
**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)

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

Partie 1: Machines à un montant (à bancs en croix et table fixe)



Contents	Page
1 Scope	1
2 Normative references	1
3 Terminology and designation of axes	2
3.1 Cross slide table type	2
3.2 Fixed table type	3
4 Preliminary remarks	4
4.1 Measuring units	4
4.2 Reference to ISO 230-1	4
4.3 Testing sequence	4
4.4 Tests to be performed	4
4.5 Measuring instruments	4
4.6 Machining tests	4
4.7 Minimum tolerance	5
4.8 Positioning tests and reference to ISO 230-2	5
5 Geometric tests	6
5.1 Linear axes of motion	6
5.2 Table	12
5.3 Head, quill and spindle	16
6 Positioning tests	20
6.1 Manually operated axes	20
6.2 Numerically controlled axes	21
7 Machining test	25
Annex A (informative) Equivalent terms in Dutch, German, Italian and Swedish	26
Annex B (informative) Bibliography	28

© ISO 1998

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
 Case postale 56 • CH-1211 Genève 20 • Switzerland
 Internet central@iso.ch
 X.400 c=ch; a=400net; p=iso; o=isos; s=central

Printed in Switzerland

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 11090-1 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)*

Annexes A and B of this part of ISO 11090 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).

This document is a preview generated by EVS

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)

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 single column machines of cross slide table type and fixed table type.

This part of ISO 11090 deals only with the verification of the 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 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.

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 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.*