



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS D 9455 : 2008

(JBPI/JSA)

Air pumps for bicycles

ICS 43.150

Reference number : JIS D 9455 : 2008 (E)

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Date of Establishment: 1961-01-01

Date of Revision: 2008-03-20

Date of Public Notice in Official Gazette: 2008-03-21

Investigated by: Japanese Industrial Standards Committee
Standards Board

Technical Committee on Consumer Life Products

JIS D 9455:2008, First English edition published in 2008-08

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Printed in Japan

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Bicycle Promotion Institute (JBPI)/ Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS D 9455**: 1995 is replaced with this Standard.

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Air pumps for bicycles

1 Scope

This Japanese Industrial Standard specifies the air pumps used for bicycles specified in **JIS D 9111** (hereafter referred to as “pumps”). Electrical air pumps are not covered by this Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS B 0205-1 *ISO general purpose metric screw threads—Part 1: Basic profile*
- JIS B 0205-2 *ISO general purpose metric screw threads—Part 2: General plan*
- JIS B 0205-3 *ISO general purpose metric screw threads—Part 3: Selected sizes for screws, bolts and nuts*
- JIS B 0205-4 *ISO general purpose metric screw threads—Part 4: Basic dimensions*
- JIS B 0209-1 *ISO general purpose metric screw threads—Tolerances—Part 1: Principles and basic data*
- JIS B 0209-2 *ISO general purpose metric screw threads—Tolerances—Part 2: Limits of sizes for general purpose external and internal screw threads—Medium quality*
- JIS B 0209-3 *ISO general purpose metric screw threads—Tolerances—Part 3: Deviations for constructional screw threads*
- JIS D 0202 *General rules of coating films for automobile parts*
- JIS D 0205 *Test method of weatherability for automotive parts*
- JIS D 9101 *Cycles—Terminology*
- JIS D 9111 *Cycles—Classification and essential characteristics*
- JIS D 9422 *Tire valves for bicycles*
- JIS H 8601 *Anodic oxide coatings on aluminium and aluminium alloys*
- JIS H 8610 *Electroplated coatings of zinc on iron or steel*
- JIS H 8617 *Electroplated coatings of nickel and chromium*
- JIS K 5600-7-7 *Testing methods for paints—Part 7: Long-period performance of film—Section 7: Accelerated weathering and exposure to artificial radiation (Exposure to filtered xenon-arc radiation)*

3 Terms and definitions

For the purpose of this Standard the terms and definitions given in **JIS D 9101** and the following apply.

3.1 air pump

tool for compressing air by means of a piston and supplying it to a tube through a hose and the like so as to inflate the tyre

It is sometimes called “inflator”.

3.2 frame pump

portable and small-size air pump which is fixed to the bicycle by means of claws or iron pump clips welded on the bicycle frame or which is carried in a bag

There are some versions equipped with a simple foot step at the cylinder end or with a grip whose angle is adjustable. It is sometimes called “portable pump”.

3.3 foot pump

air pump which supplies compressed air by moving up and down the T-shape grip attached to a piston rod at the upper end of the cylinder while being held with a foot placed on the foot step and the pedestal at the cylinder bottom

Foot pumps are usually kept at home and bicycle retail shops. Foot pump is sometimes called “floor pump”.

3.4 step foot pump

air pump which is placed on the floor and supplies compressed air by moving the step of the pump up and down with a foot; there are two types of step foot pump, Type A whose cylinder barrel is parallel to the floor and Type B whose cylinder barrel stands upright

It is sometimes called “floor inflator”.

4 Classification

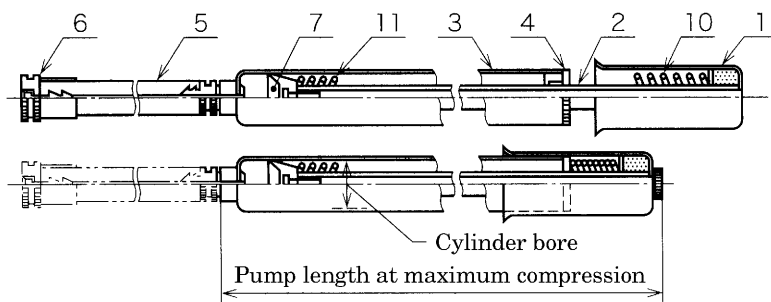
Pumps shall be classified into frame pumps, foot pumps and step foot pumps according to the constructions.

Different types of pumps and names of principle parts are shown in figures 1 to 3.

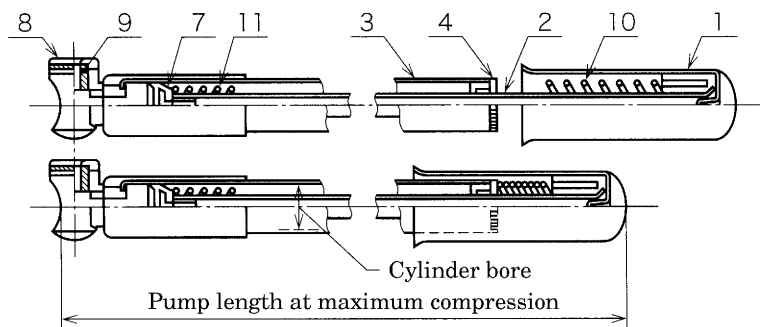
5 Shape and dimensions

The shape and main recommended dimensions of pumps are shown in figures 1 to 3. The screw threads shall be as specified in Annex to **JIS D 9422** and **JIS B 0205-1** to **JIS B 0205-4**. The permissible limits and tolerances shall generally be the tolerance Class 6H/6g specified in **JIS B 0209-1** to **JIS B 0209-3**.

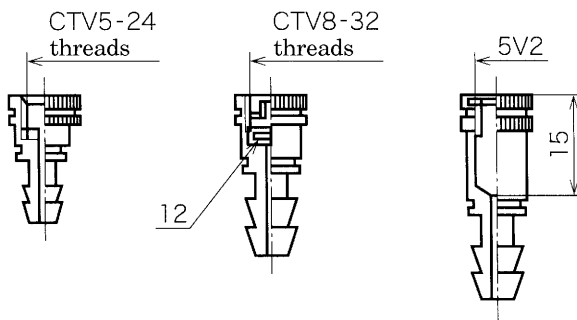
Unit: mm



a) Hose type

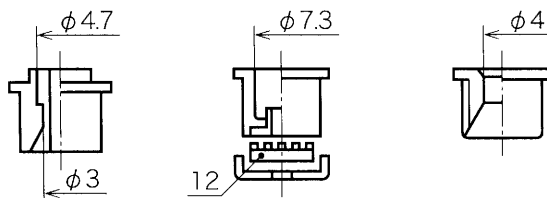


b) Push-on type



1) Woods type 2) Schrader type 3) Presta type

c) Valve connections of hose type



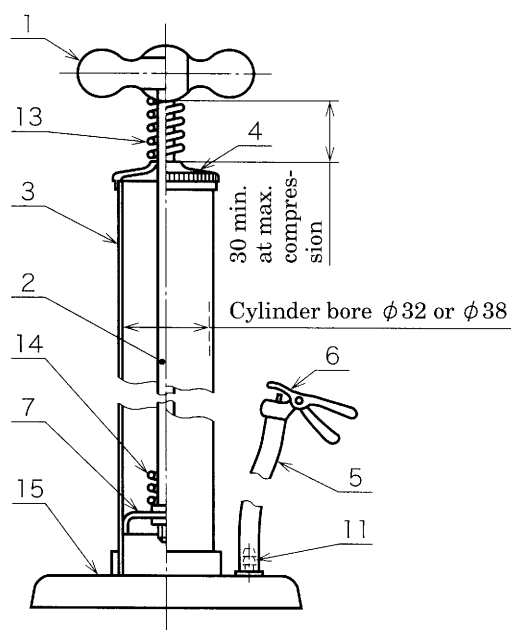
1) Woods type 2) Schrader type 3) Presta type

d) Packing for push-on adapter

No.	Part name
1	Grip (Handle)
2	Piston rod
3	Cylinder barrel
4	Cap
5	Pump hose
6	Valve connection
7	Piston
8	Push-on adapter
9	Packing
10	Spring
11	Inner spring
12	Check valve

Figure 1 Frame pump

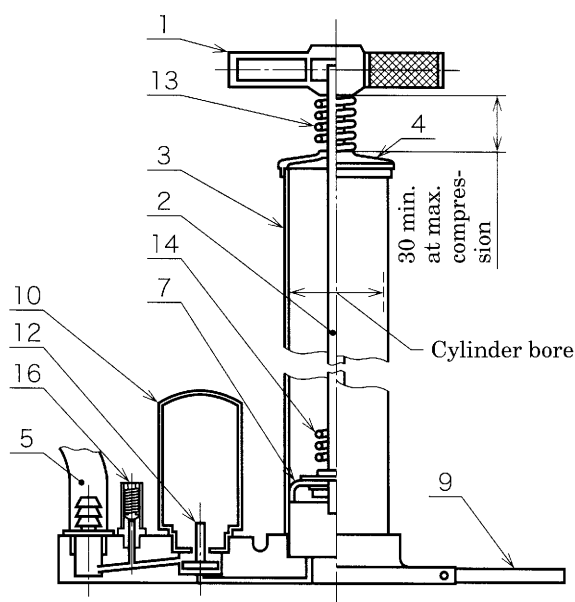
Unit: mm



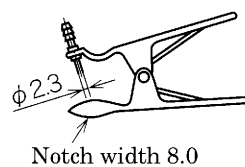
a) Without accumulator

No.	Part name
1	Grip (Handle)
2	Piston rod
3	Cylinder barrel
4	Cap
5	Pump hose
6	Nozzle
7	Piston
8	Packing
9	Foot step
10	Accumulator
11	Check valve
12	Accumulator check valve
13	Spring
14	Inner spring
15	Pedestal
16	Safety valve/pressure regulating valve

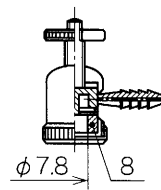
NOTE : The safety valve/pressure regulating valve location shown is an example.



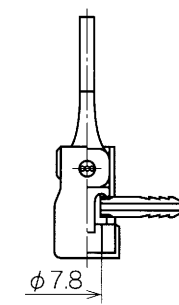
b) With accumulator



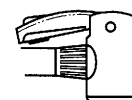
1) Woods type



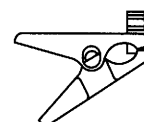
2-1) Schrader type (thread type)



2-2) Schrader type (lever type)



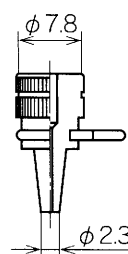
4-1) Normal condition (Schrader type)



4-2) Woods type adapter



4-3) Presta type adapter



3) Woods-cum-Schrader type

4) Woods-cum-Schrader-cum-Presta type

c) Nozzle types

Figure 2 Foot pump