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Assembly, adjustment and inspection of an alpine ski/binding/boot (S-B-B) system

*Montage, réglage et contrôle d'un ensemble ski/fixation/chaussure
(SFC) pour skis alpins*

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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	2
4 Skier's parameters	3
4.1 General.....	3
4.2 Weight method	3
5 Equipment parameters	3
5.1 Choice of new equipment	3
5.2 Visual inspection and preparation of used equipment.....	4
5.3 Assembly	4
5.4 Binding-to-boot fitting adjustments.....	4
5.5 Initial indicator adjustment	4
5.6 Functional check (inspection of functions)	4
5.7 Measurement of release moment.....	5
5.8 Report	5
Annex A (normative) Definition of skier type	6
Annex B (normative) Method of setting	7
Annex C (normative) Flow chart	9
Annex D (normative) Clean versus lubricated diagnostic test for boot/binding compatibility.....	10
Annex E (normative) Drill	11
Annex F (informative) Tibial width method.....	12
Bibliography	16

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11088 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 3, *Ski bindings*.

This fourth edition cancels and replaces the third edition (ISO 11088:2004), subclauses 5.1, 5.7 and 5.8, and Annexes A, B, C and F of which have been technically revised.

This corrected version of ISO 11088:2006 includes the following correction:

— page 6, Table A.1 <https://standards.iteh.ai/catalog/standards/sist/eb1ced6b-37dd-4bda-81ae-13441ed433e9/iso-11088-2006>

Replace the value “34 kg” by “22 kg”.

Introduction

International Standards exist for the components of the alpine ski/binding/boot (S-B-B) system, mainly intended for the component manufacturers. An International Standard (ISO 8061) also exists for the selection of release moments. The present International Standard is intended primarily for retailers. However, its aim is to include in one text the different phases of the choice of components, their assembly, adjustment and inspection in the form of practical procedures, and to provide tolerances for inspection and adjustment.

The inspection procedures and tolerances described in this International Standard apply to the condition of the S-B-B system before it leaves the ski shop and are not intended to be used to judge the condition of the equipment once it is put into use.

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Assembly, adjustment and inspection of an alpine ski/binding/boot (S-B-B) system

1 Scope

This International Standard specifies assembly, adjustment and inspection procedures for the binding mechanisms of skis, integrating in a practical way, the requirements of those International Standards which are related to skis, bindings and boots.

It is intended for all individuals and institutions concerned with those procedures, and especially for sports retailers.

It is applicable to a ski/binding/boot system (S-B-B) for alpine skiing, of which at least one component is owned by the user.

NOTE In the case where the two components (SB and B) are rented, ISO 13993 gives a method of measurement by sampling as an alternative to systematic measurement, before delivery to the end-user.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5355:2005, *Alpine ski-boots — Requirements and test methods*

ISO 8061:2004, *Alpine ski-bindings — Selection of release torque values*

ISO 8364, *Alpine skis and bindings — Binding mounting area — Requirements and test methods*

ISO 9462, *Alpine ski-bindings — Requirements and test methods*

ISO 9523:—¹⁾, *Touring ski-boots for adults — Interface with touring ski-bindings — Requirements and test methods*

ISO 11087, *Alpine ski-bindings — Retention devices — Requirements and test methods*

ISO 11110, *Winter-sports equipment — Test devices for the setting of the functional unit ski/boot/binding — Requirements and tests*

ISO 13992, *Alpine touring ski-bindings — Requirements and test methods*

1) To be published. (Revision of ISO 9523:1990)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 fitting adjustment
procedure required to obtain geometric compatibility and correct functioning of different components

3.2 indicator value
Z-mark
release indicator value marked on the binding in accordance with ISO 9462

3.3 skier type
release adjustment criteria pertaining to the type of skiing to be undertaken, as assessed by the skier in accordance with Table A.1

NOTE 1 The designations L, A, S, which were used in ISO 8061:1984, have been replaced by types 1, 2 and 3, respectively, in ISO 8061:1991 and in ISO 8061:2004.

NOTE 2 If the skier desires a setting outside the tolerances of this International Standard, he or she can select such a setting at his or her own discretion. Ski-binding manufacturers should provide guidelines to shops and skiers regarding the recommended magnitude of such changes. Skiers should be clearly informed when these changes result in release values above the upper limit or below the lower limit defined in ISO 8061.

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3.4 initial indicator position
release indicator position of the binding corresponding with the instructions given in Table B.1 or F.1

3.5 Release moment (values) M_Z and M_Y [ISO 11088:2006](https://standards.iteh.ai/catalog/standards/sist/eb1ced6b-37dd-4bda-81ae-13441ed433e9/iso-11088-2006)
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3.5.1 selected individual release moment reference moment
(for a given skier) release moment determined in accordance with ISO 8061

3.5.2 measured release moment
(for a given S-B-B system) average or middle quantitative value of three consecutive release measurements in the same direction on the same unit

NOTE It is expressed in newton metres.

3.6 deviation accepted for the setting inspection tolerance
maximum difference between the **measured release moment** (3.5.2) and the **selected individual release moment** (3.5.1)

NOTE This difference, which may be reduced by the setting, is limited for M_Z to $\pm 15\%$ or 3 N·m (whichever is greater), and for M_Y to $\pm 15\%$ or 10 N·m (whichever is greater).

3.7 release adjustment
procedure for making the measured M_Z and M_Y values coincide with the selected individual M_Z and M_Y values within the limits stated in Table B.1 or F.1

3.8**trouble-shooting procedures**

additional procedures recommended by the equipment manufacturer

3.9**deviation accepted for the re-adjustment****re-adjustment tolerance**

maximum difference between the **measured release moment** (3.5.2) at the **initial indicator position** (3.4) and the **selected individual release moment** (3.5.1)

NOTE This difference, which may be reduced by re-adjustment, is limited for M_Z to $\pm 30\%$ or 6 N·m (whichever is greater), and for M_Y to $\pm 30\%$ or 10 N·m (whichever is greater).

4 Skier's parameters**4.1 General**

The individual release moment values are given in ISO 8061. The following procedure using discrete values may be considered as an acceptable approximation of the basic functions of ISO 8061.

4.2 Weight method

NOTE For the tibial width method, see Annex F.

4.2.1 Determine the skier's parameters:

— mass (weight);

— height;

— type (according to Annex A);

— age;

— sole length if necessary.

4.2.2 Using Table B.1, choose the individual release values of M_Z and M_Y .**5 Equipment parameters****5.1 Choice of new equipment**

The components shall be in conformance with the following International Standards:

- a) ISO 8364 for skis;
- b) ISO 5355 and ISO 9523 for boots;
- c) ISO 9462 and ISO 13992 for bindings;
- d) ISO 11087 for brakes.

The skier should receive specific recommendations concerning the selection of boot, binding and ski, if they are provided by the manufacturer.

5.2 Visual inspection and preparation of used equipment

If any of the components of the S-B-B system have been used, the installer shall carry out a visual check according to the following criteria. In addition to this, older equipment may require special attention as defined by the manufacturer.

- a) The edges and sole of the ski shall be properly prepared according to the recommendations of the ski manufacturer. Unused mounting holes, if any, shall be carefully filled in, according to the manufacturer's specifications.
- b) The condition of the boot sole shall meet the binding manufacturer's requirements. All buckles, fasteners and support areas shall be in good condition.

In cases where release is independent of the boot (e.g. some plate bindings), the inspection of the sole may be less exacting.

- c) The condition of the binding components shall meet the binding manufacturer's requirements (i.e. no broken, deformed, missing or worn-out parts).

Component guides or rotation points shall be free-moving, free of obvious rust, corrosion and dirt, etc.

The manufacturer's inspection and maintenance instructions shall be observed (including lubrication).

The brake shall not be deformed. Suspect components shall be repaired or exchanged.

5.3 Assembly

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When assembling the system, comply with the instructions of the binding and ski manufacturers and use the proper tools.

ISO 11088:2006

The use of a drill according to Annex E is recommended. Once they are drilled, it is recommended that the holes be tapped and glue applied if this is required by the ski manufacturer. New holes shall not be drilled less than 10 mm from old holes (measured from centre of hole to centre of hole), even when they are filled in, unless otherwise specified by the ski or binding manufacturer.

When inserting the screws, take care not to damage the threads. A maximum tightening moment of 4 N·m shall fulfil this requirement, unless otherwise specified by the ski manufacturer.

5.4 Binding-to-boot fitting adjustments

Follow the binding manufacturer's instructions.

5.5 Initial indicator adjustment

The binding manufacturer shall provide a table similar to Table B.1 for his products.

Using Table B.1, adjust the bindings to the appropriate initial indicator position.

5.6 Functional check (inspection of functions)

Check visually that everything conforms to the binding manufacturer's instructions and operates correctly.

Check if the boot returns quickly to its initial position within less than 2 mm after a sideward displacement of approximately 10 mm.

5.7 Measurement of release moment

Precondition the binding by releasing each unit as required by the binding manufacturer.

Using a test device in accordance with ISO 11110, proceed as follows.

- a) Follow the test device manufacturer's instructions and check the calibration of the test device according to the manufacturer's procedures.
- b) Check that the measured $+M_Z$, $-M_Z$ and $+M_Y$ values are within the limits stated in Table B.1 and, if required, correct the release adjustment. If the first two successive release measurements in the same direction fall within the $\pm 15\%$ inspection tolerance range, it is not necessary to make a third release measurement.
- c) If the measured $+M_Z$, $-M_Z$ and $+M_Y$ values fall near opposite limits of the inspection tolerance range, the manufacturer's procedure for evaluation of non-symmetrical release shall be implemented.
- d) If the release values are out of the limit for re-adjustment (see 3.9), check the binding manufacturer's most recent instructions before proceeding. If no instructions are provided, the person mounting the bindings should conduct a clean versus lubricated diagnostic test in accordance with Annex D.
- e) If the measured $+M_Z$, $-M_Z$ and $+M_Y$ values are outside the $\pm 15\%$ inspection tolerance, consult the manufacturer's trouble-shooting instructions. After completing the trouble-shooting procedures, if the measured values fall within the $\pm 30\%$ limit for re-adjustment tolerance, re-adjustment of the binding may be undertaken. These re-adjustments shall achieve measured values as close as practical to the selected individual release moment, within the $\pm 15\%$ tolerance.

5.8 Report

An adjustment report is established by the ski shop and delivered to the user. It shall contain at least the following information:

- skier's parameters;
- indicator value;
- measured values of M_Z and M_Y , or pass/fail result of the system test.

NOTE The exact content of the report and its delivery conditions are defined by the national standard organizations.