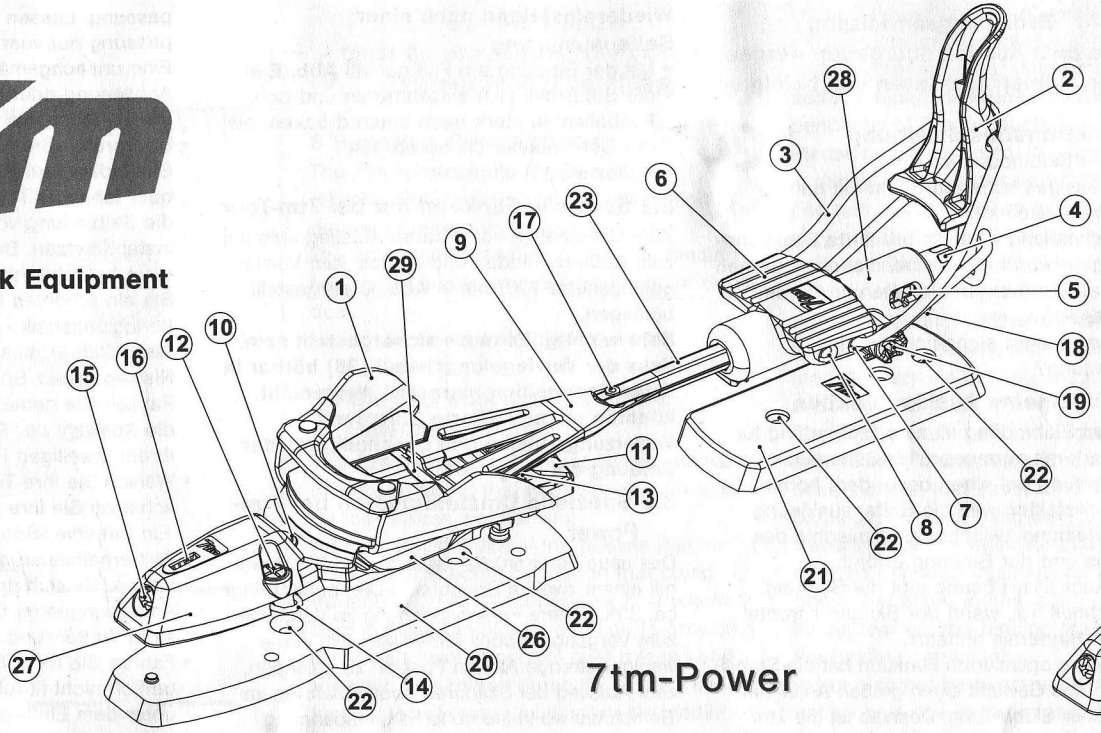
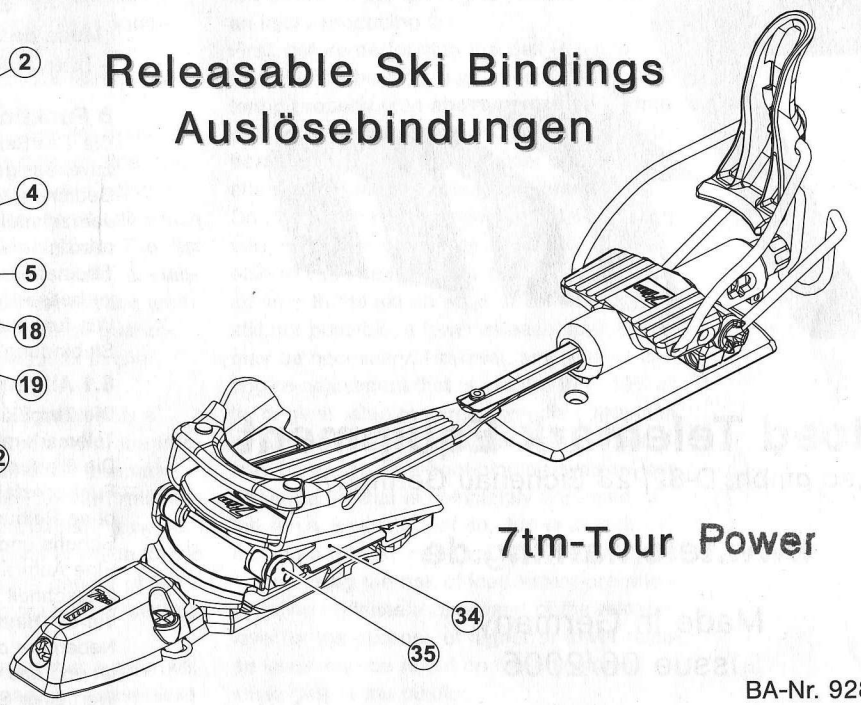
7tm

Advanced Telemark Equipment

Releasable Ski Bindings
Auslösebindungen



7tm-Power



7tm-Tour Power

BA-Nr. 928

Assembly Instructions for Ski Retailers

Range of the binding's boot sole length adjustment

Mondo Point,	approx.	24 - 31.5
UK,	approx.	4.5 - 12.5
Eurosize,	approx.	37 - 48

E

Caution: The release mechanism only works properly in combination with plastic boots. Soft leather boots may not transfer the expected torque to the binding to release it in the event of an injury producing fall.

1 Assembly

1.1 Location of the Binding on the Ski

Always follow the recommendations of the ski manufacturer for the location of the binding on the ski. There are two principle methods for locating the binding on the ski, **Pict. A.**

a) Skis that have a mark for the location of the binding:
Most ski manufacturers mark the location of where the binding should be mounted on the ski surface. The center of the boot line or a 3Pin Line. Some telemark skis are marked for the "3pin line" where the 3pins would be that would fit in the toe of your telemark boot. Check the ski carefully to determine which location it is.

b) Ski without a mark for the location of the boot:
Toe of the boot -15 mm (3 pin line) = center of the ski (half of the cord length). But this does not work with twin tip ski.
Extremely wide skis can be mounted, using the 7tm paper template as a means for locating the drill-holes.
7tm ski bindings have been developed for use only with PAIRS of skis. If the 7tm ski binding is modified in any way, or mounted on a mono ski or snowboard, all warranty claims or any other claims are void.

7tm Mounting Jig

Pict. B: Please note the corresponding frame size (punched into the mounting jig).
Drill holes (22) for riser plates only if required.

- Turn both opening levers until the jaws of the jig are completely open. Place the jig flat onto the ski surface and tighten the gauge.
- Positioning of the mounting jig. Skis with location mark:
Transfer the center of the boot sole or, if provided, the location-mark on the boot, to the length-scale (cm) on the mounting jig. Adjust the proper value on the scale of the jig to the location-

1.6 Ski Brake

Only for a maximum ski width (measured underneath the binding) up to [x] mm – (see brake size at the bag).
Mounting: Before mounting the 7tm on the ski, the brake lever has to be positioned underneath the binding as indicated in the **Pict. M** . It is essential that the plastic levers itself swing back and the plastic hooks of the 7tm brake levers are aligned against direction of travel (see picture) – otherwise the components can be severely damaged or the brake will not work.
Warning: The 7tm brake only swings into a braking position after a release of the binding mechanism! There will be no brake effect as long as the heel lever comes loose, but the boot holding device remains in the binding! To avoid such an unintended opening of the heel lever it should be secured with a safety strap (see Pict. N).

1.7 Telemark ski leash

- Leashes (24) are attached on ringlet for ski leash (14) according to **Pict. H**

1.8 Telemark Safety Strap

Use an safety strap as indicated in the **picture N** in connection with the brake: To avoid an unintended opening of the heel lever it should be secured with a safety strap.
Secure the loose end of the strap against slipping through as indicated in the **picture N**.
If worn or damaged, the safety strap should not be used any more and be replaced!

2 Fitting Boots to the Binding

- For the adjustment of the boot length, you first have to open the heel fastener (2) and place the boot into binding.
- Now, with the boot all the way into the binding, lift the "heel plate" to the point that the length adjustment screw can be turned conveniently until the boot fits into the binding (see **Pict. F**).

Important note: For extremely short boots, the heel bar (3) can be changed from the regular position (7) to "extra short" (8), Pict. G.

- The pressure between the boot and the binding is correct when the inner edge of the length adjustment screw (4) can be seen in the center of the pressure scale (5), as noted in Pict. F. Step the boot into and out of binding several times, insuring that the toe of the boot is all the way into the toe of the binding – and then converge upon the correct forward pressure.

recommended by 7tm, voids all claims.

3.2 Measuring Release Torque with Test Equipment

After the assembly, adjustment and functional inspection have been carried out properly, the binding must be checked with ski binding test-equipment that is certified according to DIN / ISO 11088. (Note: Measuring the release torque is not applicable for telemark bindings in North America, but you must follow these instructions to achieve a "recommended pre-setting" in North America).
Caution: Note the instructions of the test-equipment manufacturer.
This inspection validates that the actual release values (given in daNm of torque) are within the specified tolerances of the adjusted release values. According to DIN / ISO 11088, a tolerance of ± 15% is allowed between the actual and the expected release torque. After testing, provide your customer with the inspection report together with the functionally-acceptable ski-boot-binding system. If the test-equipment cannot print a report, the results are to be documented in writing. In addition to documenting the release measurement data, the data given in chapter 5.1 must be documented, too.

4 Troubleshooting Procedures

Conduct the following tests after measuring the lateral release and after the heel fastener has been adjusted properly:
Check that the ski, the binding and the boot meet the visual inspection criteria.
Note: all used bindings must be cleaned prior to inspection.

4.1 Additional Functional Inspection of Lateral Release

Inspection for lateral elasticity and re-centering:
Hold the ski tightly and apply an impact to the toe area of the boot by hand or by using a rubber hammer.
The lateral release mechanism at the toe should move 6 - 10 mm. The boot should return-to-center quickly and without being excessively delayed by friction. If the release mechanism moves more than 10 mm laterally, the binding will release, completely.
Before testing further, the release mechanism must be reattached and the boot must be re-entered into the binding.
If the system functions properly
Measure the release values with the ski binding test-equipment.
If the system does not function properly
Slow, incomplete return to the center:

- Check to determine if the release mechanism is excessively

- With the binding attached to the boot according to Pict. E, center the cam-roller (10) – and press down on the ball of the foot with enough force to hear the sole-retainer click into the holding-block (11).

Explanation of the System:

- Demonstrate the boot/binding system to the skier
- Explain to the skier where the release adjustment screw is located and which release values have been specifically and individually selected and adjusted for them. The skier should always be informed about their Recommended Pre-setting release adjustment values.
- It must always be explained to the skier that the risk of injury increases significantly when parts of the system do not meet the standards or when they are excessively worn.
- Explain how to re-connect the release mechanism after release.
- It must always be pointed out to the skier that they should contact a ski retail specialist as soon as any problems occur regarding the ski, the boot, the binding or the ski-boot-binding system.

Maintenance

- It must be explained to the skier that the binding must always be free of dirt, salt and corrosion.
- The skier must be advised to take the complete ski-boot-binding system to a ski retail specialist at the beginning of each season or every 60 skier days, which ever is first, to check, measure and readjust it.
- The skier can also be shown IAS "Self-Release" method. The IAS Self-Release method allows twist release adjustment of the binding, if the binding is first functioning correctly – especially to signal, on the slope, if there is a gross impediment to release.

5.3 Signature of the Skier on the Inspection Certificate and/or Adjustment Card

- Correct explanation of the entry, exit and re-connection procedure.
- Call the skier's attention to the release values. The skier must confirm that the adjustment(s) on the actual binding are the same as those noted on the adjustment card.
- The skier must read the notations and confirm that they understand and agree to any special waivers.

The skier should be aware of the risks of this sport. 7tm intends to reduce these risks to a minimum. It should be noted that no binding can guarantee release in every situation.

Toe piece	1	S
Heel fastener	2	F
Heel fastener bar	3	F
Length adjustment screw	4	L
Forward pressure adjustment scale	5	A
Standing plate	6	S
Heel fastener housing, Pos. "standard"	7	F P
Heel fastener housing, Pos. "extra short"	8	F P
Tension strap	9	S
Roller-cam	10	S
Holding block	11	H
Front binding screw	12	B
Rear binding screw	13	B
Ringlet for the ski leash	14	F
Adjusting screw	15	E
Adjusting scale	16	E
Connecting screw	17	V
Split pin	18	S
Housing for the climbing heel	19	S
Front part of the riser plate – optional	20	C o
Rear part of the riser plate – optional	21	C o
Screws for riser plates – optional	22	S U
Marking for the length	23	L
Ski leash	24	F
Anti icing plugs	25	A
Upgrade plate	26	E
Release housing	27	A
Pressure spring (inside)	28	A
Power pin	29	P
Touring Hinge	34	T
Axle & Nuts	35	T
Touring Lock	36	V

Or: For skis that are marked with a Pin Line, line the jig up with the Pin Line on the jig matching the Pin Line on the skis. For skis that are un-marked or do not specify, please contact the ski manufacturer."
Caution: Special care is to be taken in case of cap-shaped skis and skis with slanting tapered sidewalls. Please inspect carefully.

Paper Template

Pict. C: The paper template is an option in case the mounting jig is not available.

- Positioning the paper template like the jig above and tape the paper template to the ski surface.

This transfer of markings should be made very carefully, since the drill holes must be positioned, precisely.

1.2 Drilling

Instructions for drilling the holes
Mounting ski bindings is standardized by DIN / ISO. These standards require a drill-depth of 8.0 mm ± 0.5 mm and 9.0 ± 0.5 mm.
Ski standards require a certain area where bindings must be mounted and the standards define the resistance by which screws pull-out. For some skis, the binding-mounting-plate that is inside the ski is located so deeply within the ski that the standard binding-screws do not come into contact with the plate – and the binding is therefore not properly secured to the ski. When this occurs, longer mounting screws are required. Regardless of the situation, you must always follow the special indications given by the ski manufacturer. The diameter of the drill-holes is 4.1 mm. Only use the special ski binding drills. Again however, you must follow any special specifications provided by the ski manufacturer. Avoid the use of blunt drills.

- Always drill with constant pressure and hold the drill straight. Do not tilt the drill within the drill-bushings of the mounting jig.
- The drill-holes must be deep enough to counter bore each hole. This drilling-technique insures that the ski is not damaged and that the binding is placed properly on the ski.
- Remove the mounting jig after drilling. Turn the ski over, and with your hand, knock-out the drill scraps.

1.3 Mounting the Binding on a Ski with drilled holes:

All screws must be attached tightly, but not overtight. If an electric drill is used, the torque should be adjusted to the lowest possible setting to prevent overtighting the screws. Final tightening of the screws should always be done by hand.
In case the screws are too long and dimple the base of the ski, either use shorter screws or carefully grind them shorter.
Glue can also be used as a lubricant for ski binding screws. Only use glue if it is needed as a lubricant and/or if recommended by the ski manufacturer.

- First, the ringlets for the ski leashes (14) must be positioned both on the left and right sides, underneath the front housing, according to **Pict. D/H** and they can be tightened in position, slightly, with the prepositioned front screws (12).
- Slightly screw the "holding block" (11) tight with the two rear prepositioned screws (13).
- Now tighten all screws (12, 13) equally by hand.
  In order to minimize the under sole snow build up, put some screw glue on the slots of the rear two screws (13) and press the anti icing plugs (25) firmly over the tightened screws.
- After finishing the mounting of the binding to the ski, you must attach the toe piece (1) see **Pict. E.**
- Finally, you must check each screw again to insure that the binding is flush against the surface of the ski and insure that it is properly aligned, lengthwise, with the ski.

1.4 Mounting the Binding on a Ski with thread inserts:

1) The optional Insert adapter # **Z007** is required.
2) Place screws M5x16 into the ski inserts and tighten them by hand.
3) Mount the rear riser plate (21) with screws M5x16
4) Now mount the binding as in Pos. 1.3 indicated and tighten all screws by hand.

All screws should be firmly tightened by hand, but not overtight. If an electric screwdriver is used, the torque should be adjusted to the lowest possible setting to prevent overtighting the screws. Final tightening of the screws should always be done by hand.

- Finally, you have to re-check each screw to make sure that the binding is even with the surface of the ski and that it is properly aligned lengthwise.

1.4.1. Binding raiser plates

If binding raiser plates (20, 21) are used, attach the front base plate with screws (22), first; then interchange the original screws (12) with the longer screws that come with the base plate – and attach the binding as described under 1.3.

1.5 Climbing aid

Install it according to **Pict. L** and switch it into the desired position if needed.

Caution: There is no advantage to increasing the forward pressure beyond that which is specified: too much forward pressure will reduce the life of binding's moving parts.

- The sole height adjustment is automatic if the boot meets the appropriate standards.

3 Adjusting the Binding

The adjustment of the lateral release level is first "pre-set" using the adjustment screw (15) and can be read on the adjustment scale (16). The release value appearing on the scale is to be viewed with one eye aligned perpendicular to the scale.
Turn the release adjustment screw (15) to the "recommended pre-setting" that appears on the scale.
Re-adjust the "pre-setting" based on the measured release torque, using the appropriate ski shop testing equipment – and, if necessary, correct the pre-setting to a "setting", using the adjustment screw.
(Note: Measuring the release torque is not applicable for telemark bindings in North America, but you must follow these instructions to achieve a "recommended pre-setting" in North America).
The values of the measured release torques and indicator settings must be recorded on the Inspection Certificate (see Chapter 5, Inspection Certification).

3.1 Determining the Release Values by Means of the Weight Method

1. Find the weight of the skier in the first column and their height in the second column. If both figures are not on the same row across, use the figures in the next row "up" on the printed table, which gives a lower "initial code" value.
2. The initial code is for "Type 1" skiers. For skiers that are "Type 2" please move one row down (the next printed row down); and for "Type 3" skiers, move 2 rows down from the initial code value.
3. Then, if the skier is 50 years or older, move one row up on the printed table. Steps 1 - 3 result in the skier's "code".
4. Now move to the section of the table that involves the boot sole length. Find the column that corresponds to the boot sole length. The point of intersection in the chart for the proper "boot sole length" column, together with the row that has the proper skier's "code" determines the "recommended pre-setting" release value for the binding. Adjust the front toe piece to this value.
   Important: If, in the chart, no value is provided at the point of intersection, remain on the same row – and use the next value to the right or to the left.

Example: a skier weighs 75 kg (or 165 pounds – there are 2.2 lbs per kg); is 170 cm (5ft, 7" – there are 0.39 inches per cm) tall; their boot is 320 mm long; they are 55 years old; and they grade themself to be a Type 2 skier. In this case, the skier's code is derived to be "K" and the recommended pre-setting = 5.

Determining "Skier Type"
Use the following descriptions to enable skiers to determine their "Skier Type" themselves. Remember that Skier Type has nothing to do with expertise. So, for example, some advanced skiers that ski with finesse can be graded correctly to be Type 2.

Type 1 Skier

- Skis conservatively
- Prefers slower speeds
- Prefers easy, moderate slopes
- Would rather have a lower release value than the average recommended value
- Skiers that grade themselves to be Type 1 obtain lower release / retention settings than the average. This decision may cause a higher probability of inadvertent pre-release of the binding, in order to achieve a lower release level during a potentially injury-producing fall.
- Advanced beginners that do not know which Skier Type to choose, should select Type 1.

Type 2 Skier

- Skis in an average way
- Skis at different speeds
- Skis on varying terrain, including some difficult terrain
- Skiers that cannot be categorized as Type 1 or Type 3.

Type 3 Skier

- Skis aggressively
- Normally skis at higher speeds
- Prefers steep, difficult slopes
- Skiers that grade themselves to be Type 3 obtain higher release / retention values than the average. This decision may cause a lower probability of release during a potentially injury-producing fall and may cause a lower probability of inadvertent pre-release.

Caution: The adjustment tables described and printed here are the only ones presently recommended for the 7tm. The adjustment tables that were available prior to the 1998/99 season are now invalidated – and should no longer not be used.
Adjusting the binding not in correspondence with the tables
Boot slides laterally within the toe fastener:

- Check to determine if the forward pressure is too low. Readjust, if necessary.
- Check to determine if lubricants have been excessively applied to the boot or to the release mechanism. Clean-off all mating surfaces.
- Check to determine if the geometry of the boot corresponds to the boot-standards and/or compare it to another model of boot.

Screws are loose:

- Check if screws are missing, over tightened or loose. Repair, replace or glue, if necessary.

4.2 Heel Fastener

Boot slides within the heel fastener:

- Check to determine if the forward pressure is not high enough. Readjust, if necessary.
- Check to determine if lubricants have been excessively applied to the boot. Clean-off all mating surfaces.
- Check to determine if the heel-projection of the boot is deep enough. If necessary, remove additional material from the boot with a small grinding tool, knife, file or other suitable tool.

5 Mounting & Inspection Certification

As a ski retail specialist you must correctly and completely record the appropriate data on the adjustment of 7tm ski bindings. Please document and store a copy of all adjustment cards (inspection reports).
(Note: Measuring the release torque is not applicable for telemark bindings in North America, but you must follow these instructions to achieve a "recommended pre-setting" in North America).

5.1 Provide the Functionally-Acceptable System and Adjustment Card to your Customer

Always provide a duplicate of the inspection report, together with the functionally-acceptable ski-boot-binding system to your customer AFTER the final adjustments have been conducted. The following data must be documented on the adjustment card:

- Name of user
- Age
- Gender
- The skier's "recommended pre-setting release value", and the expected release torque in daNm.
- Skier Type
- Length of boot sole
- Boot brand and model
- Binding brand and model
- Ski brand, model and length
- Actual release torque (in daNm) read from the test-equipment according to DIN/ISO 11088 after the release mechanism was re-adjusted. Enter the clockwise and counter clockwise values for the left and right skis. In North America, it is not mandatory to measure the release torque, but all of the other aspects of these instructions must be followed.
- The final adjustment-scale values on the binding (left and right skis).
- Notation of any idiosyncrasies.
- Signature of waiver of customer that certifies they have requested a variation from these instructions.
- Date of inspection / adjustments

Providing the Operational Instruction / Limited Warranty Certificate

- The skier must receive the operational instructions as well as the limited warranty certificate for the purchased ski binding.

5.2 Instructing the Customer

If possible, the following instructions should be given and shown to the customer, directly. If the customer is a minor, the information should also be given to the parents or guardian:
Entry, Exit and Re-connecting the Binding
Correct entry / exit of the binding as well as how to re-connect the binding's release mechanism should be demonstrated to the customer either in the shop or when they receive the equipment.

Entry

- Remove snow, ice or dirt that is attached to the sole of the boot.
- Center the toe of the boot into the toe of the binding and enter.
- Close the heel fastener by hand.

Exit

- Open the heel fastener using a ski pole, the opposite boot or ski, or by hand. Simultaneously lift the heel of the boot.

Opening the Heel Fastener after a Fall, or Exit when Trapped.

- Open the heel fastener using a pole or hand.
- If trapped in deep snow, twist the boot off of the ski.

Re-connecting the Binding
At the conclusion of the sale, the skier must sign the Inspection Certificate or the adjustment card, personally. If the customer is a minor, the document must be signed by the person responsible.

6 Limited Warranties

Ski bindings or accessories that may be subject to warranty claims are to be kept for at least one year by the dealer after being returned by the customer, so that 7tm can inspect the possible defect, if necessary.

7 Guidelines for Standardized Equipment

As a ski retail specialist you are required to confirm that all of the equipment-components meet the DIN / ISO 11088 (formerly DIN 32923) standards – and if necessary, re-work or replace the equipment for the skier prior to assembling or adjusting the fully-functional ski-boot-binding system. All components must meet the DIN / ISO standards.
(Retailers in North America do not have to conform to all aspects of the DIN standard-procedures, but all retailers must insure that DIN / ISO-standard boots, bindings and skis are used and mated together and that the skier's "Recommended Pre-settings" are adjusted to the bindings.)

7.1 Guidelines for the inspection of a ski binding

All new 7tm bindings meet (and in some aspects, exceed) the requirements of the current national and international standards (as e.g. DIN ISO 9462 and DIN ISO 11487). Prior to assembly or adjustment of a 7tm ski binding, a visual inspection must be conducted, especially in the case of used bindings.

- Check to insure that the "Recommended Pre-settings" (specified release values) are adjusted on the bindings for the individual skier.
- Surface damages: inspect the surfaces that are in contact with the boot for wear or visible damage. Repair those worn or damaged parts or replace them with new ones.
- Ski brake (optional): inspect for cracks, bends and complete retraction. When the ski is placed flat on the floor, the brakes must be strong enough to lift the ski.
- Check to insure that no screws are missing.
- Scales: Check their readability and adjustability.
- All moving interfaces of the binding must be clean. Check for dirt, corrosion and gross damage. If the binding is significantly contaminated, use a dry or moist cloth to clean the binding. Do not use solvents for cleaning bindings. Do not use silicone or other lubricants on the toe housing or the heel fastener. Repair damaged parts.

7.2 Guidelines for inspecting the ski

Most skis are reinforced in the area where the binding is mounted. The material, design and dimensions of the ski may vary. Therefore, follow the instructions of the ski manufacturer when mounting the binding.
Follow to the recommendations of the ski manufacturer for the dimensions of the drill-holes, glue or tapping. If no guidelines exist, please note the following recommendations:

- Check the thickness of the ski for the correct drill-depth of the screw. If mounted in the correct way, the screws should never delaminate or dimple the ski. If you suspect that the ski is too thin, the binding should be temporarily placed on the ski so that the screws are temporarily exposed next to the sidewalls. If there is the risk that the screw will delaminate or dimple the base, use a shorter screw or carefully grind off some of the screw.
- Check the ski width. Check the ski edges for possible contact with the binding-screws to insure that they do not cause delamination or dimpling.
- Additional reinforcement plates or other reinforcement devices within the ski: some manufacturers of skis use reinforcement plates that are located approx. 3 - 6 mm underneath the ski surface. These plates must be drilled-through, completely, to prevent delamination.

7.3 Guidelines for boots

7tm telemark bindings are almost independent of boot soles. Despite this fact, certain minimum geometric requirements must be met to help insure that the boot is securely connected into the binding. These qualifications are noted in the ISO 11497 and ISO 6959 standards.
Only boots that meet these standards can be used.
With boots that are extensively worn, check to insure that they can be securely connected to the binding.
Children's boots may only be used with adult telemark bindings when the appropriate release values can be achieved.

Montageanweisung für

Bindungs-Schuhlängen-Einstellber

Mondo Point	ca.
UK	ca.
Eurosize	ca.

Warnung: Die Auslösung funktionie Kunststoff-Telemarkschuhen zuverl können womöglich die Drehmomen Bindung bei einem Sturz nicht ausr

1 Montage

1.1 Skibindungsanordnung

Befolgen Sie immer die Empfehlunge
Es gibt grundsätzlich zwei Methoden, anzuordnen, **Abb. A.**
a) Ski mit Montagemarkierung:
Die meisten Skihersteller markiere Skiseite wo die Skibindung montie Schuhsohlenmitten-Markierung bz
b) Ski ohne Montagemarkierung:
Schuhspitze -15 mm (3 Pin Linie) nen nur mit der 7tm Papierschablo

7tm Montagelehre
Abb. B: Beachten Sie die entspreche druckt auf der Montagelehre).
Bohrungen (22) für Carving-Unterlage

- Beide Öffnungshebel drehen, bis sind. Die Montagelehre plan auf de zieren und Lehre spannen.
- Positionieren der Montagelehre.
  Ski mit Montagemarkierung: Schuh handen Schuhmarkierung in Übere Montagemarkierung des Skis bring
  Ski ohne Montagemarkierung: Ski nen. Die Montagelehre mit der Sch die ausgemessene Skimitte positio

Wichtig: Besondere Vorsicht ist bei schrägen Seitenwangen geboten. H prüfung der planen Auflage der Mo

Papierschablone
Abb. C: Die Papierschablone ist ein nicht zur Verfügung steht.

- Positionieren der Papierschablone Montagelehre. Dann Papierschabl

Arbeiten Sie dabei sehr sorgfältig, dar Bohrungen (22) für Carving-Unterlage

1.2 Bohren

Hinweise zu den Befestigungssch
Die Befestigungsschrauben für Skibi tenden DIN/ISO Normen. Diese schre 8,0 mm ± 0,5 mm vor. Die Norm für c
Für Ski fordert die Norm einen defini gungsbereich und einen definierten S
Bei einigen Skimodellen liegt die zur dige Befestigungsplatte so tief, dass ten Befestigungsschrauben nicht fest sind längere Befestigungsschrauben auch in diesem Fall unbedingt auf die Skihersteller.
Der Bohrer Ø beträgt 4,1 mm. Verwe Skibindungs-Bohrer, beachten Sie un Skiherstellers. Vermeiden Sie den Ge Bohrern.

- Immer mit gleichmäßigem Druck b ten. Verkanten Sie den Bohrer nic Montagelehre.
- Die Bohrung muss so tief ausgefü Ansenkung hat. Dadurch wird der Skibindung sitzt korrekt auf dem S
- Nach dem Bohren die Montagelehen und mit der Hand auf die Skil Späne aus den Löchern herausfal

1.3 Montage der Bindung auf d

Alle Schrauben müssen fest angezog werden. Bei Verwendung eines Elekt