



BSI Standards Publication

Earth-moving machinery — Dumpers — Terminology and commercial specifications

National foreword

This British Standard is the UK implementation of ISO 7132:2003+A1:2018. It supersedes BS ISO 7132:2003, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee B/513/1, Earth moving machinery (International).

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2018
Published by BSI Standards Limited 2018

ISBN 978 0 580 90828 6

ICS 01.040.53; 53.100

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 18 December 2003.

Amendments/corrigenda issued since publication

Date	Text affected
31 December 2018	Implementation of ISO amendment A1:2018

INTERNATIONAL STANDARD

ISO
7132

Third edition
2003-12-01

Earth-moving machinery — Dumpers — Terminology and commercial specifications

*Engins de terrassement — Tombereaux — Terminologie et
spécifications commerciales*



Reference number
ISO 7132:2003(E)
Documents
Document Sharing Hub
© ISO 2003



COPYRIGHT PROTECTED DOCUMENT

© ISO 2003, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General	1
3.2 Performance	3
4 Base machine	3
4.1 Types of dumper	3
4.1.1 Method of dumping	3
4.1.2 Steering system	5
4.1.3 Drive system	7
4.1.4 Number of axles	9
4.1.5 Method of self-loading	9
4.1.6 Operator position	10
4.2 Dimensions (see ISO 6746-1)	11
4.2.1 Dumpers	11
4.2.2 Crawler dumper	14
4.2.3 Compact dumpers	14
4.3 Masses	18
4.4 Component nomenclature	18
5 Performance characteristics	27
6 Commercial literature specifications (SI units)	27
6.1 Engine	27
6.2 Transmission	28
6.3 Drive axle(s)	28
6.4 Steering	28
6.4.1 Type	28
6.4.2 Performance	28
6.5 Brakes	29
6.5.1 Service brakes	29
6.5.2 Parking brake	29
6.5.3 Secondary brake	29
6.5.4 Retarding brake	29
6.5.5 Brake performance	29
6.6 Tyres	29
6.7 Hydraulic system	29
6.7.1 Empty body dump and return time	29
6.7.2 Steering	30
6.8 Suspension	30
6.8.1 Type	30
6.8.2 Capacity	30
6.8.3 Load/deflection rate	30
6.9 Body	30
6.9.1 Rated body capacity	30
6.9.2 Method of self-loading	30
6.10 Operator station	30
6.11 Masses	31
6.12 System fluid capacities	31
6.13 Overall dumper dimensions	31
Annex A (normative) Dimensions for dumpers	33
Annex B (normative) Dimensions for compact dumpers	34

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 7132 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 4, *Commercial nomenclature, classification and rating*.

This third edition cancels and replaces the second edition ([ISO 7132:1990](#)), which has been technically revised.

Earth-moving machinery — Dumpers — Terminology and commercial specifications

1 Scope

This International Standard establishes a terminology for, and the content of, commercial literature specifications for self-propelled dumpers (including compact dumpers), as defined in [ISO 6165](#), used in earth moving.

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 3450](#), *Earth-moving machinery — Braking systems of rubber-tyred machines — Systems and performance requirements and test procedures*

[ISO 5010](#), *Earth-moving machinery — Rubber-tyred machines — Steering requirements*

[ISO 6014](#), *Earth-moving machinery — Determination of ground speed*

[ISO 6016](#), *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components*

[ISO 6165](#), *Earth-moving machinery — Basic types — Identification and terms and definitions*

[ISO 6483](#), *Earth-moving machinery — Dumper bodies — Volumetric rating*

[ISO 6746-1](#), *Earth-moving machinery — Definitions of dimensions and codes — Part 1: Base machine*

[ISO 7457](#), *Earth-moving machinery — Determination of turning dimensions of wheeled machines*

[ISO 9249](#), *Earth-moving machinery — Engine test code — Net power*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in [ISO 6165](#) and the following apply.

3.1 General

3.1.1

dumper

self-propelled or towed crawler or wheeled machine with an open body, which transports and dumps or spreads material, and where loading is performed by means external to the dumper

Note 1 to entry: A compact dumper can have integral self-loading equipment.

[SOURCE: [ISO 6165:2012](#), 4.6]

3.1.1.1

rigid-frame dumper

dumper (3.1.1) having a rigid frame and wheel or crawler steering

[SOURCE: [ISO 6165:2012](#), 4.6.1]

[A1] 3.1.1.2

articulated-frame dumper

dumper (3.1.1) with an articulated frame which accomplishes the steering of the machine

[SOURCE: ISO 6165:2012, 4.6.2 ^[A1]]

[A1] 3.1.1.3

swing dumper

dumper (3.1.1) having a 360° swing upper structure, whose upper structure consists of a rigid frame, the open body and the operator's station, and whose undercarriage consists of a track type or wheeled unit

[SOURCE: ISO 6165:2012, 4.6.3 ^[A1]]

[A1] 3.1.1.4

towed dumper

towed wagon

dumper (3.1.1) that is not self-propelled but which is propelled instead by a towing machine on which the operator's station is located

Note 1 to entry: The towed dumper can function in different ways (e.g. side-dump, bottom-dump, rear-dump or use an ejector). ^[A1]

[A1] 3.1.1.5

compact dumper

articulated frame dumper (3.1.1.2) or *rigid frame dumper* (3.1.1.1) having an operating mass in accordance with ISO 6016 of 4 500 kg or less

Note 1 to entry: A compact dumper can have integral self-loading equipment.

[SOURCE: ISO 20474-6:2017, 3.5, modified - "in accordance with ISO 6016" has been added in the definition, Note 2 to entry has been deleted." ^[A1]]

3.1.2

base machine

machine with a cab or canopy and operator-protective structures (if required), without equipment or attachments but possessing the necessary mountings for such equipment and attachments

3.1.3

equipment

set of components mounted onto the base machine which allows an attachment to perform its design function

3.1.4

self-loading equipment

an integral mounted, bucket-supporting structure and linkage permanently fitted to a compact dumper enabling it to fill its own open body with material

Note 1 to entry: See 4.1.5.

3.1.5

attachment

assembly of components that can be mounted onto the base machine or equipment for a specific use

3.1.6

component

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

3.2 Performance

3.2.1

tractive force rimpull

A1 force available between the tyre or the crawler and the ground to propel the dumper **A1**

3.2.1.1

tractive force with direct drive transmission

tractive force calculated or measured at the maximum engine torque in each forward gear

Note 1 to entry: The maximum pull could be limited by mass and traction conditions.

3.2.1.2

tractive force rimpull with powershift transmission [electric drive] [hydrostatic drive]

tractive force rimpull given by the calculated or measured pull versus machine speed curves in each forward gear range

Note 1 to entry: The maximum pull could be limited by mass and traction conditions.

3.2.2

empty body dump and return time

A1 full movement cycle time of a body, door or ejector without load, at the rated engine speed, consisting of *empty body dump time* (3.2.2.1) and *empty body return time* (3.2.2.2) **A1**

A1 3.2.2.1

empty body return time

returning movement time of a body, door or ejector without load, at the engine speed as specified by the manufacturer at which the empty dump body can return within a shortest timeframe, from the body uppermost position (after dumping) or from the door/ejector most widely opened position to the beginning position of a body dumping or a door/ejector opening **A1**

A1 3.2.2.2

empty body dump time

movement time of a body, door or ejector without load, at the engine speed as specified by the manufacturer at which the empty dump body can dump within a shortest timeframe, from the beginning of the movement of a body dumping or of a door/ejector opening to the end of the dumping or opening movement **A1**

3.2.3

payload

manufacturer's rated mass that can be carried by the machine

4 Base machine

NOTE The information on the base machine parameters is provided in the referenced figures.

4.1 Types of dumper

4.1.1 Method of dumping

- Rear dump: see [Figure 1](#).
- Bottom dump: see [Figure 2](#).
- Side dump: see [Figure 3](#).
- Front dump: see [Figure 4](#).
- Rotating dump: see [Figure 5](#).

- High dump: see [Figure 6](#).
-  Swing  dump: see [Figure 7](#).

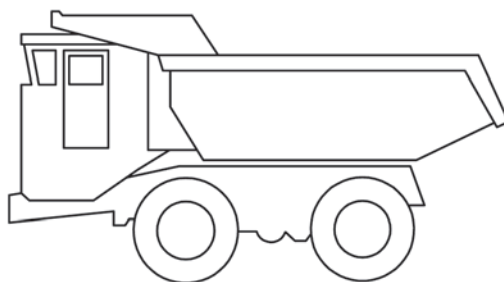


Figure 1 — Rear dump

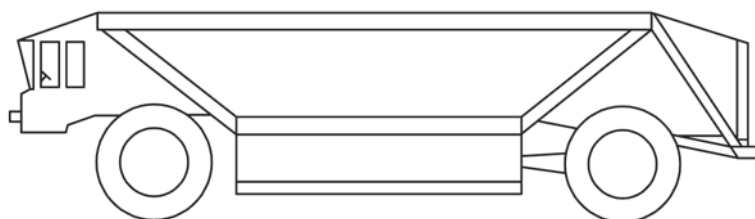


Figure 2 — Bottom dump

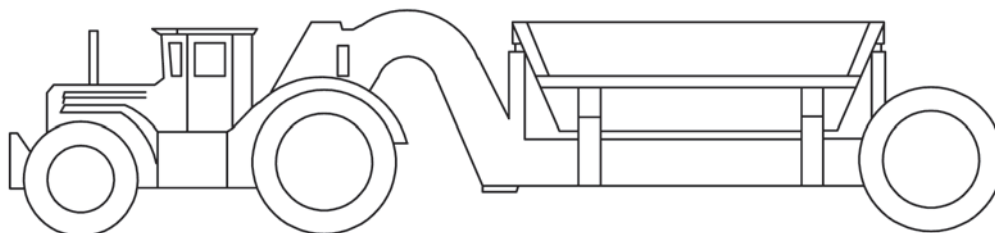


Figure 3 — Side dump

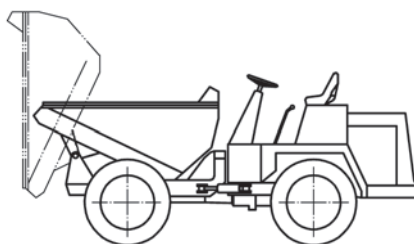


Figure 4 — Front dump

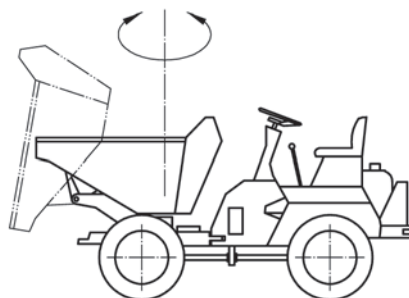


Figure 5 — Rotating dump

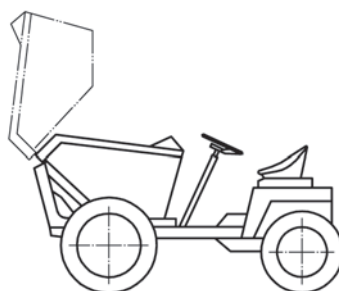


Figure 6 — High dump

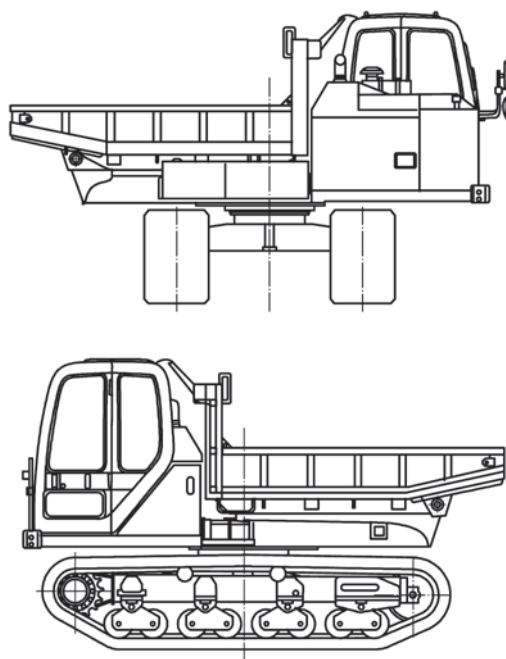
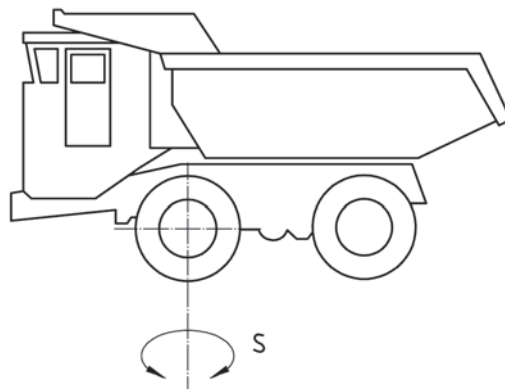


Figure 7 — $\square_{A1}$ Swing $\square_{A1}$ dump

4.1.2 Steering system

- Front-wheel steer: see [Figure 8](#).
- Articulated steer: see [Figure 9](#).
- Rear-wheel steer: see [Figure 10](#).

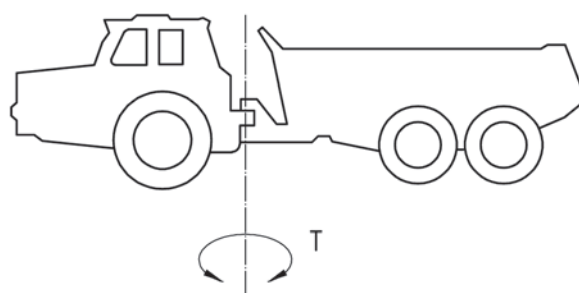
- All-wheel steer: see [Figure 11](#).
- Crawler skid steer: see [Figure 12](#).
- Wheel skid steer: see [Figure 13](#).



Key

S steerable wheels

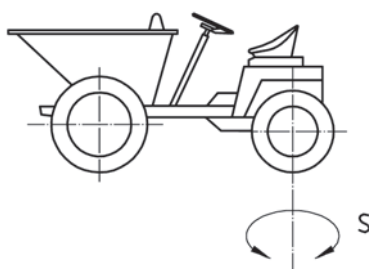
Figure 8 — Front-wheel steer



Key

T turning centre

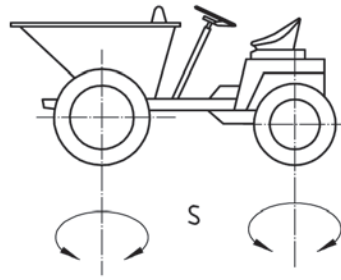
Figure 9 — Articulated steer



Key

S steerable wheels

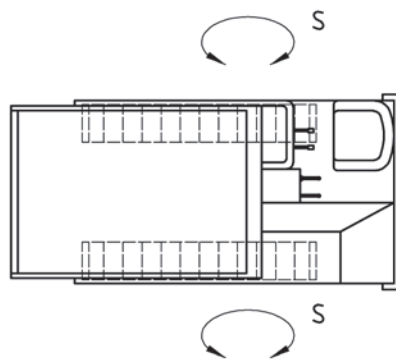
Figure 10 — Rear-wheel steer



Key

S steerable wheels

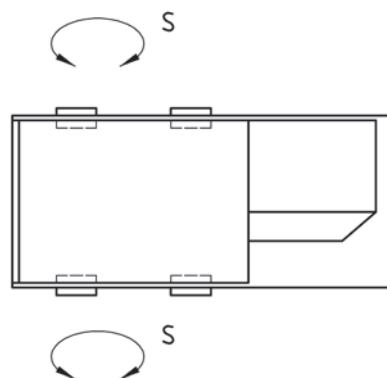
Figure 11 — All-wheel steer



Key

S steerable track

Figure 12 — Crawler skid steer



Key

S steerable wheels

Figure 13 — Wheel skid steer

4.1.3 Drive system

- Rear-wheel drive: see [Figure 14](#).
- All-wheel drive: see [Figure 15](#).
- Centre-axle drive: see [Figure 16](#).