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Earth-moving machinery — Hydraulic excavators — Terminology and commercial specifications

Engins de terrassement — Pelles hydrauliques — Terminologie et spécifications commerciales

INTERNATIONAL ISO

Reference number
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Contents

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Annexes

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.

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.

International Standard ISO 7135 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Sub-Committee SC 4, *Commercial nomenclature, classification and rating*.

Annexes A and B form an integral part of this International Standard. Annex C is for information only.

Earth-moving machinery — Hydraulic excavators — Terminology and commercial specifications

1 Scope

This International Standard establishes terminology and the content of commercial literature specifications for self-propelled crawler and wheeled hydraulic excavators, and their equipment, as defined in 3.1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3450:1985, *Earth-moving machinery — Wheeled machines — Performance requirements and test procedures for braking systems.*

ISO 5010:1992, *Earth-moving machinery — Rubber-tyred machines — Steering requirements.*

ISO 6014:1986, *Earth-moving machinery — Determination of ground speed.*

ISO 6015:1989, *Earth-moving machinery — Hydraulic excavators — Methods of measuring tool forces.*

ISO 6165:1987, *Earth-moving machinery — Basic types — Vocabulary.*

ISO 6746-1:1987, *Earth-moving machinery — Definitions of dimensions and symbols — Part 1: Base machine.*

ISO 6746-2:1987, *Earth-moving machinery — Definitions of dimensions and symbols — Part 2: Equipment.*

ISO 9249:1989, *Earth-moving machinery — Engine test code — Net power.*

3 General definitions

3.1 hydraulic excavator: Self-propelled excavator as defined in ISO 6165:1987, definition 2.4, using a hydraulic system to operate the equipment mounted onto the base machine

3.2 base machine: Hydraulic excavator without equipment as described by the manufacturer specifications. The machine has the necessary mountings to secure equipment as given in clause 5.

3.3 equipment: Set of components mounted onto the base machine to fulfill the primary design function.

3.4 attachment: Optional assembly of components that can be mounted onto the base machine for a specific use.

3.5 components: Part or assembly of parts of a base machine, equipment or an attachment.

4 Base machine

4.1 Types of hydraulic excavators

4.1.1 Crawler excavator

See figure 1.

4.1.2 Wheeled excavator

See figure 2.

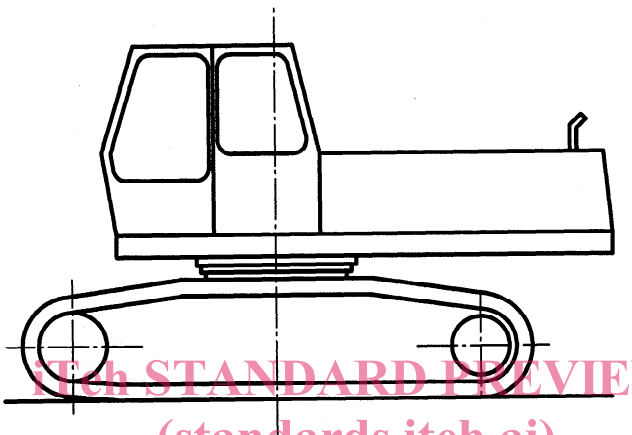


Figure 1 — Crawler excavator

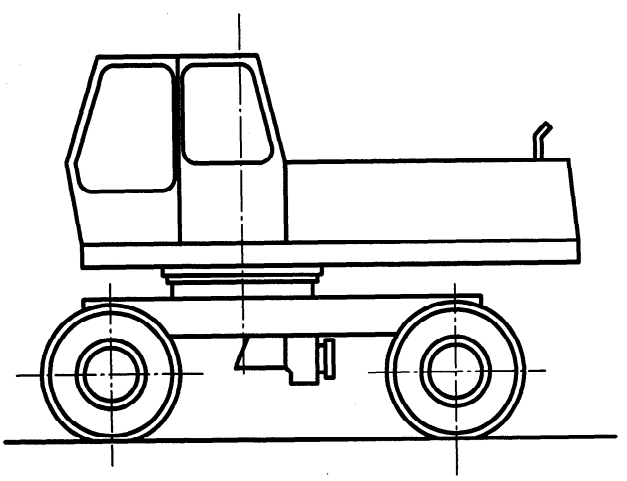


Figure 2 — Wheeled excavator

4.2 Dimensions

Dimensions of hydraulic excavators are shown in figures 3 and 4.

For definitions of dimensions and the ground reference plane (GRP), see ISO 6746-1.

For definitions of dimensions strictly related to hydraulic excavators, and dimensions $H24$ to $H26$, $W16$ to $W18$, $L14$ to $L19$ and $R4$, see annex A.

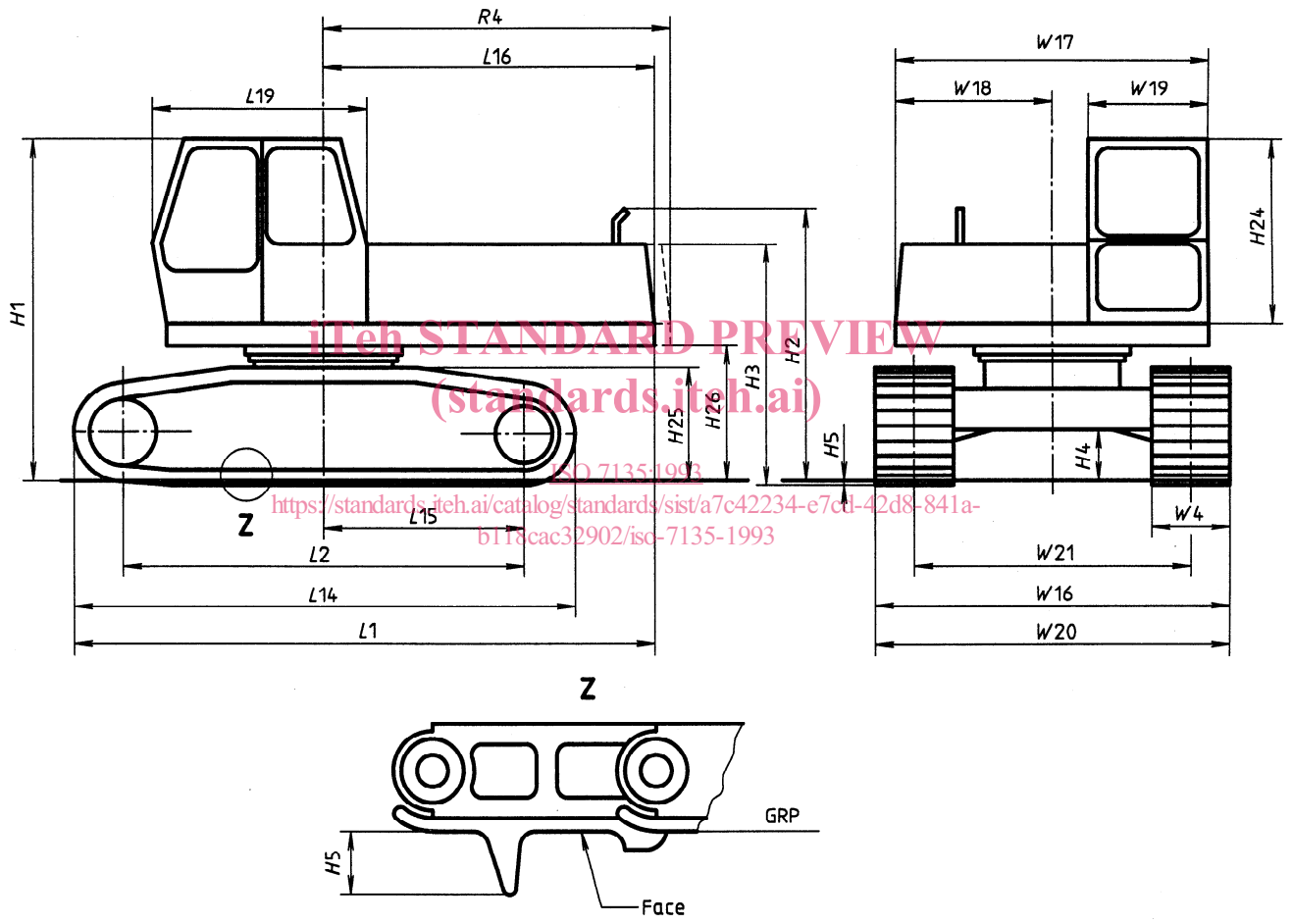


Figure 3 — Dimensions of base machine (crawler excavator)

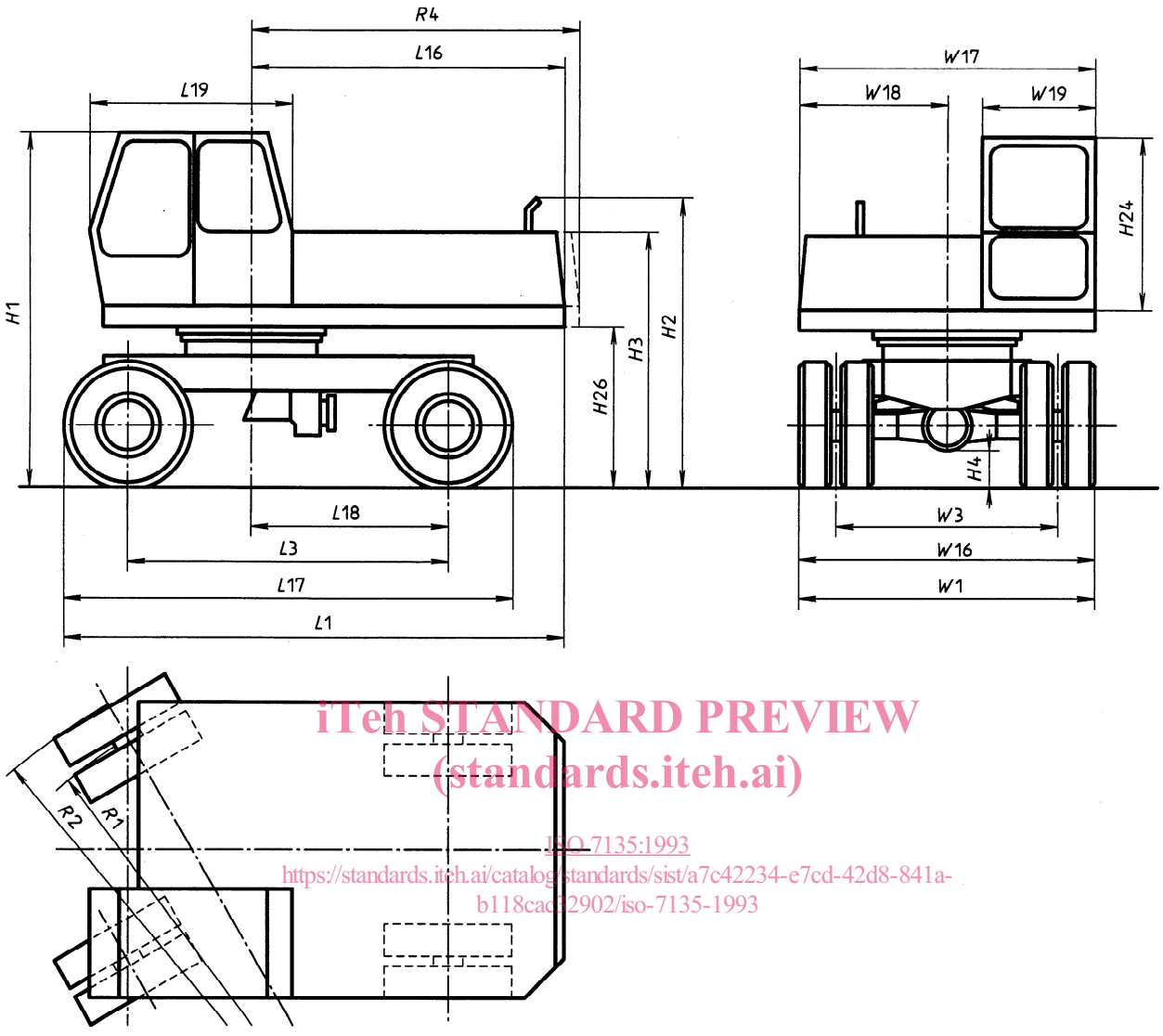


Figure 4 — Dimensions of base machine (wheeled excavator)

4.3 Masses

4.3.1 operating mass: Mass of the base machine, with equipment specified by the manufacturer, operator (75 kg), full fuel tank, and full lubricating, hydraulic and cooling systems.

4.3.2 shipping mass: Mass of the base machine without operator, with full lubricating, hydraulic and cooling systems, 10 % of fuel tank capacity and with or without equipment, cab, canopy or FOGS[1], as specified by the manufacturer.

4.3.3 cab, canopy and FOGS mass: Mass of cab, canopy and FOGS with all their components and mountings required to secure these to the base machine.

1) FOGS — Falling-object guarding system.

4.4 Nomenclature

The following numbers refer to the parts in figures 5 and 6.

1 Undercarriage chassis
2 Swing bearing
3 Upper structure
4 Cab
5 Counterweight
6 Revolving frame
7 Track frame
8 Track assembly
9 Idler
10 Sprocket
11 Rigid axle (rear)
12 Steering axle (front)

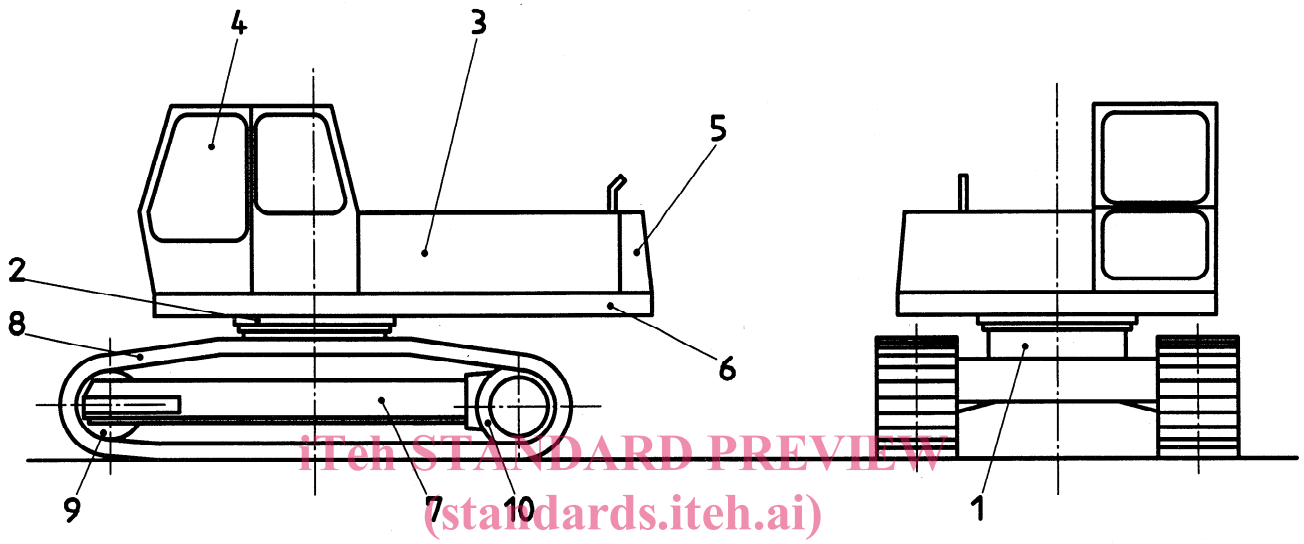


Figure 5 — Base machine, crawler excavator

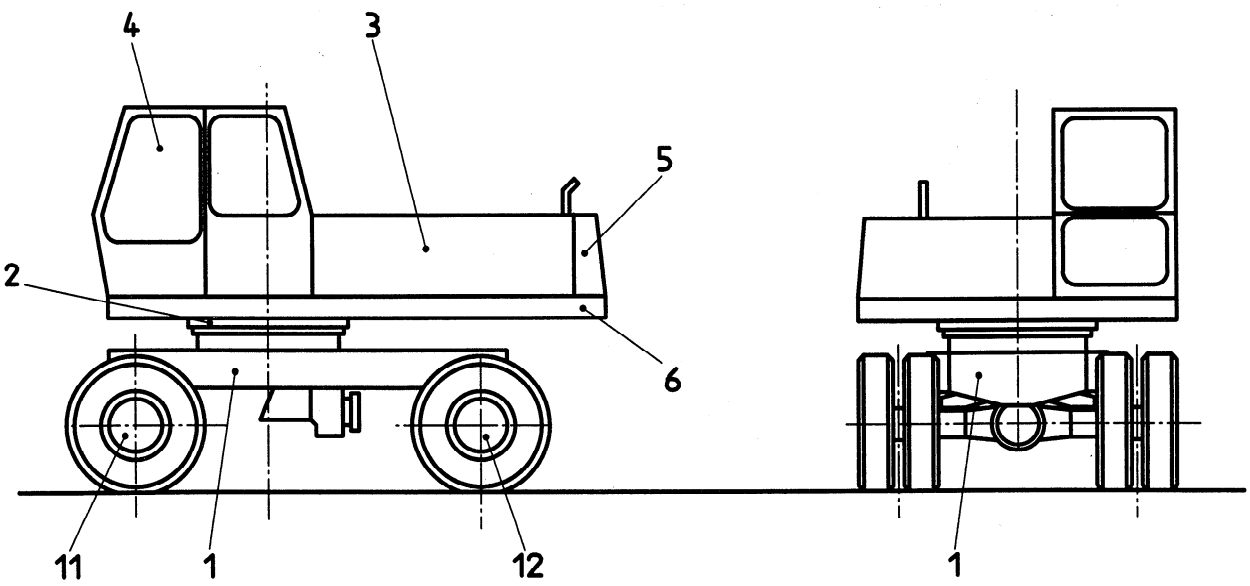


Figure 6 — Base machine, wheeled excavator

5 Equipment and attachments

5.1 Definitions

The definitions given below are based on the main geometrical digging curves of most common applications of hydraulic excavators.

5.1.1 Hoe equipment

Consists of a boom, arm, linkage and hoe bucket that cuts generally towards the machine. It is primarily for below ground level excavation (see figure 7).

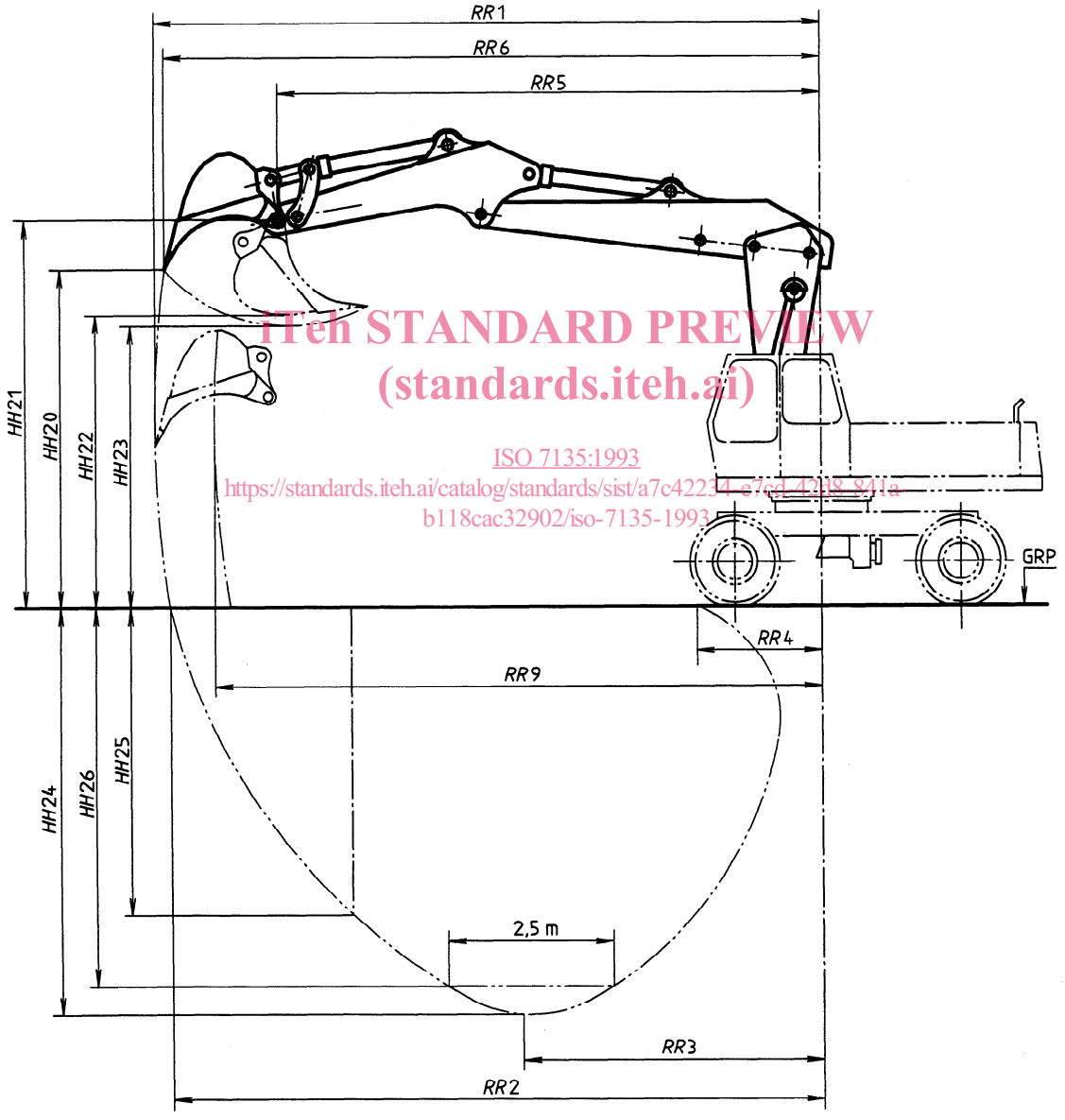


Figure 7 — Dimensions of hoe

5.1.2 Shovel equipment

Consists of a boom, arm linkage and shovel bucket that cuts away from the machine and generally upward. It is primarily for above ground level excavation (see figure 8).

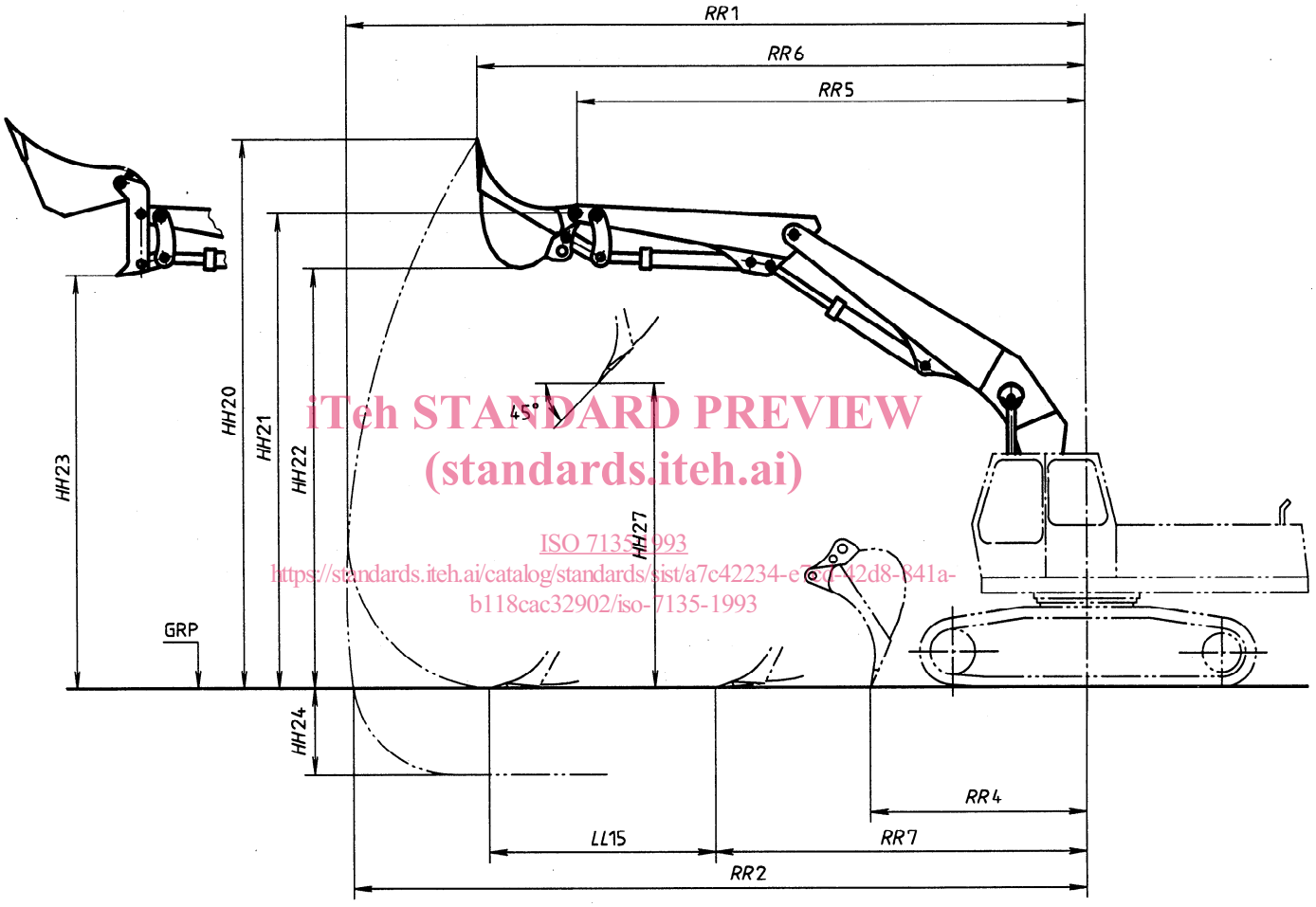


Figure 8 — Dimensions of shovel

5.1.3 Grab or clamshell equipment

Consists of a boom, arm and grab or clamshell with linkage. Digging and grabbing is done generally in vertical direction, discharging below and above GRP (see figure 9).

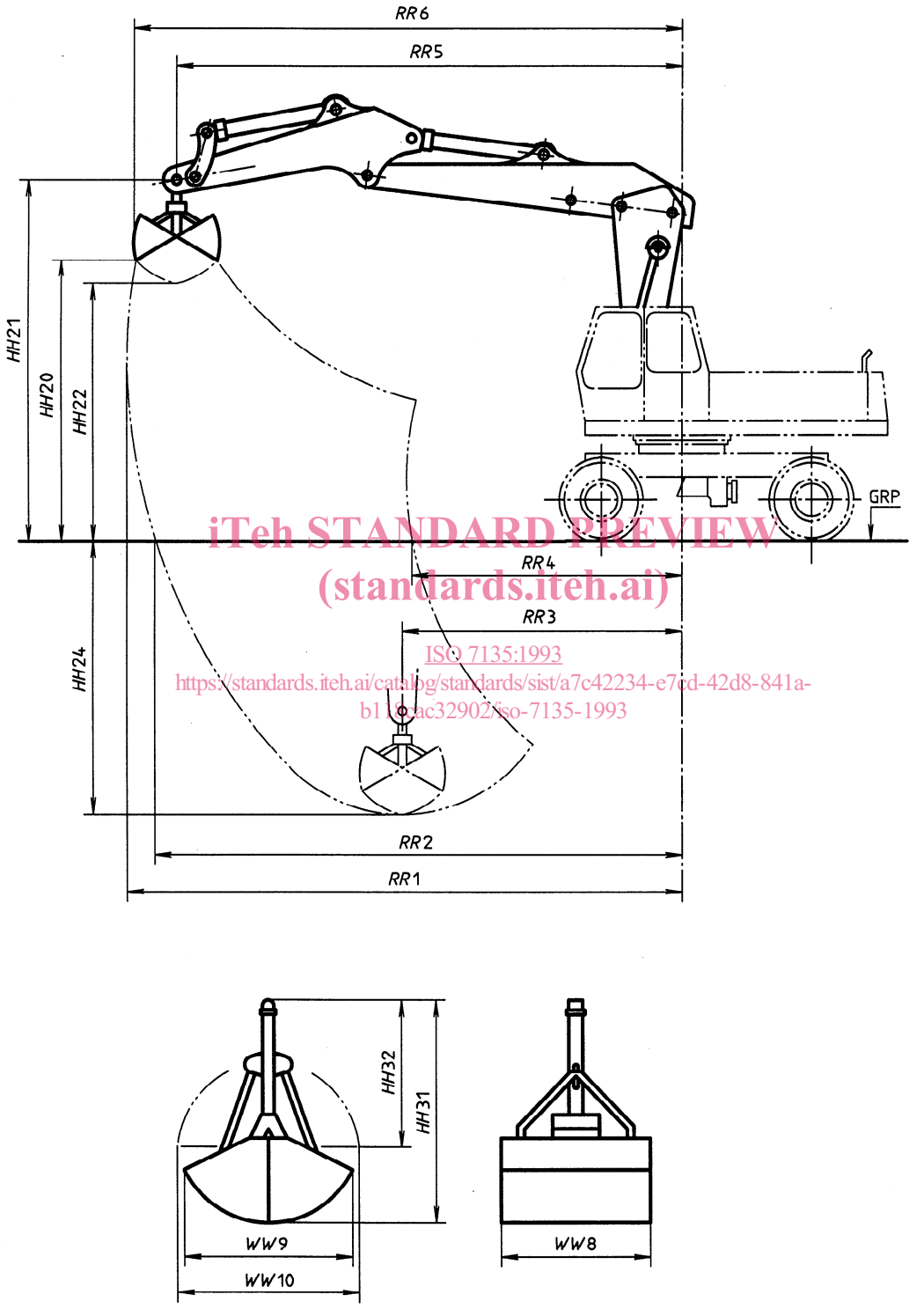


Figure 9 — Dimensions of grab/clamshell

5.1.4 Telescoping boom equipment

Consists of a boom and bucket that can be extended and retracted about the boom axis and cuts toward the machine through the telescoping action of the boom. It is used primarily for excavation and/or grading slopes either above or below ground level (see figure 10).

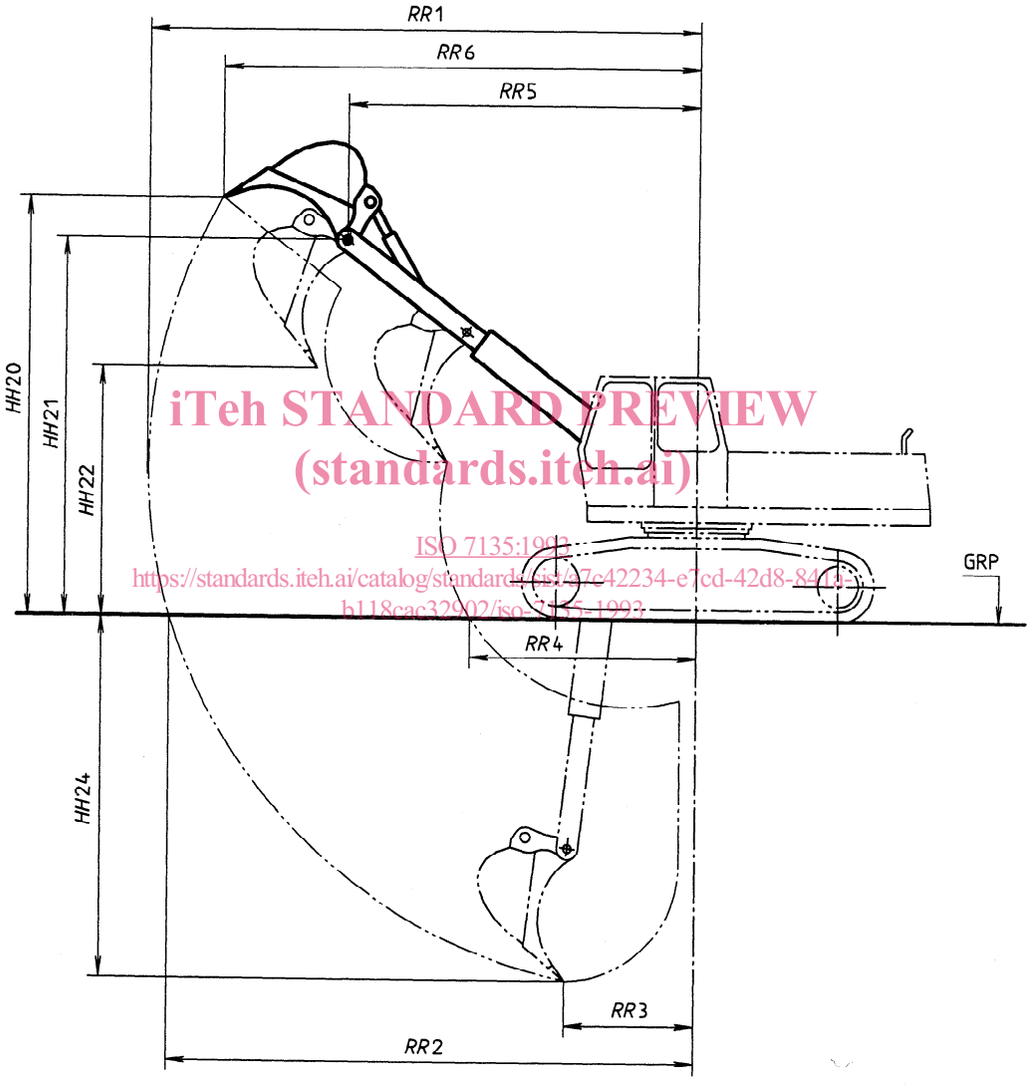


Figure 10 — Dimensions of telescopic boom

5.2 Dimensions

For definitions of dimensions, see ISO 6746-2.

For definitions of dimensions strictly related to hydraulic excavators and their equipment, see annex B.

5.3 Manoeuvring, road travelling and shipping

For definitions of dimensions relating to manoeuvring, road travelling and shipping of hydraulic excavators, see annex B.

Dimensions are as shown in figures 11 to 14.

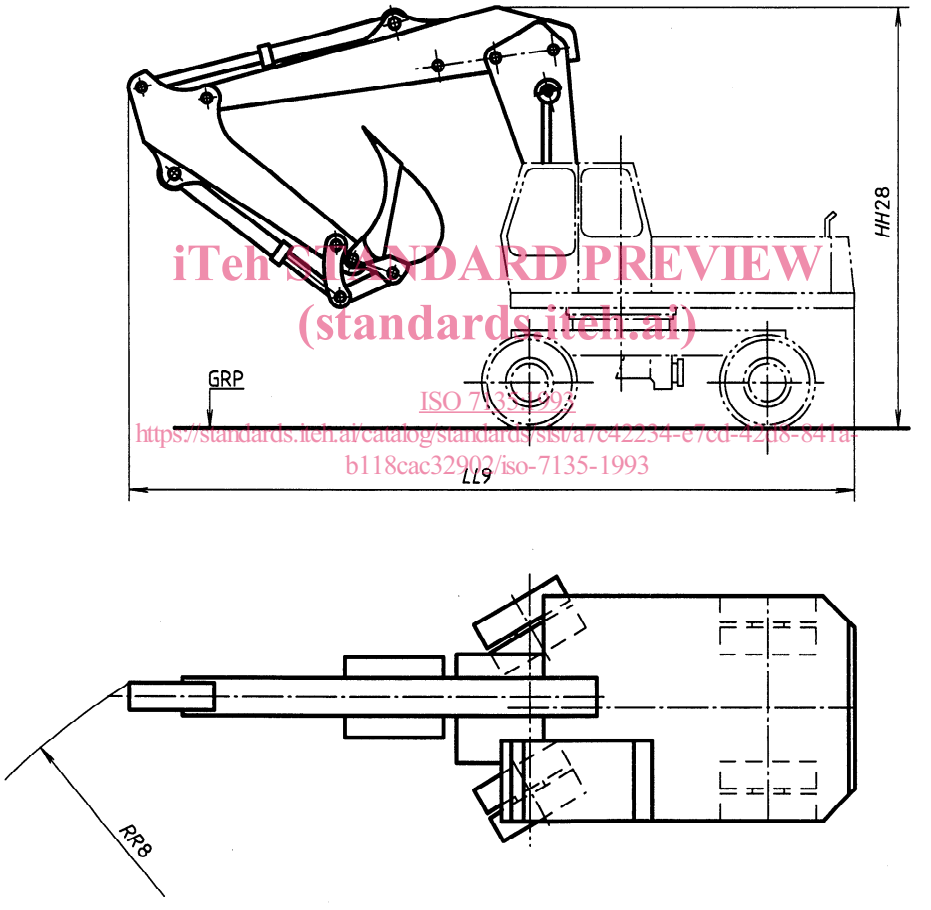
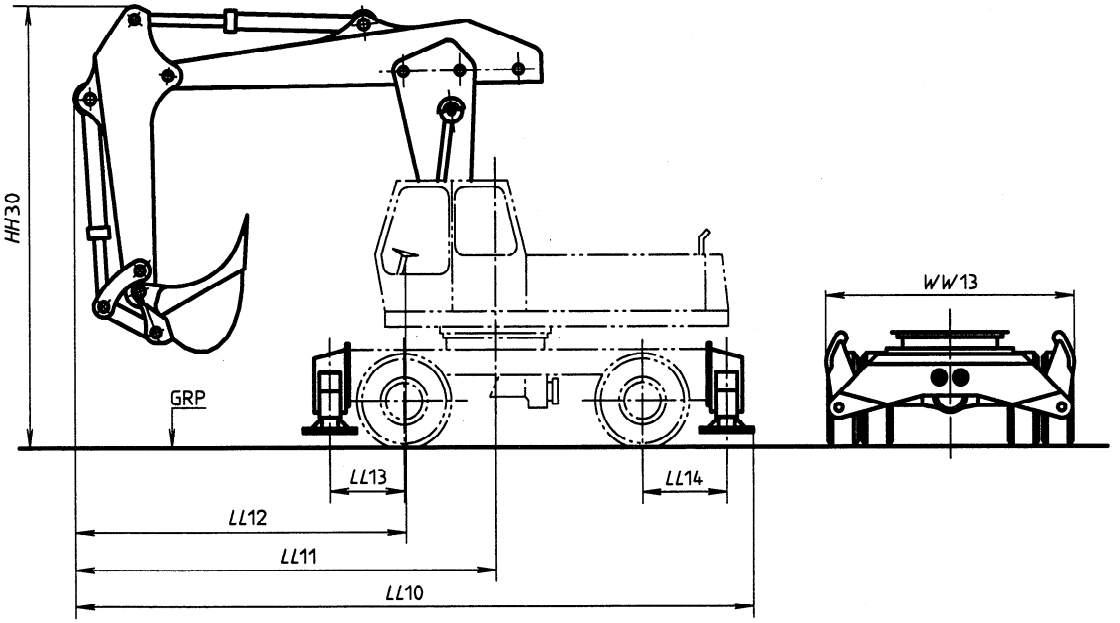


Figure 11 — Manoeuvring dimensions of wheel excavator



NOTE — These dimensions should be shown to meet the regulation of each country. The fixed position should be described.

Figure 12 — Dimensions of wheeled excavator, travelling on public roads

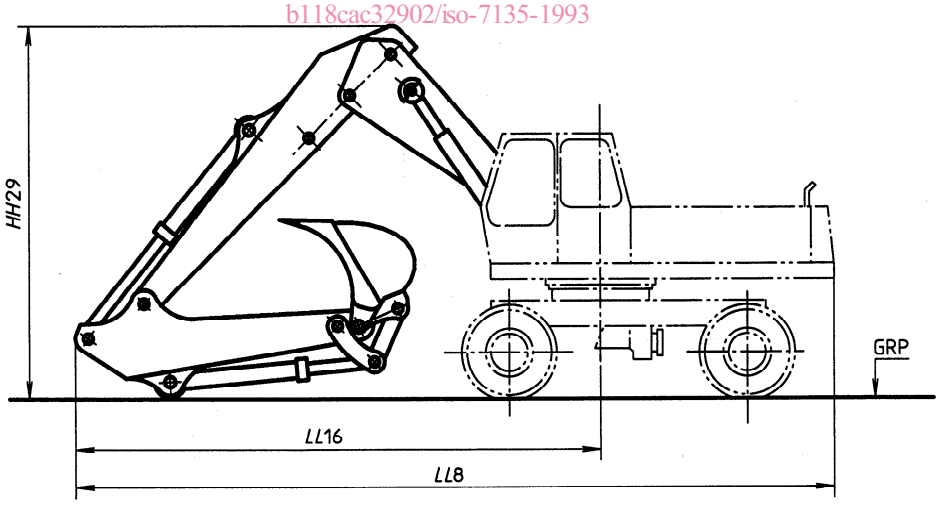


Figure 13 — Shipping dimensions of wheeled excavator