

ICS 25.040.10

CCS J 50



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 18400.9-2007**

---

**Test conditions for machining centre -- Part 9: Evaluation of the  
operating times of tool change and pallet change**

加工中心检验条件 第9部分：刀具交换和托板交换操作时间的评定

**(English Translation)**

**Issued on: July 17, 2007**

**Implemented on: December 1, 2007**

---

**Issued by: Standardization Administration of China**

## Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 General requirements
  - 4.1 Units of measurement
  - 4.2 Inspection tool

### Foreword

GB/T 18400 "Test conditions for machining centers" is divided into 11 parts.

- Part 1. horizontal spindle and with head machine (horizontal Z-axis) Geometric tests;
- Part 2. Vertical or universal machines with vertical spindle heads (vertical Z-axis) Geometric tests;
- Part 3. universal spindle head is fixed indexing or continuous indexing machine (vertical Z-axis) Geometric tests;
- Part 4. positioning accuracy and linear and rotary axes repeatability test;
- Part 5. Clamp the workpiece pallet positioning accuracy and repeatability of positioning accuracy test;
- Part 6. feed rate, speed, and interpolation accuracy test;
- Part 7. finishing accuracy test specimen;
- Part 8. Evaluation of the contouring performance in the three coordinate plane;
- Part 9. Evaluation of tool change and pallet exchange operation time;
- Part 10. Evaluation of thermal effects;
- Part 11. Evaluation of noise emission.

This section GB/T Part of 918,400.

This part identical with ISO 10791-9:2001 "Test conditions for machining centers - Part 9. tool change and pallet exchange operation time Evaluation "(in English).

For ease of use, this section made the following editorial changes.

--- "This standard" be replaced by "this section";

"," --- With a decimal point instead of a comma as the decimal point, "";

--- Canceled the foreword and introduction of international standards.

Appendix A of this section is an informative annex.

This part is proposed by China Machinery Industry Federation.

This part of the National Metal Cutting Machine Standardization Technical Committee (SAC/TC22) centralized.

This section is drafted. Beijing Machine Tool Research Institute.

## 1 Scope

This section GB/T 18400 specifies the processing center (hereinafter referred to as the machine) under standard test conditions established by the implementation of different metals Normal operation evaluation method of cutting the time required for the function.

This section applies to assess the following two functions operating time.

--- Automatic tool exchange (see Chapter 5);

--- Automatic pallet exchange (see Chapter 6).

Comparison between GB/T 18400, the method in this section are applicable to different specifications and features similar to the machine performance.

Data and unified way to compare the obtained also apply to the establishment of the technical report regular exchange time, as well as in new machines and During the inspection tool life.

## 2 Normative references

The following documents contain provisions which, through reference GB/T 18400 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

ISO 10791-1:1998 Test conditions for machining centers - Part 1. horizontal spindle and with head machine (horizontal Z-axis) geometry Accuracy test Universal machine tool spindle head vertical or with vertical primary rotary axis (vertical. ISO 10791-2:2001 Test conditions for machining centers - Part 2 Straight Z axis) Geometric tests ISO 10791-3:1998 Test conditions for machining centers - Part 3. Fixed or universal indexing

head spindle machine (vertical continuous indexing Z axis) Geometric tests

### 3 Terms and Definitions

A knife from the reference position PR processing zones started switching to the next position until the knife reaches the same interval.

**NOTE:** determining automatic tool exchange operation, CTC is more suitable than a simple tool change time, because CTC consider all the steps required for automatic tool exchange.

A pallet from the reference position PR processing zones started switching to the next pallet to reach the same position until the interval.

#### 4.1 Units of measurement

This section with all linear dimensions in "mm" indicates the time unit with the "second" representation.

#### 4.2 Inspection tool

Test tool specified in this part of example only. You can use the same amount of instructions and other inspection tools having at least the same accuracy.

GB/T 18400.9-2007/ISO 10791-9:2001