Take this into account if you are out on the ski tracks by yourself.

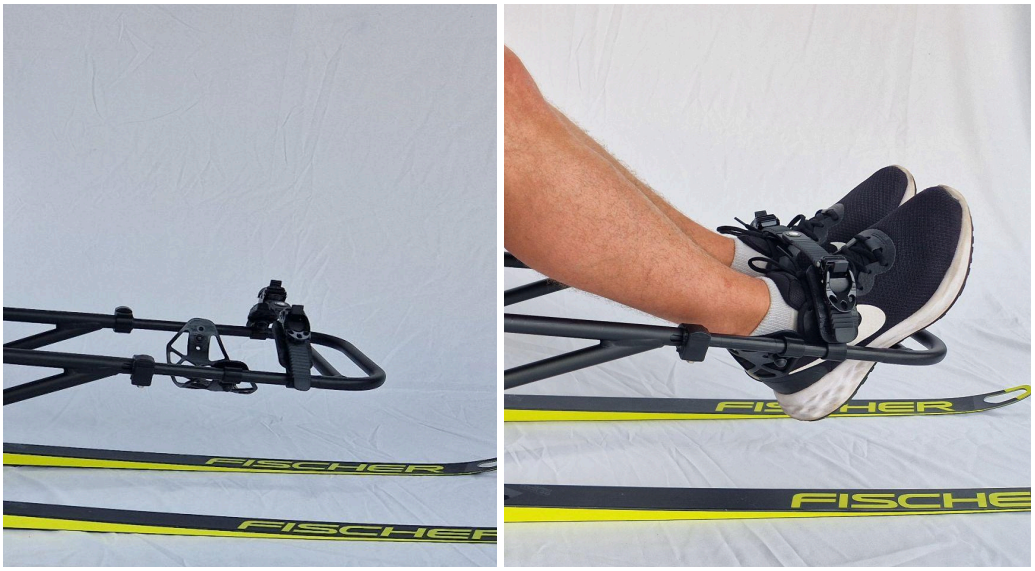


Figure 3.2.2c - Foot belt.

3.2.3 Attaching skis

Choosing skis and binding system

Spike Snow is designed to fit Turnamic-bindings. These are delivered with IFP plates by Fischer and Rossignol.

The recommended skis and choice of tension in the skis for each athlete are selected based on the athlete's body weight and technique. The ski tension should correspond to a maximum of 75% the athlete's body weight. *Example: a person with a body weight of 80 kg should have a ski with a weight tension at 60 kg.*

When it comes to the recommended ski length for Spike Snow the rule of thumb is that longer skis provide a better glide, and we recommend adults to go for a minimum 180 cm, or 0-10 cm longer skis than your height.

If you are purchasing skis from a third party, or if you bought skis from SmartGroup but are changing skis, it is important to make sure that these have the right type of binding. Contact SmartGroup if you have questions.

Attaching the skis

To connect Spike Snow with the skis, follow the steps below. We have created a video tutorial that illustrates the different steps. Please find the video through this link: https://www.youtube.com/watch?v=_2HpS2r-R1o

1. Make sure that the heel cap on the ski binding is taken off (figure 3.2.3a) and that the binding is in the open position.

Figure 3.2.3a - Make sure that the heel cap on the ski binding is off.

2. Slide the rear ski attachment onto the skis from the front (figure 3.2.3b).

Figure 3.2.3b - rear ski attachment.

3. Squeeze it together so that the front ski attachment connects with the ski binding (just like a ski boot connects with a ski binding).

Figure 3.2.3c - front ski attachment.

4. Close the binding and be assured that the ski is properly connected.
5. Repeat the process to connect the other ski.

Spike Snow and the skis need to be disconnected when changing skis or for easier transportation and storage. This can be done in the following way:

Taking off the skis

To disconnect the skis from Spike Snow, please follow the steps below. Please see the video tutorial here: https://www.youtube.com/watch?v=_2HpS2r-R1o

1. Open the binding and slide the ski downwards and out of the front ski attachment.
2. Slide the ski forward in the direction of motion.
3. Close the binding.

3.2.4 Selecting the pole length

Spike Snow comes with a set of Swix Triac cross-country poles. The length of the poles must be adapted to each individual. A starting point can be to have poles that reach the athlete somewhere between the chin and nose at a sitting position in Spike Snow. Here, the athlete's physique, desires or health will determine the length. If the athlete has experienced shoulder issues, shorter poles are recommended for less strain on the shoulders.

Figure 3.2.4 - Swix Triac cross country poles

3.3 Getting in and out of Spike Snow

Getting on and off can be a challenge in the beginning. Make sure that Spike Snow is on a flat surface so that it does not slip away when you move into it. It is recommended to grip the seat edge or on the aluminum frame in front of the seat to get a safe and good support point while transferring your body in Spike Snow.

3.4 Recommended equipment

When using Spike Snow we recommend the following equipment:

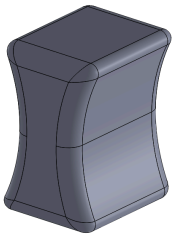
- Visible clothing, and clothing by weather conditions.
- Water/food on longer rides and preferably warm drinks on colder days.
- Extra clothing for longer rides.
- Cellphone

When riding alone, we recommend notifying someone on where you depart from and bring your cell phone to be able to call for help if needed (due to potential poles or skis breaking, if you fall, or if the weather changes quickly e.g.).

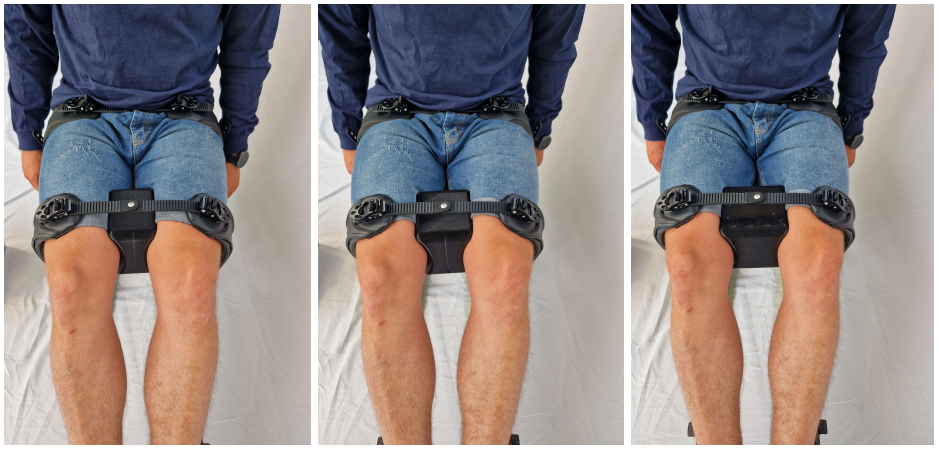
3.5 Additional equipment

If desired, Spike Snow can be used with additional equipment to increase your use and satisfaction with the product. The following equipment for Spike Snow can be ordered by SmartGroup:

3.5.1 Abduction block



Keep the thighs and knees separated. Comes in 3 different sizes; 60, 80 and 100mm.



3.5.2 Backrest

Mounting the Backrest to the Frame

1. Locate the four nuts pre-installed on the seat at delivery (see Picture 1).
2. Remove the nuts from the threaded bolts. Place the seat onto the frame (see Picture 2) and align the bolts with the mounting holes in the frame. Adjust the seat to your preferred position.
3. From underneath the frame, reinstall the nuts onto the threaded bolts and tighten securely. Tighten the nuts in a cross pattern to ensure the seat is firmly and evenly secured.

Picture 1.

Picture 2.

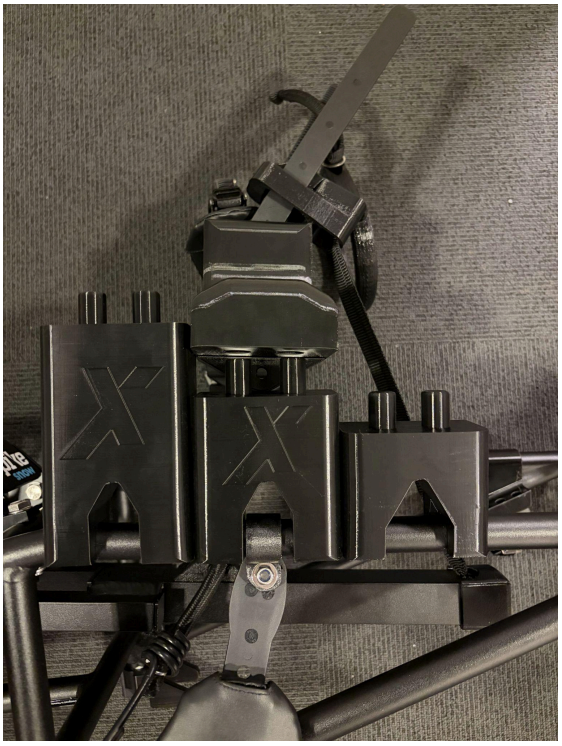
3.5.3 Bodypoint core belt

For support around your core. Can be combined with the bodypoint core belt.

For extra support along with the backrest.

3.5.4 Thigh support

The thigh support is available in three height options (S, M, L) and is assembled from three parts: a left-side frame clamp, a right-side frame clamp, and a bridge that supports the user's legs. These components are connected by stacking them together as shown in Pictures 1 and 2.



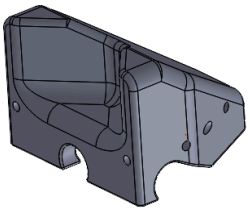
Picture 1.

Picture 2.

To support your thighs if needed using Spike Snow.

3.5.5 Pole target

To be pushed by others when going uphill etc. Attached on the back of Spike Snow.



3.5.6 Ice skates

Use Spike Snow on ice!

Isvidda Nordic Skates 55cm with Fischer Race Pro Skate IFP binding

Important! *Handle ice skates with care because of the sharp blades.*

Important! *Use a helmet when using Spike Snow on ice!*

Spike Snow with ice skates

To connect and disconnect Spike Snow with ice skates, follow the same procedures as with skies. We have created a video tutorial that illustrates the different steps. Please find the video through this link: https://www.youtube.com/watch?v=_2HpS2r-R1o

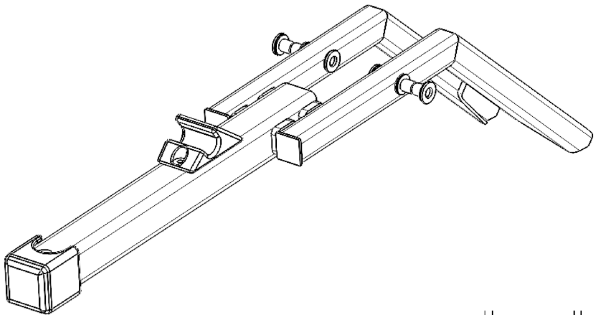
Maintenance of ice skates

Ice skates should be sharpened regularly to keep the performance. Contact a local expert or SmartGroup AS for more information.

3.5.7 Brakes

User manual for Brakes at Spike Snow

1.



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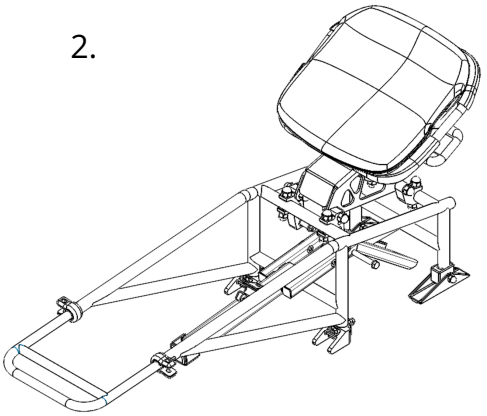

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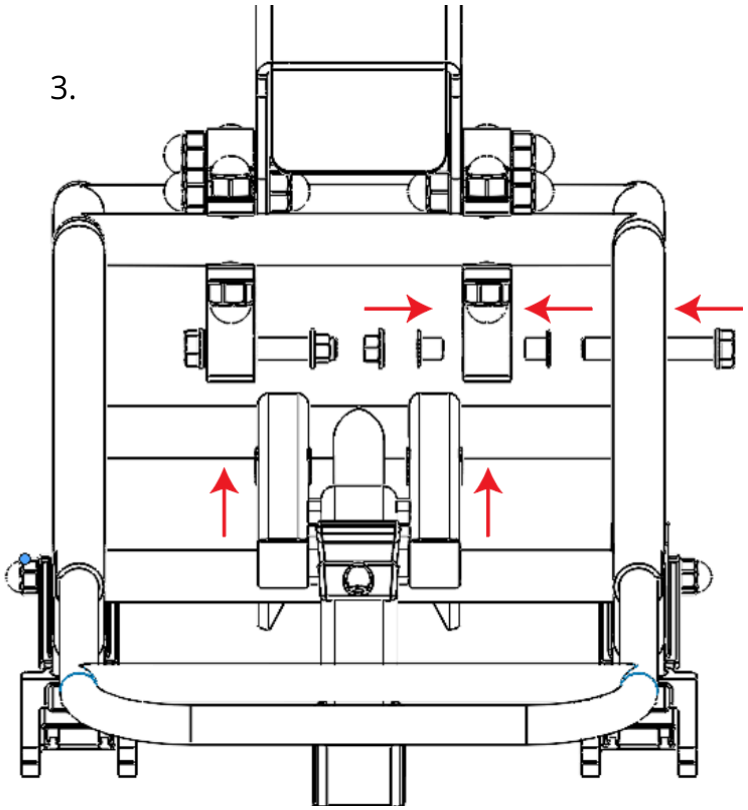
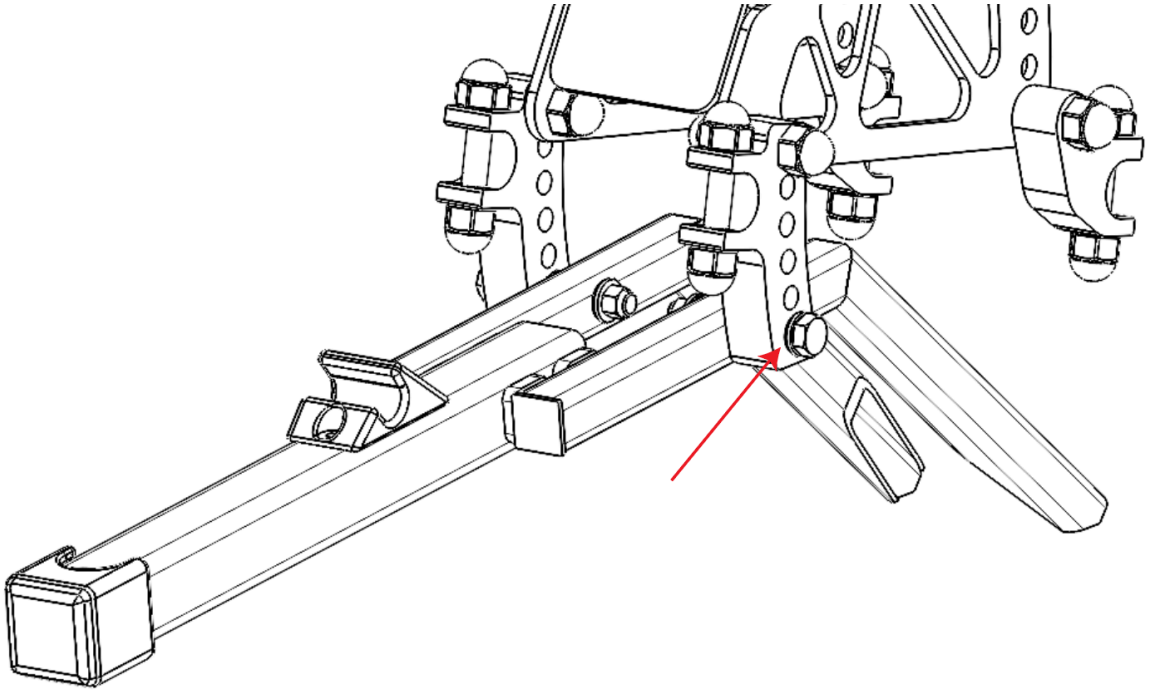
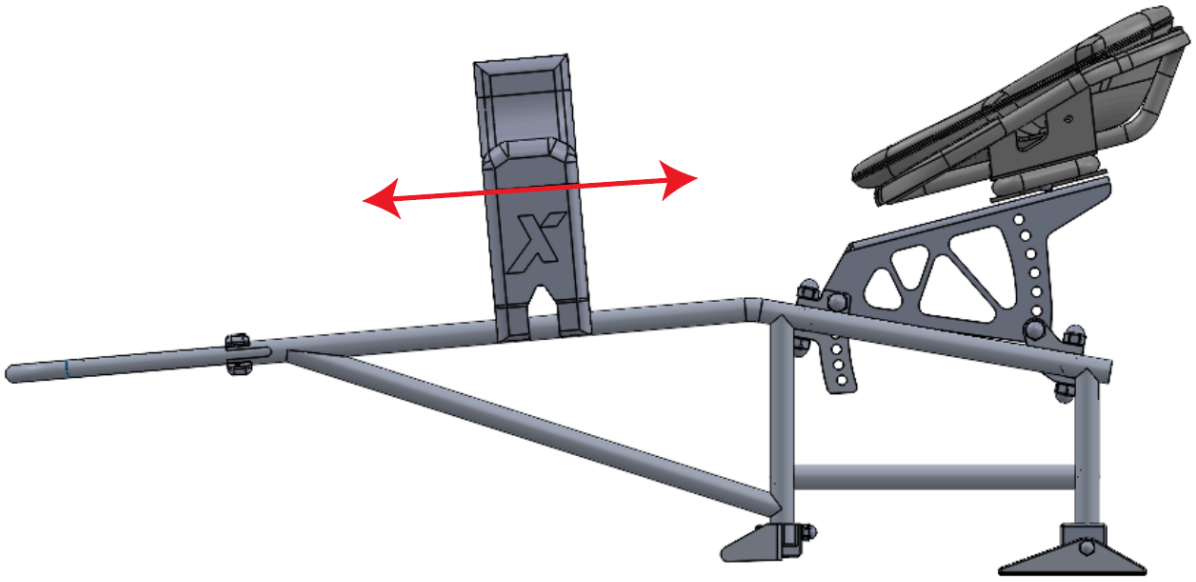


4. The red arrow indicates that the nut should be installed in the lower hole on the front bracket.



5. Position the thigh support so that it sits comfortably under the user's thighs.

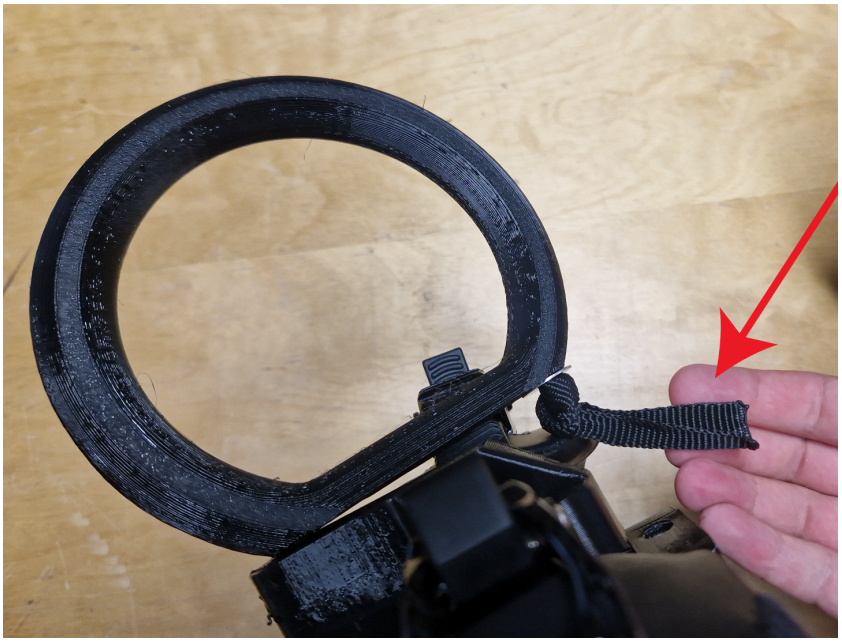


6. Thread the “brake saddle” onto both thigh straps / ladder straps so that it is held in place by the straps.

7. Tighten the brake band until there is tension in the band between the brake and the brake handle.

8. Tie a knot on the strap on the other side of the brake handle. Preferably keep a bit of extra tension, as it will “settle” over time. If necessary, undo and re-tie the existing knot.

9. After adjusting the strap to the appropriate length, any excess material can be cut off and the end melted with a lighter to prevent fraying. **Note:** Leave some extra length to allow for future adjustments.



10. Mount the “bungee attachments” on the tubes down by the ski bindings and hook on the bungee cord. Pull the bungee over the brake and place it in the “saddle” mounted on top of the brake.

Check that the brake works as intended before use.

3.5.8 Complete drag & harness system

To be able to be pulled by others in the ski tracks, including dragging bar and harness.

Place the dragging bar underneath the sled at the strap brackets (see Picture 2 underneath). Wrap the straps around the metal tubing of the dragging harness as shown in Picture 2, then tighten securely.

For a visual guide to assembly and use, please refer to the YouTube link.https://www.youtube.com/watch?v=2of0KjG02T8

Picture 1

Picture 2

3.5.9 Support Legs

The support legs provide additional structural reinforcement for users who push the Spike to its limits. They help prevent the rear binding plate from lifting when high loads are applied to the sled's front tipping point during active use.
For normal use, support legs are not required.

Follow the picture sequence to install the support legs on your sled.





4 CHECKLIST BEFORE EVERY RIDE

4.1 Checking nuts and bolts

Check all the bolts and nuts before use and make sure they are tightened with the correct torque. It is especially important to check the bolts and nuts on the seat arm and seat. Before tightening these bolts you must remove the protection cap. Inspect the screws and nuts on the seat arm and seat post. Use a **13 mm** wrench and adjustable wrench and tighten. Re-place protection cap.

4.2 Checking straps and strapping

Before use, the athlete must ensure that the straps are fastened properly to Spike Snow. Control that there is no damage to the straps and that they open/close as they should.

4.3 Check that skis are properly attached

Before use, the athlete should check the attachment between the Spike Snow and the binding. It is important that the screws and nuts that are part of the attachment are tightened sufficiently.

If you change skis, it is especially important that you make sure that the skis fit well on the attachment and ski binding. This is important to avoid damage to the binding or skis.

See section 3.2.3 for a step-by-step explanation of how to get on and off skis.

4.4 Check the seat cushion

Before use, the athlete should check that the seat cushion is operating correctly. See chapter 3.2.1e on seat cushion.

5 GET THE MOST OUT OF YOUR SPIKE SNOW

Through developing Spike Snow, we have met many people with great ideas and thoughts on how Spike Snow can be used in as many ways as possible. Alongside our own experience, we want to share some advice so you can get the absolute most out of your Spike Snow.

5.1 Adjusting pole lengths

For those who desire further variations in their training, adjusting the length of your poles can be useful. As previously mentioned, we recommend having poles that reach up to your eye-level while seated in Spike Snow. By using slightly shorter poles (5-10cm) the user can have a slightly higher frequency which can for example be useful when poling a lot uphill. We recommend experimenting to find the most fun and dynamic training.

5.2 Adjusting the seat angle and seat height

To start with, we recommend a lower seat height to easier stay in balance. Adjust the seat's angle and height to vary the sitting position and hip angle, and to challenge the core muscles and balance coordination.

Adjust the seat's angle and height taller for a more active sitting position and to open up the hip angle. This makes the power transmission more aggressive as well as challenging the balance and core muscles.

Adjust the seat's angle more horizontally and the height lower for a more passive sitting position. This sitting position is closer to the ground which makes it more stable and less challenging for balance and core.

5.3 Terrain and tempo variations

For increased variety and enjoyment, it is encouraged to use Spike Snow on a variation of terrain; uphill, flat, or hilly and winding trails. If you can not vary your terrain, you can vary the pace of the session through intervals with high tempo or long distance workouts.

6 STORAGE AND MAINTENANCE

To ensure the lifetime of your Spike, it's important to sufficiently take care of the product. Maintenance specified in the user manual must be followed. The user can maintain Spike themselves with the exception of what is listed under **authorized maintenance**, see ch.6.2**.** Authorized maintenance of the product must only be done by SmartGroup or partners approved by SmartGroup as this reduces risk of faulty assembly.

6.1 Self maintenance

After use, Spike Snow should be cleaned with a damp towel to remove salt and clay. This should be done indoors. Follow these steps to take care of the different parts:

1) Remove the seat cushion and wash separately.
2) All other parts should be washed with a damp cloth and mild detergent.
3) Dry with a towel after washing.
4) Let the cushion dry indoors.
5) Always store the seat cushion indoors when Spike Snow is not in use. This is to prevent it from getting hard as a result of low outdoor temperature.

Be cautious of salt water. Do not use solvents, steel brushes or pressure washers. This can shorten the lifespan of the product.

6.1.1 Inspection and troubleshooting

Inspection

We recommend regularly inspecting Spike Snow. In table 6.1 you will find an overview of how you can take care of your Spike Snow.

Component	Function and inspection	Before use	Every quarter
Screws and nuts	Check screws and nuts in relation to chapter 4.1	x	
Seat	Check that the seat are all properly fixed and without damage Check that clamps under the seat are correctly closed Check for cracks in the plastic material	x	 x x
Belts	Check that the belts and the attachment to the belts are intact.	x	
Ski attachment	Check that the attachment between the binding and the ski is intact Check that the attachment between Spike Snow and binding is intact	x x	

Table 6.1 - Maintenance

Troubleshooting

If you spot errors with your Spike, table 6.2 may be of use.

Error	Solution	Reference
Creaking sounds	Make sure that screws are properly fastened. Lubricate movable parts with a thin oil	
Seat cushion is losing its shape	Re-adjust the cushion	Chap 3.2.1e
Skis are not properly attached to Spike Snow	Check that the ski attachment is properly screwed on.	

Table 6.2 - Troubleshooting

Important! *Contact* SmartGroup *if you cannot solve the problem or discover flaws in the product.*

6.1.2 Seat cushion maintenance (additional equipment)

It is important to maintain your seat cushion. This is how you do it:

1. Control regularly the cushion's condition
2. Screw on the air cap before cleaning
3. Standard washing detergent can be used. Do not use fabric softener or acid based detergents.
4. All standard disinfectants can be used
5. Can be washed in a washing machine on max 60°C
6. Hang dry, preferably indoors.
   NOTE! Do not put in dryer

6.1.3 Ski binding maintenance

Wipe off dirt on and around the ski bindings

6.1.4 Maintenance and off-season storage of skis

When the ski season is over, it is important to make sure that the skis are ready for use for the next season. Wax the skis with gliders on the entire sole to avoid the dried sole for next season. Check out what the manufacturer of your skis recommends of wax for storage.

6.2 Authorized maintenance

Maintenance or repairs described in this chapter must not be handled by the user, unless approved by SmartGroup. This type of maintenance must be handled by people approved by SmartGroup. If such maintenance is required we ask the owner of the product to contact SmartGroup for procedure.

6.2.1 Damaged parts

If you find cracked or worn parts on Spike Snow, or parts that no longer function as intended, contact SmartGroup for maintenance or repair.

6.3 Storage and transport

Spike Snow should be stored in a dry environment without direct exposure to sunlight, either indoors, in a garage or storage room when not in use. Make sure Spike Snow is clean and dry before storing. It is recommended to store the seat cushion indoors and in warm temperatures to maintain maximum comfort and prevent it from becoming very hard and cold. This may cause the seat cushion to be adjusted before each ride.

During transport, it is recommended to pad the spiked ferrule to reduce the risk of accidents. During transport and especially during flights and train journeys, it is recommended to pack skis and poles in a ski bag. Spike Snow should be padded with bubble wrap or protected with similar packaging during transport, and especially when sent as luggage on aircrafts.

6.4 Disassembly and reassembly

You can disassemble the skis on Spike Snow. This makes transport and storage easier. Start with the right ski. Open the ski binding, lift up the Spike Snow from the front binding and push the ski until it is loose. Repeat on the left ski.

See chapter 3.2.3 for a step-by-step explanation of how to take on and off sksi.

Important! *Be aware of the danger of pinching your fingers when adjusting the seat arm and seat position. See Figure 6.4 for illustration of areas with a risk of pinching fingers.*

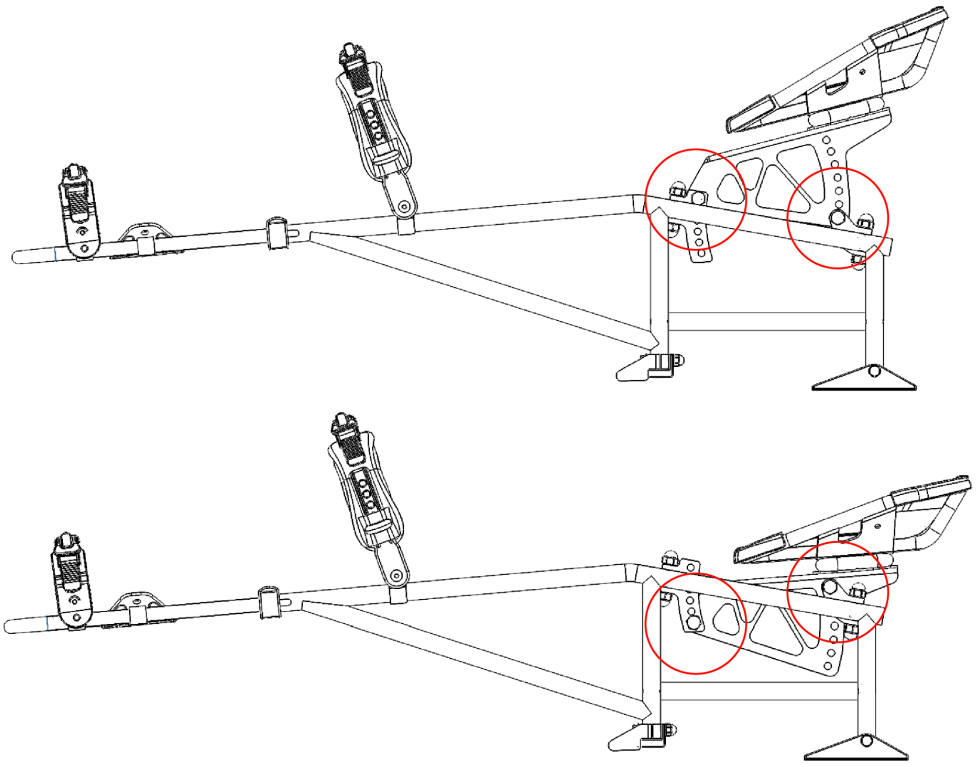


Figure 6.4 - Danger of pinching finger at seat arm marked with red circles. Note: the skis on the picture deviates from delivery.

7 WASTE MANAGEMENT

7.1 Reuse

In cases where you no longer need to use Spike Snow and it is still in good condition, reuse will be appropriate.

7.2 Waste management

List of Spike parts and recommended disposal procedures.

Part	Component	Material
Main frame	Aluminium	Metal
Seat arm	Aluminium	Metal
Brackets	Aluminium	Metal
Seat	Aluminium	Metal
Seat	Plastic	Plastic
Belts	Mix	Waste
Cushion	Mix	Waste
Putepumpe	Plastic	Waste
Bolts and nuts	Steel	Metal
Nut caps	Rubber	Plastic
Footrest	Plastic	Plastic
Ski binding	Aluminium	Metal
Skis	Mix	Waste or reuse
Poles	Mix	Waste or reuse

Table 7.2 - Waste management

Notes: