

Glossary of

Terms for loaders used for earth-moving

[ISO title: Earth-moving machinery — Loaders — Terminology
and commercial specifications]

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The preparation of this British Standard was entrusted by the Road Engineering Standards Committee (RDB/-) to Technical Committee RDB/21, upon which the following bodies were represented:

- Associated Offices Technical Committee
- Construction Industry Training Board
- Construction Plant-hire Association
- Department of Trade and Industry (Mechanical and Electrical Engineering Division)
- Federation of Civil Engineering Contractors
- Federation of Manufacturers of Construction Equipment and Cranes
- Health and Safety Executive
- Institution of Civil Engineers
- Institution of Highways and Transportation
- Ministry of Defence
- National Coal Board

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National foreword

This British Standard has been prepared under the direction of the Road Engineering Standards Committee and is identical with ISO 7131:1984 “*Earth-moving machinery — Loaders — Terminology and commercial specifications*” published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

Cross-references

International Standard	Corresponding British Standard
ISO 5010:1984	BS 6573:1985 <i>Specification for steering capability of rubber tyred earth-moving machines</i> (Identical)
ISO 6014:1979	BS 5982:1980 <i>Method for determination of ground speed of earth-moving machinery</i> (Identical)
ISO 6165:1978	BS 5718:1979 <i>Glossary of terms for basic types of earth-moving machinery</i> (Identical) BS 6295 <i>Dimensions and symbols for earth-moving machinery</i>
ISO 6746-1:1982	Part 1:1982 <i>Glossary of terms for base machine</i> (Identical)
ISO 6746-2:1982	Part 2:1982 <i>Glossary of terms for equipment</i> (Identical)
ISO 7457:1983	BS 6486:1984 <i>Method for measurement of turning dimensions of wheeled earthmoving machinery</i> (Identical)
ISO 7546:1983	BS 6422:1983 <i>Method for volumetric rating of loader and front loading excavator buckets used for earth-moving</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 3450¹⁾ and ISO 5998, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

Additional information. It will be noted that the subclauses 7.2, 7.3 and 7.5 are headed, but lack definitions. It is hoped that in future editions it will be possible to provide such definitions or suitable cross-references.

The Technical Committee is currently engaged in conjunction with ISO/TC 127 in drawing up an engine test code for earth-moving machinery (see footnote to 7.1). ISO 1585, referred to in 7.1, is a standard solely for road vehicles.

¹⁾ Currently being revised

Clause 8 lists headings for information which manufacturers should consider including in their commercial literature specifications.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 26, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This International Standard establishes terminology and the content of commercial literature specifications for self-propelled crawler and wheel loaders, and their equipment.

2 Field of application

This International Standard applies to loaders as defined in ISO 6165.

3 References

- ISO 1585, *Road vehicles — Engine test code — Net power*.
 ISO 3450, *Off-highway earth-moving machinery — Minimum performance criteria for brake systems*.
 ISO 5010, *Earth-moving machinery — Rubber-tyred machines — Steering systems*.
 ISO 5998, *Earth-moving machinery — Rated operating load for crawler and wheel loaders*.
 ISO 6014, *Earth-moving machinery — Determination of ground speed*.
 ISO 6165, *Earth-moving machinery — Basic types — Vocabulary*.
 ISO 6746-1, *Earth-moving machinery — Definitions of dimensions and symbols — Part 1: Base machine*.
 ISO 6746-2, *Earth-moving machinery — Definitions of dimensions and symbols — Part 2: Equipment*.
 ISO 7457, *Earth-moving machinery — Measurement of turning dimensions of wheeled machines*.
 ISO 7546, *Earth-moving machinery — Loader and front loading excavator buckets — Volumetric ratings*.

4 General definitions

4.1

loader

a self-propelled crawler or wheeled machine with an integral front-mounted bucket supporting structure and linkage which loads or excavates through forward motion of the machine, and lifts, transports and discharges material (see ISO 6165)

4.2

base machine

a loader as described by the manufacturer specifications. The machine should be provided with the necessary mountings and attachments to secure equipment as shown in clause 6

4.3

equipment

a set of components mounted onto the base machine to fulfil the primary design function

4.4

attachment

an optional assembly of components that can be mounted onto the base machine for a specific use

4.5

component

a part or an assembly of parts of a base machine, equipment, or an attachment

5 Base machine

5.1 Types of loaders

5.1.1 *Undercarriage*

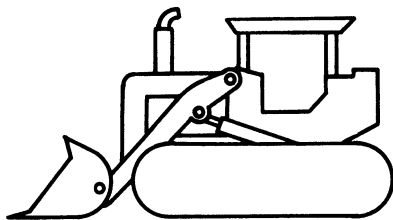
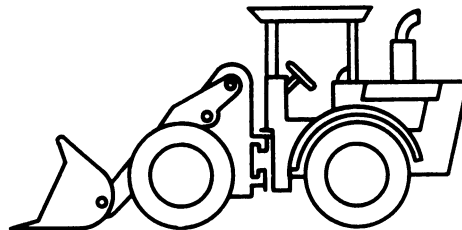
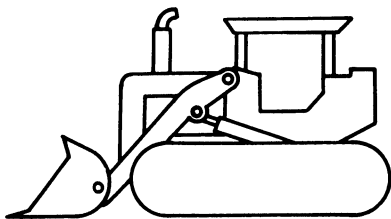
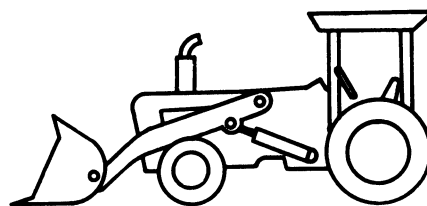
5.1.1.1 *Crawler loader (Figure 1)*

5.1.1.2 *Wheel loader (Figure 2)*

5.1.2 *Engine location*

5.1.2.1 *Front engine (Figure 3)*

5.1.2.2 *Rear engine (Figure 4)*

5.1.3 Steering system**5.1.3.1** *Front wheel steer (Figure 5)***5.1.3.2** *Rear wheel steer (Figure 6)***5.1.3.3** *All wheel steer (Figure 7)***5.1.3.4** *Articulated steer (Figure 8)***5.1.3.5** *Wheel skid steer [Figure 9a)]***5.1.3.6** *Wheel independent steer [Figure 9b)]***5.1.3.7** *Crawler skid steer (Figure 10)***5.1.3.8** *Crawler independent steer (Figure 11)***5.1.4 Drive system****5.1.4.1** *Front wheel drive (Figure 12)***5.1.4.2** *Rear wheel drive (Figure 13)***5.1.4.3** *All wheel drive (Figure 14)***Undercarriage (see 5.1.1)****Figure 1 — Crawler loader****Figure 2 — Wheel loader****Engine location (see 5.1.2)****Figure 3 — Front engine****Figure 4 — Rear engine**

Steering system (see 5.1.3)

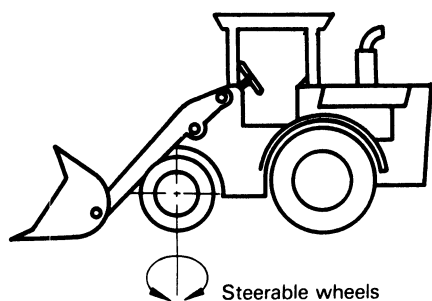


Figure 5 — Front wheel steer

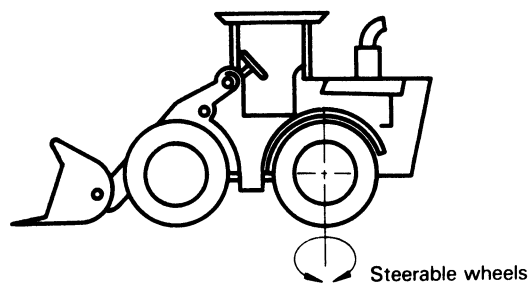


Figure 6 — Rear wheel steer

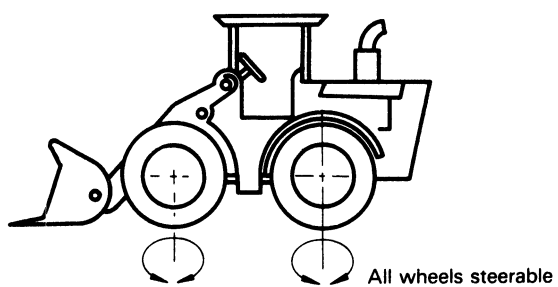


Figure 7 — All wheel steer

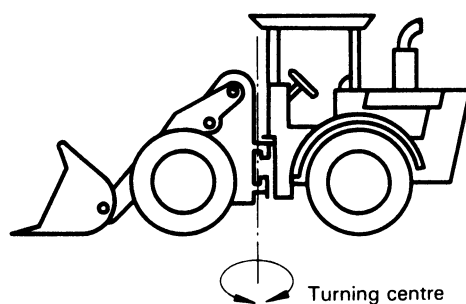
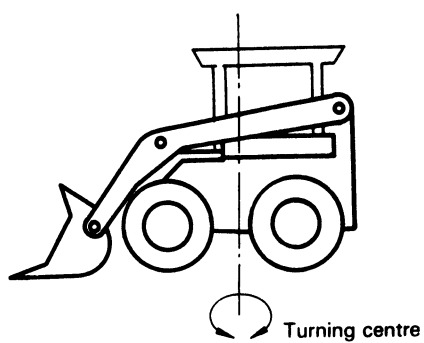
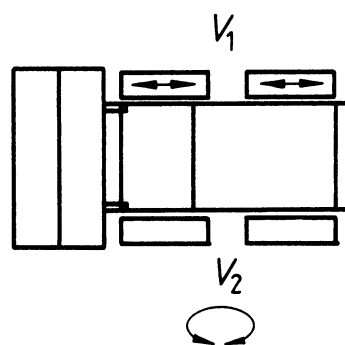


Figure 8 — Articulated steer

Figure 9a) — Wheel skid steer ($V_2 = 0$)

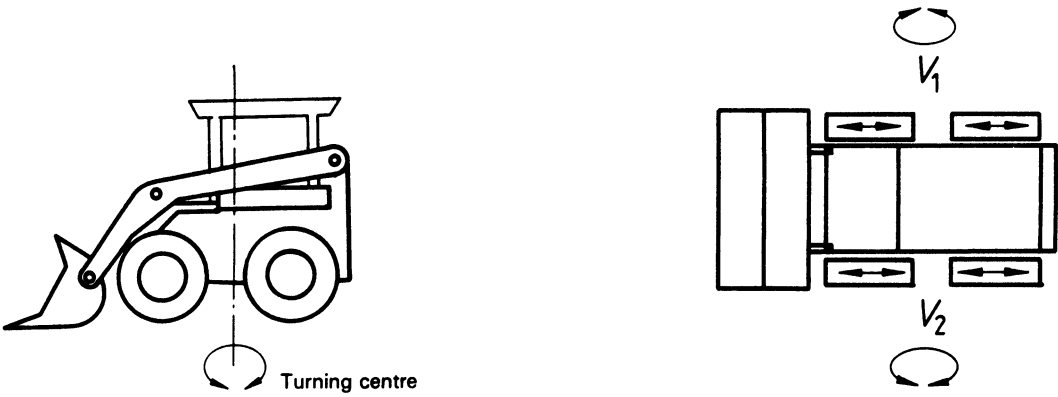


Figure 9b) — Wheel independent steer ($V_1 \neq V_2$)

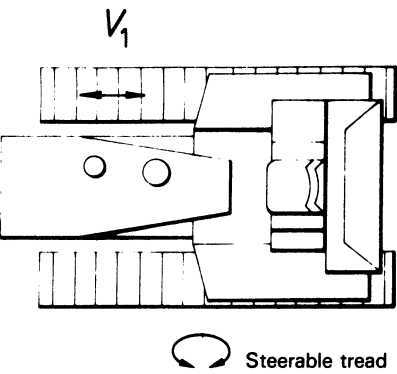


Figure 10 — Crawler skid steer

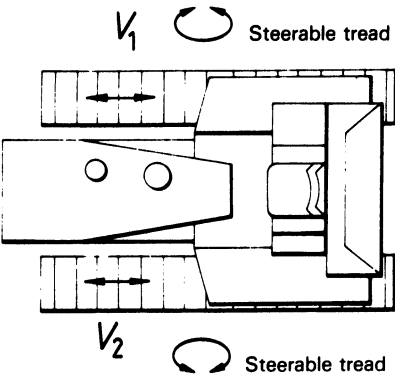


Figure 11 — Crawler independent steer ($V_1 \neq V_2$)

Drive system (see 5.1.4)

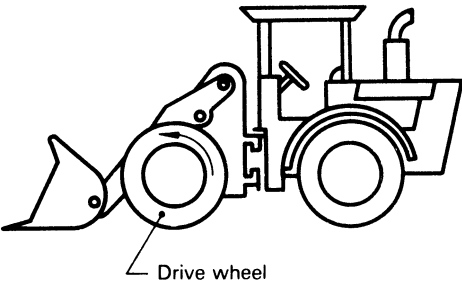


Figure 12 — Front wheel drive

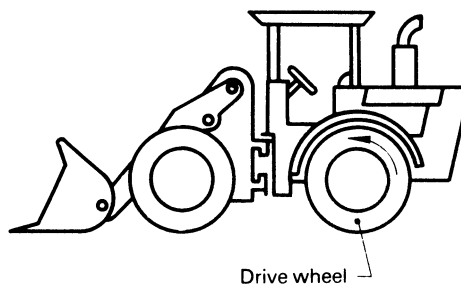


Figure 13 — Rear wheel drive

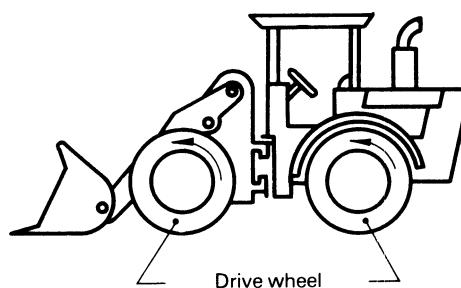


Figure 14 — All wheel drive