

KS

KOREAN INDUSTRIAL STANDARD

Frame-Assembly for Bicycles

KS R 8011 : 1998

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Frame-Assembly for Bicycles

1. Scope

This Korean Industrial Standard specifies frame-fork assemblies (hereafter referred to as "frame-fork assembly") used for bicycles for general use and bicycles for young children specified in KS R 8002.

Remark The units and numerical values given in { } in the Standard are based on the traditional units and are appended for informative reference.

2. Normative Reference

The standards given in the Attached Table contain provisions which, through reference in the text, constitute provisions of this standard. The most recent editions of the standards shall be applied.

3. Definitions

For the purpose of this Standard, the following definitions apply.

a) frame Central Plane

Plane determined by the centreline of the head tube, top tube, seat tube, down tube, or members corresponding thereto. Practically, this plane should be considered as a plane made by the centres of the internal diameter at the both ends of head tube and one of the centre of seat tube or down tube near bottom bracket joint to a point corresponding thereto.

b) frame Size

Distance from the centreline of the bottom bracket shall to the upper extreme of the seat tube corresponding thereto (refer to Attached Fig. 1).

c) frame Parts

Generic term of head parts, bottom bracket parts and seat parts.

4. Constitution and Classification

4.1 Constitution

Frame-fork assemblies shall be constituted with frame, front fork, and frame parts (seat parts may be omitted).

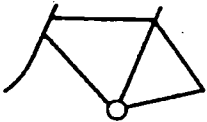
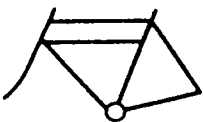
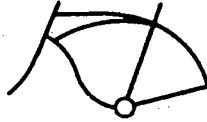
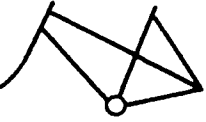
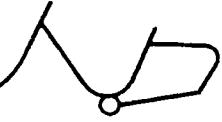
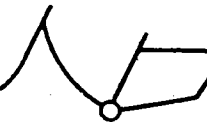
4.2 Classification

Frame-fork assemblies shall be classified to the shape and use as follows :

a) Shape

Frame-fork assemblies shall be classified according to the shape into two types of diamond shape and the other shapes (refer to Table 1).

Table 1. Shape of Frame-Fork Assembly

Shape	Examples of shape of frame-fork assembly		
Diamond shape			
			
	(Staggered shape)	(Parallel shape)	(Mixed shape)
Other shapes			
	(Double loop shape)	(Loop shape)	(Berceau shape)
			
	(H shape)		
			
	(U shape)		
			
	(L shape)		

b) Use

Frame-fork assemblies shall be classified according to their use into three classes of for bicycles for adults⁽¹⁾, for children and for young children.

Note ⁽¹⁾ Bicycles for adults mean those other than bicycles for children among bicycles for general use.

5. Names of Parts

Names of parts of frame-fork assembly and examples of materials mainly used are shown in Attached Figs. 1 to 3.

Further, part names of front fork and frame parts are in accordance with specifications of KS R 8026 and KS R 8012.

6. Strength

Remark Strength of frame-fork assemblies for MTB-look bicycles shall be in accordance with Annex to this Standard.

6.1 Vibration Proof

When the frame-fork assembly is mounted on a vibration testing machine as undermentioned, and applied vertical up-and-down vibrations under the test conditions given in Table 2, there shall be no fractures nor visible deformation or distortion of any part of the frame-fork assembly.

- a) The frame-fork assembly shall be mounted so as the front and rear wheel axles to be horizontal as shown in Fig. 1. Where it is designed such that the front and rear wheels have different designations of diameters, it shall be mounted to test so as the ground contact points of respective wheels to be horizontal.
- b) By using a seat pillar to be combined with the frame-fork assembly, fix the seat pillar at the position of engaging limit mark. As to the load to seat part, as shown in Fig. 2 attach the saddle shape loading base to the seat part, suspend the circular mass dividing the weight into right and left, on the hanger fitting, and take the sum of loading base, hanger fitting and mass as the load (mass).

Fix the loading base at position under by 20 mm on the central line from upper end of seat pillar, to the seat pillar by using a fastening metal fitting.

- c) As to the load to bottom bracket part, fix a circular mass dividing the weight into right and left, to the bottom bracket part.
- d) As to the load to head part, fix the mass at the position where no clearance between the under surface of mass support and the upper surface of head lock nut exists by using a metal fitting as shown in Fig. 3.
- e) The frequency of vibration shall be selected arbitrarily in the range of 6.6 Hz to 10 Hz, avoiding resonance frequency.

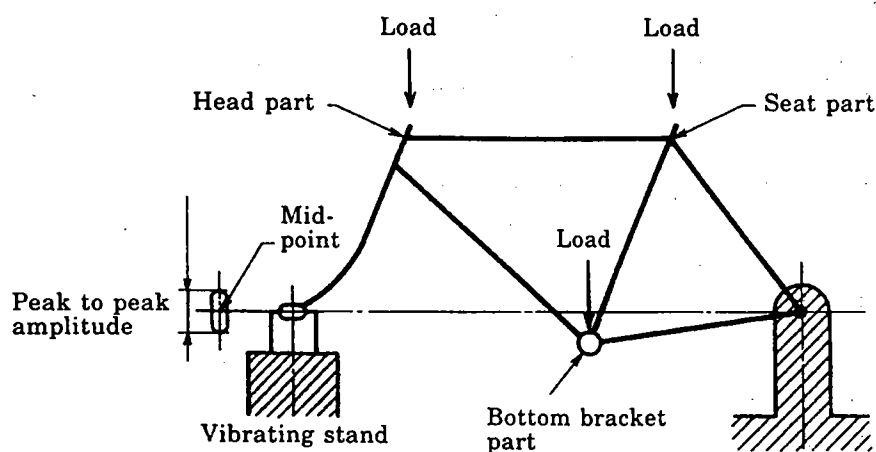


Fig 1. Vibration Proof Test

Table 2. Test Conditions for Vibration Proof

Classification of frame		Load (mass) kg				Frequency Hz	Accelerat- ion of vibrating part m/s ² {G}	Number of vibrations cycles
		Head part	Seat part	Bottom bracket part	Total			
For adults	Diamond shape	5	50	20	75	6.6 to 10	19.6{2}	100000
	Other shapes		45	15	65		17.6 {1.8}	70000
			40	10	55			
For children				30	10		45	
For young children								

Unit : mm

Unit : mm

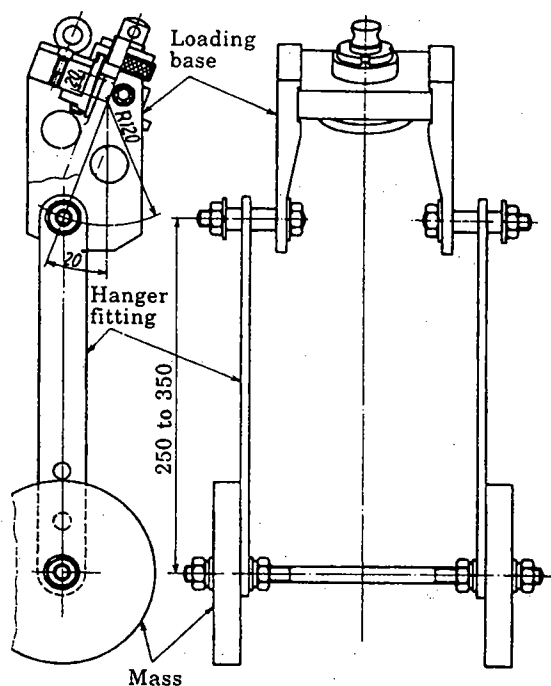


Fig 2. Loading Device to Seat Part

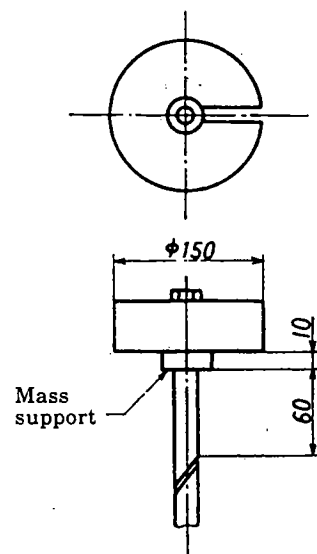


Fig 3. Loading Device to Head Part

6.2 Falling Mass Impact Resistance or Energy Absorbing Property

When the following a) falling mass impact test or b) energy absorption test is carried out, the permanent deformation of distance between axle centreline (wheel base) shall not exceed 40 mm (20 mm for young children bicycles), and there shall be no visible fracture of any part.

Further, in the test of b), when the energy is absorbed, the force shall not be less than 880 N (90 kgf).

a) Falling Mass Impact Test

Assemble a low-mass roller, less than or equal to 1 kg, in the front fork, the frame-fork assembly shall be held vertically and clamped to a rigid fixture by the rear axle attachment points as shown in Fig. 4.

A mass of 22.5 kg shall be dropped vertically through a height of 180 mm (50 mm for young children bicycles) so as to strike the low-mass roller at a point in line with the wheel centres. The wheel base shall be measured before and after test to determine the permanent deformation.

Where the frame has detachable or movable top tube, it shall be tested with the top tube removed.