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

Reference number
ISO 19452:2008(E)

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Published in Switzerland

Foreword

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

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.

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.

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.

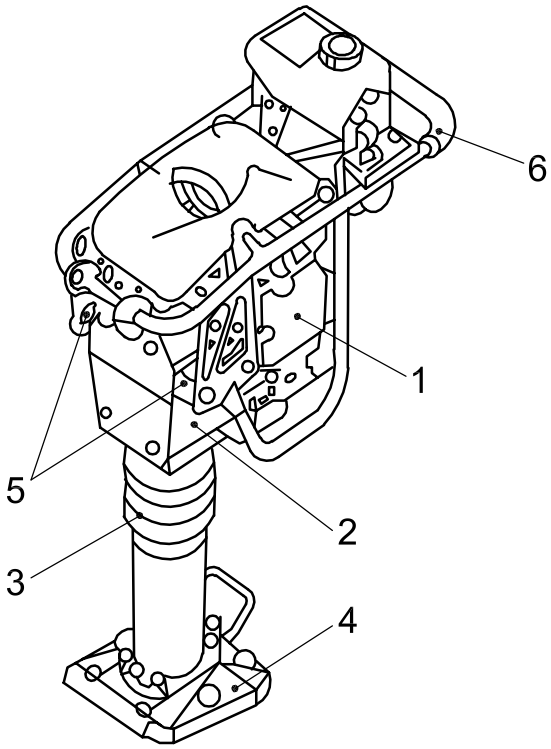
2.10
vibration frequency
percussion frequency
frequency at which the foot-plate (shoe) contacts material to be compacted

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

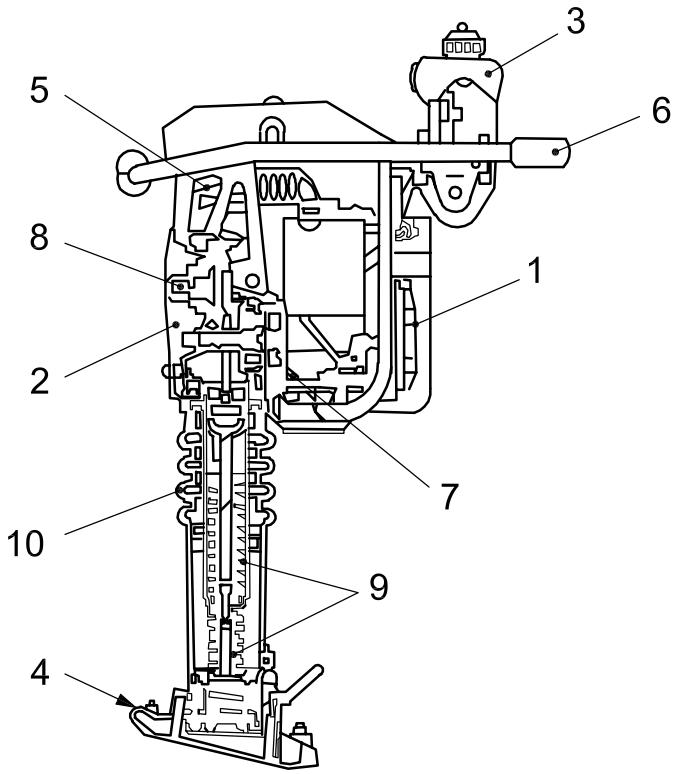
2.14
stroke
total movement of the foot-plate (shoe) in the vertical direction without forward motion



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

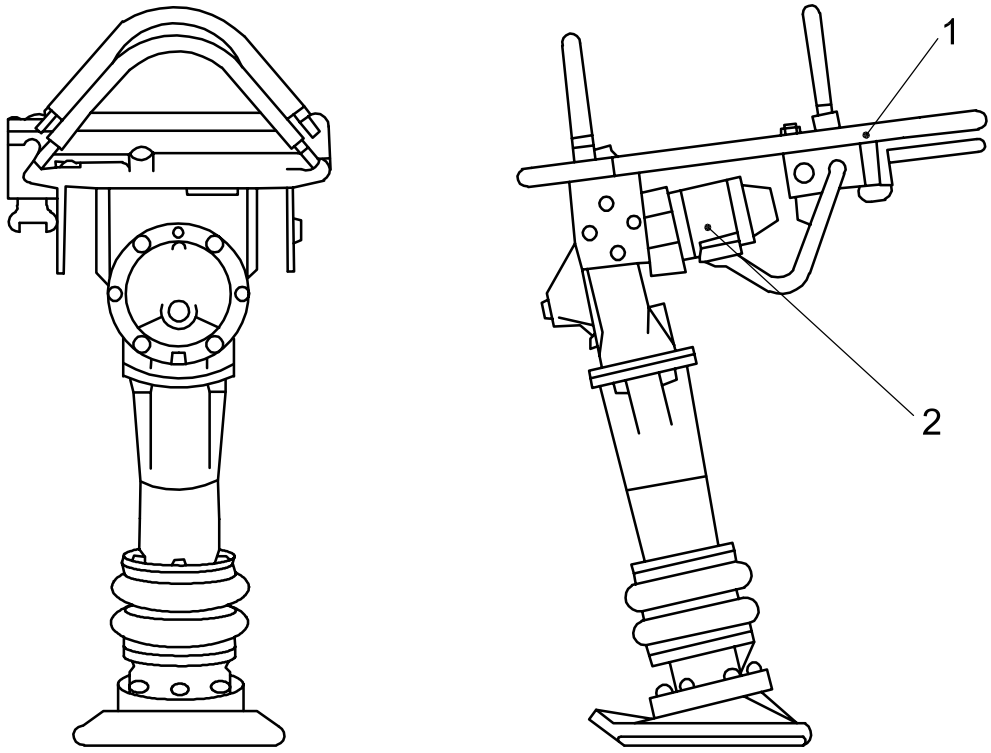


Key

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



Key

1 input for pneumatic prime-mover source

2 pneumatic motor

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