

Motorcycles - Wheel balancing weights

1. Scope

This standard specifies balancing weights (hereafter called balance weights) that are used for centre rib type and wire spoke type (hereafter called spoke type) wheels that are used on motorcycles.

Remark: Types of balance weights that are used on motorcycles but are not specified in this standard include the stick-on type and the rim flange type.

2. Normative references

The following standards, when referenced in this standard, constitute a part of the specifications of this standard. As required, the most recently updated version of the applicable standard (including addenda) shall be applied.

JIS D0201: Automobile parts – General rules of electroplating

JIS D0202: General Rules of Coating Films for Automobile Parts

JIS G4313: Cold rolled stainless steel strip for springs

JIS G4401: Carbon tool steels

JIS H0321: General Rules for Inspection of Non-ferrous Metal Materials

JIS H2107: Zinc ingots

JIS H2108: Tin Metal

JIS H8610: Electroplated coatings of zinc on iron or steel

JIS Z2245: Rockwell hardness test - Test method

JIS Z2371: Methods of salt spray testing

JATMA Year Book: (Japan Automobile Tire Manufacturers Association standards)

3. Types

Balance weights are classified into the two types shown in **Table 1** according to the type of wheel on which they are used. The nominal rim diameter of the wheel shall be in accordance with the latest **JATMA Year Book**.

Table 1 Types of balance weights and their specifications

Balance weight type code	Applicable wheel type	Nominal rim diameter	Spoke diameter mm
A1	Centre rib type	12 to 19	---
B1	Spoke type	---	φ3.2 to φ4.5

4. Performance

4.1 Retention

The retention of balance weights must satisfy the performance requirements shown in **Table 2**.

Table 2 Retention

Balance weight type	Applied force/torque	Required performance	Test procedure
A1	Separation force	>100N	10.2.1
	Tangential movement force	>100N	10.2.2
	Separation torque	>1.5N·m	10.2.3
B1	Axial movement force	>30N	10.3

4.2 Corrosion resistance

The corrosion resistance of balance weights shall be such that when testing is conducted by the procedure indicated in 10.4, rust shall not develop within 96 hours.

5. Structure

5.1 Centre rib type (A1)

The centre rib type has a clip that is mounted on the centre rib of the wheel. The centre rib type may have a structure with a balance weight on one side or on both sides of the clip.

a) One-sided balance weight structure

This structure is employed in a steel balance weight. An example of the structure is shown in Figure 1.

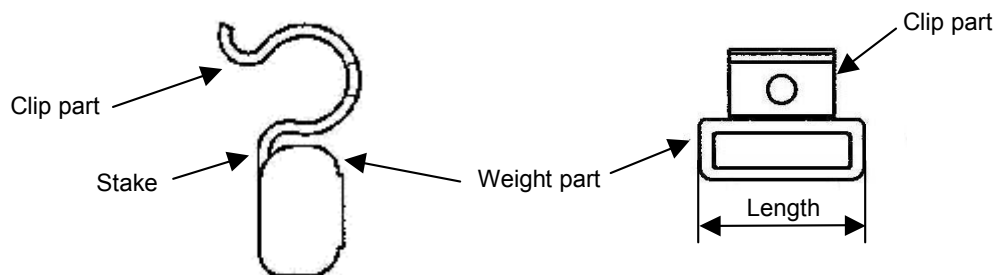


Figure 1 One-sided balance weight structure (Example)

b) Two-sided balance weight structure

This structure is employed in a zinc balance weight. An example of the structure is shown in Figure 2.

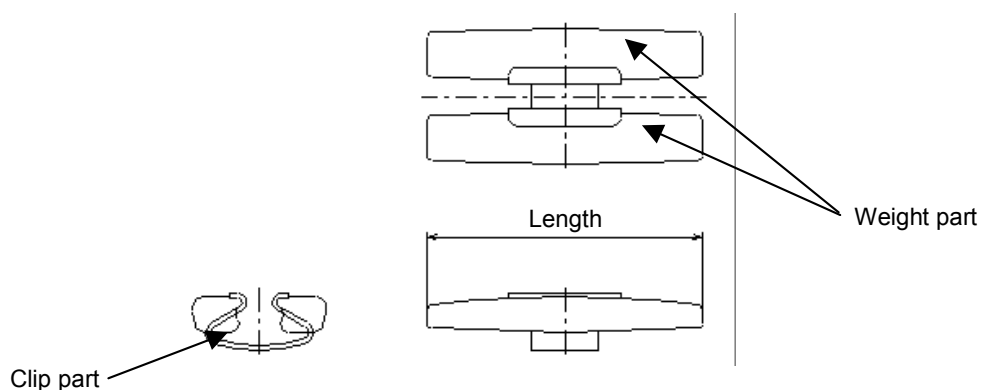


Figure 2 Two-sided balance weight structure (Example)

5.2 Spoke type (B1)

The spoke type has a structure that is secured to the wire spokes of the wheel. An example of the structure is shown in Figure 3.

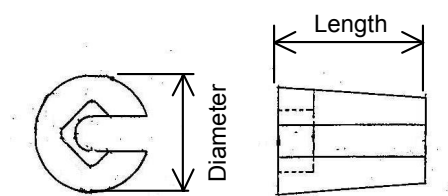


Figure 3 Spoke type balance weight structure (Example)

6. Shape and dimensions

6.1 Balance weights for centre rib type

6.1.1 Masses and tolerances

The masses and tolerances of the balance weights shall be as shown in **Table 4**.

Table 4 Balance weight masses and tolerances								Units: g
Mass	5	10	15	20	25	30	35	40
Tolerance	±1.0	±1.0	±1.5	±1.5	±1.5	±1.5	±2.0	±2.0

6.1.2 Length of weight part

The length of the weight part shall be as illustrated in **Figures 1 and 2**, and it shall be no longer than 70 millimetres.

6.1.3 Clip shape

The shape of the clip part shall be such that it can be attached to the centre rib of a wheel with the dimensions shown in **Figure 4**.

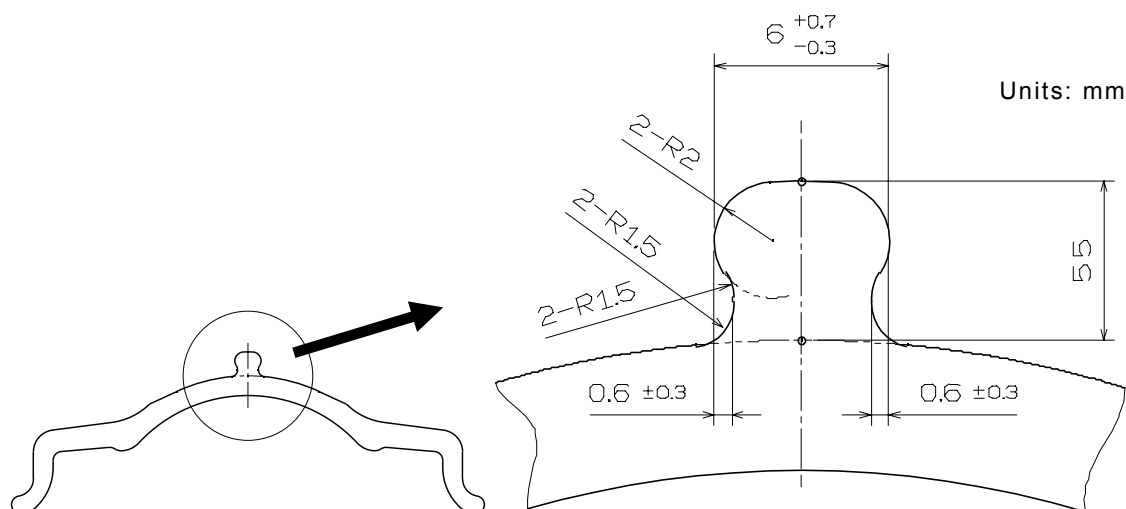


Figure 4 Wheel centre rib dimensions

6.2 Balance weights for spoke type

6.2.1 Masses and tolerances

The masses and tolerances of the balance weights shall be as shown in **Table 5**.

Table 5 Balance weight masses and tolerances					Units: g
Mass	10	15	20	30	
Tolerance	±1.0	±1.0	±1.0	±1.0	

7. Materials

7.1 Basic requirements

The materials used in balance weights must not include any materials specified as environmental burdens by the Japan Automobile Manufacturers Association (lead, mercury, cadmium, hexavalent chromium, etc.).

7.2 Weight part

The material of the weight part shall be steel, zinc, tin, etc. The use of zinc and tin must be in accordance with **JIS H2107** and **JIS H2108** respectively.