



SLOVENSKI STANDARD

SIST EN 15432:2008

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Oprema za vzdrževalna dela zimske službe in službe za vzdrževanje cest - Oprema za namestitev na sprednji del vozila - Zamenljivost

Winter and road service area maintenance equipments - Front-mounted equipments - Interchangeability

Winterdienst- und Straßenbetriebsdienstausstattung - Mechanische Schnittstelle an Fahrzeugen für frontangebaute Maschinen - Austauschbarkeit

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Matériels de viabilité hivernale et d'entretien des dépendances routieres - Matériels montés a l'avant - Interchangeabilité

[SIST EN 15432:2008](https://standards.iteh.ai/catalog/standards/sist/9e27120-118e-4157-a2c6-717c13617e88/sist-en-15432-2008)

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43.160

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ICS 43.160

English Version

Winter and road service area maintenance equipments - Front-mounted equipments - Interchangeability

Matériels de viabilité hivernale et d'entretien des dépendances routières - Matériels montés à l'avant - Interchangeabilité

Winterdienst- und Straßenbetriebsdienstausstattung - Mechanische Schnittstelle an Fahrzeugen für frontangebaute Maschinen - Austauschbarkeit

This European Standard was approved by CEN on 21 October 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 15432:2008) has been prepared by CEN/TC 337/WG 3 "Interface between tools and vehicle", the secretariat of which is held by UNI-CUNA, under the direction of Technical Committee CEN/TC 337 "Winter maintenance and road service area maintenance equipment", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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1 Scope

This European Standard specifies the requirements for the various elements of carrying vehicles to ensure interchangeability between a vehicle and different equipments that are frontally mounted. It specifies certain interchangeability dimensions of the front mounting plate, including its height above the ground, as well as the locations of coupling devices for electrical and hydraulic connections and for mechanical power take off (PTO).

This European Standard specifies two different classes of mounting plates in order to cover road vehicles, having a maximum design total mass higher than 3,5 t, of the greatest possible variety (commercial vehicles, multi-purpose vehicles, communal vehicles, ...), which are capable of carrying front-mounted equipments for winter maintenance and for road service area maintenance.

This European Standard specifies, with regard to electrical and hydraulic connections and to PTO, only location areas, clearance spaces and preferred layout in order to ensure interchangeability. Requirements applying to connectors, coupling devices and PTO splines are given in EN 15431.

Normative Annex A specifies provisions for an advanced front coupling system that is able to allow for mounting and demounting equipments without the use of tools. Users having to address specific needs (e.g. extreme weather conditions) may require the vehicle be fitted with such automatic coupling system.

Normative Annex B gives provisions for a compact and light front mounting plate intended for combined road and off-road applications.

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.

[SIST EN 15432:2008](#)

EN 15431, *Winter and road service area maintenance equipments – Power system and related controls – Interchangeability and performance requirements*

3 Interchangeability requirements

3.1 Front mounting plate

3.1.1 General provisions

Mounting plates of all classes, as defined in following 3.1.2, shall be designed and installed to the carrying vehicle to allow for safe and easy tilting of the cabin (if the vehicle has been designed to provide for this facility).

Mounting plates of all classes, as defined in following 3.1.2, shall be designed and installed to the carrying vehicle so as to allow for mounting a front towing hitch (if the vehicle has been designed to provide for this facility).

Compliance to this requirement may be achieved in different ways, e.g. by a pivoting or folding mounting plate, by an appropriate non-obstructing design or by provisions for direct mounting of the hitch to the mounting plate itself.

Characteristics of the quick-coupling system designed to allow for mounting and demounting of equipments without the use of tools are given in Annex A.

Characteristics of the compact mounting plate designed for combined road and off-road applications are given in Annex B.

3.1.2 Mounting plate classes

Table 1 gives indications on installation heights and on the recommended range of the maximum design total mass (ISO-M07, item 4.7 of ISO 1176:1990) of the carrying vehicle for each of the two classes of mounting plates that are defined in this European Standard.

The installation height is measured with the carrying vehicle being at kerb mass (ISO-M06, item 4.6 of ISO 1176:1990) from the ground to the upper edge of the mounting plate, as shown in Figure 2 and Figure 3.

Table 1 — Installation heights of mounting plate classes

Mounting plate class	Height mm	Recommended range of carrying vehicle maximum design total mass ¹⁾ t
F 1	1 000 ± 60	≥ 7,5
F 2	870 ± 50	≥ 3,5 and ≤ 9

¹⁾ When mounting plates of classes F1 and F2 are being mounted on vehicles, which are not covered by ISO 1176, recommended ranges as given in the table may not be applicable.

3.1.3 Strength requirements

Mounting plates shall be designed to withstand the maximum loads and moments that are given in Table 2 for each appropriate class. The values given in Table 2 refer to static loads and moments applied by the greatest variety of equipments (e.g. snow plough, grass cutting machine, ...) that may be fixed on the mounting plate. Equipments apply static loads and moment when they are being held in a raised position for transportation and transfer purposes.

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Table 2 — Maximum static loads

Mounting plate class	Vertical load, Fz kN	Bending moment, My kNm	Torsional moment, Mx kNm
F 1	22	22	45
F 2	12	12	18

Loads and moments given in Table 2 refer to the vehicle coordinate system as shown in Figure 1.

Mounting plates shall also be able to withstand to foreseeable dynamic forces which may arise when working with equipments having maximum static loads shown in Table 2.

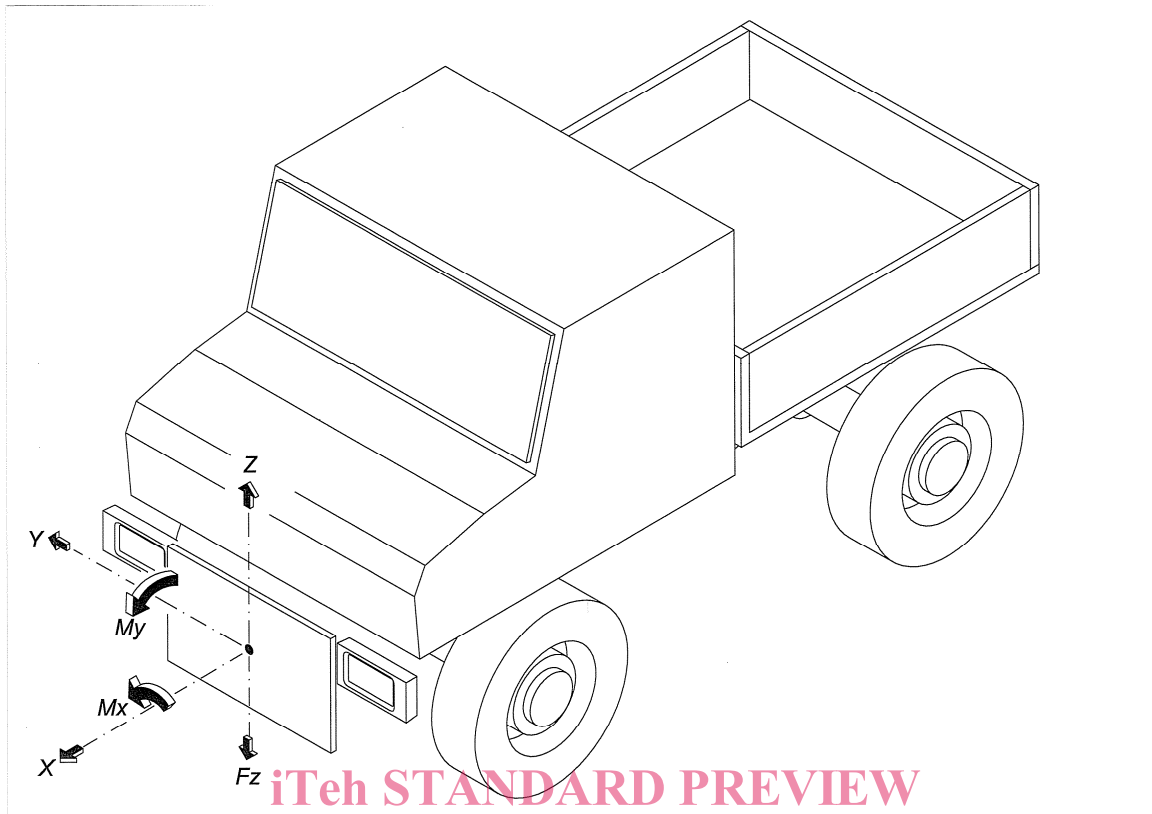


Figure 1 — Vehicle coordinate system

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3.1.4 Designation

Mounting plates meeting the requirements of this European Standard shall be identified by the following information, in the order given:

- a) reference to this European Standard (EN 15432:2008);
- b) indication of the mounting plate class.

EXAMPLE Mounting plate of class F 2:

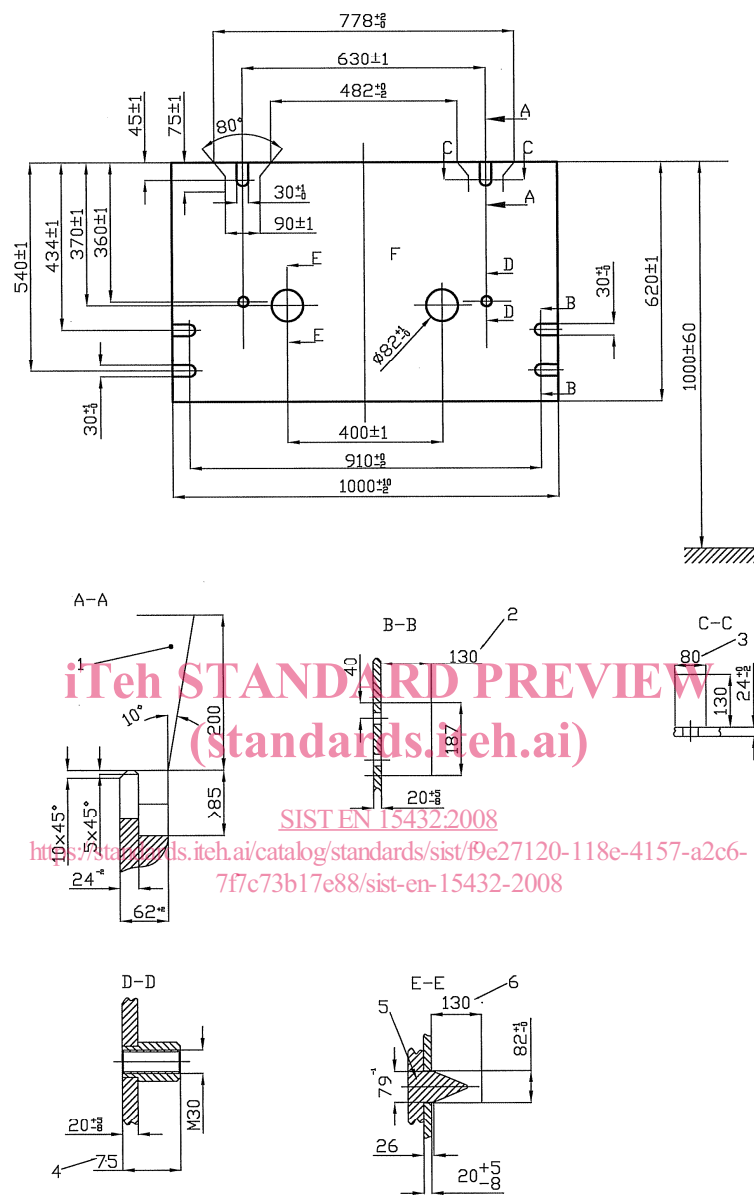
Mounting plate EN 15432 F 2

3.1.5 Interchangeability dimensions

Interchangeability dimensions of mounting plates shall be according to:

- Figure 2 for Class F 1 mounting plates;
- Figure 3 for Class F 2 mounting plates.

Dimensions not specified in Figure 2 and Figure 3 are left to the discretion of the manufacturer.



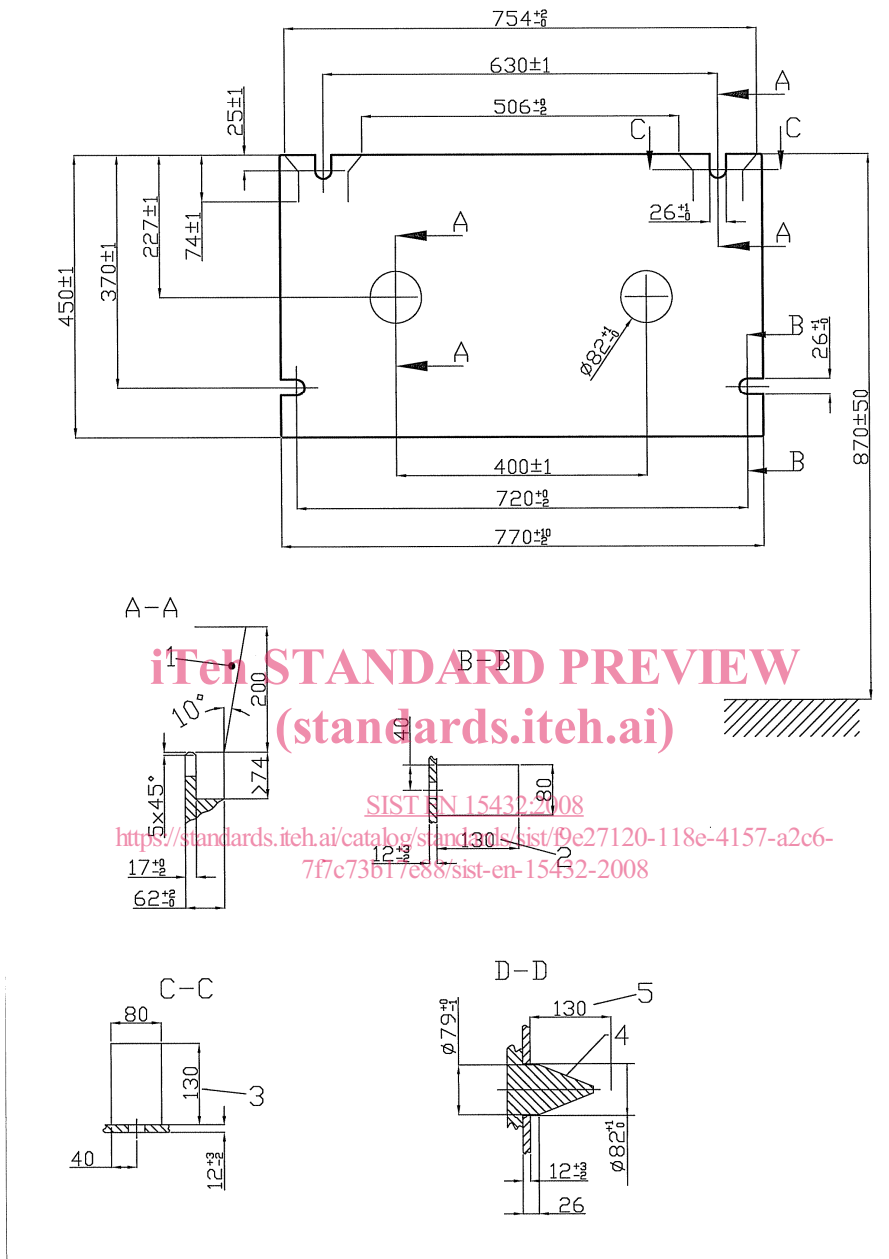
Key

- 1 clearance for claw
- 2 clearance for swivel bolts
- 3 clearance for swivel bolt
- 4 clearance for passing bolt
- 5 cone
- 6 clearance for centring cone

NOTE 1 Additional cut-outs are allowed if the stiffness is not reduced thereby.

NOTE 2 Additional elements, which do not conflict with the characteristic dimensions, may be provided to couple in-use implements using different fixing systems.

Figure 2 — Dimensions for F 1 mounting plates



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Key

- 1 clearance for claw
- 2 clearance for swivel bolt
- 3 clearance for swivel bolt
- 4 cone
- 5 clearance for centring cone

NOTE 1 Additional cut-outs are allowed if the stiffness is not reduced thereby.

NOTE 2 Additional elements, which do not conflict with the characteristic dimensions, may be provided to couple in-use implements using different fixing systems.

Figure 3 — Dimensions for F 2 mounting plates

3.1.6 Tool fixing systems

3.1.6.1 General

To ensure interchangeability with tools already in use, mounting plates defined in this European Standard are designed in such a way as to allow for different fixing systems.

The choice of the most appropriate fixing system shall be left to the tool manufacturer and to the user.

The following subclauses give a description of all the fixing elements provided by each mounting plate class.

Additional fixing elements that do not conflict with the characteristic dimensions given in Figure 2 and Figure 3, i.e., which do not interfere with fixing elements listed in following 3.1.6.2 and 3.1.6.3, may also be provided when there is a need of coupling in-use equipments having widespread fixing systems at National or Regional level.

3.1.6.2 Class F 1 mounting plate

Class F 1 mounting plates provide for the following fixing elements:

- two pockets (centre to centre 630 mm \pm 1 mm, section A-A in Figure 2) as a support for the relevant claws;
- two couples of lateral slots (\varnothing 30 mm + 1/-0 mm, centre to centre 910 mm + 0/-2 mm, section B-B in Figure 2) for the relevant swivelling bolts;
- couple of upper slots (\varnothing 30 mm + 1/-0 mm, centre to centre 630 mm \pm 1 mm, section C-C in Figure 2) for the relevant swivelling bolts;
- two threaded holes (M30, centre to centre 630 mm \pm 1 mm, section D-D in Figure 2) for the relevant passing bolts;
- two holes (\varnothing 82 mm + 1/-0 mm, centre to centre 400 mm \pm 1 mm, section E-E in Figure 2) for the relevant centring cones.

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When using swivelling bolts, the use of appropriate washers is strongly recommended.

3.1.6.3 Class F 2 mounting plate

Class F 2 mounting plates provide for the following fixing elements:

- two pockets (centre to centre 630 mm \pm 1 mm, section A-A in Figure 3) as a support for the relevant claws;
- couple of lateral slots (\varnothing 26 mm + 1/-0 mm, centre to centre 720 mm + 0/-2 mm, section B-B in Figure 3) for the relevant swivelling bolts;
- couple of upper slots (\varnothing 26 mm + 1/-0 mm, centre to centre 630 mm \pm 1 mm, section C-C in Figure 3) for the relevant swivelling bolts;
- two holes (\varnothing 82 mm + 1/-0 mm, centre to centre 400 mm \pm 1 mm, section D-D in Figure 3) for the relevant centring cones.

When using swivelling bolts, the use of appropriate washers is strongly recommended.

3.2 Electrical and hydraulic connections

3.2.1 General

Electrical connectors and hydraulic couplings for connecting the equipment to the vehicle shall be provided in the front of the vehicle, as close as possible to the front mounting plate. Electrical and hydraulic connections on the