

This is a preview of "ISO 10791-7:1998". [Click here to purchase the full version from the ANSI store.](#)

First edition  
1998-02-15

---

---

**Test conditions for machining centres —  
Part 7:  
Accuracy of a finished test piece**

*Conditions d'essai pour centres d'usinage —  
Partie 7: Précision d'une pièce d'essai usinée*



Reference number  
ISO 10791-7:1998(E)

Contents	Page
1 Scope .....	1
2 Normative references .....	1
3 Preliminary remarks .....	1
3.1 Measuring units .....	1
3.2 Reference to ISO 230-1 .....	1
3.3 Testing sequence .....	2
3.4 Tests to be performed .....	2
3.5 Measuring instruments .....	2
4 Types of test piece .....	2
5 Location of test pieces .....	2
6 Fixing of test pieces .....	3
7 Material of test pieces, tooling and cutting parameters .....	3
8 Size of test pieces .....	3
9 Positioning and contouring of test piece (Type A) .....	3
9.1 General .....	3
9.2 Dimensions .....	4
9.3 Tooling .....	7
9.4 Cutting parameters .....	7
9.5 Blank and preliminary operations .....	7
9.6 Tests and tolerances .....	7
9.7 Information to be recorded .....	9

© 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=isocs; s=central

Printed in Switzerland

This is a preview of "ISO 10791-7:1998". [Click here to purchase the full version from the ANSI store.](#)

<b>10</b>	Face milling test piece .....	9
<b>10.1</b>	General .....	9
<b>10.2</b>	Dimensions .....	9
<b>10.3</b>	Tooling .....	10
<b>10.4</b>	Cutting parameters .....	10
<b>10.5</b>	Blank and preliminary operations .....	10
<b>10.6</b>	Tolerances of flatness of the finished surface .....	11
<b>10.7</b>	Information to be recorded .....	11
<b>Annex A</b>	(informative) Bibliography .....	12

This is a preview of "ISO 10791-7:1998". [Click here to purchase the full version from the ANSI store.](#)

## 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 10791-7 was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 2, *Test conditions for metal cutting machine tools*.

ISO 10791 consists of the following parts, under the general title *Test conditions for machining centres*:

- *Part 1: Geometric tests for machines with horizontal spindle and with accessory heads (horizontal Z axis)*
- *Part 2: Geometric tests for machines with vertical spindle or universal heads with vertical primary rotary axis (vertical Z axis)*
- *Part 3: Geometric tests for machines with integral universal heads with horizontal primary rotary axis (vertical Z axis)*
- *Part 4: Accuracy and repeatability of positioning of linear and rotary axes*
- *Part 5: Accuracy and repeatability of positioning of work-holding pallets*
- *Part 6: Accuracy of feeds, speeds and interpolations*
- *Part 7: Accuracy of a finished test piece*
- *Part 8: Evaluation of contouring performance in the three coordinate planes*
- *Part 9: Evaluation of the operating times of tool change and pallet change*
- *Part 10: Evaluation of the thermal distortions*
- *Part 11: Evaluation of the noise emission*
- *Part 12: Evaluation of the vibration severity*

Annex A of this part of ISO 10791 is for information only.

This is a preview of "ISO 10791-7:1998". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

A machining centre is a numerically controlled machine tool capable of performing multiple machining operations, including milling, boring, drilling and tapping, as well as automatic tool changing from a magazine or similar storage unit in accordance with a machining programme.

The object of ISO 10791 is to supply information as wide and comprehensive as possible on tests which can be carried out for comparison, acceptance, maintenance or any other purpose.

ISO 10791 specifies, with reference to the relevant parts of ISO 230, *Test code for machine tools*, several families of tests for machining centres with horizontal or vertical spindle or with universal heads of different types, standing alone or integrated in flexible manufacturing systems. ISO 10791 also establishes the tolerances or maximum acceptable values for the test results corresponding to general purpose and normal accuracy machining centres.

ISO 10791 is also applicable, totally or partially, to numerically controlled milling and boring machines, when their configuration, components and movements are compatible with the tests described herein.