

# JIS

JAPANESE INDUSTRIAL STANDARD

Trip Balances

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## JAPANESE INDUSTRIAL STANDARD

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## Trip Balances

B 7601-1983

1. Scope

This Japanese Industrial Standard specifies the trip balances and weights to be used with attached thereto.

Remark: The trip balance in this standard means the balance of which weight application point and load application point are at the equal distance relative to fulcrum as center, of which pans are above the weight application point and load application point respectively, and which is to judge the balance by the pointer and graduated panel. This balance corresponds to the pan manual balance in the type of massmeter specified in the Measuring Instrument Qualification Inspection Ordinance (Cabinet Ordinance No. 152, in 1967).

2. Definitions

For the purposes of this standard the definitions specified in JIS Z 8103 apply, together with the following definitions:

- (1) weighing capacity The maximum mass capable of being measured.
- (2) reciprocal sensibility The mass sufficient to cause variation of not less than  $1/2$  of the scale spacing of graduated panel.
- (3) graduated panel The panel graduated without expressing the mass in order to judge the balance in combination with a pointer.
- (4) working range The effective measuring range from 20 times the reciprocal sensibility to weighing capacity.
- (5) weight application point The point of application of load by weight.
- (6) measuring load application point The point of application of load by substance to be measured.

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Applicable Standards: See page 11.



4. Classification

The classification of trip balances shall be dependent on weighing capacity and reciprocal sensibility as shown in Table 1.

Table 1

| Weighing capacity | Reciprocal sensibility |               |
|-------------------|------------------------|---------------|
|                   | Precise type           | Ordinary type |
| 50 g              | Less than 50 mg        | 50 mg         |
| 100 g             | Less than 100 mg       | 100 mg        |
| 200 g             | Less than 200 mg       | 200 mg        |
| 500 g             | Less than 500 mg       | 500 mg        |
| 1 kg              | Less than 1 g          | 1 g           |
| 2 kg              | Less than 2 g          | 2 g           |
| 5 kg              | Less than 5 g          | 5 g           |
| 10 kg             | Less than 10 g         | 10 g          |

Remark: The precise type means that its reciprocal sensibility is less than 1/1000 of weighing capacity. The ordinary type means that its reciprocal sensibility is equal to 1/1000 of weighing capacity.

5. Performances and Inspection Methods

The performances and inspection methods of trip balances shall be in accordance with the following:

- (1) When the load of reciprocal sensibility is applied on one side pan under the state where the same masses in the working range are applied on right and left pans, the tip of the pointer shall displace by half or more of the scale spacing of the graduated panel.  
The inspection shall be carried out under the blank state and the state where the loads of weighing capacity are applied on the right and left pans.
- (2) The instrumental error shall be not more than the reciprocal sensibility where the measuring quantity exceeds 1/4 of the weighing capacity, and be not more than half the reciprocal sensibility where it is not more than 1/4 of the weighing capacity.  
The inspection shall be carried out by measuring the differences of the rest points when the weights of the same mass are put on the centers of right and left pans respectively concerning the masses of weighing capacity and about 1/4 of that from the rest point at the blank load. The weights to be used for inspection shall be those of which tolerances of mass are not more than 1/5 of tolerance of instrumental error of trip balance to be inspected.
- (3) The eccentric-placing error shall not exceed the reciprocal sensibility.