INTERNATIONAL STANDARD

ISO 19452

First edition
2008-04-15

Building construction machinery and equipment — Pedestrian-controlled vibratory (percussion) rammers — Terminology and commercial specifications

Machines et matériels pour la construction des bâtiments — Dames vibrantes (à percussion) guidées à la main — Terminologie et spécifications commerciales

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

Reference number
ISO 19452:2008(E)

© ISO 2008

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

 © ISO 2008 – All rights reserved

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 19452 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment.*

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved

Introduction

The purpose of this International Standard is to define the main terms and commercial specifications for pedestrian-controlled vibratory (percussion) rammers, used for material (primarily soil) compaction. These machines are typically used in the building trades to improve soil density characteristics.

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved

Building construction machinery and equipment — Pedestrian-controlled vibratory (percussion) rammers — Terminology and commercial specifications

1 Scope

This International Standard provides a terminology and sets out commercial specifications for pedestrian-controlled vibratory (percussion) rammers used in building construction.

It is not applicable to rammers that compact by use of a tamping action of the foot-plate (shoe), nor is it applicable to explosion-type rammers.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
pedestrian-controlled vibratory rammer
pedestrian-controlled percussion rammer
machine designed for the purpose of improving material (primarily soil) density and stiffness through use of a displacement-driven foot-plate for compaction

See Figure 1.

NOTE The machine compacts material through a vibrating action performed by the foot-plate.

2.2
prime mover
driving energy source for the percussion mechanism

See Figure 1.

NOTE The following prime mover types are used for vibratory rammers: combustion engine (see Figure 2); hydraulic (see Figure 3).

2.3
vibratory mechanism
system of components that translates the prime mover energy to the foot-plate

2.4
foot-plate
shoe
machine element that contacts the material being compacted

See Figure 1.

NOTE Foot-plate materials include steel, wood and polymer blends.

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved

2.5
impact force
force generated by the rammer as it strikes the material surface

NOTE Results from using the rammer, e.g. forces, are application-specific.

2.6
operating mass
machine mass with equipment, attachments and all fluid systems (i.e. hydraulic oil, engine oil, lubrication oil, transmission oil) at the levels specified by the manufacturer, and — when applicable — with the fuel tank half-full

2.7
shipping mass
machine mass as configured for shipping

2.8
overall dimensions
maximum length, L, width, W, and height, H, with the machine upright and standing on its foot-plate

See Figure 4.

2.9
foot-plate [shoe] size
foot-plate as defined by its length, L_s, and width, W_s

See Figure 4.

2.10
vibration frequency
percussion frequency
frequency at which the foot-plate (shoe) contacts material to be compacted

2.11
maximum travel speed
maximum horizontal distance the rammer travels over material being compacted in a given unit of time

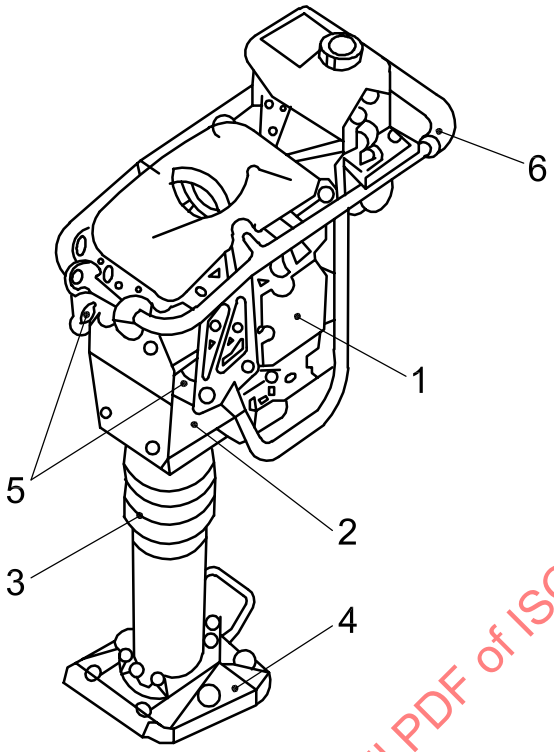
2.12
operating speed
maximum operating speed of the prime mover

2.13
fuel-to-oil ratio
fuel oil mixture
ratio of parts of oil to gasoline required on a two-cycle internal combustion engine

2.14
stroke
total movement of the foot-plate (shoe) in the vertical direction without forward motion

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved



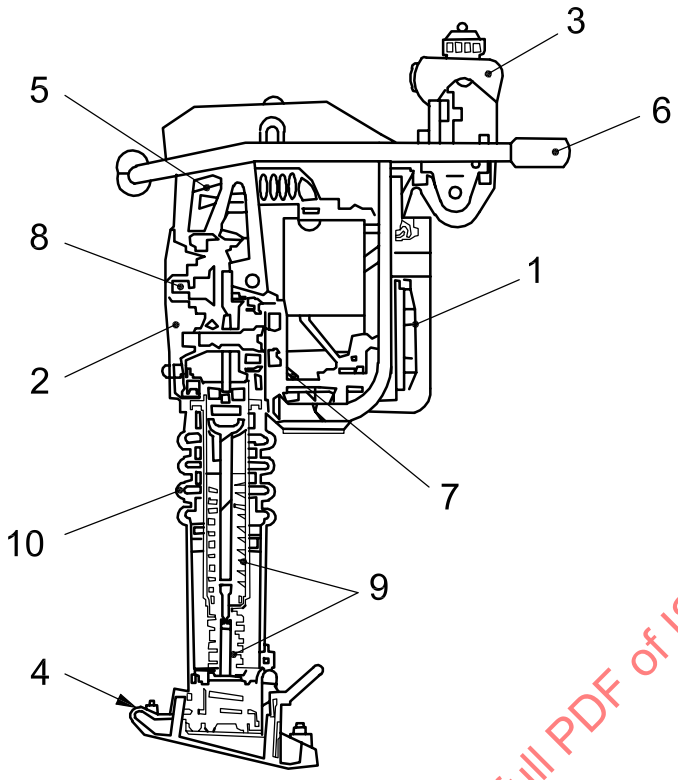
Key

1 prime mover
2 transmission
3 bellows
4 foot-plate (shoe)
5 vibration isolation mounts
6 operator control bar

Figure 1 — Basic structure of pedestrian-controlled vibratory (percussion) rammer

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved



Key

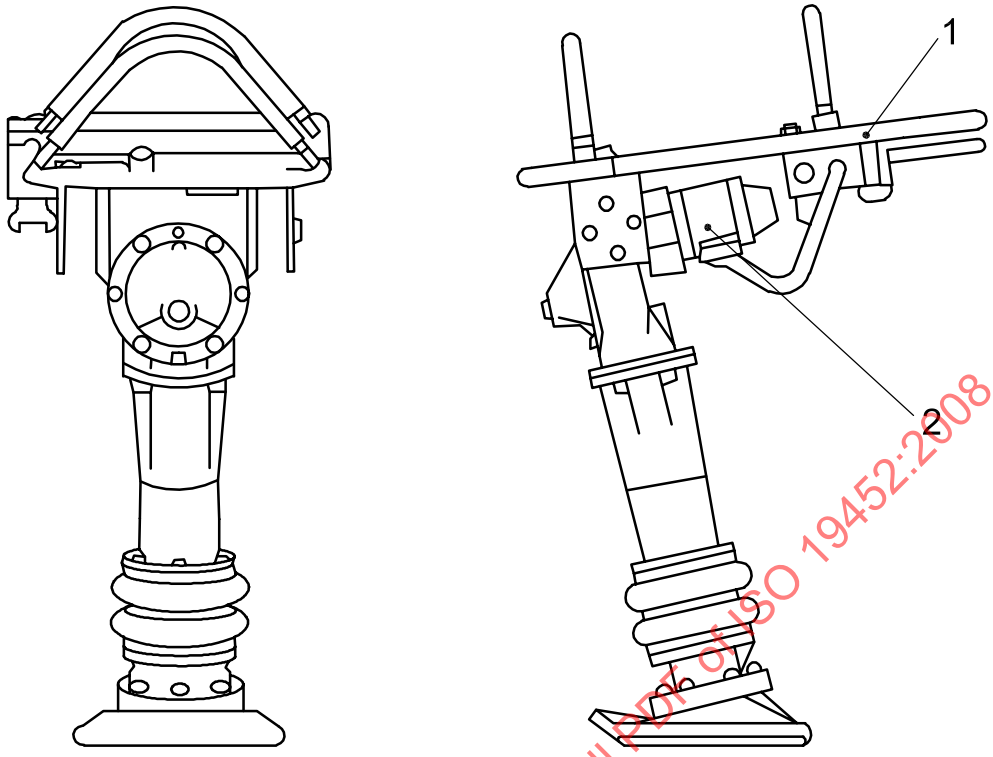
1 prime mover
2 transmission
3 fuel tank
4 foot-plate (shoe)
5 vibration isolation mounts
6 operator control bar
7 centrifugal clutch
8 crank mechanism
9 spring set
10 bellows

Shown in cross-section.

Figure 2 — Combustion-engine-driven pedestrian-controlled vibratory (percussion) rammer — Example

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved



Key

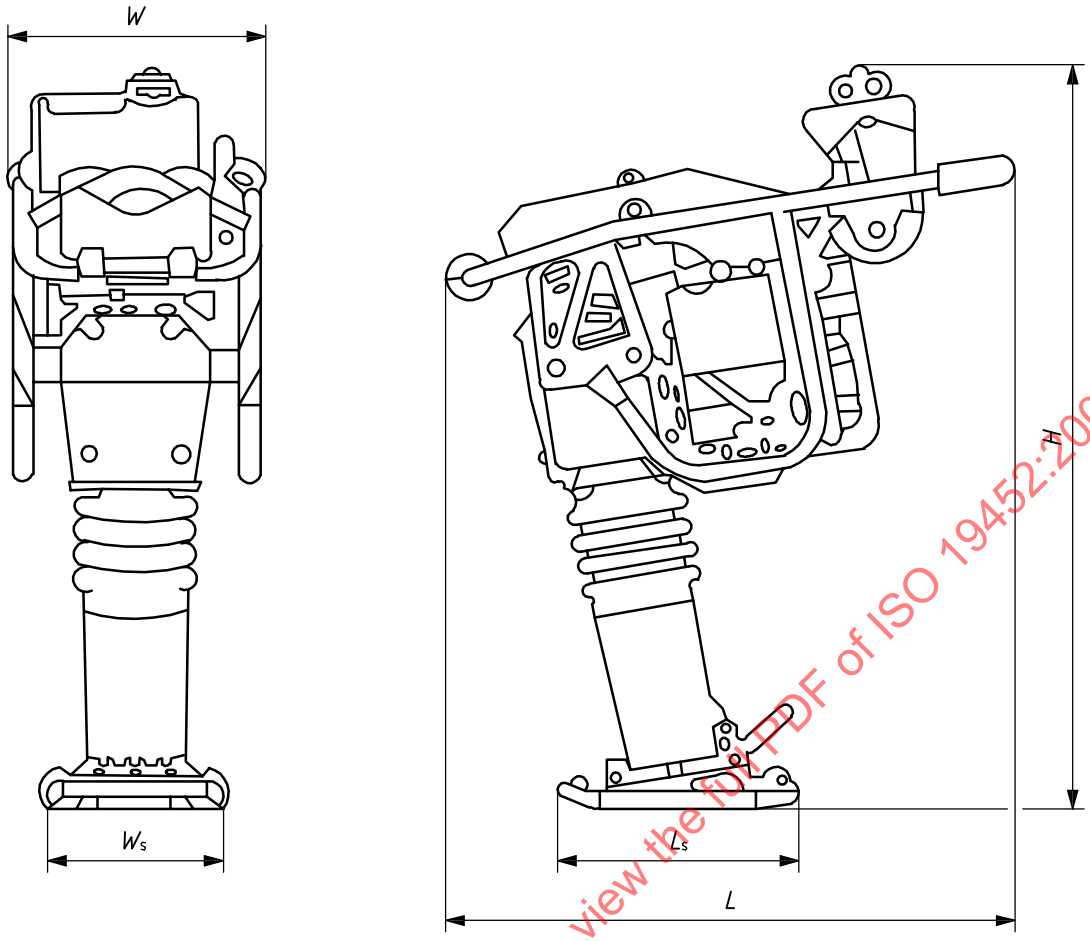
1 input for pneumatic prime-mover source

2 pneumatic motor

Figure 3 — Pedestrian-controlled vibratory (percussion) rammer with pneumatic drive — Example

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved



Key

L length
W width
H height
L_s foot-plate length
W_s foot-plate width

Figure 4 — Overall and foot-plate dimensions

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved

3 Commercial specifications

3.1 General

The following general data shall be presented:

a) model and type;

b) manufacturer;

c) serial number;

d) prime mover type (internal combustion engine, electric, hydraulic, pneumatic);

e) operating mass kg;

f) stroke mm;

g) foot-plate (shoe) size ($W_s \times L_s$) mm (see Figure 4);

h) vibration frequency Hz;

i) maximum travel speed m/min;

j) overall dimensions (see Figure 4):

— length, L mm;

— width, W mm;

— height, H mm.

3.2 Prime mover

3.2.1 For combustion engines

The following internal combustion engine data shall be presented:

a) engine type:

— with spark ignition (2 or 4 cycle) or

— compression ignition;

b) model;

c) manufacturer;

d) operating revolutions min^{-1};

e) swept capacity cm^3;

f) engine net power kW (as specified by the engine manufacturer);

g) fuel type;

h) fuel/oil ratio in mixture (if applicable);

i) fuel tank capacity l.

STANDARDSISO.COM : Click to view the full PDF of ISO 19452:2008

© ISO 2008 – All rights reserved