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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 of 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 9416**:2004 is replaced with this Standard.

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Bicycles — Pedals

Introduction

This Japanese Industrial Standard has been prepared based on the fourth edition of ISO 4210 published in 1996 and the second edition of ISO 8098 published in 2002 with some modifications of the technical contents.

The portions with continuous sidelines or dotted underlines are the matters in which the contents of the corresponding International Standards have been modified.

A list of modifications with explanations is given in Annex JA.

1 Scope

This Standard specifies pedals to be used mainly for bicycles for general use and bicycles for young children defined in JIS D 9111 (hereafter referred to as "pedals") .

NOTE : The International Standards corresponding to this Standard and the symbol of degree of correspondence are as follows :

ISO 4210 : 1996 *Cycles — Safety requirements for bicycles*

ISO 8098 : 2002 *Cycles — Safety requirements for bicycles for young children* (Overall evaluation : MOD)

The symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21.

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*

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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 B 0209-4 *ISO general purpose metric screw threads — Tolerances — Part 4 : Limits of sizes for hot-dip galvanized external screw threads to mate with internal screw threads tapped with tolerance position H or G after galvanizing*

JIS B 0209-5 *ISO general purpose metric screw threads — Tolerances — Part 5 : Limits of sizes for internal screw threads to mate with hot-dip galvanized external screw threads with maximum size of tolerance position h before galvanizing*

JIS B 0225 *Cycle threads*

JIS D 9111 *Cycles — Classification and essential characteristics*

JIS D 9418 *Bicycles — Free wheels and hub cogs*

JIS D 9452 *Bicycles — Reflex reflectors*

NOTE : Corresponding International Standard : **ISO 6742-2** : 1985 *Cycles — Lighting and retro-reflective devices — Photometric and physical requirements — Part 2 : Retro-reflective devices* (MOD)

JIS H 8617 *Electroplated coatings of nickel and chromium*

JIS Z 2245 *Rockwell hardness test — Test method*

3 Classification

Pedals are classified according to the use as follows :

a) **Pedals for general use** Pedals to be used for bicycles for general use.

b) **Pedals for young children** Pedals to be used for bicycles for young children.

4 Names of parts

Figure 8 shows the names of parts constituting a pedal.

5 Strength

5.1 Strength of bearing cups

The inside and outside cups of a pedal, when tested by 10.1, shall not rupture.

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5.2 Static strength of pedal

When the pedal is tested by 10.2, the pedal spindle or pedal body shall be free from fissures, fractures and other defects.

5.3 Static strength of pedal end part

When the pedal is tested by 10.3, the maximum deflection at the loading point shown in figure 4 shall be 20 mm or less and the pedal spindle or pedal body shall be free from fissures, fractures and other defects. Further, for the pedals which are foldable (hereafter referred to as "folding pedals"), the fixation of the pedal shall not be released, except for pedals for young children and pedals with shoe retention devices (binding pedals and so on).

5.4 Pedal dynamic durability test

When the pedal is tested by 10.4, there shall be no visible fracture on any part of the pedal.

5.5 Pedal spindle strength

The pedal spindle, when tested by 10.5, shall be free from fissures, fractures and other defects. However, wrinkles and fine fissures generated on the hardened surface and bending of pedal spindle are excluded from this requirement.

5.6 Low temperature resistance of synthetic resin pedals

When the pedal made of synthetic resin is tested by 10.6, the pedal body shall be free from noticeable fissures, fractures and other defects. However, this requirement does not apply to pedal reflector lenses.

6 Hardness of ball races

The ball races [see figure 8 a) to figure 8 c)] of a pedal, when tested by 10.7, shall satisfy the hardness requirement given in table 1. This requirement does not apply to those of ball-less type.

Table 1 Hardness of ball races

Parts	Hardness HRA
Pedal spindle	72 min.
Adjusting cone	
Inside and outside cups	70 min.

7 Steel balls

The steel balls to be used for pedals shall be as specified in Annex B of JIS D 9418 or those having a quality at least equivalent thereto.

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8 Construction

The pedal shall have a construction satisfying the following :

a) Respective parts of the pedal shall be joined securely without looseness and there shall be no excessive play in the rotating parts.

b) The crank fitting threads of the pedal spindle shall be right-hand for right pedal spindle and left-hand for left pedal spindle, and each pedal spindle shall be marked with a symbol to identify right or left.

c) Pedals intended to be used without shoe retention devices shall have tread surfaces on both the top and bottom surfaces of the pedal or a preferred position that automatically presents the tread surface to the rider's foot (referred to as "single tread pedals").

d) The tread surface shall be either integrated with or assembled securely into the pedal body.

e) Pedals with shoe retention devices such as binding pedal, etc. need not have tread surface.

f) For pedals with pedal reflectors [see figure 8 a) to figure 8 c)] attached onto the pedal body, the reflector lens [1)] shall be sufficiently recessed from the end face of the pedal body, or of the reflector housing. The pedal reflector shall be located on the front and rear surfaces of the pedal. Such pedal reflectors shall comply with the requirements of **JIS D 9452**.

Note [1)] Light-reflecting surface of pedal reflector

g) Pedals shall rotate smoothly, and when, with the pedal body being fixed as shown in figure 1, the gauge is attached on the threaded part of the spindle and then rotated once, the lateral run-out measured on the gauge surface at a portion 15 mm apart from the centre of the pedal spindle shall not exceed 0.5 mm.

Unit : mm

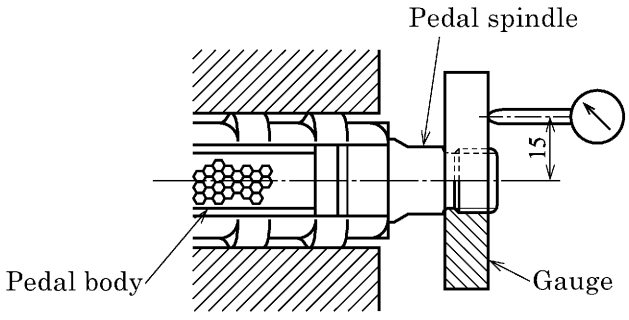


Figure 1 Rotational accuracy of pedals

h) The folding pedals shall not be used for pedals for young children.

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