

Machine tools — Test conditions for die sinking electro-discharge machines (EDM) — Terminology and testing of accuracy —

**Part 2: Two column machines
(slide-head type and cross-slide
table type)**

ICS 25.120.40

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee MTE/1, Machine tools, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, pages ii to iv, pages 1 to 24, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 December 1998

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INTERNATIONAL STANDARD

ISO 11090-2

First edition
1998-10-01

Machine tools — Test conditions for die sinking electro-discharge machines (EDM) — Terminology and testing of accuracy —

Part 2:

Two column machines (slide-head type and
cross-slide table type)

*Machines outils — Conditions d'essai des machines d'électroérosion
en plongée — Terminologie et contrôle de la précision —*

*Partie 2: Machines à deux montants (type à tête mobile et type à bancs
en croix)*



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Descriptors: Machine tools, numerical control, positioning, nomenclature, tests, geometric tests, determination, accuracy, testing conditions.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11090-2 was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 2, *Test conditions for metal cutting machine tools*.

ISO 11090 consists of the following parts, under the general title *Machine tools — Test conditions for die sinking electro-discharge machines (EDM) — Terminology and testing of accuracy*:

- *Part 1: Single column machines (cross slide table type and fixed table type)*;
- *Part 2: Two column machines (slide-head type and cross-slide table type)*.

Annex A and Annex B of this International Standard are for information only.

Introduction

The purpose of ISO 11090 is to standardize methods of testing the accuracy of die sinking electro-discharge machines (EDM).

1 Scope

This part of ISO 11090 specifies, with reference to ISO 230-1 and ISO 230-2, geometric and machining tests and tests for checking accuracy and repeatability of numerically controlled positioning axes for general purpose and normal accuracy die sinking electro-discharge machines (EDM). It also specifies the applicable tolerances, corresponding to the above-mentioned tests.

This part of ISO 11090 is applicable to two column machines of slide-head type and cross-slide table type.

This part of ISO 11090 deals only with the verification of accuracy of the machine. It does not apply to the testing of the machine operation (vibrations, abnormal noises, stick-slip motion of components, etc.), nor to the checking of its characteristics (such as speeds, feeds, etc.), which should generally be checked before the testing of the accuracy.

This part of ISO 11090 provides the terminology used for the principal components of the machine and the designation of the axes with reference to ISO 841 ^[1].

NOTE In addition to the terms used in the three official ISO languages (English, French and Russian), Annex A of this part of ISO 11090 gives, for information, the equivalent terms in the Dutch, German, Italian and Swedish languages; these are published under the responsibility of the national member bodies for Belgium (IBN), Germany (DIN), Italy (UNI) and Sweden (SIS). However, only the terms given in the official languages can be considered as ISO terms.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11090. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11090 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 230-1:1996, *Test code for machine tools — Part 1: Geometric accuracy of machines operating under no-load or finishing conditions*.

ISO 230-2:1997, *Test code for machine tools — Part 2: Determination of accuracy and repeatability of positioning of numerically controlled axes*.

3 Terminology and designation of axes

3.1 Slide-head type

See Figure 1 and Table 1.

NOTE It is recognized that Figure 1 does not comply with the second and third paragraphs of 4.4.2 of ISO 841:—¹⁾. But X and Y designations may be interchanged to suit axes lengths and/or the operator position. Selection is at the discretion of the manufacturer.

¹⁾ To be published.

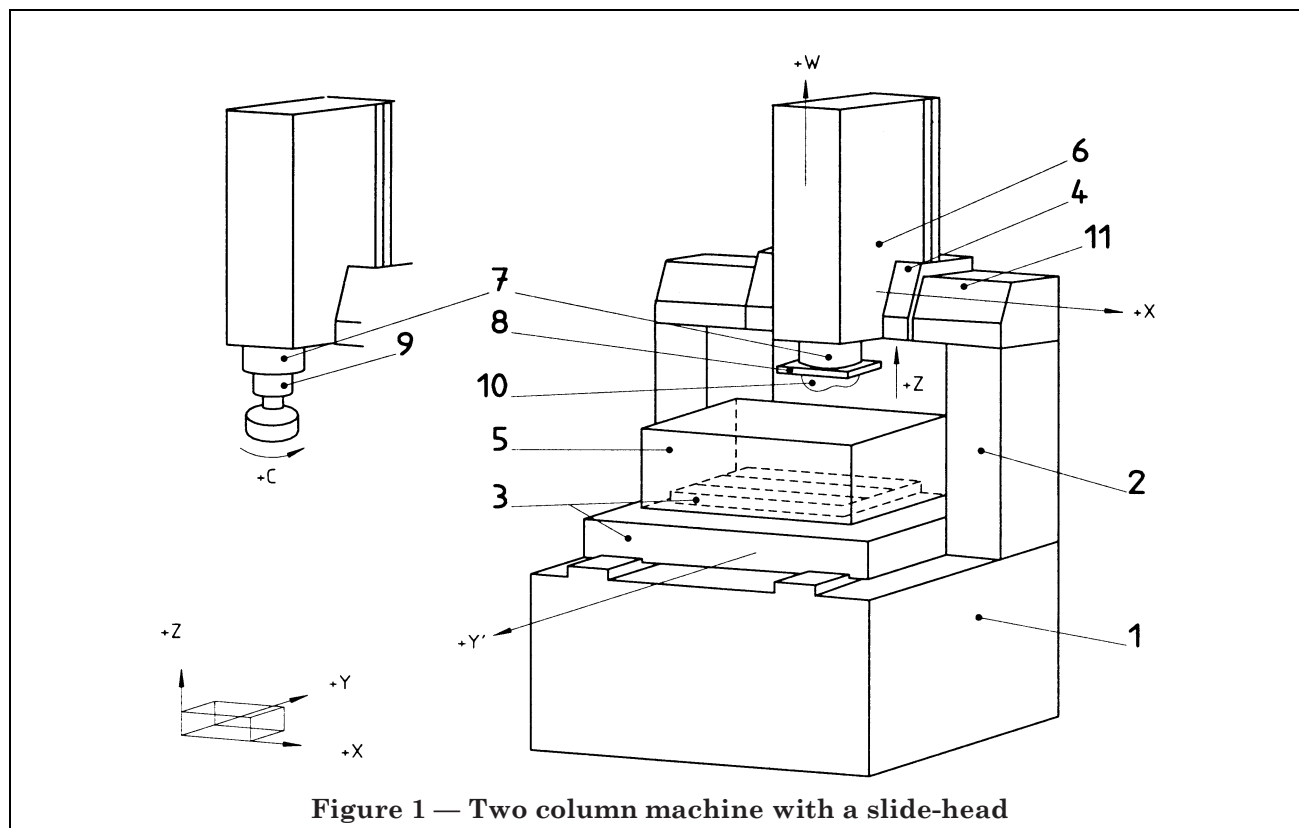


Table 1 — Terminology

Ref.	English	French	Russian
1	Bed	Banc	Станина
2	Column	Montant	Стойка
3	Table (Y'-axis)	Table (axe Y')	Стол (ось Y')
4	Saddle (X-axis)	Chariot transversal (axe X)	Салазки (ось X)
5	Work tank	Réservoir de travail	Рабочая ванна
6	Head (W-axis)	Tête de travail (axe W)	Головка, рабочая (ось W)
7	Quill (Z-axis)	Coulisse (axe Z)	Пинопль (ось Z)
8	Electrode platen	Porte-électrode	Электрододержатель
9	Spindle (C-axis)	Broche (axe C)	Шпиндель (ось C)
10	Electrode	Électrode	Электрод
11	Beam	Traverse	Траверса

3.2 Cross-slide table type

See Figure 2 and Table 2.

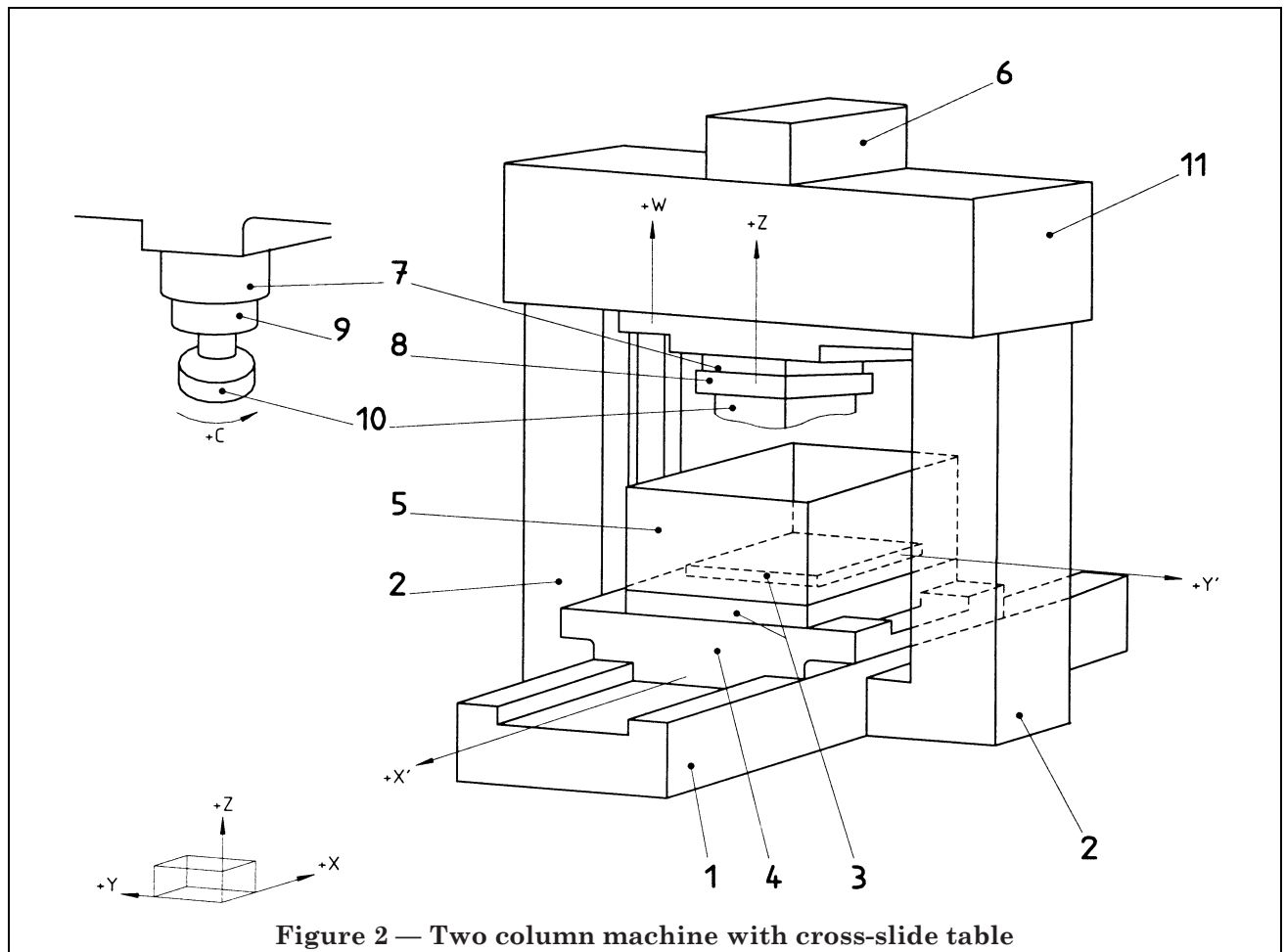


Figure 2 — Two column machine with cross-slide table

Table 2 — Terminology

Ref.	English	French	Russian
1	Bed	Banc	Станина
2	Column	Montant	Стойка
3	Table (Y'-axis)	Table (axe Y')	Стол (ось Y')
4	Saddle (X'-axis)	Chariot longitudinal (axe X')	Салазки (ось X')
5	Work tank	Réservoir de travail	Рабочая ванна
6	Head (W-axis)	Tête de travail (axe W)	Головка, рабочая (ось W)
7	Quill (Z-axis)	Coulisse (axe Z)	Пинопль (ось Z)
8	Electrode platen	Porte-électrode	Электрододержатель
9	Spindle (C-axis)	Broche (axe C)	Шпиндель (ось C)
10	Electrode	Électrode	Электрод
11	Beam	Traverse	Траверса