



tessier
LA TECHNOLOGIE DU SKI ASSIS

KARTSKI

Operation and maintenance manual
www.dualski.com

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Manual for the Kartski from n° KS105 to KS135

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1. PRESENTATION AND INSTRUCTIONS FOR USE

The objective of the following explanations is not to teach the user to ski but to give basic advices for the use of this equipment.

The **Kartski** is intended to adults and children who want to ski in an autonomous way, who can use their arms but who don't have enough balance to ski with a Uniski or Dualski.

Il est indispensable, en particulier lors de l'apprentissage, que l'accompagnateur soit relié par l'intermédiaire d'une ligne de vie attachée à sa taille (corde ou sangle) avec le KARTSKI.

A skier always assists the Kartski skier in order to make sure he's safe thanks to a safety leash attached between his belt and the Kartski, especially during the learning period. The help of the accompanist is also necessary for the use of skilifts and chairlifts.

Choice of skis

For the Kartski, the length must be between **155cm and 175cm**.

Choice of bindings

The binding to be used depends on the skier's weight and ability. It is advisable never to take one's skis off so the bindings must always be adjusted to their maximum level.

With the Kartski, we recommend "standard" bindings that can be adjusted up to 14 DIN or more or "pivot" bindings that can be adjusted up to 12 DIN.

"Pivot" type bindings are well adapted to the Kartski because they tolerate punctual overloads

- Standard binding: 14 DIN minimum

- Pivot binding (Rossignol Axial or Look PX): 12 DIN minimum

Do not remove the clips ("pattes anti-déchaussement", see page 6, n°18) at the front of the aluminium boots because lateral efforts are very important.



Mounting the bindings onto the skis

The boots fitting the skis are **325 mm** in length.

Mounting is usually the same as for a shoe of an identical length: the middle of the boot must be aligned with the marker of the ski.

Protection

When skiing in a Kartski, the use of a ski helmet is strongly recommended.

Use of skilifts

In France, the Kartski has authorization N° AVMH 777_06_A for the use of chairlifts and ski lifts.

The attachment mechanism « TESSIER harness system » has received authorization N° AVMH_734_99_B.

These authorizations are delivered by the « commission des matériels de ski assis » (committee for seated skiing equipments) presided over by the STRMTG (division of the Ministry of Transport, Equipment, Tourism and Sea). They are available on request.

Also, the French Handisport Federation has set out regulations for seated skiing.

Use of draglift or T-bar lifts

These practical advices don't replace any aspect of the authorizations.

- The skier must have in his possession the identification sheet of the harness system with specifications in order to be able to show that it is conform.
- It is compulsory that a helper leaves first and is in a position of stopping the skilift, using the emergency button, in the event of a malfunction of the harness system or of any other problem. This is a condition of the authorization's validity.
- Before using the skilift, the skier or the accompanist must check the safety brake located under the frame (page 6, n°15).
- The skier must have already prepared his harness before arriving to the ski-lift attendant. The semicircular ring of the harness must be closed. A plastic adjustment enables the arch of the ring to be adjusted. This arch must be closed to the maximum and should just allow the seat of the pole to pass.
- The ski-lift attendant must use the manual departing method for the pole.
- He passes the seat of the perch through the ring.
- At the moment of departing, **the ski-lift attendant must position the ring on the seat of the pole and maintain the pole steadfastly at the front of it.** This enables the « slip-knot » of the harness to work instantaneously.
- The rope of the main hook release should not be attached to the hand but simply held between the hand and the handle, as it leaves with the ring in the event of the safety hook release.
- On T-bar lifts, pass the hook one side or on the other side of the T-bar and position it against the pole.
- The safety hook release cord must be put around the wrist and maintained on the handle like a ski pole sword knot.
- Once at the top of the ski lift, the skier releases his harness and go a bit further to pack it with the help of the accompanist.

Use of chairlifts

This practical advice does not replace any aspect of the authorizations.

- Prior to take the chairlift, inform the chairlift staff of your presence. They will be careful and will use the emergency button in the event of an incident.
- Systematically ask to get on at a slow speed, even requesting that it stops if the chairlift only has 2 places or is unable to go slowly. The speed for getting off the chairlift mustn't be higher than the speed for getting on.
- Before getting ready to embark :

- Unlock the frame so the seat can rise.
Lock the right ski so it can't move during the embarkation or during the uphill. Attention, in this locked position, a strong lateral effort on the handle (fall for example) can twist it.
- **Loosen the Kartski's backrest adjustment strap** in order that the seat is comfortable and safe.
- The accompanist goes on the left hand of the Kartski and can push the Kartski with the assistance bar and can take the handle in order to drive the Kartski.
- For embarkation, position oneself as follows :
 - For a chairlift with 2 places: on one of the 2 places.
 - For a chairlift with 3 places: on the middle place.
 - For a chairlift with 4 places or more: on one of the middle places. The footrest bars of the seat's safety rail are mainly positioned every 2 places. In any event, do not position the Kartski between 2 places where the footrests of the seat's safety rail are likely to obstruct. This should be imperatively entirely folded down.
- With the help of jacks and possibly of the seated skier, the accompanist lifts the Kartski seat and waits for the chairlift.
- Once seated, close the safety rail as quickly as possible.
- When arriving, the accompanist raises the safety rail at the last moment and pushes the Kartski off the chairlift so as to get clear as quickly as possible.
- Think to lock back the frame, unlock the ski and tighten the backrest's adjustment strap before going onto the piste.

Ski with a Kartski

- When using the Kartski, especially during the learning period, the accompanist (who has a good ski level) must be linked to the Kartski by a safety leash in order to be able to slow it down or stop it if necessary. When the sitskier has a perfect control of the Kartski, he can remove the safety leash.
- The tracks used are easy ones.
- **At the beginning, it's very important not to go fast and to do small and slow movements.**
- The skier starts by using the « snow-plough » technique: he joins to the maximum his hands, keeping them forward. He releases more or less this snow-plough position to control his speed.
- Two brake teeth, located at the rear of the handles, allow braking when pulling the handles backward. Those brakes are not part of the skiing technique but can be used to brake more efficiently in some conditions.
- For the first turns, the seated skier starts from the snow-plough position and slightly opens the interior handle in the direction he wants to go. The other hand stays in the initial position. Once the Kartski in the desired direction, close the interior hand to the initial position to come back in snow-plough position.
- Then move on with a turn in the other direction.
- During those turns, the interior ski must be on the interior edge or flat on the snow but mustn't go on the exterior edge.
- To take more speed, the skier can open his arms until having the skis flat on the snow.
- A good skier can then evolutes toward parallel turns. To do it, the skier put both handles in the desired direction. Be careful not to take too much speed.

2. GENERAL DESCRIPTION

Elements nomenclature figures 1 & 2

N°	Designation	Quantity
1A	Châssis haut	1
1B	Barre d'assistance	1
1C	Crochet d'attache de la ligne de vie (soudé sur barre d'assistance)	1
2	Châssis bas	1
3	Biellette haute	1
4	Biellette basse	1
5	Verrou pour utilisation télésiège	1
6	Dent de frein	2
7	Silentbloc amortisseur de chocs	1
8	Poignée	2
9	Levier	2
10	Sangle de pied arrière	1
11	Sangle de pied avant	1
12	Repose-pieds	1
13	Système de verrouillage du ski droit	1
14	Vérin de compensation pour utilisation télésiège	2
15	Frein anti-retour	1
16	Crochet d'attache du largueur (soudé sur châssis haut)	2
17	Sabot en aluminium	2
18	Patte anti-déchaussement vissée sur le sabot	2
19	Ski + fixation standard	2
20	Siège en matériaux composites	1
21	Plaque signalétique	1

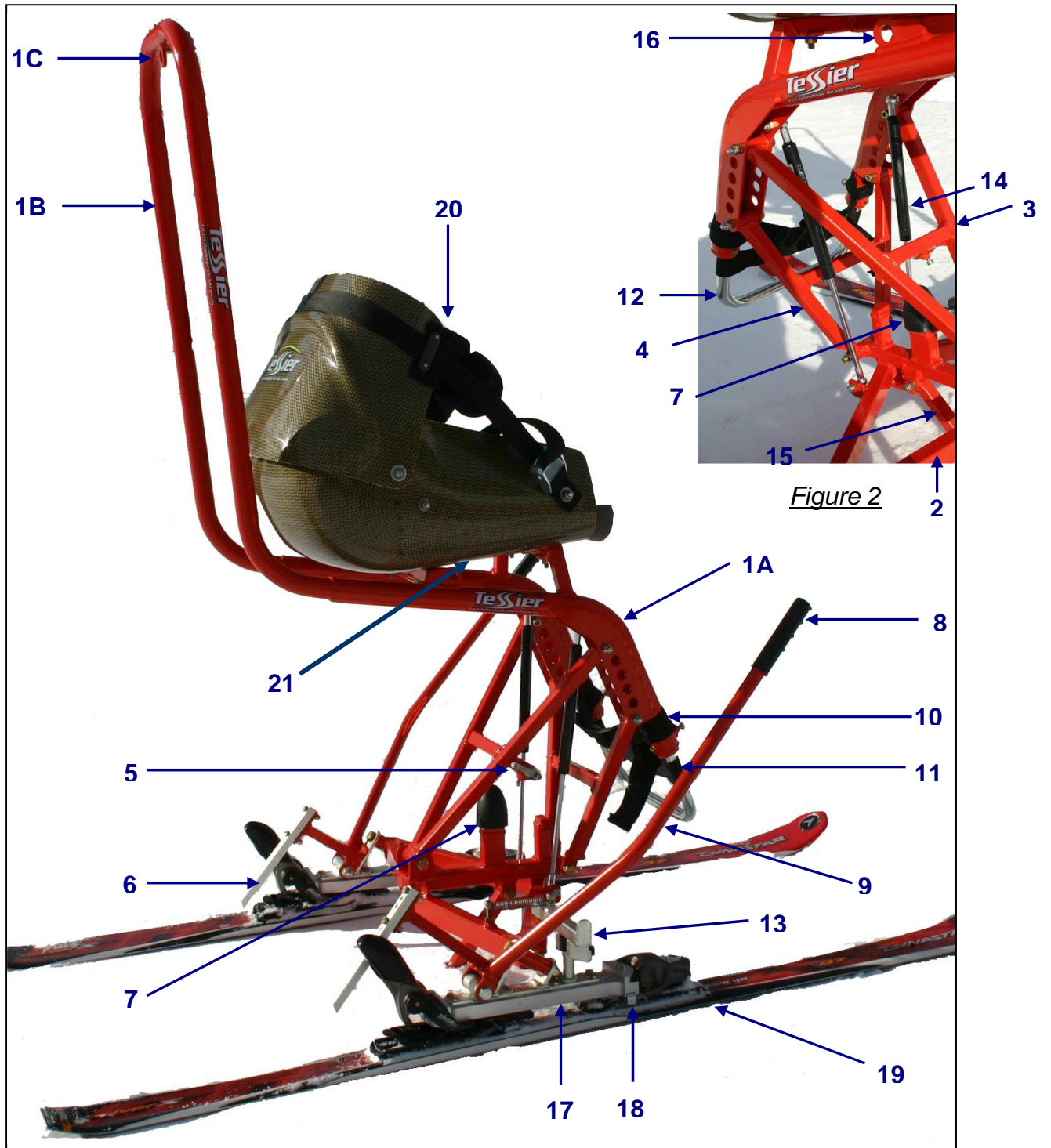


Figure 1

5. SKILIFT HARNESS

Description according to figure 3

No.	Comment
1	Polymer ring with an outside diameter of 35 mm, length of 370 mm, scleroscope hardness of 70 A.
2	Main swivel hook release – Wichard brand.
3	The swivel means that the release hook mechanism can be turned to where the skier is.
4	A plastic adjuster enables the opening of the ring to be easily adjusted.
5	Granny knot. A 7mm diameter rope is tied twice at the end of the ring.
6	6 mm diameter link.
7	Opening safety hook – Wichard brand When the poles are equipped with a clamp ring instead of the nut tightening the seat, then this hook can be attached to the clamp ring.
8	Snap hooks mean that the attachment cord on the apparatus can be opened so that the skier can sit down.
9	7 mm diameter traction cord.
10	Most of the knots are covered with a sheath.
11	6 mm diameter main release cord. It has a 150 mm long sheath to make release easier if the ring suddenly turns.
12	An eight knot helps the skier with the cord.
13	6 mm diameter safety release cord. The loop at the end enables the skier to pass his hands through before grasping the handle of his stabilizer. In the event of release, the safety snap hook stays next to the apparatus.

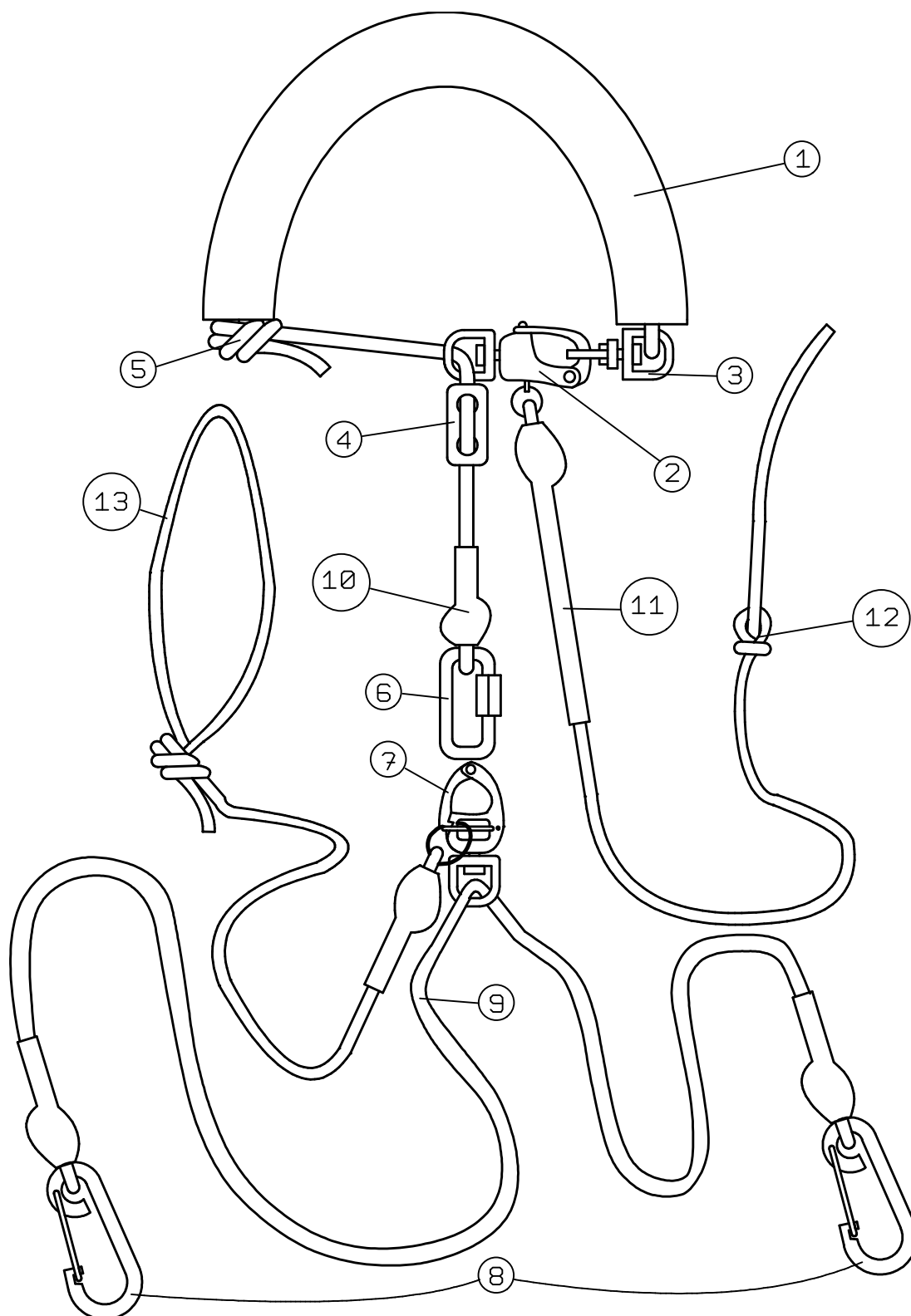


Figure 3

Installation of the ski lift harness on the Kartski
Figure 4

1. Fix the 2 snap hooks (n°1) on the 2 fixing rings on the frame (n°2). It is necessary to remove at least one snap hook to seat in the seat.
2. **Attention**, always put the rope between the backrest adjustment rope and the seat.



Figure 4

4. ADJUSTMENT AND MAINTENANCE

Footrest

- 1- Adjustment of the front / back positions of the feet on the footrest :
At the back, the feet are held in place with a large strap which is equipped with two adjustment buckles. Evenly distribute the adjustment between the 2 buckles in order that the middle of the feet presses against the footrest.
- 2- Height adjustment :
 - Raise the footrest as high as possible by unscrewing the 2 screws - TCHC 8x16 - with a male hexagonal spanner - 6 - before the skier sit in the seat.
 - Once the skier is seated, lower the footrest until there is a finger space between the seating foam and the underside of the knee at the front of the seat. The footrest must be brought out to a maximum of 13 cm between the end of the frame and the bearing surface of the feet.
 - Correctly tighten the 2 screws.
- 3- Replacement of the straps holding the feet :
If a strap or buckle is damaged, it is necessary to remove the footrest in order to replace it.

Latch for the use of chairlifts

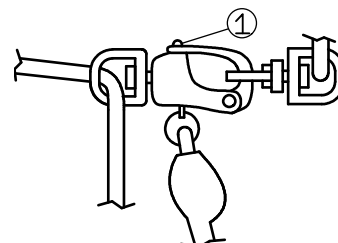
The latch is mounted with waterproof grease.

When this grease loses its efficiency (not before) and the latch becomes harder to use (with cold weather), it means that there is humidity inside and that ice jams it.

Without dismantling it, regularly spray into the latch a lubricant containing silicone. It is advised to unlock the latch into the chairlift position and to lean the Kartski on its side so the lubricant is able to penetrate.

Ski lift harness

Regularly spray over the snap hook (1) with a silicone based lubricant.



Maintenance program

Apart from the above mentioned, the Kartski in fact needs little maintenance; however, it is necessary to:

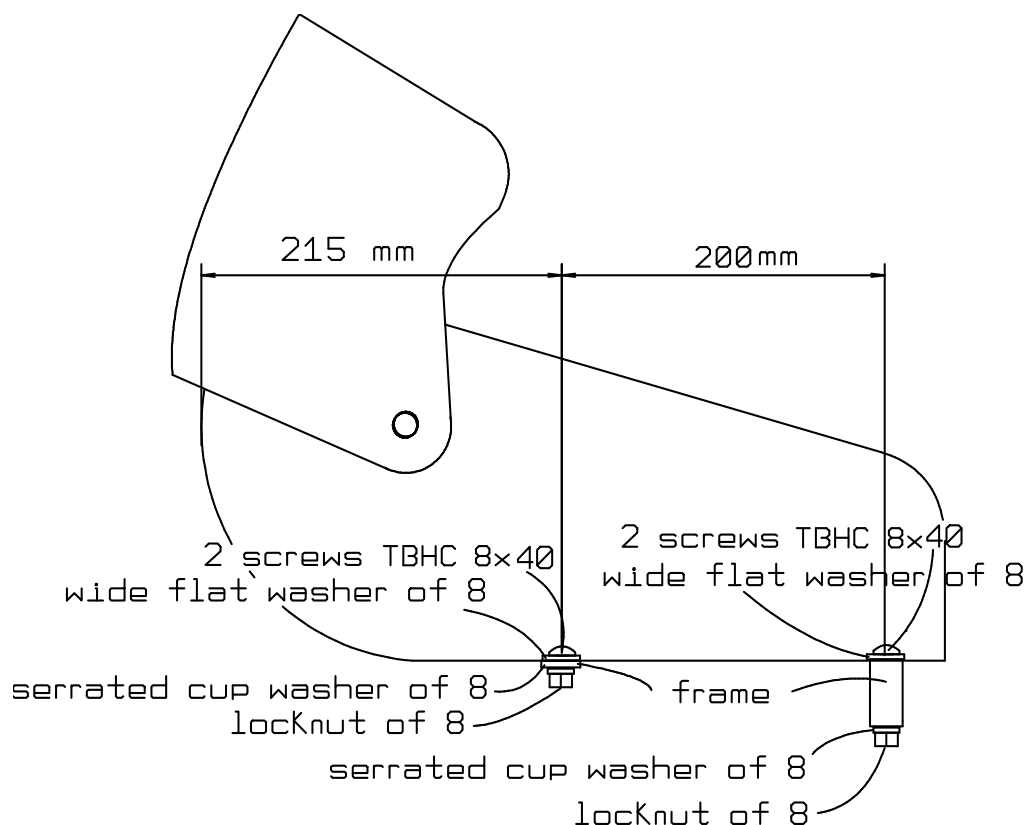
Action	Frequency
Store the Dualski in a dry place	After each use
Visually check the frame	After each use, or after a shock
Check the condition of the skis and bindings.	After each use, or after a shock
Check that there is no play or wear and tear in any of the pivot joints.	Every 300 hours of use, or after a shock
Check the straps of the frame and seat.	Every 30 hours of use, or after a shock

Don't hesitate to contact us when in doubt or if you want us to check your Kartski.

Seat

The seat is covered with two types of foam:

1. Foam that is damp-proof glued to the seat and in the backrest.
2. At the bottom of the seat, removable and very comfortable foam which has some distinct characteristics :
 - it hardens in the cold, but with the heat from the skier's body it softens and takes the shape of the skier.
 - it can shrink in the seat but will regain its original shape when it is taken off and placed in a warm environment.
 - it is relatively damp-proof but it may be necessary to dry it out.



Seat assembly

- Use the screws as in the sketch above.
- Attention, screws that are not the original ones and which are too long could damage the seats and chairlifts.
- If the seat is not the original TESSIER one, then it is necessary to drill the rear securing points at a distance of 215 mm from the back of the seat, according to the above sketch. This is important in order to respect the balance of the Kartski during gliding and when using the chairlifts.

The centre distances of the fixation: front points 140 mm, rear points 120 mm and 200 mm from front to rear, as indicated on the plan.

When in doubt, don't hesitate to contact us.

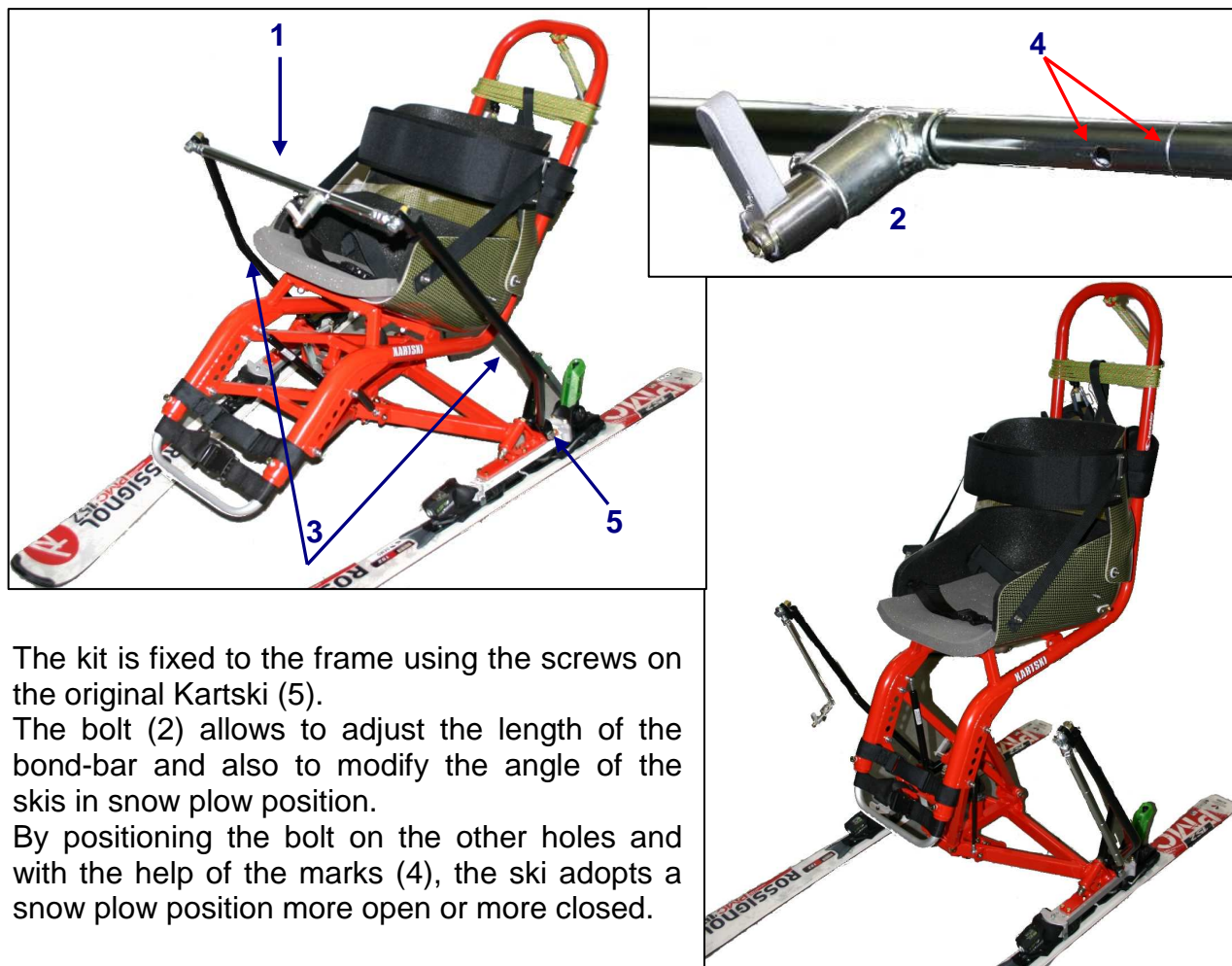
The use of a seat which is not a Tessier seat cancels the warranty.

5. KIT FOR ONE-HAND PILOTING

We offer an optional kit for one-hand piloting, composed of:

- The telescopic bond-bar (1) adjustable in length thanks to the bolt (2).
- The right and left levers (3) specific to the kit.

This adaptation allows especially **hemiplegic people** to use the KARTSKI. This kit may be appropriate for people who do not have enough muscle strength in the upper limbs because the bond-bar allows driving with less effort. In this case, the Kartski with kit can be piloted with both hands.



The kit is fixed to the frame using the screws on the original Kartski (5).

The bolt (2) allows to adjust the length of the bond-bar and also to modify the angle of the skis in snow plow position.

By positioning the bolt on the other holes and with the help of the marks (4), the ski adopts a snow plow position more open or more closed.

It is therefore necessary to adjust the length of the bond-bar according to the slope in order to allow the pilot to control its speed of sliding. Moreover, the skier can pull backward on the bar to brake. That is necessary to stop sliding for adjusting the length of the bar.

When taking the chairlift, the bond-bar has to be unlocked to allow the frame to lift completely without the sit-skier is trapped between the seat and the bar. The right lever is locked by the locking system, as it is customary in Kartski.

6. WARRANTY

TESSIER pays a detailed attention to the quality of manufacture and the reliability of its products.

TESSIER guarantees each frame or each component against any material or manufacturing defect **during 1 year**.

Free warranty extension on the frame

We offer a free warranty extension of 2 years, so a warranty of **3 years on the frame** (Except on the seat, the leg cover, the straps).

To benefit from this extended warranty, note your Kartski number (written on the inox plate fixed on the frame, n° KSXXX) and register your Kartski in 2 minutes on our website: www.dualski.com/en/enregistrement.

Don't forget to register to benefit from this advantage

This warranty does not cover:

- Normal use
- In the event of incorrect dismounting and remounting by the customer.
- In the event of incorrect maintenance by the customer.
- In the event of the installation of parts or accessories not designed for the sold frame or incompatible with this one.
- Any consecutive damage or anomaly with an accident, a misuse or negligence.
- In the event of a frame modification or modification of its parts.
- Les skis and bindings.

This warranty is expressly limited to the repair or the replacement of a defective element and constitutes the single recourse of the warranty. This warranty applies as from the date of purchase.

In the event of return of the material, the expenses of routing and return of the material to factory TESSIER or the approved distributor of the country are the responsibilities of the purchaser.

The complaints with the title of this guarantee must be deposited at TESSIER or of an approved retailer.