1995/96

TYROLIA SYMRENT

1995/96

SKIBINDUNGEN ALPIN
ALPINE SKI BINDINGS
FIXATIONS DE SKI ALPINE
ATTACHI PER SCI ALPINO
ALPINE SKIBINDINGEN

ALPINSKI
ALPINE SKI
SKIS ALPINE
SCI ALPINO
ALPINE SKI'S

ALPINSKISCHUHE
ALPINE SKI BOOTS
CHAUSSURES DE SKI
SCARPONI DA SCI ALPINO
ALPINE SKISCHOENEN

Technische Änderungen vorbehalten – Technical matters subject to change
Sous réserve des modifications – Specifiche soggette a variazione – Wijzigingen voorbehouden

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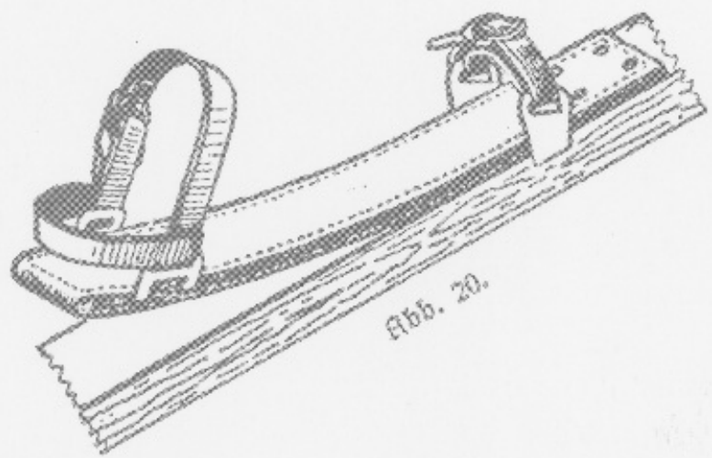


WE REALLY DO CARE ...

The Tyrolia SYMRENT System 95/96

Performance, for a rental binding, is not only what happens on the hill. A key measure of a product's quality is the ease with which a system can be adjusted and maintained throughout the course of several seasons.

The on- hill features of the TYROLIA design are well explained elsewhere in the Hi- Tech manuals for the retail. The mechanic-friendly rental design, however, deserves special attention here:

- Easy mounting: This means fewer mistakes and reduced set-up time.Especially with the PREDRILLED ski model „AT R SYMRENT"
- Easy pre- season testing, low drop- out rate. The automatic solelug design and the precise centering of the toe pincer system mean: fewer correction factors will be needed and less time spent testing.
- The SINGLE CODE system gives you a super fast option for binding-to-boot adjustment: set the heel's length using the special sole length scale. Forward pressure will be right on, first time, every time.
- All models with automatic solelug accommodating standard differences in boot sole height.
- Easy, hand- levered „ONE TOUCH"- set up. One tool adjustment, easy to turn adjustment screw, "easy- in" boot feature.
- Almost maintenance- free, easy-changing the AFD, cleaning the heel track, lubricating.
- In a „RENTAL BASIC KIT" TYROLIA offers essentials: template, boot measure, tape measure, adjustment charts, SINGLE CODE- stickers, white marker, rental manual.

TYROLIA made the commitment to offer a new comprehensive product and service program.

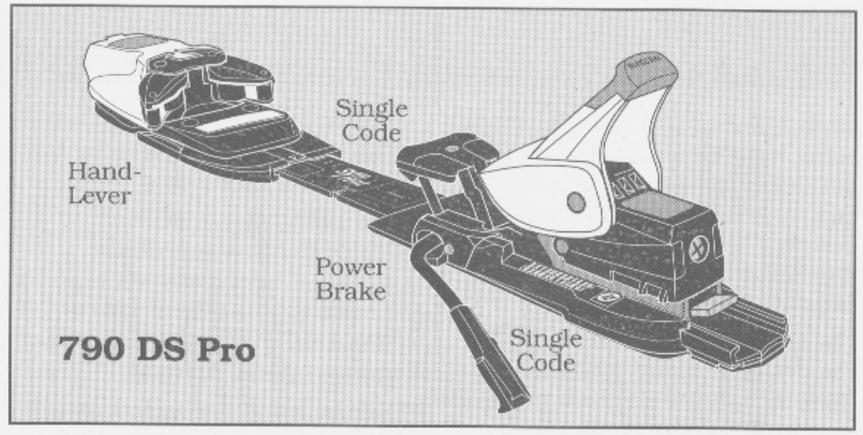
The SYMRENT Bindings 95/96

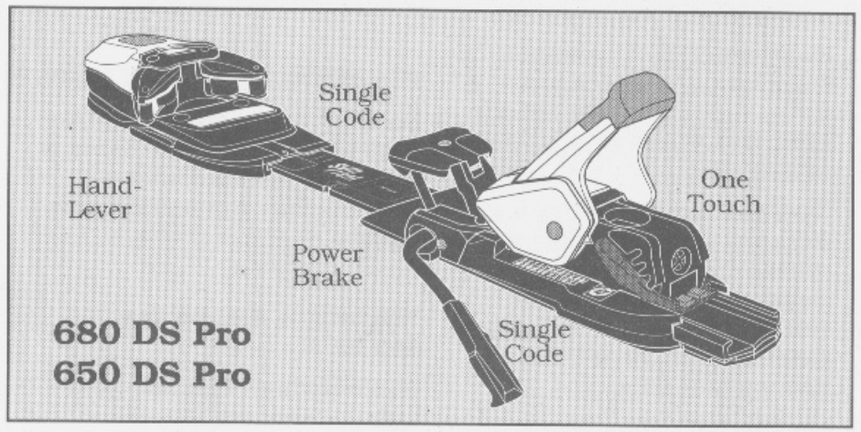
No single rental binding can ever fulfill all the needs of all types of shops. We therefore offer the following lineup of rental/demo models:

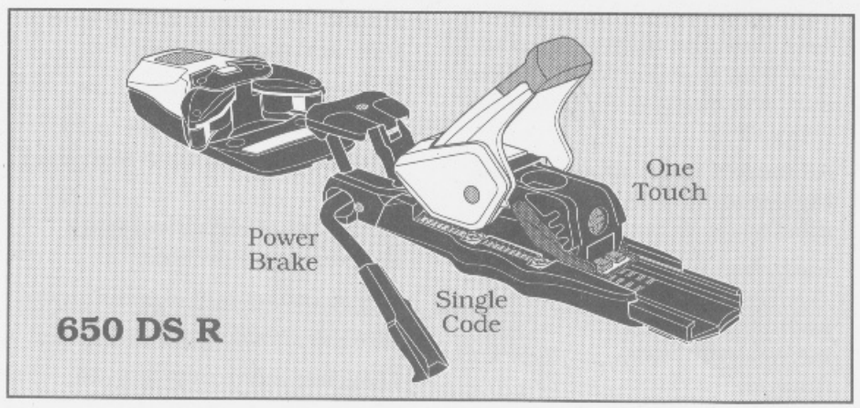
790 DS Pro, 680 DS Pro, 650 DS Pro —

Those bindings that help your high performance skis sell through.

- Handlever- adjusted heel (±48 mm) and toe (±48 mm)
- 7- step toe adjustment.
- DIN- rages from 2,5 up to 12 that accomodate even high level skiers.
- Short, lightweight heel track, because toe moveable.
- Power Brake: a new pedal brake.
- SINGLE CODE (alphanumeric)
- Diagonal toe, hand- levered.







- Diagonal heel with the sporty 790 DS Pro.
- well- known brand that provides confidence for the skier.

650 DR —

A technically new based but proven workhorse for the discerning skier who rents.

- Retail cosmetics enhancing the value of the binding to the skier.
- DIN range of 2.5 up to 9.
- Diagonal toe.
- large size range (84 mm, long track).
- SINGLE CODE (alphanumeric)
- Automatic toe and heel height. No guesswork.
- ONE TOUCH hand- lever- adjustment.

630 DR —

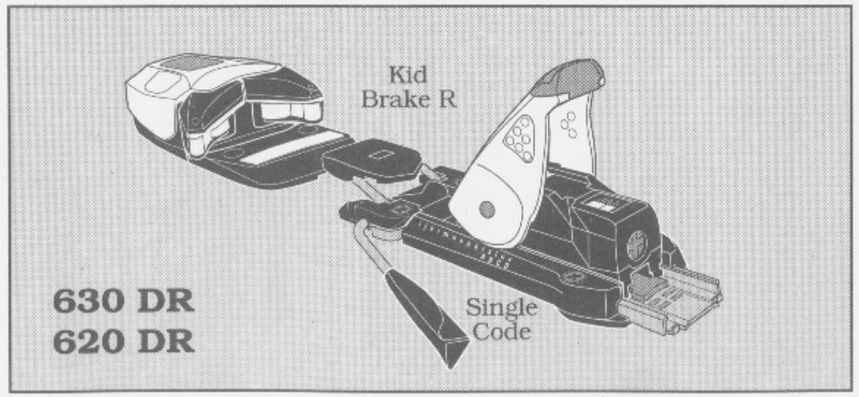
The light- weight junior binding with features rental operators want most.

- Latest toe and heel construction.
- SINGLE CODE (2 heel guides: i - v and q - L). Kid's boots in lower case letters, adult boots in upper case letters.
- Automatic toe and heel height for both "children: C" and "adult: A" boot standards
- New replaceable pedal brake.
- Suitable for ski lengths up to 170 cm.
- Wide DIN range: 1,5 - 5,5
- For ski length up to 170 cm

620 DR —

A new children and junior model, super convenient, „parent- free" operation.

- Automatic toe and heel pieces accept junior and adult boot sole dimensions, giving you full utilization of your junior ski inventory.
- SINGLE CODE (a - n, alphanumeric)
- New replaceable pedal brake.
- Fast heel track adjustment.
- Easy to open, easy to close (ergonomic children design).
- For ski length up to 140 cm
- DIN range 0.75 up to 4.5.



SYMRENT 95/96 - Data at a Glance

Model	DIN	Toe	Drill Tplt.	Single Code	Mondo Point	Bootsole L = mm
790 DS Pro	4-12	S-Pro	95	A - Y	22,5-32,5	262-362
680 DS Pro	3,5-10	S-Pro	95	A - Y	22,5-32,5	262-362
650 DS Pro	2,5-9	S-Pro	95	A - Y	22,5-32,5	262-362
650 DS R	2,5-9	Light	95	A - V	22,5-31	262-350
630 DR	1,5-5,5	Pro Junior	94	i - v q - L	19-24,5 22-27,5	230-282 258-310
620 DR	0,75-4,5	Junior Light	94	a- n	15,5-21,5	194-250
790 RFF Pro	5-14	Racing	92,93	H - R	23,5-31,5	272-352

Drill Template 94 (violance)

1. Compatibility

Presently the drill template 94 is valid for the following SYMRENT-models of the 1995/96 collection: 630 DR, 620 DR.

2. Drill Bit

If not otherwise specified by the ski manufacturer, use a 4.1 (diameter) x 7.0 mm drill bit.

Note for 630 DR: In accordance to the prevailing standard, use a 4.1 (diameter) x 9.0 mm drill bit for skis longer than 140 cm.

The bindings come with short screws. Replace them with longer ones if mounting on skis larger than 140 cm (see screw table on page A - 13).

3. Adjusting the Drill Template

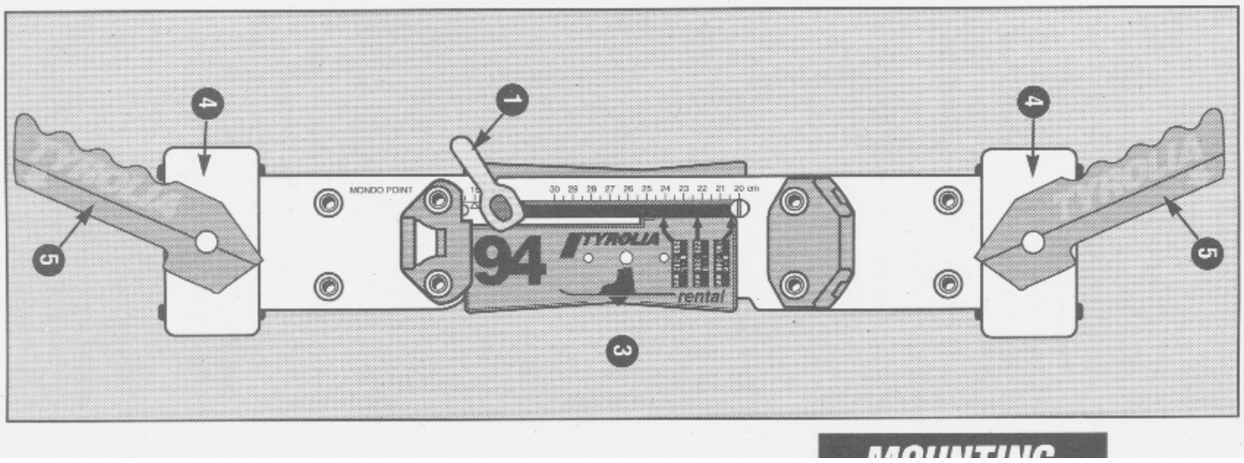
Unlock the locking lever (1) by rotating it counterclockwise.

For 620 DR: Slide the template to the marking „a - n". Aligne it exactly with the pointer and lock the lever (1) to prevent length change.

For 630 DR: Push the drill template exctly to the „i - v" (or „q - L") marking and lock the lever (1) to prevent length change.

See page A - 4 for further information about size adjustment ranges of the SYMRENT- bindings

The boot midpoint indicator (3) automatically represents the location of the boot center. The pointer of the template will have to



correspond with the print- marked or individually measured ski mid.

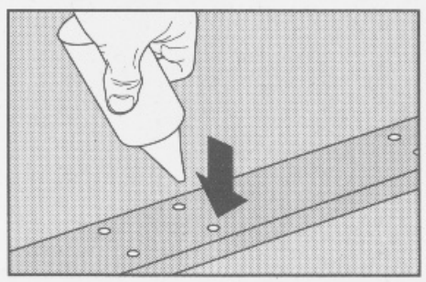
4. Positioning the Drill Template

Open the clamping jaws (4) of the template by rotating the violance colored clamping handles (5).Then place template correctly on the ski, with the boot midsole indicator (3) aligned with the mounting mark on the ski. Be sure the template is evenly seated against the ski's top surface.

Release clamping handles (5) thus attaching the template firmly to the ski.

5. Drilling the Holes

Drill the holes using an appropriate TYROLIA drill.



After drilling you may drop some TYROLIA glue into the holes. It lubricates the screws when getting mounted and later seals the ski preventing it from water leakage.

6. Mounting the Toe

Place the pre-mounted toe unit over the holes and fasten the screws (crosswise, in two cycles).

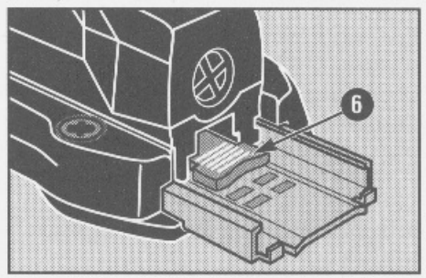
7. Mounting the Heel

Place the pre- assembled heel unit with its brake, guide and track over the holes. First fasten the rear screws, then fasten the front screws.

8. Forward Pressure Control

Place any reference boot in the binding using the SINGLE CODE for length adjustment and close it.

Then check the indicator (6, see pict.) located at the rear end of the heel piece. It must show the mid of the grooved marking on the toothed lock.



NOTE:

If the limits are not satisfied, readjust the bootsole length, check the SINGLE CODE (See also The Boot, page C - 8 in this manual).

Adjusting the forward pressure of the heel: please make sure that no boot is placed in the binding when opening the toothed lock!

9. Adjustment

Take at least one reference boot satisfying all standards and free of functional damages to perform test adjustments with the binding.

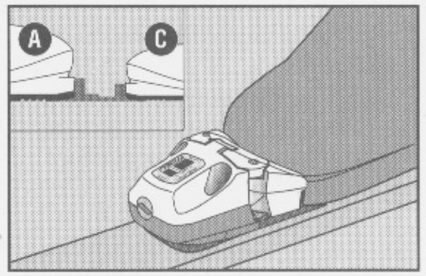
Using the SINGLE CODE choose the bootsize- corresponding alpha-setting on the heel guide.

If a boot of unknown size is used proceed as follows:

Open the heel unit and slide it gently to the heel of the inserted boot. Lock the heel in place while the Power Levers of the toe should not be pressed open.

Close the binding, check the forwardpressure.

No more adjustment of the toe - sole- lug is necessary. The toe units of 620 DR and 630 DR come with an automatic sole-lug accepting both „Adult" (A) and „Children" (C) standard bootsoles (see pict).



For the size ranges and the related TYROLIA SINGLE CODE see table on page A - 4 in this Manual.

Finding of the Release- /Retention values for both toe and heel:

Place a boot in the binding. Following the ASTM- and ISO- standards the release- / retention value finding should be based either on the Body Weight- or the Tibia Diameter Method.

Determine the setting number listed in the table and set the binding accordingly.

We strongly recommend to measure the set release values using an electronical or mechanical momentum test device and to record the test results in a document.

10. Function Check

Before the newly mounted ski equipment is exposed to the public rental use please perform a complete functional check.

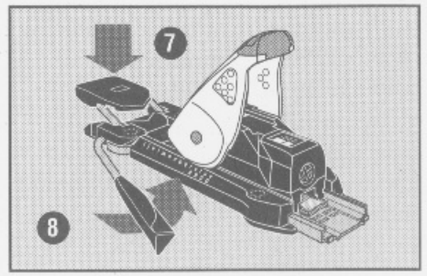
For your own interest focus on the ease of manual adjustment handling before you follow the rest of the usual test routine.

Note:

In some countries (USA, CAN) Rental equipment has to pass a special test procedure (Pre- Season Test) to qualify for rental use (See also tests in this manual and the annually issued TYROLIA Hi- Tech Manual).

Easy entry and exit: If set properly the boot should not catch on the sole hold-down of the heel as it opens and closes.

Pedal Brake: Press the step-on plate (7) down by hand. The brake arms (8) must close and open automatically to the braking position when the step-on plate is released (See pict).



620 DR: The brak e can be used for all skis up to a length of 140cm and a width of 70 mm.

630 DR: The brake can be used for all skis up to a length of 170 cm and a width of 70 mm.

Lateral elasticity of the toe: press the boot laterally outward (by hand).

The binding must recenter the boot easily and quickly from a 10mm lateral displacement.

The vertical elasticity: The „Control" feature of the toe should be undertaken a visual check.

After any vertical displacement the bootsole should return immediately to the original stand on the AFD plate leaving just a small play (not less than 1.5 mm) to avoid any build- up of mechanical friction.

11. Final Check

* Has the proper mounting point been selected?
* Has the proper heel guide (630 DR) for the desired size range been selected?
* Have all screws been fastened tightly?
* Has the forward pressure setting been controlled?
* Has at least one full adjustment been made using a representative reference boot including Release- / Retention setting and momentum test?
* Has the functional check been passed successfully?
* Release values of toe and heel properly determined and set?
* Is the user instruction attached? Is the shop mechanic instructed?
* *For specific countries being concerned:*

  Did the equipment pass a Pre-Season Test Procerdure successfully (keep a record for liability reasons)?

Warning:

Please do not apply any physical changes to the bindings geometry, especially to the automatic sole hold- down of the toe piece.

Such action could cause unforseen and dangerous changes of the designed release- /retention characteristics.

Drill Template 95 (yellow)

1. Compatibility

Presently the drill template 95 is valid for the following SYMRENT-models of the 1995/96 collection:

790 DS Pro, 680 DS Pro, 650 DS Pro, 650 DS R.

2. Drill Bit

If not otherwise specified by the ski manufacturer, use a 4.1 (diameter) x 9.0 mm drill bit.

As all above mentioned bindings are designed for adults they schould be mounted on skis longer than 140 cm.

NOTE: No more drilling for TYROLIA binding model 650 DS R on a TYROLIA AT R SYMRENT ski which comes predrilled if desired (optional).

3. Adjusting the Drill Template

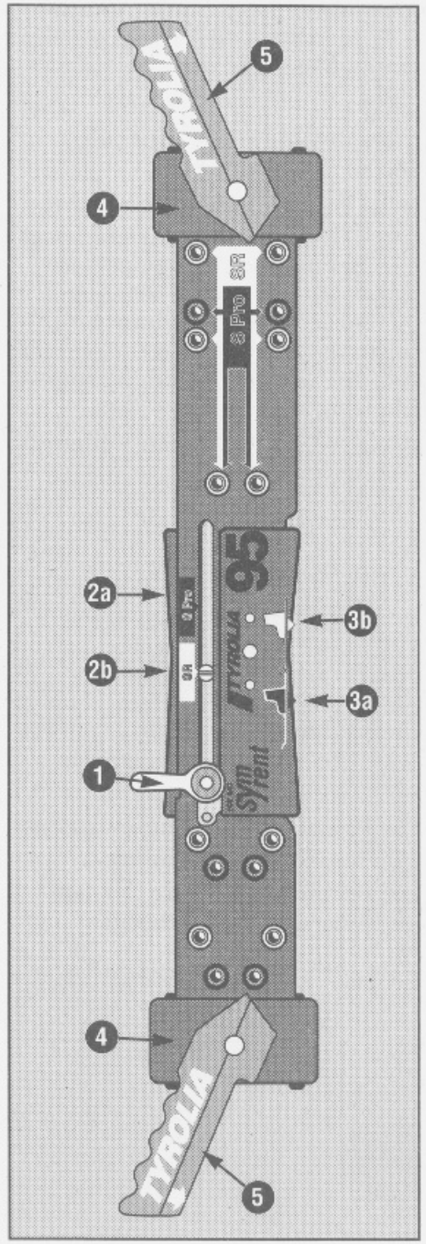
Unlock the locking lever (1) by rotating it counterclockwise.

For all Pro models: Push the template to the „S Pro"- position (2a, black) and lock with lever (1) to prevent length change.

Note: The boot midpoint indicator (3a, black) automatically represents the location of the boot center.

For 650 DS R: Slide the template to the "SR"- position (2b, yellow). Lock the lever (1) to prevent length change.

Note: The boot midpoint indicator



(3b, yellow) automatically represents the location of boot center.

The boot pointers (3a, 3b) of the template will have to correspond with the print- marked or individually measured ski mid.

4. Positioning the Drill Template

Open the clamping jaws (4) of the template by rotating the clamping handles (5) and then place template correctly on the ski. Aligne the boot midsole indicator with the mounting mark on the ski. Be sure the template is evenly seated against the ski's top surface.

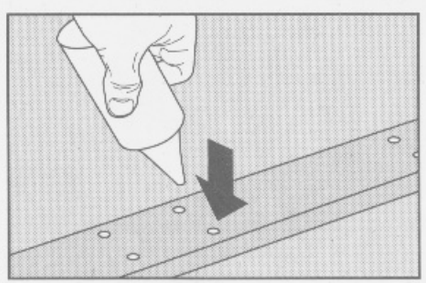
Release clamping handles (5) thus attaching the template firmly to the ski.

5. Drilling the Holes

Drill the holes using appropriate TYROLIA drill. After drilling you may drop some TYROLIA glue into the holes. It lubricates the screws when getting mounted and later seals the ski preventing it from water leakage

For Pro bindings: 8 holes to drill (black and white bushings).

For 650 DS R: 10 holes to drill (yellow and white bushings)



6. Mounting the Toe

For all Pro models: Connect (hook) the plastic mid section with the metal toe track.

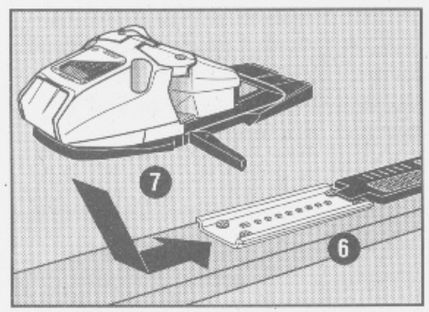
Place the assembled toe track (6) and fasten the 4 (four) screws.

Slide on the toe piece with its hand lever open (7) from the front.

Close the hand lever and let the toepiece catch the desired SINGLE CODE position on the track.

Make sure that the lever snaps in place completely (it may be necessary to slightly slide the toe forwards and backwards).

For 650 DS R: Place toepiece on the prepared holes and fasten screws (crosswise, two times).



7. Mounting the Heel

Place the pre-mounted heel unit with its brake, guide and track over the holes. Start fastening the rear screws, then fasten the front screws.

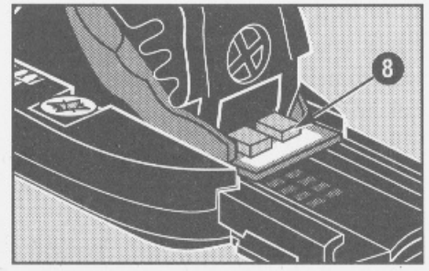
NOTE for 650 DS R: Long 80 mm track with 6 screws.

8. Forward Pressure Control

Place a suitable reference boot in

the binding using the SINGLE CODE for length adjustment and close it.

Then check the indicator (8, see pict.) located at the rear end of the heel piece. With boot inserted the pointer should rest in the mid of the white print- marking on the toothed lock.

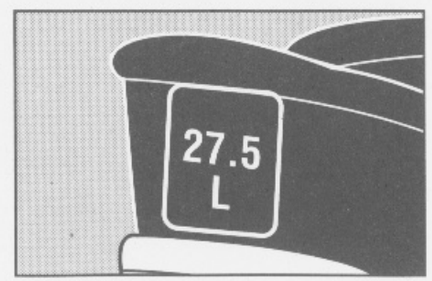


NOTE: If this limit is not satisfied, readjust the bootsole length, check the SINGLE CODE (See The Boot, page C - 8 in this manual).

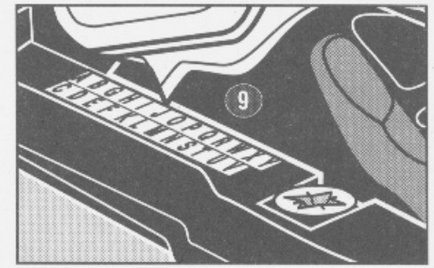
Adjusting the forward pressure of the heel: please make sure that no boot is placed in the binding when opening the toothed lock!

9. Adjustment

For all Models: find adjustment ranges and some handling hints in sections „Overview" and „Rental" of this manual.



Take at least one reference boot satisfying all standards and free of functional damages to perform test adjustments with the binding.



Choose the bootsize- corresponding alpha- setting (SINGLE CODE) on the heel guide (9).

If a boot of unknown size is used proceed as follows:

Open the binding heel and slide it gently to the heel of the inserted boot. Lock the heelpiece in place while the Power Levers of the toe should not be pressed open.

Close the binding, check the forward pressure.

All toe units come with an automatic sole- lug accepting „Adult" (A) standard bootsoles.

The release- / retention value finding should be based either on the Body Weight- or the Tibia Diameter Method according to ASTM /ISO standards (See charts on page A - 27/28 in this manual).

Determine the toe and heel setting number listed in the table and set the binding accordingly.

We strongly recommend to measure the settings with an electronical or mechanical momentum test device and to record the test results in a document.

NOTE: Adjustment numbers >10 do not satisfy the standard. Protection assertions are not fully applicable. **Adjustments exceeding this range are made on ones own risk!**

10. Function Check

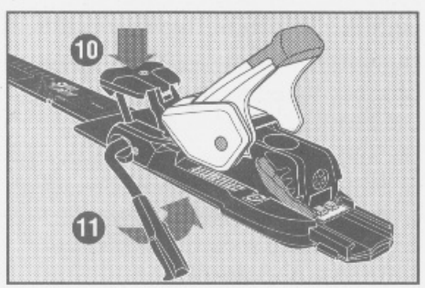
Before the newly mounted ski equipment is exposed to the public rental use please perform a complete functional check.

For your own interest focus on the ease of manual adjustment handling before you follow the rest of the usual test routine.

Note: In some countries (USA, CAN) rental equipment has to pass a special test procedure (Pre- Season Test) to qualify for rental use (See also tests in this manual and the annually issued TYROLIA Hi- Tech Manual).

Easy entry and exit: If set properly the boot should not catch on the sole hold-down of the heel as it opens and closes.

Power Brake: Press the step- on plate (10) down by hand. The brake arms (11) must close and open automatically to the braking position when the step-on plate is released (See pict).



TYROLIA brakes are compatible up to a ski width of 72 mm.

Lateral elasticity of the toe: press the boot laterally outward (by hand).

The binding must recenter the boot easily and quickly from a 15mm lateral displacement.

11. Final Check

* Has the proper mounting point been selected?
* Have all screws been fastened tightly (10 with 650 DS R)?
* Has the forward pressure setting been controlled?
* Has at least one full adjustment been made using a representative reference boot including Release- / Retention setting and momentum test?
* Has the functional check been passed successfully?
* Functional brake test passed?
* Is the user instruction attached? Is the shop mechanic instructed?
* *For specific countries being concerned:*

  Did the equipment pass a Pre-Season Test Procerdure successfully (keep a record for liability reasons)?

Screw Table, SYMRENT 1995/96

Art.-No.	Symbol and Dimension	790 RFF Pro „TEST"	790 DS Pro 680 DS Pro 650 DS Pro	650 DSR	630 DR 620 DR	630 DR Ski > 140 cm
002 430	5,5 x 12,3		**			
002 319	5,5 x 14					
002 339	5,5 x 12	*				
002 426	5,5 x 16,9					
002 376	5,5 x 13,4					
002 425	5,5 x 25,5					
002 401	5,5 x 15,5					
002 402	5,5 x 11,4					
002 403	5,5 x 17,5					
160 018	5,5 x 18,5					
160 030	5,5 x 15,5					
160 031	5,5 x 20,5					
160 050	5,5 x 9,5					
002 423	5,5 x 21,4			***		
002 424	5,5 x 27,5					
002 429	5,5 x 24,5					

* 3 Screws (for toe track)

** 4 Screws (for toe track)

*** 4 Screws (center and rear of heel guide)

The SYMRENT- Skiboots

The Total System Approach

To create the optimal ski system, a ski, boot and binding should be conceived, designed and created as a single unit. The TYROLIA boot is the centerpiece of a ski system designed for top performance.

The foot is a dynamic, complex appendage. The nerves, muscles and 26 bones comprising the foot are constantly transmitting sensations and making adjustments to help the body maintain a balanced stance.

For a ski boot to function well, good fit is essential. The results are often reduced sensitivity, cold and discomfort. The foot should be firmly supported, but not to the point where the natural motion and interaction of the bones of the foot is impeded.

Prevention

Even more important than comfort and convenience might be the preventional factor of ski equipment. To qualify as a mature part in a rental systems the boot has to satisfy a number of technical requirements.

A safety binding would release as it has been designed for just if the boot is able to transfer the critical dynamic trigger forces unfiltered.

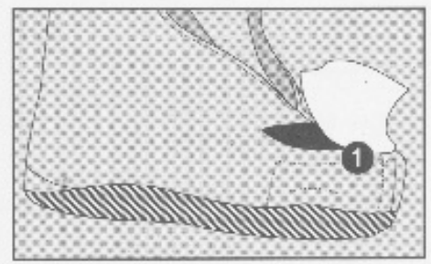
No binding adjustment could ever compensate an insufficient performance of a skiboot.

Children in Mind

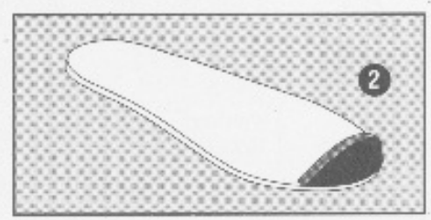
To meet children's need for freedom of movement, TYROLIA has developed the "Walky" boot model. This modern children's ski boot supports and cradles the foot. It facilitates walking and increases foot stability without interfering with the leg's natural movement at the front and back.

Sturdy shaft elements support the leg laterally. The Vibram profile on the sole ensures a firm step when walking.

Windows (1) located at the toe of the inner boots make it easy to assess the child's foot size as it grows.



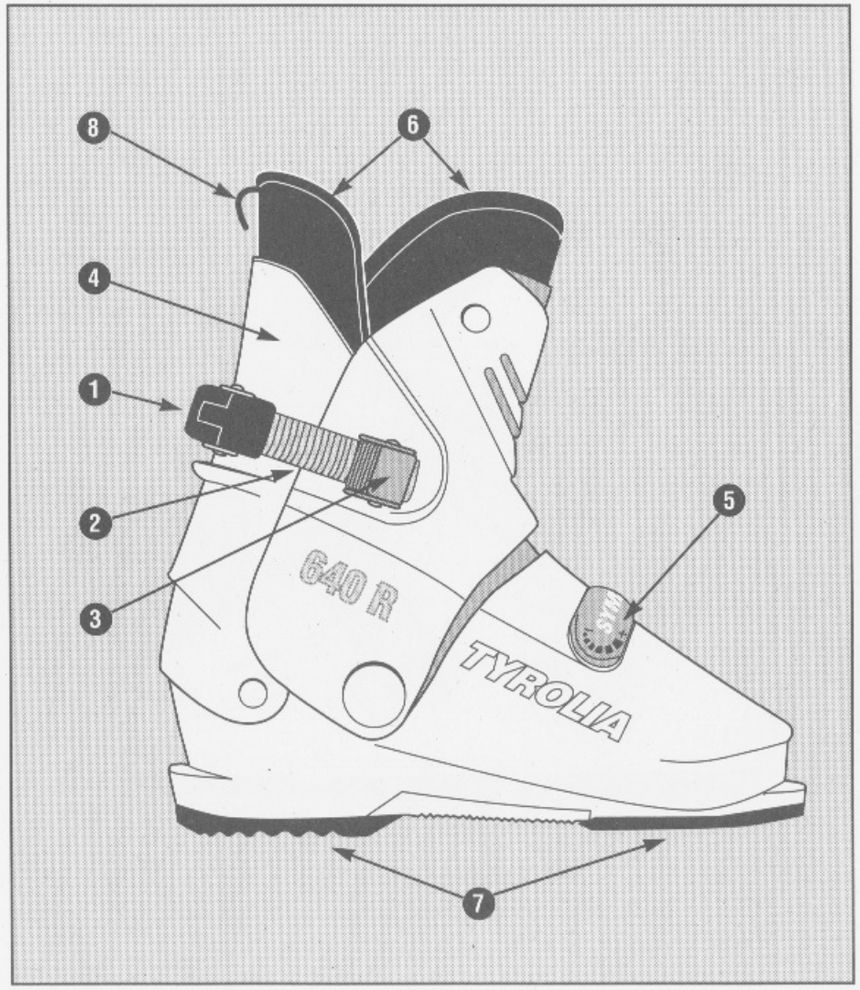
Thanks to its replaceable parts like the binding contact plate, reserve capacity for growing feet (2. inlay sole) Walky can be utilize your inventory for more than just one season.



Spareparts, Collection 95/96

Sparepart, Item		For models	Unit	Art. Nr.
	Basic Wedge R	23–24.5, 640 R	1 Pair	002 612
		25–26.5, 640 R		002 613
		27–28.5, 640 R		002 614
		29–30.5, 640 R		002 889
	Inlay Sole R 94	23.5–30.5, 640 R	1 Pair	028 205- 028 220
	Inlay Sole W 94	alle Walky	1 Pair	028 180- 028 194
	Innerboot R 94	23.5–30.5, 640 R black	1 Pair	028 556– 028 570
	Innerboot 94 Walky	all Walky, red	1 Pair	028 530– 028 544
	Screw Rivet 4x6 mm	all Buckles	50 Pieces	002 876
	Sole Pad Set R 94	all sizes, 640 R	1 Set	002 886
	Sole Pad W	all Walky, black	1 Piece	002 891
	Rubber Seal	all Walky, black	1 Piece	002 890
	T-Band Buckle + Stop	640 R, black	1 Piece	002 893
	E-Buckle 1a/b	all Walky	1 Paar	002 884
	T-Plate 3+4 E-Buckle	all Walky	1 Piece	002 620
	Washer 16/7/0.8	Washer f. toothed plates	50 Pieces	002 615
	Rivet 3.7x11mm	all Buckles	50 Pieces	002 875

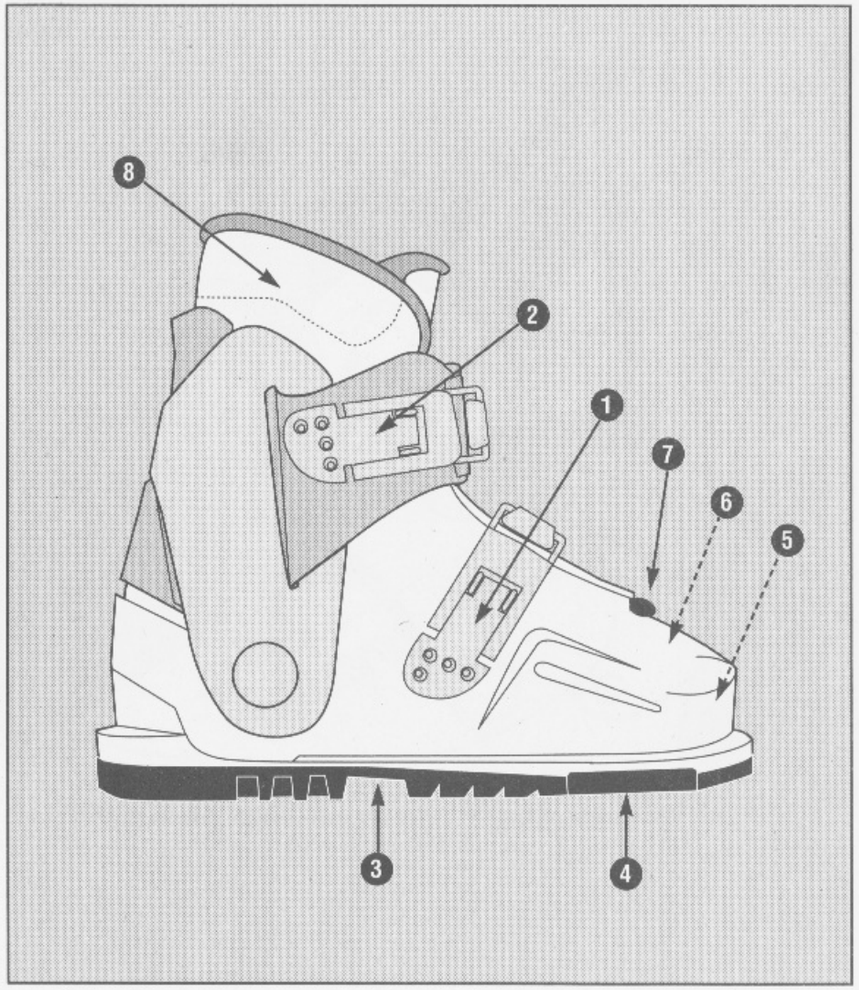
640 R SYMRENT, MP: 23,5 - 30,5



Comfort, Parts and Functional Elements:

1 Buckle Lever (replaceable)
2 Ratchet Strap (replaceable)
3 Ratchet Lock (replaceable)
4 Rear Spoiler
5 Forefoot and Instep-Adjustment
6 Innerboot, Liner
7 Sole Pads
8 Size Label (Mondo Point and TYROLIA SINGLE CODE)

WALKY, MP: 15,5 - 21,5



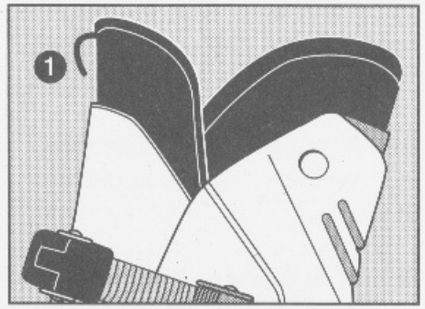
Walky, Parts and Functional Elements:

1-2 Buckles, adjustable
3 Vibram Rubber Sole
4 Anti- Friction Plate (replaceable)
5 Window "Toe-Eye" (inlay sole)
6 Growth Reserve Capacity (inlay sole)
7 Rubber Seal (replaceable)
8 Inner Boot (replaceable)

Pre- Season: Prepairing and Testing

„SINGLE CODING"

The TYROLIA 640 R SYMRENT comes labelled (1) with Mondo Point size and the alphanumeric SINGLE CODE on the rear spoiler. This will give you a super fast option for shop service and binding-to-boot adjustment.



Preparing all other boots for the season follow this procedure:

1. Mount all bindings according to TYROLIA procedures. Pick a mounted sample binding of each model.
2. Place a boot of each size in the binding and adjust forward pressure until correct.
3. Open the heel and remove boot.
4. Record the SINGLE CODE from the track that corresponds to the mark on the side of the heel body (The boot must not be inserted in the binding when you read the code).
5. Check each code again before marking all boots of this size with their SINGLE CODE (TYROLIA color stickers available!)

For this procedure you could also use our Rental Boot Indicator (Art.Nr. 002 439, see below in this manual). TYROLIA SINGLE CODE- stickers: Art. Nr.: 009 442.

Pre- season boot test

Any boot in inventory not passing the Visual Inspection criteria (see below in this manual) should be repaired or not be used with a TYROLIA binding.

The Test

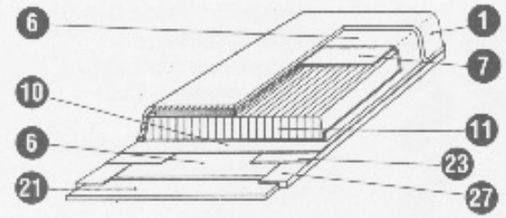
1. For each rental binding model in inventory, select two reference bindings that passed the preceding binding tests.
2. Select a sample of boots to be tested:

- The sample size should be 5% of the inventory (but not less than 15 nor more than 80 units).
- At least one boot from each shell size in stock should be included in the sample.
- Selected boots should be representative of the quality of boots in the shop's inventory.

3. Take the first pair of reference bindings and lubricate all boot/binding contact surfaces with a soap and water solution.
4. Using a typical boot of the sole length to be inspected, adjust both bindings to the same measured values as indicated in the following chart:

Model: MC R SYMRENT Length: 160 - 200 cm

Construction



1 Vandar MEGACAP (transparent, backprint)
6 Prepreg glass weaver
7 Prepreg Torsionsbox
10 GFK Fleece
11 Compound Core
21 HM PE Grafite, sintered
23 Elastomer
27 Steel Edge
--- Ski Tip Cover

Target Group, Recommendation

Target group: All Terrain, Rental.
Length: Body height +15 to +25 cm (dep. on weight and skiing ability).
Recomm. use: Abrasion- proof shell ski for heavy duty in rental business. All Terrain, but forgiving.

E.T.S.- Code

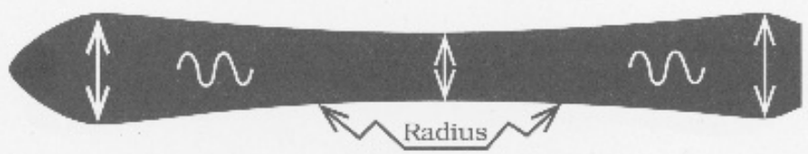
Edge **oo** = Good edge grip between the turns.
Turn **oo** = Turn initiation flat and carved as well.
Speed **oo** = Medium and upper speed range.

(E = Edge = Designed for edge grip ...)
(T = Turn = Designed for type of turn initiation ...)
(S = Speed = Designed for speed range ...)

Technical Data (for 190 cm sample)

Flex at shovel:..... 23,30 N/cm
Flex at tail: ..... 33,90 N/cm
Flex at waist: ..... 30,80 N/cm
Sidecut: 85,6 - 63,6 - 75,1 mm

Torsional rigidity: ....1,05 Nm/Grd
Weight/Ski: ..... 1565 g
Radius: ..... 42,2 m

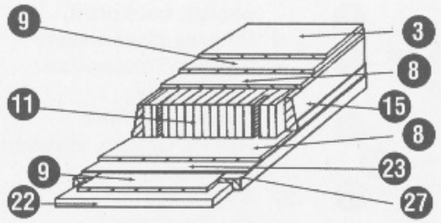


Argumentation

- Shell Construction (backprint)
- PA Megacap + Torsionbox
- Grafite Reinforced
- Rental Tuning
- Heavy duty
- Serviceable

Model: AT R SYMRENT, L: 140, 150, 160-200 cm

Construction



3 Phenol Top Sheet (Serigrafic, Protection Seal)
8 GFK- Laminate
9 Titanal Reinforcement
11 HD Compound Core
15 Phenol Sidewall
22 HM PE Grafite extruded
23 Elastomer
27 Steel Edge

Target Group, Recommendation

Target group: All Terrain / Rental.
Length: Body height -5 to +20 cm (depdt. on weight and skiing ability).
Recomm. use: Classical sandwich ski for heavy duty in rental business. For Skiers preferring a lifely All Terrain ski with some tolerance.

E.T.S.- Code

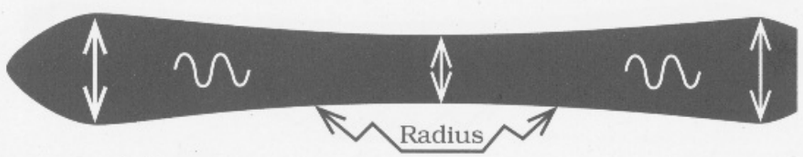
Edge **ooo** = Dominant edge grip with carving tendency.
Turn **oo** = Turn initiation flat and carved as well.
Speed **oo** = Medium and upper speed range.

(E = Edge = Designed for edge grip ...)
(T = Turn = Designed for type of turn initiation ...)
(S = Speed = Designed for speed range ...)

Technical Data (for 190 cm sample)

Flex at shovel:..... 25,1 N/cm
Flex at tail: ..... 40,1 N/cm
Flex at waist: ..... 38,0 N/cm
Sidecut: 86,5- 67,84- 76,9 mm

Torsional rigidity: ... 1,07 Nm/Grd
Weight/Ski: ..... 1580 g
Radius: ..... 57,72 m



Argumentation

- HD Sandwich Compound
- Trapezoid Sidewalls
- Rental Tuning
- Serviceable running base: extruded HM- PE- Grafite
- PREDRILLED for 650 DS R

Service, Grinding

Mounting hints

The PREDRILLED TYROLIA skis help to spare more than 75 % of the mounting time and prevent from possible mounting errors.

Beside this advantage the precision of an industrial C. A. M. - system guided drilling device seems to be unbeatable if compared with manual template drilling.

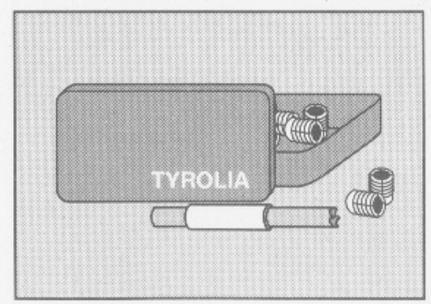
With predrilled skis the mechanic is now free to concentrate exclusively on binding set up and equipment testing.

NOTE, if choosing the predrilled AT R SYMRENT ski:

The drill pattern of this ski is fitting exclusively for the TYROLIA SYMRENT binding model 650 DS R.

Old Skis aren't lost yet

For repairs of damaged binding holes and rocked mounting areas of old skis we recommend a special Repair Set (Art. Nr. 162 129, see pict).

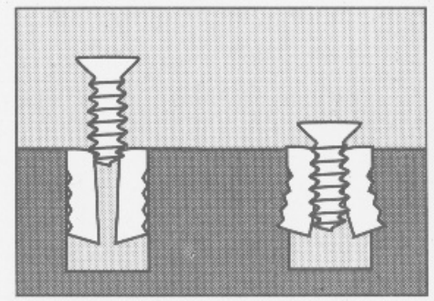


It cosists of a cavity- drill bit and some oversized plastic plugs.

You can even get out and replace a broken screw with this tool.

Just drill an oversized hole around the dmaged hole using the original template of the binding.

Then plug in a plastic (see pict) and drive in a new screw. Some mechanics swear the new screw would provide a better hold than any before.



Seal the free holes

When mounting repeatedly different bindings on one ski you should not forget to close any free hole carefully.

Most suitable for this are wooden plugs as they are used also by our Racing Service (Art. Nr. 190 857, see Workshop list in this manual).

New: 3 -D- Ski Grinding Device for asymmetric Ski Designs

(Art. Nr. 009 335, see pict.)

For powered grinder ski preparation the asymmetric 3- D- ski always have been a problem.

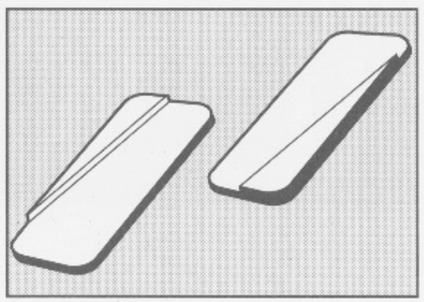
Now we offer a simple and helpful device applicable to all TYROLIA and some other problem ski models of the recent years.

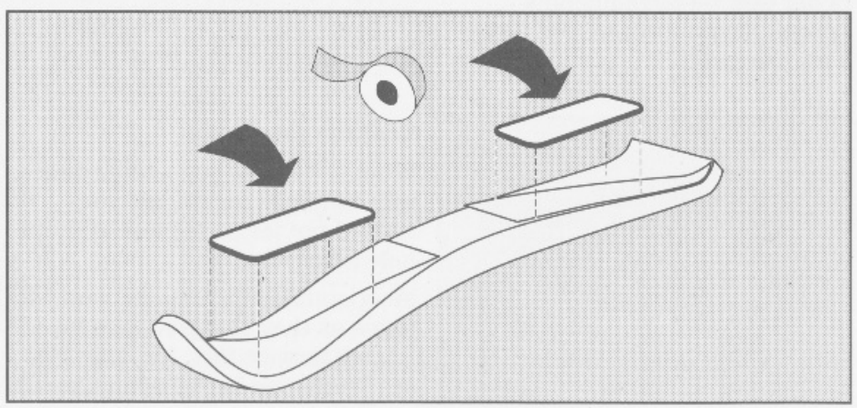
The self- adhesive plastic pads are compensating the uneven surface of the ski.

It allows the ski running smoothly through the grinding device.

No more asymmetric grinding appears even after 15 service cycles.

Automatic grinder with pneumatic support can get better hold of the ski and don't loose it during the procedure.





Service Check / Rental

Visual Inspection of Skis

In assembling a system for the skier, it is the responsibility of the shop to inspect and evaluate each equipment component.

This inspection checklist should be followed before any mounting or adjusting is performed.

Ideally, the checklist should be posted and used on the sales floor while the customer is still in the shop so that any deficiencies can be explained on the spot.

1. Check Suitability

- Are the model and size appropriate for the skier's ability?

2. Check that the skis are a pair

- Do the serial numbers match?

3. Check Condition

- Skis with more than 3 sets of binding holes should be replaced (Exeption: TYROLIA predrilled skis).
- Unused holes should be sealed with wood or plastic plugs and some TYROLIA glue.
- Skis should be free of significant bends or delaminations.
- Check that edges and tip and tail inserts are in place and secure.
- Check running base and edge condition and recommend a tune-up for improved performance, if appropriate.

GENERAL RULE:

ONLY AFTER ALL COMPONENTS HAVE PASSED EACH POINT OF INSPECTIONS AS ABOVE SHOULD THEY BE ACCEPTED FOR ASSEMBLY INTO A SYSTEM!

First Class Rental

With the predrilled TYROLIA- Top Skis of the Inline, which are compatible wirh the FreeFlex 790 RFF Pro („Test") you get the opportunity to offer a special rental and Test- service for your VIP- customers.

The drill pattern also fits to all PowerPoint bindings of the retail line.

Predrilled also means that you are free to sell the skis through at any time even with another binding model mounted. No risk.

Change the binding model or the mounting size in no time and without drilling new holes!

Heavy Duty Rental

TYROLIA offers two specially designed rental models with low abrasion top shell / sheet, and a black durable high density running base.

The MC R has a shell construction

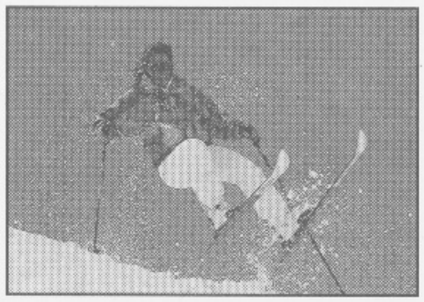
All Terrain und ETS

in a colorful durable backprint-design, the AT R features a Grafite- / Titanal- reinforced sandwich construction.

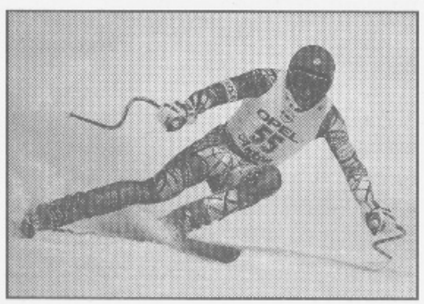
"All Terrain Ski" as a Concept

The traditional target groups are not enough to describe the new trends in the ski market.

All Terrain: Because of tighter spaces, edge grip, maneuverability and smoothness of performance are becoming more important



Quick acceleration from the lower speed range, whether the ski is on its edge or flat on its base, is gaining more emphasis. This should



allow to handle the different slopes and snow conditions with ease.

The All Terrain ski has already become a real alternative to the competition- oriented ski.

People want a versatile, agile ski with excellent buffering behavior in moguls and good floating capability in deep or changing snow.

E.T.S.- Code as a new Ski Specification

During the sales talk the E.T.S.-Code helps to find the suitabe ski much quicker than before.

E.T.S. does not specify the customer personality, it explains the „ personality of the ski and what it has been designed for:

E = Kind of the **edge** grip and steering / carving

T = Kind of the **turn** initiation

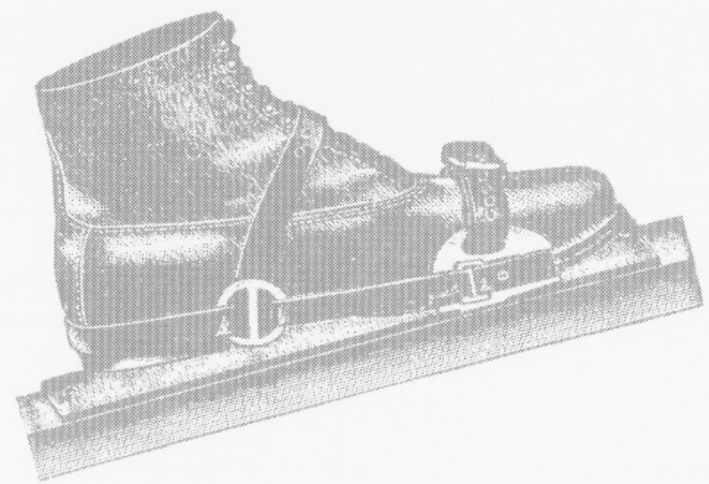
S = The **speed** range, smoothness of performance.

The non- linear E.T.S. system allows more diversified argumentation towards the customer.

Psychologically the E.T.S. helps to avoid a classification of the customer's skiing ability and encourrages the customer to identify with the ski qualities.

Find more about it in the dealers catalogue and the Hi Tech manual 95 im Hi-Tech Manual 95.

symrent



WE REALLY DO CARE ...

should be replaced immediately. Easy replacement with SYMRENT bindings possible:

- The new „Power Brake" for all adult binding models.
- The new replaceable Kid & Junior Brake for the model 630 DR and skilengths up to 170 cm.
- The replaceable Kid Brake for the model 620 DR and ski lengths up to 140 cm.

Replacing the Heel Track

1. For 620/ 630: Unscrew the heel unit, disconnect it from brake, slide (forwards!) the heel off the track, replace track.
2. For Pro and 650 DS R: Slide off the heelpiece (backwards, see pict below, 6), unscrew track and brake, replace track.

Sparepart- Identification

Most of the replaceable parts have an article number (000 000) imprinted down under.

Please enclose this reference number your sparepart order to prevent confusions.

Cleaning and Lubricating

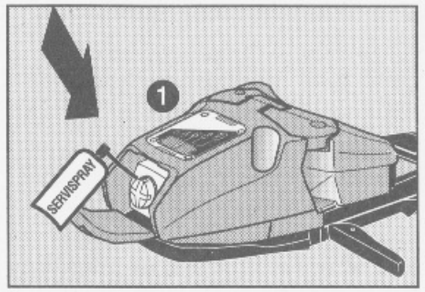
- Ski bindings need regular maintenance.
- Proper function is no longer insured if this procedure is not followed periodically.
- Please use TYROLIA recommended grease (Art. Nr.: 170 052) and lubrication (ServiSpray Art. Nr.: 170 051) exclusively.
- Clean the surfaces with a dry rag or warm water and soft soap.
- Avoid any contact with aggressive solvents or degreasants.
- Do not use cleansers!
- Do not use solvents at all!
- High pressure cleaning is not recommended. It might have the negative side- effect of washing away the lubricating films.
- Take the special TYROLIA grease to lubricate tracks and moveable parts.
- Take the TYROLIA ServiSpray only if the point to be greased cannot be reached directly (these positions are specially marked in the drawings).
- Please never use sprays where plastic glides on plastic. Beside other unwanted effects this could radically change the release values!

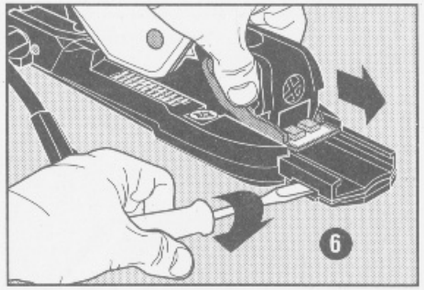
GENERAL RULE:

ONLY AFTER ALL COMPONENTS HAVE PASSED EACH POINT OF INSPECTIONS AS ABOVE SHOULD THEY BE ACCEPTED FOR ASSEMBLY INTO A SYSTEM!

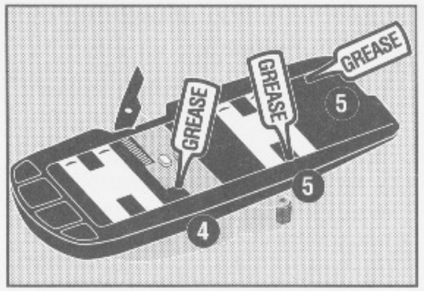
Lubricating the Toepiece

1. Toe release indicator adjustment screw, guides of the main spring in the housing (with TYROLIA ServiSpray, see pict).





2. In case of friction in the track system: Mark the toe position, open the SYMRENT hand lever, pull off (forward!) the toepiece from the toe track (no pict).
3. Dry- clean the track and the toe guide base gently using a plastic brush (no pict).
4. Then lubricate the locking mechanism at both sides of the toe guide base (use TYROLIA grease, see pict).
5. Both sides of the track guide over the entire length (use TYROLIA grease, see pict).

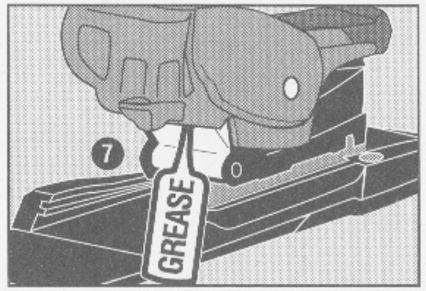


Lubricating the Heel

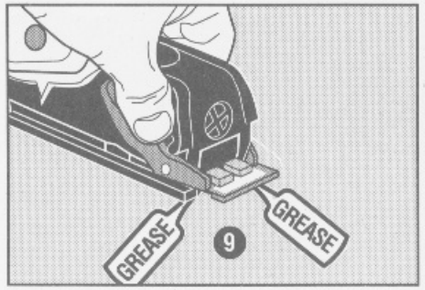
6. Mark heel position, open the guide lock with screwdriver, press hand lever and pull off the heelpiece backwards (pict).

Note: The heels of 620 / 630 cannot be pulled off the track.

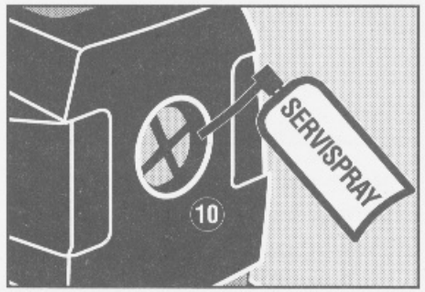
7. Edge of the synthetic release cam under the heel lug as shown white in the pict below (use TYROLIA grease, see pict).



8. Both sides of the heel track (inside), entire length (use TYROLIA grease, no pict).
9. The bearings of the opened hand- lever, bottom side (use TYROLIA grease, see pict).



10. The guiding channel of the releasesetting adjustment screw (use TYROLIA ServiSpray, see pict).

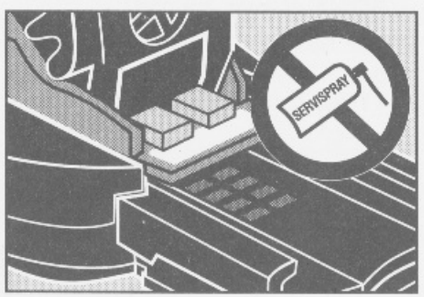


After finishing the heel lubrication restore its original position and lock it in place.

NOT to be Lubricated:

The locking element and the corresponding holes in the heel track should be cleaned but not lubricated.

This will prevent from sticky dirt accumulation in this area which could interfere the ease of handling.



Use of Ski- Binding- Interfaces

According to the trend the new SYMRENT bindings are equipped with some higher stand.

Warning: Any further increase of stand height by using non- native interfaces between ski and binding could result in a dramatic loss of brake function or interfere the mounting procedure.

Test Your Drill Template!

1. Position the fully extended drill template on a discarded ski.
2. Turn the clamping lever to open the clamping jaws of the mounting template.
3. Position the template properly on the ski so that the boot center marking is aligned with the mounting point described on the ski.
4. Let go of the clamping lever. The template clamps automatically.
5. Drill all the holes.
6. Remove the mounting template and clean the ski.
7. Measure the holes with a slide gauge.
8. The distance of the bore holes to the edge of the ski must be equal for each pair of related holes. The deviation must not be more than 1mm.
9. The mounting template must be discarded if greater deviations occur!

ASTM / ISO - Release /Retention Chart

kg/lbs	cm/Ft'In"	SKIER CODE	mm <250	251-270	271-290	291-310	311-330	331<	Nm (5)	Nm (18)
10-13 kg 22-29 lbs		A	0,75	0,75					8	29
14-17 kg 30-38 lbs		B	1,00	1,00	0,75				11	40
18-21 kg 39-47 lbs		C	1,50	1,25	1,00				14	52
22-25 kg 48-56 lbs		D	1,75	1,50	1,50	1,25			17	64
26-30 kg 57-66 lbs		E	2,25	2,00	1,75	1,50	1,50		20	75
31-35 kg 67-78 lbs		F	2,75	2,50	2,25	2,00	1,75	1,75	23	87
36-41 kg 79-91 lbs		G	3,50	3,00	2,75	2,50	2,25	2,00	27	102
42-48 kg 92-107 lbs	≤148 cm ≤4'10"	H		3,50	3,00	3,00	2,75	2,50	31	120
49-57 kg 108-125 lbs	149-157 cm 4'11" - 5'1"	I		4,50	4,00	3,50	3,50	3,00	37	141
58-66 kg 126-147 lbs	158-166 cm 5'2" - 5'5"	J		5,50	5,00	4,50	4,00	3,50	43	165
67-78 kg 148-174 lbs	167-178 cm 5'6" - 5'10"	K		6,50	6,00	5,50	5,00	4,50	50	194
79-94 kg 175-209 lbs	179-194 cm 5'11" - 6'4"	L		7,50	7,00	6,50	6,00	5,50	58	229
95 kg ≤ 210 lbs ≤	195 cm ≤ 6'5" ≤	M			8,50	8,00	7,00	6,50	67	271
		N			10,00	9,50	8,50	8,00	78	320
		O			11,50	11,00	10,00	9,50	91	380
		P							105	452
										(540)

(issued according to ASTM, ISO 11080 for Season 94/95 ff)

SKIER TYPE

	I	II	III
Speed?	Slow to moderate	Neither column I nor column III	Fast
Terrain?	Easy to moderate		Steep
Readiness to take risks?	Low		High

How to use the ISO Weight Table:

1. Determine the Skier Code which corresponds to the skier's weight and the Skier Code which corresponds to the skiers height.

1.1. If both codes are on the same line, you can find the appropriate SKIER CODE in the next column on the same line.

1.2. If the codes are on different lines, pick the Skier Code which is closer to the top of the chart (lower indicator settings).

2. Use this skier Code for Type "I" skiers.
For Type "II" skiers, move down the chart one Skier Code.
For Type "III" skiers, move down the chart two Skier Codes.
3. Move up the chart one Skier Code for skiers age 50 and over.
4. Record the individual's Skier Code on the workshop ticket.
5. Determine the binding's Initial Indicator Setting by matching the Skier's boot sole length with the selected Skier Code.
6. Adjust toe and heel pieces to this Initial Indicator Setting, and record on the workshop ticket.
7. Use a calibrated torque measuring device according to the instructions provided by the supplier.
8. Compare the measured values (Nm) for HEEL and TOE release with the table- value.

8.1. Measured release values that are between one line above and one line below of the table- values are acceptable. This is called the "Adjustment Tolerance".

8.2. Note the range from two values above to two values below the skier's table- value. This is the "Limit for Readjustment". If any measured values fall outside this range, boot, binding and/or ski components must be replaced. Do not try to readjust this system!

8.3. If measured values fall within the "Adjustment Tolerance" defined in 8.1 or / and the "Limit for Readjustment" defined in 8.2., check the following points:
1.) Forward pressure.
2.) Sole- hold down adjustment.
3.) ADF surface (if worn, replace it).
4.) All other binding surfaces in contact with the boot.
5.) The mounting procedure (has it been done correctly?)
6.) The ski boot (does it meet the standards? Use the TYROLIA Boot Measuring device to evaluate wear).
When all points are acceptable, measure release values again. If measured values still fall within the "Limit of Readjustment" but outside the "Adjustment Tolerance" range defined above, readjust the binding's toe or heel indicator as required to achieve measured values within the "Adjustment Tolerance".

9. Record final indicator settings and sign the workshop ticket when all procedures have been completed.
10. Explain the work performed to the customer, deliver the TYROLIA Instruction For Use booklet, and have customer sign the workshop ticket.

This chart is also available in DIN A 3 format (Art. Nr.: 009 430)

Tibia - Release /Retention Chart

Tibiakopf-Durchmesser in mm: Kinder/ Jugendliche bis 15 Jahre	Frauen	Männer	Ermittelte Mz in daNm
–52			0,5
53–61			1,0
62–68			1,5
69–73			2.0
74–77			2.5
78–81	–73		3.0
82–85	74–78		3.5
86–88	79–83	–76	4.0
89–91	84–87	77–79	4.5
92	88–90	80–82	5.0
	91–94	83–85	5.5
	95	86–88	6.0
		89–91	6.5
		92–94	7.0
		95–96	7.5
		97–99	8.0
		100–101	8.5
		102	9.0
			9.5
			10,0

EINSTELLTABELLE 1991/92

Korrekturen: Alter Jahre	Fahrkönnen nach DIN 7890, ÖNORM S 4050 I	II	III
bis 15	–0,5	0	+0.5
16–17	–1,5	–0.5	+0.5
18–50	–1	0	+1
51–60	–1,5	–0,5	+0,5
ab 61	–2	–1	0

TYP	I	II	III
Geschwindigkeit	langsam bis gemäßigt	Skifahrer, die weder den Beschreibungen unter 1 noch unter 3 voll entsprechen	schnell
Gelände	leicht bis gemäßigt		steil
Risikobereitschaft	niedrig		hoch

Individuelles Auslösedrehmoment in Nm: VB	FT
5	18
10	37
15	55
20	75
25	94
30	114
35	134
40	154
45	175
50	196
55	218
60	239
65	261
70	284
75	307
80	330
85	353
90	377
95	401
100	425

Sofern bei Einstellgeräten Kräfte gemessen werden, muß die Sohlenlänge – und damit der tatsächliche Hebelarm – berücksichtigt werden.

Überprüfen, ob die Sohlenlänge innerhalb der angeführten Grenzen liegt. Sonst korrigieren.

Stand November 1990

Auslösedrehmoment daNm	Voreinstellung (Bindungsskala) aufgrund korrigierter Schuhsohlenlänge in cm: 20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
0,5	0,5	0,5	0,5	0,5	0,5	0,5													
1,0	1,25	1,0	1,0	1,0	1,0	0,75													
1,6			1,75	1,75	1,5	1,5	1,25	1,25	1,25	1,25,1,0									
2,0			2,5	2,25	2,25	2,0	2,0	1,75	1,75	1,75	1,5								
2,5			3,5	3,0	3,0	2,75	2,75	2,5	2,25	2,25	2,25	2,0							
3,0			4,5	4,0	4,0	3,5	3,5	3,0	3,0	2,75	2,75	2,5	2,5	2,25					
3,5				5,0	4,5	4,0	4,0	4,0	3,5	3,5	3,5	3,5	3,0	3,0	2,75				
4,0				6,0	5,5	5,0	5,0	4,5	4,5	4,0	4,0	4,0	3,5	3,5	3,5	3,0			
4,5				7,0	6,5	6,0	5,5	5,5	5,0	5,0	4,5	4,5	4,0	4,0	4,0	3,5			
5,0					7,5	7,0	6,5	6,0	6,0	5,5	5,5	5,0	5,0	4,5	4,5	4,5	4,0		
5,5						8,0	7,5	7,0	6,5	6,5	6,0	6,0	5,5	5,5	5,0	5,0	4,5		
6,0							8,5	8,0	7,5	7,0	7,0	6,5	6,0	6,0	5,5	5,5	5,0		
6,5							9,5	9,0	8,5	8,0	7,5	7,0	7,0	6,5	6,5	6,0	6,0	5,5	
7,0							10,5	10	9,5	9,0	8,5	8,0	7,5	7,5	7,0	6,5	6,5	6,0	
7,5								11	10,5	10	9,5	9,0	9,0	8,5	8,0	7,5	7,5	7,0	6,5
8,0							12	11,5	11	10,5	10	9,5	9,0	9,0	8,5	8,0	7,5	7,5	7,5
8,5									11,5	11	10,5	10,5	10	9,5	9,0	8,5	8,5	8,0	7,5
9,0									12	11,5	11,5	11	10,5	10	10	9,5	9,0	8,5	8,5
9,5									13	12,5	12	11,5	11	10,5	10,5	10	9,5	9,5	9,0
10,0										13	12,5	12	11,5	11,5	11	10,5	10,5	10	9,5

Troubleshooting List (incl. Rental)

Problem	Possible Reason	Solution
FreeFlex-drill pattern not fitting (790 RFF Pro)	Toe / equalizing bridge in wrong position	Unmount, place toe in correct position
	Drill template not fixed	Readjust, drill new holes
Difficulty when stepping in	Non-standard bootsole	Test and select a new boot
	Forward pressure too high	Readjust according instructions
	Brake jams	Clean & lubricate; replace
Brake does not retract	Obstruction under the brake	Remove, clean, lubricate
	Ski obstructs brake	Check ski width (72mm max for adults, 70mm for 620D/620 DR)
Boot fails pre-season test	Low-quality boot material	Replace boot
	Excessive wear or contamination	Clean, repair or replace boot
	Reference binding worn	Recheck reference binding with a boot that has passed, replacing if needed
	Improper use of testing device	Check calibration and operating technique
Excessive in-season class I or class II deviations	Excessive boot sole wear or contamination	Clean, repair or replace boot
	Inadequate binding service/lubrication	Conduct recommended maintenance every 15-20 days of use
	Improper use of testing device	Check calibration and operating technique
	Indicator correction factor needed	Test system according to pre-season testing. Define indicator correction factor for subsequent adjustments.

Problem	Possible Reason	Solution
SINGLE CODE on binding interferes SINGLE CODE on boot	Incorrect template adjustment used when mounting	Set jig to proper length and remound heel
	Incorr. track guide scale chosen for given mounting pos.	Check the underside of scale for correct jig position
Test toe (790 RFF Pro) wobbles in its track	Toe AFD track worn, broken or missing	Remove toe and replace plastic insert track
	Toe locking lever not properly engaged in locking holes	Be sure toe piece locks into place
Heel slides backwards when customer steps in	Rear locking lever not fully closed or boot length exceeds adjustment range	Lever must be down all the way, fully engaging locking teeth into their mating slots on heel track
Release indicators hard to read	Contamination, wear	Spray TYROLIA ServiSpray into front of toe housing („First Aid", but just short time solution!)
Binding fails pre-season test: release values too high or too low	Reference boot contaminated or worn	Clean or replace boot as indicated by clean vs. lube test result
	Forward pressure set incorrectly	Readjust to TYROLIA recommendations
	Incorrect or off- center- mounting	Remount using jig correctly
	Improper use of testing device	Check calibration and operating technique
	Binding indicator requires readjustment to achieve optimum release value	Calibrate indicator to reduce test readjustment time. Clearly label binding scale for all subsequent adjustments
Adult bootsole does not fit into Junior toe lug	Bootsole exeeds the standard tolerance,	Clean AFD and bootsole, check standard tolerance, change boot

1995/96
TYROLIA SYMRENT
1995/96

symrent

WE REALLY DO CARE ...

Spareparts, SYMRENT 1995/96

Sparepart Item	790 RFF Pro „TEST"	790 DS Pro	680 DS Pro 650 DS Pro	650 DS R	630 DR	620 DR
Heel Track	002 360	002 438	002 438	002 437	002 394	002 394
Heel Guide	002 302	002 436	002 436	002 435	002 397 * 002 396	002 395
Mid Part Cover	002 368	002 434	002 434			
Brake	177 000	002 433	002 433	002 433	002 400	002 399
AFD	002 367	002 382	002 382	002 382	002 382	002 382
Rear Cover	002 384					
Toe Base Plate				002 432		
Heel Base Plate		002 431	002 431			
Heel Glide Insert	002 357					
Toe Glide Insert	002 404					
Cover	002 371	002 371				

* 2 Sizes of heel guides : „l - v" and „q - L"

Identification Support:

Most of the replaceable parts have an article number (000 000) imprinted on the bottom. Please mention this reference number in your sparepart order.

Workshop Tools for Bindings 95/96

Tool, Item	unit / Art. Nr.
Rental Basic Kit 95 (including complete set of tools and instructions for the new „SYMRENT"- bindings collection. Please mention language version in your order (d, e, f, i)	per piece 002 441
Drill Template 94 for 620 D, 620 DR, 630 DR	per piece 002 388
Drill Template 95 for 790 DS Pro, 680 SD Pro, 650 DS Pro, 650 DS R	per piece 002 440
Rental Boot Indicator (Single Code, Millimeter)	per piece 002 439
Screwdriver for all adjustment screws	per piece 190 806
Screwdriver + magnetic bit (190 805)	per piece 190 800
Universal bit for screwdriver 190 800 and for elecric drivers hexagon. 1/4" (6,35 mm)	per piece 190 805
Screwdriver bit for powered tools (Black & Decker, Skill, Thor, Atlas-Copco, Virax, Consolidated, Bosch, Ingersoll-Rand), hexagon. 1/4" (6,35 mm)	per piece 190 802
Screwdriver bit for powered tools (Bosch, Metabo, AEG), hexagon. 5,5 mm	per piece 190 803
Screwdriver bit for powered tools (Fein, AEG)	per piece 190 804
TYROLIA special Ski Tape Measure	per piece 190 827
Drill bit 4,1 x 7	per piece 190 837
Drill bit 4,1 x 9	per piece 190 838
Drill bit 3,5 x 7	per piece 190 839
Drill bit 3,5 x 9	per piece 190 840
Drill bit set complete	4 pcs. 190 836
Plastic hole plugs Ø 4,6 mm, 6 colors mixed	1 pkg = 500 pcs. 190 857
Wood hole plugs	1 pkg = 500 pcs. 190 859

Workshop Tools for Bindings 95/96

TYROLIA ServiSpray 400 (400 ml)	per piece 170 051
Grease (for TYROLIA bindings)	per piece 170 052
Glue (for binding holes)	per piece 190 858
Brake retainer for all Power Brake- models	per piece 002 313
Brake retainer for Racing Brake 2	per piece 177 006
Brake retainer for Racing Brake 3	per piece 177 009
Brake retainer for Brake 403, 404, 520, 520 R	per piece 177 007
Brake retainer for 410, 430, 530 J, 540 C, 550 DL, 590 RDJ	per piece 177 008
Spezial set for binding hole repairs	per piece 162 127
Drill bit for special set	per piece 162 128
Plastic hole plugs for special set	1 pkg. = 50 pcs. 162 129
IDS-hole plugs Ø 8 mm, 3 colors	1 pkg = 48 pcs. 002 710
3- D- Ski grinding device for TYROLIA MC7, MC6 (earlier collections). Note: applicable also to several non- TYROLIA- 3- D- Ski models	per piece 009 335
Release- /retention chart (weight method, new ASTM und ISO 11088 standard, Format DIN A 3, water resistant, english version)	per piece 009 430
Shop display „TYROLIA Center 95/96“ (available for mechanics after certification only)	per piece 009 462
Shop display „TYROLIA Service 95/96“ (available for mechanics after certification only)	per piece 009 461
TYROLIA Hi- Tech Manual 95 (update insert, english version)	per piece 009 458
„SINGLE CODE“ Rental- Boot- Stickers (4 sheets)	per set 009 442
Rental Flow- Chart (rental testing, Format A 3, international version	per piece 009 432
Rental Manual 95 (this manual, english version)	per piece 009 439

SYMRENT on the Shop Floor

Preparing and Checking Rental Systems

Customers usually don't treat your rental equipment as gently and carefully as they would handle their private property.

On the other hand your rental offer has to stay attrative both optically and functionally.

Thus the Rental dealer should permanently check and test his equipment in inventory to achieve full compatibility and synergy of all components.

Bindings as well as boots have to pass a number of specified test routines even before season starts.

To keep the equipment in good shape and to keep away liability troubles we recommend to run an „In- Season- Test“- procedure periodically following certain criterias desribed in this manual.

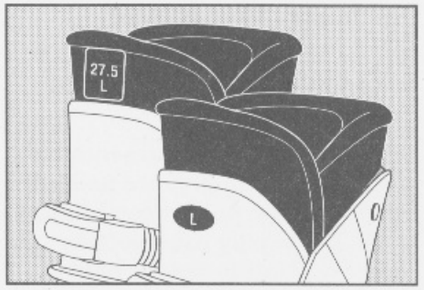
Pre- Season SINGLE CODING

The TYROLIA skiboot 640 R SYMRENT comes labelled with a permanent Mondopoint- and SINGLE CODE (alpha code) sticker.

This enables a quick boot- and- binding- coordination even during the rush hours of rental business.

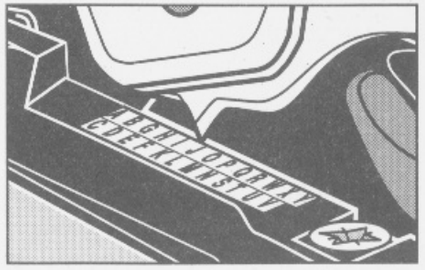
You check the boot size, get the SINGLE CODE and adjust the binding according the SINGLE CODE.

For all other boots TYROLIA offers self adhaesive color stickers with



the SINGLE CODE to be applied before season.

1. Mount all bindings according to the TYROLIA procedures. Pick a mounted sample binding of each model.
2. Place a boot of each size in the binding and adjust forward pressure until correct.
3. Open the heel and remove boot.
4. Record the SINGLE CODE from the track that corresponds to the mark on the side of the heel body. (The boot must not be in the binding when you read the code.)
5. Check each code again before marking all boots of this size with their SINGLE CODE.



For this procedure you could also use our Boot Measuring Device (Art.Nr. 002 439).

Pre-Season Binding Test

Pre-season binding tests should be performed on all bindings in inventory.

"Reference boots", representative of those in inventory, are needed to perform the pre-season binding tests. To simplify the selection procedure and to reduce boot wear, separate boots are selected for the Twist and Forward Lean tests. The "reference boot" should be changed at least every hundred binding inspections or whenever damage or wear is apparent.

Reference Boot Finding

1. For adult bindings (650 DS R, 630 DR, Pro-models), pick five boots with sole lengths as close as possible to 314 mm, which are typical of the adult boots in inventory.

   For children's and junior models (630 DR, 620 DR), pick five boots with sole lengths as close as possible to 258 mm, which are typical of the children's boots in inventory. (These boots should have the smaller children's sole dimensions.)
2. Clean all five with a mild detergent and water.
3. Using a representative binding adjusted to midscale, determine the Measured Release Value clockwise and counterclockwise for each boot and record the results.
4. Set aside any boots with clockwise and counterclockwise Measured Release Values that differ by more than 5 Nm. Rank the remaining boots by clockwise Measured Release Value. Pick the boot which is closest to the middle of the ranking as the reference boot.
5. Repeat this procedure (Steps 1-4) in Forward Lean. Mark the Twist and Forward Lean "reference boots".

NOTE: Has your testing device been calibrated for the season? Contact your device manufacturer for calibration information.

The Test Procedure

Use the following procedure to check that your bindings function properly and have valid release/retention indicators.

1. Adjust adult bindings to an indicator setting of "5". Adjust children's and junior bindings to a setting of "2". Put the reference boot into the first binding to be tested and check lug height clearance and forward pressure.
2. Move the boot off center in Twist a distance of approx. 15mm (10mm for 620 DR, 630 DR) and check if it recenters quickly to its original position.
3. Test each binding in Twist and Forward Lean. Measured Release Values should fall within the Inspection Range specified on the 1995/96 TYROLIA Adjustment Chart. For convenience, these Pre- Season Test Values are reproduced in the chart below:

Skier Code	Binding	Binding-Adjustment	Sole-Length	Twist Release	Fwd. Release
E	Child Junior	2.0	258 mm	17-23 Nm	64-87 Nm
K	Adult	5.0	314 mm	43-58 Nm	165-229 Nm

4. Retest any units which failed using a different inspector. Consult the Rental Troubleshooting section to deal with any bindings still not releasing within the specific range.

Pre-Season Boot Testing

(see: The Boot / Rental in this manual)

In- Season Testing

The following sampling procedures should be used by all rental facilities, but only after thorough pre-season testing has been performed.

Any sampling program which gives every unit of inventory the same chance as every other of being picked is valid. Sample size may be based on average weekly output if average equipment usage has dropped below 50% of capacity since the last sample.

1. Take a random sample of the rental inventory (sized from the chart below) each week during the operating season.
2. Condition inventory available for rental according to the same procedures used during dispatch.
3. Test sample units in Twist (clockwise or counterclockwise) and Forward Lean.
4. Compare the Measured Release Values with the tolerance for the appropriate Skier Code in the following chart.
5. For evaluation, see table: "Sample Tolerances" next page.
6. If the results are in the green range (±20%) the unit passes.
7. Test elastic travel and make a visual inspection of the ski brake, interface areas between boot and binding (including AFD), lug clearances, and forward pressure. Count any deficiencies and Class 1 (yellow) deviations.
8. If more than the maximum number of Class I (yellow) deviations are found in the sample, take samples daily until two consecutive samples have passed.
9. If no samples fail over a two-week period, begin sampling every other week.
10. If at any time results in the red range (greater than ±30%) are found, count the unit as a Class II deviation, determine the cause, and correct the problem in the appropriate inventory.

	Sample Size								
Inventory Size (pairs)*	100	200	300	400	500	600	700	800	900
Sample Size Units *	16	20	30	40	50	60	70	80	90
Max. Yell. (class 1) Units to pass	1	2	3	4	5	6	7	8	8

* Maximum sample size is 80 units for any inventory over 800 pr.

Sample Tolerances									
Twist Release					Forward Lean Release				
-30%	-20%	Skier Code	+20%	+30%	-30%	-20%	Skier Code	+20%	+30%
3	5	A	11	13	14	19	A	34	44
6	8	B	14	16	25	30	B	50	55
9	11	C	17	19	36	42	C	62	68
12	14	D	20	22	45	51	D	77	83
14	16	E	24	26	53	60	E	90	98
16	18	F	28	30	61	70	F	104	113
19	22	G	32	35	71	82	G	122	133
22	25	H	37	40	84	96	H	149	156
26	30	I	44	48	99	113	I	164	183
30	34	J	52	56	116	132	J	198	215
35	40	K	60	65	136	155	K	233	252
41	46	L	70	75	160	183	L	275	298
47	54	M	80	87	190	217	M	325	352
55	62	N	94	101	224	256	N	384	416
64	73	O	109	118	266	304	O	456	494
red	yell	green	yell	red	red	yell	green	yell	red

Evaluation Guideline:
±20% (Green) = Passed
±20% to ±30 (Yellow) = Class I- Deviation
Greater than ±30% (Red) = Class II- and III- Deviation

11. Keep a record of all in-season tests. Show the number of units tested, the number of green, yellow or red results, and any action taken.

    Ski numbers of the units tested and actual Measured Torque Values do not need to be recorded.

Rental / Demo of Partial Systems

Many shops offer their customers the ability to rent partial ski equipment systems: boots only if customers own their own skis with bindings, or skis and bindings if the customers own their own boots.

Additionally some shops utilize on- hill "demo days" as a means by which new products can be tested and evaluated by potential buyers.

In order to offer these skiers the same level of care as that afforded under the preceding procedures, the following guidelines should be used:

Rental of Boots only: See The Boot / Rental in this manual)

Rental of Skis / Bindings only: (customer- owned boots).

Although the retail test procedure may be applied in this case, it is often impractical to require actual system testing, especially in on-hill situations. In lieu of retail testing, the following procedures may be employed:

1. The ski/binding system to be rented or demoed should be tested "pre- season" using a boot which passes the TYROLIA Boot Visual Inspection.

   The testing procedure should follow that specified under "Pre- Season Binding Testing."
2. The skier's boot should also pass the noted Visual Inspection. If any questions exist regarding the quality of the boot, retail- type testing should be used.
3. The binding should be adjusted and its indicators set per current TYROLIA recommendations.
4. A full record noting appropriate customer information and binding settings should be kept by the individual or organization responsible for the adjustment.
5. After seven days of use, the ski/binding system should be tested according to the In- Season Inspection Procedures previously described.

(NOTE for US and CDN:

Signatures by both the customer and TYROLIA Certified Mechanic are required on all shop forms to qualify for the TYROLIA Dealer Insurance Program.)

Maintenance, Service

Rental Maintenance

Rental equipment is exposed to far more wear than most gear sold at retail.

But unfortuntely rental shops are judged to a great extent by the appearance of the equipment they offer.

TYROLIA SYMRENT bindings are designed for heavy duty and easy service.

A regular maintenance schedule should be instituted so that every system will be serviced every 15 - 20 days of use.

In addition to the normal maintenance routine for ski equipment the following schould be performed:

1. Check heel piece sliding on track „ONE TOUCH". If adjustment is not smooth and easy, or if the heel piece has excessive side-to-side wobble, check condition of track and AFD inserts on the underside of the heel piece.
2. Check that all release- / retention- indicators are clearly readable and that they can travel the entire length of their range.
3. Check that bootsole length adjustment scales are intact, in place and readable. Verify that scale and boot length agree.
4. Include all other system components (boot, ski, poles) into your maintenance schedule.
5. Clear records should be kept to document all pre- and in-season servicing.

Rental Troubleshooting

Please consult the Troubleshooting Table (see: The Binding / Mix in this manual) for solutions to basic system performance problems.

Visual Check of the Binding

Generally a visual check should include:

- Are all parts present and in working order?
- Is the AFD surface smooth and secure? If not, it should be replaced.
- Are all mounting screws present or tight?
- Does the binding show signs of contamination?
- Has proper periodic lubrication been performed? Dried out or corroded bindings can function improperly.
- Is the brake still in working order (see: functional tests, „Mounting", in this manual).

Replacement of Brake

If the brake feels too hard or blocked in the hand test, if the brake arms are damaged or the pedal is worn out the brake

Binding	Clockwise + C-Clockwise Twist Value	Vorward Lean Value
Junior & Children	20 Nm	75 Nm
Adult	50 Nm	149 Nm

5. Rinse clean one of the bindings and mark it as "clean". Mark the other bindings as "lubricated".
6. Test all sample boots of a given sole length in the clean binding in Twist (clockwise and counter-clockwise) and Forward Lean, and record results.
7. Test all sample boots of this sole length in the lubricated binding in Twist (clockwise and counter-clockwise) and Forward Lean, and record results.
8. Use the following chart to evaluate the test results. Any boots with a test result outside the passing range should be repaired or removed from inventory.

Passing Range Twist		Passing Range Fwd. Lean	
Children Refer. Binding	Adult Refer. Binding	Children Refer. Binding	Adult Refer. Binding
17-23 Nm lubr.	43-58 Nm lubr.	64-87 Nm lubr.	165-229 Nm lubr.
15-25 Nm clean	37-63 Nm clean	56-94 Nm clean	145-243 Nm clean

9. Repeat steps 4-8 for each sole length group of sample boots. All adult boots in the sample should be tested with each adult reference binding. All children's boots in the sample should be tested with each children's and junior reference bindings.

Rental / Demo of partial Systems

Many shops offer their customers the ability to rent partial ski equipment systems. Additionally, many shops and manufacturers utilize on- hill "demo days" as a means by which new products can be tested and evaluated by potential buyers.

Rental of Skis / Bindings only

(see: Binding / Rental in this manual)

Rental of Boots only (customer-owned skis/bindings)

This case is a relatively simple one. Since the functional quality of the bindings is unknown, the system should be adjusted and tested following the retail procedures noted in this Hi-Tech manual. A full retail- like record noting appropriate customer information and binding settings should be kept by the individual or organization responsible for the adjustment.

GENERAL RULE:
ONLY AFTER ALL COMPONENTS HAVE PASSED EACH POINT OF INSPECTIONS AS ABOVE SHOULD THEY BE ACCEPTED FOR ASSEMBLY INTO A SYSTEM!

Boot Handling and Testing

Visual Inspection of Skiboots

In assembling a system for the skier, it is the responsibility of the shop to inspect and evaluate each equipment component. This inspection checklist should be followed before any mounting or adjusting is performed.

Ideally, they should be posted and used on the sales floor while the customer is still in the shop so that any deficiencies can be explained on the spot.

In retail, boots must pass all four points of this inspection before being accepted for use. In rental, this inspection is the first step in the "pre- season boot test procedure".

1. Check Type, Size and overall Conditions

- Is the performance level appropriate for the skier?
- Is the size correct (SINGLE CODE)?
- Is all hardware intact and in working order?
- Is the boot free of excessive or asymmetric wear?
- Is the boot free of dirt or sole warp?

2. Check Material

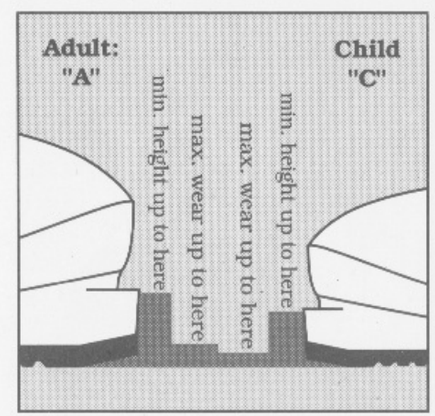
- Binding contact surfaces require a high quality hard, low-friction material. Check both lower shell and any separately attached inserts.
- If you can easily scratch the surface of the sole with your fingernail, that's an indication of extremely soft material that can degrade system performance.

3. Check Condition of Binding contact Surfaces, Toe and Heel

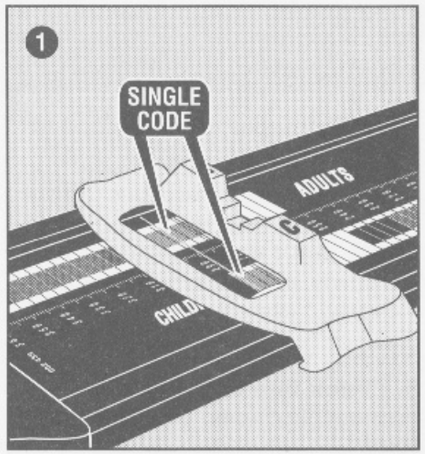
- Any scratches or other roughness should not be deeper than 1mm.
- Check for any rocks, gum, or other foreign matter stuck to the sole.

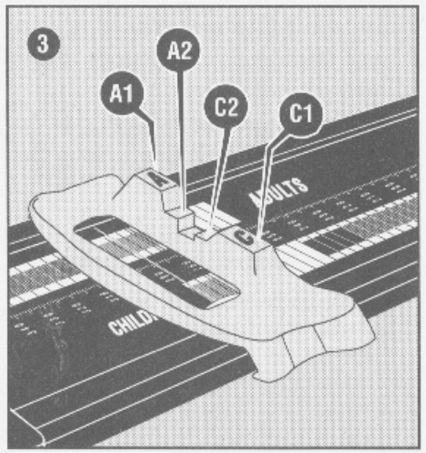
4. Verify Bootsole Dimensions

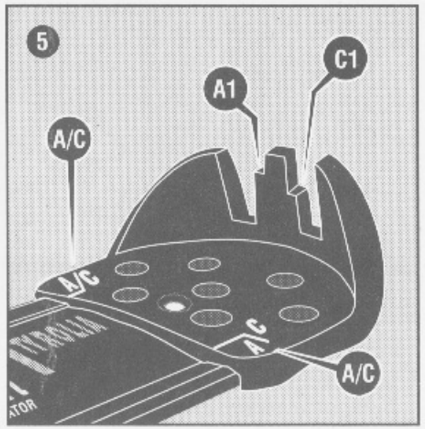
- Skiboots must meet international standard specifications.



- Use the TYROLIA Boot Rental Indicator to determine whether







wear is excessive. The most critical dimension for TYROLIA bindings is the front surface and height of the boot toe. Any boots worn past the indicated amounts should be repaired or not used with TYROLIA bindings.

The TYROLIA Rental Boot Indicator

This TYROLIA rental boot device is a multi- function- tool:

1. Sole length: Put the boot in the device and slide the toe stop up to the boot toe. Read sole length in the window, used for TYROLIA rental bindings: the SINGLE CODE (see pict 1).
2. Boot sole wear: The standardized interfaces (contact bootsole with solelugs) are important in the functioning of TYROLIA bindings.
3. Boot toe bottom: Excessive wear is indicated if the lower edge of the front surface is at or above the bottom step on the appropriate children's (C2) or adult (A2) post (see pict 3).
4. Boot toe ledge height: With the toe stop against the boot toe, the level of the toe ledge should be at or above the top of the appropriate post, „Child" (C1) or „Adult" (A1). Replace toe pads if worn. (see pict 3).
5. Heel height and wear: Check this boot standard with the same procedure used for the toe. The heel posts (A1) + (C1) are located at the rear of the device (see pict 5).

6. The marks „A/C" help to select a „Child" boot from an „Adult" by indicating the standardized sole width.

NOTE:

Any boot which passes points 3, 4 and 5, as well as conforming to the Visual Inspection Checklist, may be accepted for use with TYROLIA bindings. Boots which fail any point should be repaired, replaced.

NOTE:

These checks apply only to boots used with TYROLIA bindings. Consult other binding manufacturers for their used boot specifications.

Clean vs. Lubricated Skiboot Test

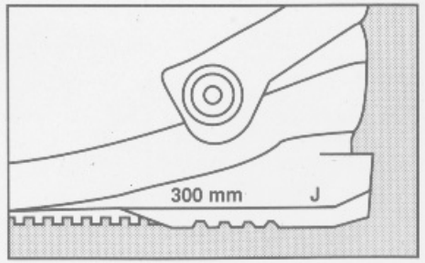
This test is designed to determine the influence of a given boot on the release characteristic of a binding. It should be performed on boots not meeting all the points of the TYROLIA boot visual inspection criteria, or if measured release values fall outside the system "inspection" tolerance. It is seen as the „last chance" for a boot to qualify before getting eliminated from inventory.

1. Clean the boot(s) to be tested with soap and water. Allow to dry.
2. Select an appropriate TYROLIA "reference" binding that has displayed release values within the inspection tolerance on the TYROLIA Adjustment Chart. Clean the binding's boot contact surfaces with soap and water and allow to dry.
3. Test the binding and boot in Twist and Forward Lean at a mid- scale indicator value. (Only one direction of twist is required.)
4. In a further test run lubricate all boot/binding contact areas with soapy water. Retest in Twist and Forward Lean.
5. Results of each lubricated test should be within 20% of the corresponding results when tested clean. Any boot which fails this test should not be used with a TYROLIA binding.

GENERAL RULE:
ONLY AFTER ALL COMPONENTS HAVE PASSED EACH POINT OF INSPECTIONS AS ABOVE SHOULD THEY BE ACCEPTED FOR ASSEMBLY INTO A SYSTEM!

NOTE:

All TYROLIA skiboots come marked with their bootsole length and the related SINGLE CODE (alphanumeric) either shown on a colored Label (640 R) or shown laterally at the base shell (others).



Tools

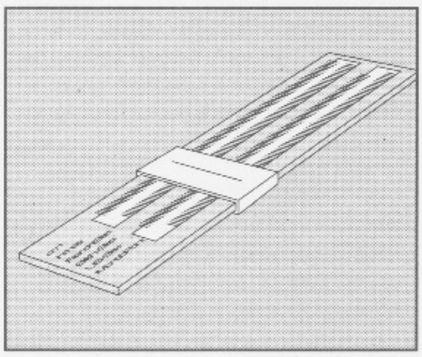
TYROLIA Boot Sliderule (Art.Nr.: 009 321)

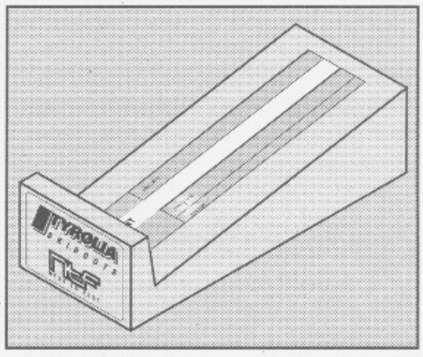
A sliderule with all international size standard scales and TYROLIA SINGLE. Pocket sized calculator for quick definition of boot sizes and transcoding to other international boot- size standards.

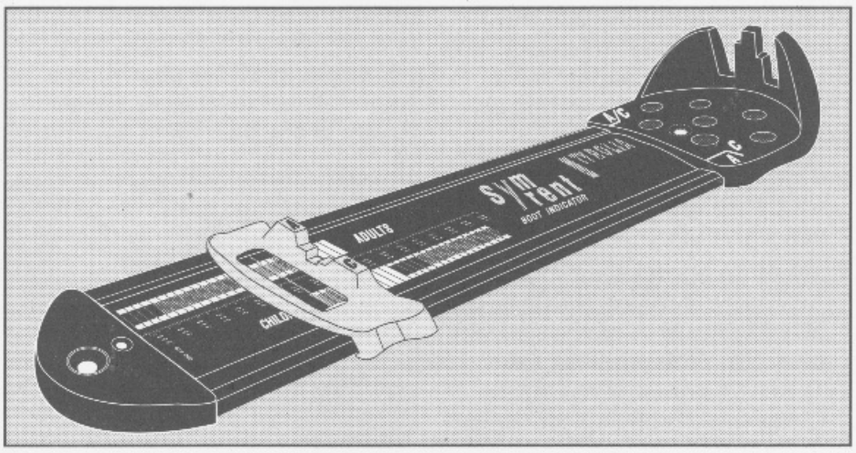
TYROLIA Boot Size Measuring Device (Art. Nr.: 002 735)

A podest for quick measurement of the customer's bootsize directly on the sales floor.

Rest the left and the right foot seperately on the podest and take the average value.





TYROLIA- Rental Boot Indicator (Art. Nr.: 009 439)

A Multi- function tool for measuring of the relevant boot standards and the TYROLIA SINGLE CODE. Useful also for quick Pre- Season Testing.