
INTERNATIONAL STANDARD 3655 / 0

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Test conditions for vertical turning and boring lathes with one or two columns — Testing of the accuracy — Part 0 : General introduction

*Conditions d'essai des tours verticaux à un ou deux montants — Contrôle de la précision —
Partie 0 : Introduction générale*

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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 3655/0 was drawn up by Technical Committee ISO/TC 39, *Machine-tools*, and was circulated to the Member Bodies in March 1975.

It has been approved by the Member Bodies of the following countries:

Australia	India	Sweden
Austria	Ireland	Switzerland
Belgium	Italy	Turkey
Bulgaria	Japan	United Kingdom
Czechoslovakia	Mexico	U.S.A.
France	Romania	U.S.S.R.
Germany	South Africa, Rep. of	Yugoslavia
Hungary	Spain	

No Member Body expressed disapproval of the document.

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AMENDMENT SLIP

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MODIFICATION TO FOREWORD *(Inside front cover)*

The ISO member body for China has now approved this International Standard. China should therefore be included in the list of countries whose member bodies have approved the document.

fixtures.

These machines fall into two categories characterized by their particular configuration, i.e. :

- vertical turning and boring lathes with a single column;
- vertical turning and boring lathes with two columns.

Furthermore in the machines of the first group or "vertical turning and boring lathes with a single column", machines are provided with :

- a fixed column and a fixed table;
- a fixed column and a movable table;
- a movable column and a fixed table.

column or in certain cases integral with the column, if movable, it slides along the vertical slideways of the column which are parallel to the table axis.

The rail is provided with horizontal slideways on which moves either one or two railheads.

These railheads carry a ram or a slide with a vertical or inclined movement and on which is mounted a toolholder or a turret.

In certain cases, the machine may be provided with an additional head called a side head. This head is mounted at the side of the table and is guided by vertical slideways which are parallel to the rail's vertical movement. It is provided with a ram fitted with a toolholder or exceptionally a turret and has a horizontal or possibly inclined movement.

2.1.3 Cutting and feed movements

The cutting movement is generated by the table.

The machine can be fitted with the following feed movements :

- horizontal movement of the railhead or heads along the rail;
- vertical or inclined movement of the railhead ram or rams;
- vertical movement of the side head;
- horizontal or inclined movement of side head ram.

These movements are also generally provided with a "rapid traverse".

The vertical movement of the rail and, where applicable, the table or column movement on the bed are only positioning movements and not feed movements.

2.2 Vertical turning and boring lathes with two columns (figure 2)

This configuration relates to machines with a large capacity having a table diameter of greater than 1 800 or 2 000 mm (72 or 80 in).

For this type of machine the table is supported by the base, which is rigidly attached to the right- and left-hand columns.

At their upper ends the columns are connected by a member having robust proportions which is called the bridge. The upper part of the machine can be capped with a front-cover for aesthetic reasons.

2.2.1 Rail, railheads and rams

Vertical turning and boring lathes having two columns, with the exception of specially adapted machines, always have a rail which can be moved vertically.

The rail is provided with horizontal slideways on which moves one or two railheads.

The railheads carry a ram or slide with a vertical or inclined movement, and on which is mounted a toolholder or a turret.

In the case of a rail provided with two railheads, these are called the right- and left-hand railheads with respect to an operator standing in front of the machine.

In certain cases the machine can be provided with a side head placed on the right-hand column and guided by vertical slideways parallel to the rail vertical movement. The side head ram can be provided with horizontal or inclined movement. The side head may be fitted with a toolholder or a turret.

2.2.2 Cutting and feed movements

The cutting movement is generated by the table. The machine may be provided with the following feed movements :

- horizontal movements of the two railheads along the rail;
- vertical or inclined movements of the railhead ram or slide;
- horizontal or inclined movements of the side head ram;
- vertical movement of the side head.

The movements are also generally provided with "rapid traverse".

The vertical movement of the rail and, where applicable, the movement of the column on the base are only positioning movements and are not feed movements.

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