International Standard ISO 2013

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Textile machinery and accessories — Beams — Method of measuring variations of form and position

Matériel pour l'industrie textile — Ensouples — Méthode de mesurage des variations de forme et de position

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2013 was developed by Technical Committee ISO/TC 72, *Textile machinery and allied machinery and accessories*, and was circulated to the member bodies in February 1982.

It has been approved by the member bodies of the following countries:

Australia	Germany, F.R.	South Africa, Rep. of
Belgium	India	Spain
Brazil	Indonesia	Sweden
China	Ireland	Turkey
Czechoslovakia	Japan	United Kingdom
Egypt, Arab Rep. of	Korea, Rep. of	USSR
France	Poland	Yugoslavia

The member body of the following country expressed disapproval of the document on technical grounds:

Italy

This second edition cancels and replaces the first edition (i.e. ISO 2013-1973).

Textile machinery and accessories — Beams — Method of measuring variations of form and position

1 Scope and field of application

This International Standard defines variations of form and position, i.e. circular run-out tolerance — axial of flanges, parallelism tolerance between flanges, total barrel run-out tolerance of beams with and without shafts, and gives the methods of measuring these variations of form and position.

The maximum tolerances together with the recommended limit for residual imbalance are specified in the particular International Standards for each type of beam.

2 References

ISO 481, *Textile machinery and accessories — Warper's beams — Terminology and main dimensions.*

ISO 1025, *Textile machinery and accessories — Sectional beams for warp knitting machines — Terminology and main dimensions.*

ISO 1037, *Textile machinery and accessories — Beams for dyeing slivers and yarns — Terminology and main dimensions.*

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 5241, *Textile machinery and accessories — Weaver's beams — Terminology and main dimensions.*

3 Definitions and methods of measurement

3.1 Circular run-out tolerance — axial (T_a) of flanges

Dimensions in millimetres

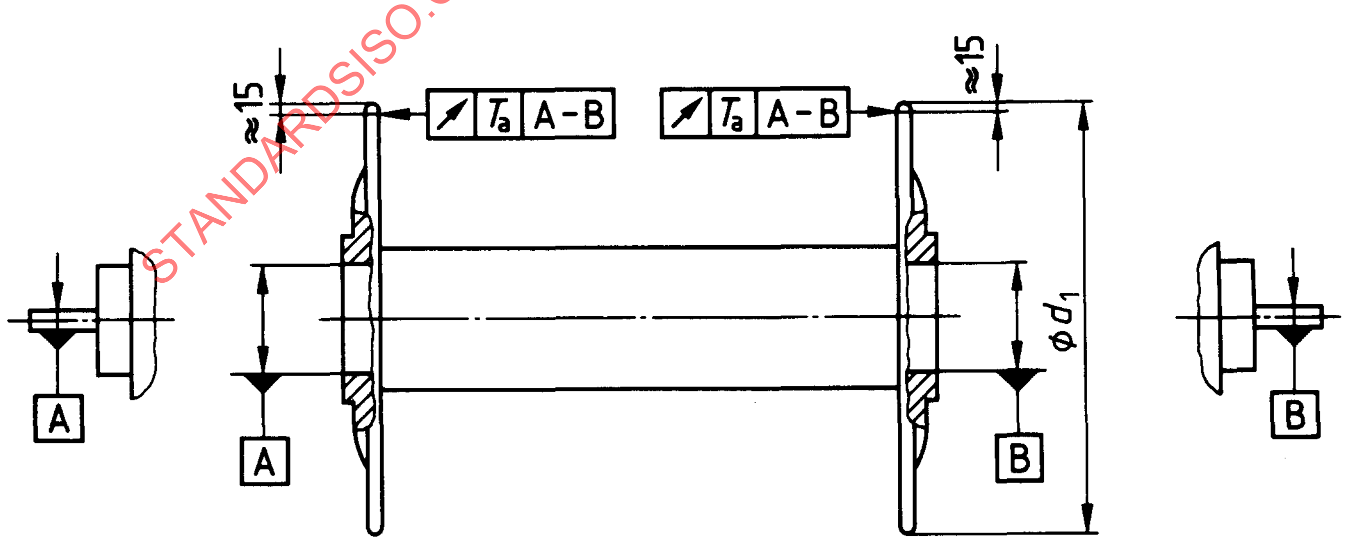

Figure 1

The circular run-out tolerance — axial (T_a) is the difference between the greatest and the smallest deviation of the inner face of a flange, measured approximately 15 mm from the outer edge of the flange during one complete revolution of the beam about the axis A-B.

3.2 Parallelism tolerance (*NP*) between flanges

Dimensions in millimetres

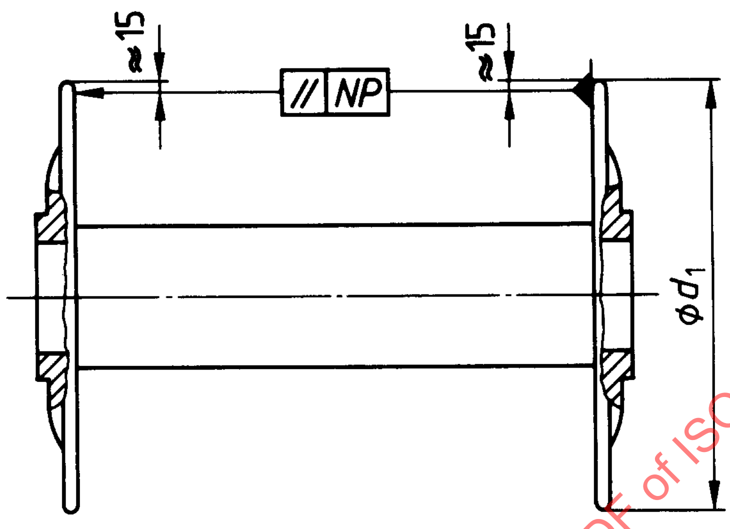

Figure 2

The parallelism tolerance (*NP*) between flanges is the difference between the greatest and the smallest distances between the inner faces of the flanges during one complete revolution of the beam, in a plane parallel to the axis of rotation of the beam and situated approximately 15 mm from the outer edges of the flanges.

The actual measurement of parallelism is made by the use of a rigid measuring rod placed approximately 15 mm from the outer edge of the flange and in a plane parallel to the axis of rotation. This measuring rod is fitted to a pressure-sensitive dial gauge calibrated in micrometres (for example). The pressure-sensitive element of the dial gauge is pressed onto the inner face of the flange, while the other end of the measuring rod is in direct contact with the inner face of the other flange. The range of maximum and minimum observations during the course of one complete revolution of the beam permits the determination of the parallelism.

NOTES

1 Only this last measurement is effective in measuring the dimensions between the flanges.

2 In practice, it is often considered sufficient to determine the circular run-out tolerance — axial of the flanges; the maximum parallelism tolerance cannot exceed the sum of the absolute value of the circular run-out tolerance — axial of each flange.

3.3 Total run-out tolerance (T_r) of the barrel

Dimensions in millimetres

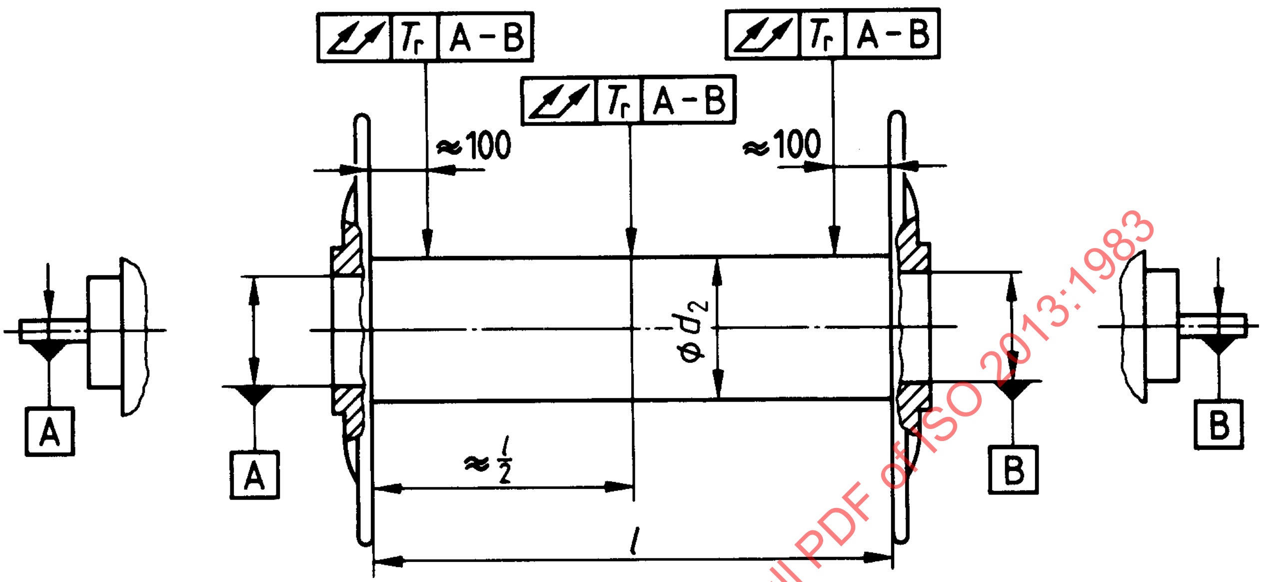

Figure 3

The total run-out tolerance (T_r) of the barrel is the sum of all run-outs of the barrel, mainly caused by

- the straightness of the barrel;
- the circularity of the barrel;
- the circular run-out — radial of the beam barrel.

It is determined from the observations (readings) taken from three dial gauges placed on the surface of the barrel; one at each end of the barrel, each at a distance of approximately 100 mm from the inside face of the flange and the third at approximately the mid-point of the barrel between the flanges. In the case of weaver's beams with screw threads on the barrel, the flanges shall be positioned at the outer edges of the barrel. The greatest of the observations (readings) from the three dial gauges shall be taken as the value of the total run-out of the barrel; it shall not exceed the maximum value admissible. The observations (readings) are taken during the course of one complete revolution of the beam.