

International Standard



8061

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Alpine skis — Ski bindings — Methods for the selection of release torque values

Skis alpins — Fixations — Méthodes de sélection des valeurs du couple de déclenchement

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 8061 was developed by Technical Committee ISO/TC 83, *Sports and recreational equipment*, and was circulated to the member bodies in January 1983.

It has been approved by the member bodies of the following countries:

Austria	Japan	USA
France	New Zealand	USSR
Germany, F.R.	Poland	
India	South Africa, Rep. of	

No member body expressed disapproval of the document.

Alpine skis — Ski bindings — Methods for the selection of release torque values

1 Scope and field of application

This International Standard specifies methods for the selection of release torque values for alpine ski bindings. It gives information necessary for determining release torque values to be recommended, for use by ski binding manufacturers in their instructions for installation and use, and by ski shops for the adjustment of already mounted ski bindings.

It is applicable to alpine ski bindings in current use.

It may be inappropriate for non-mechanical bindings or bindings used with boots which reach more than half way up the lower leg.

Manufacturers may use either of the two specified methods, or a combination of the two, as the basis for their recommended release torques.

The methods are applicable to torque-measuring binding

testers. If force-measuring testers are to be used, it is necessary to report the release force.¹⁾

In recommending release torque values, it is necessary to take into account the abilities of the skier by applying skier type correction factors. For this purpose, four types of skiers are described in an annex.

2 Symbols

See figure 1.

All imaginable loads on the ski boot can be referred to a force F acting along x , y or z axes of a system of coordinates, and a moment of rotation M about that axis.

The origin of the system of coordinates is fixed at approximately the bottom of the sole of the boot.

The torques and forces shown in figure 1 are positive. Torques and forces in the opposite directions are negative.

1) The release force F_r in newtons, is given by the equation

$$F_r = \frac{M}{l}$$

where

M is the release torque, in newton metres;

l is the lever arm, in metres (i.e. the distance from the point of force application by the tester to the point about which the boot or plate pivots).

The value of l should be determined empirically by measuring F_r for several values of M .

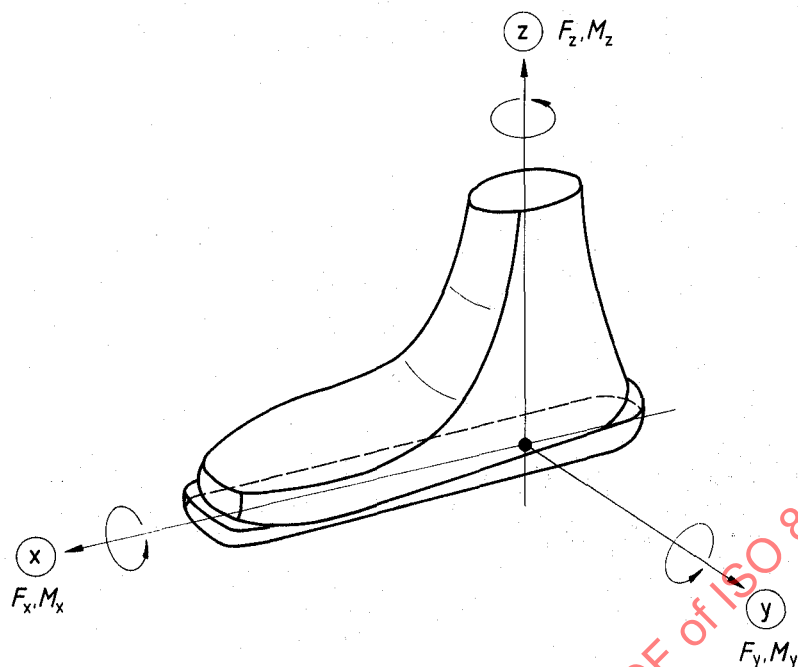


Figure 1 — Symbols

3 Mass method

3.1 A range of release torque values based on the mass of the skier can be calculated from the equations given in 3.1.1 to 3.1.3 for both twist (M_z) and forward lean (M_y) release.

Ski binding manufacturers should not recommend release torque values higher than the upper limit of this range, but may recommend settings below the lower limit. Manufacturers may provide additional information to guide the installer and user in the selection of such values.

3.1.1 The upper limit for twist M_z , in newton metres, is given by the equation

- a) if the mass of the skier is less than 70 kg:

$$M_z = 0,84 m_s + 4$$

- b) if the mass of the skier is greater than or equal to 70 kg:

$$M_z = 0,69 m_s + 15$$

where m_s is the mass of the skier, in kilograms.

3.1.2 The lower value for twist M_z , in newton metres, is given by the equation

- a) if the mass of the skier is less than 75 kg:

$$M_z = 0,71 m_s$$

- b) if the mass of the skier is greater than or equal to 75 kg:

$$M_z = 0,59 m_s + 9$$

where m_s is the mass of the skier, in kilograms.

3.1.3 The release torque in forward lean M_y , in newton metres, is given by the equation

$$M_y = M_z (3,6 + 0,006 5 \text{ N}^{-1} \text{ m}^{-1} M_z).$$

3.2 Skiers whose actual mass is greater than the maximum recommended mass for their height (h) should use release torque values corresponding to their maximum recommended mass ($m_{r \text{ max.}}$), which is given by the equation

$$m_{r \text{ max.}} = 100 (h - 1)$$

for $h > 1,50 \text{ m}$, where h is the height of the skier, in metres.

3.3 The recommended release torque should be corrected for skier type (see the annex) by applying skier type correction factors and age corrections.

3.3.1 The skier type correction factor is given in table1.

Table 1

Twist M_z N·m	Type of skier		
	L	A	S
25	-2,5*	0	+ 2,5*
25 to 50	- 5	0	+ 5
50	- 10	0	+ 10

* The use of these values is optional. They may be 2,5 or 0.

NOTE — If the skier's style requires a greater correction factor than indicated in table 1, the skier may change the setting at his own risk.