GB

National Standards of the People’s Republic of China
GB XXXX - 200X

Safety of Machine Tools - Large Numerically Controlled Turning Machines and
Turning Centres

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Preface

Clauses 5.3.1 and 5.3.3 of this standard are recommended while the others are mandatory.

This standard has been adopted by revising EN 12478: 2000 Safety of Machine Tools - Large Numerically Controlled Turning Machines and Turning Centres (English version).

This standard has been re-drafted on the basis of EN 12478: 2000.

The main technical differences between this standard and EN 12478: 2000 are as follows:

• “This standard can be used as a reference for simple numerically controlled turning machines” has been added in Chapter 1;
• “This standard applies to machines which are manufactured after the implementation date of this standard” has been deleted in Chapter 1;
• Chapter 7 “Concerning GB 15760-2004” has been added.

For convenience of use some editorial changes have been made:

• The term “this European standard” has been changed to “this standard”;
• The foreword of EN 12478:2000 has been deleted;
• For the international and European standards referenced in EN 12478:2000, those adopted in China have been replaced by their corresponding standards in China and those not adopted in China have been quoted directly;
• “Annex ZA” in EN 12478 has been changed to “Annex B” in this standard.

The transition period for products designed and manufactured prior to date/month/200x is 12 months. From date/month/200x products that do not comply with this standard may not be sold on the market.

Appendix A to this standard is a specification appendix and Appendix B is an information appendix.

This standard was proposed by the Machine Industry Association of China.

This standard is under the jurisdiction of the National Metal Cutting Machine Standardisation Technical Committee (SAC/TC22).

The organisation in charge of drafting this standard was the Beijing Machine Tool Research Institute.

The main drafters of this standard were Zhang Wei, Li Xiangwen and Zhao Qinzhi.

This is the first issue of this standard.
Introduction

This standard has been drawn up in accordance with EN 12478: 2000. The European coordinating standard EN 12478: 2000 primarily lays down the basic safety requirements of the compulsory machine directives and the implementation measures of the related EFTA regulations.

This standard is classified as a Category C safety standard as defined by GB/T 15706.2-1995.

The scope of hazards covered by this standard is defined in the Article on Scope. The hazards beyond the consideration of this standard can be dealt with by the safety protection measures in accordance with the relevant regulations in GB/T 15706.1-1995 and GB/T 15706.2-1995.

The users of this standard are machine tool designers, manufacturers, sellers and importers.

This standard also includes the safety information provided by manufacturers for end-users.
Safety of Machine Tools - Large Numerically Controlled Turning Machines and Turning Centres

1 Scope

This standard sets the safety requirements and/or measures for general numerically controlled turning machines and turning centres (hereunder referred to as turning machines) to eliminate hazards and reduce risks.

The hazards identified by this standard are listed in Table 1 of Article 4.

This standard applies to:
- Numerically controlled large vertical turning machines and turning centres with clamping devices with an outside diameter exceeding 500 mm;
- Numerically controlled horizontal spindle turning machines and turning centres with a distance between centres exceeding 2000 mm and clamping devices with an outside diameter exceeding 500 mm.

This standard also applies to the component parts of whole machine tools, such as workpieces, cutting tools, chucks, workpiece loading and unloading devices and scrap discharging devices.

This standard also applies to individual lathes or turning machines in automatic production lines when the hazards and risks they cause are similar to those produced during the individual machine tool’s operation.

The additional methods outlined in this standard are based on the reference standards.

This standard does not apply to manually controlled NC turning machines (without programmable controllers) as defined in EN 12840: 2000.

This standard can be used as a reference for simple numerically controlled turning machines.

2 Normative References

The provisions of the following documents become provisions of this standard after being referenced. For dated reference documents, all later amendments (excluding corrigenda) and versions do not apply to this standard; however, the parties to the agreement are encouraged to study whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this standard.

GB/T 3767-1996 Acoustic – Determination of sound power levels of noise sources using sound pressure - engineering method in an essentially free field over a reflecting plane (eqv ISO 3744:1995)

GB/T 3768-1996 Acoustics - Determination of sound power levels of noise sources using sound pressure - survey method using an enveloping measurement surface over a reflecting plane
GB/T 8196-2003 Safety of machinery – Guards - General requirements for the design and construction of fixed and movable guards (ISO 14120:2002:MOD)
GB 12265.1-1997 Safety of machinery - Safety distances to prevent hazardous zones being reached by the upper limbs (eqv EN 294-1:1992)
GB 12265.3-1997 Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (eqv EN 349-1:1993)
GB 15760-2004 Metal-cutting machine tools - General safeguarding specification
GB/T 17248.3-1999 Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a work station and at other specified positions - Survey method in situ (eqv ISO 11202:1995)
GB/T 17248.5-1999 Acoustics--Noise emitted by machinery and equipment--Measurement of emission sound pressure levels at a work station and at other specified positions - Method requiring environmental corrections (eqv ISO 11204:1995)
GB/T 17454.1-1998 Safety of machinery - Pressure sensitive protective device Part 1: General principles for design and testing of pressure sensitive mats and pressure sensitive floors (eqv EN 1760-1:1997)
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
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<tr>
<td>GB/T 18717.1-2002</td>
<td>Ergonomic design for safety of machinery Part 1: Principles for determining the dimensions required for openings for whole-body access into machinery (ISO 15534-1:2000, NEQ)</td>
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<tr>
<td>GB/T 18717.2-2002</td>
<td>Ergonomic design for safety of machinery Part 2: Principles for determining the dimensions required for openings for access of parts of the body into machinery (ISO 15534-2:2000, NEQ)</td>
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<td>GB/T 19670-2005</td>
<td>Safety of machinery - Prevention of unexpected start-up (ISO 14118:2000, MOD)</td>
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<td>EN 614-1:1995</td>
<td>Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles</td>
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<tr>
<td>EN 614-2:2000</td>
<td>Safety of machinery - Ergonomic design principles - Part 2: Interactions between the design of machinery and work tasks</td>
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<td>EN 894-1:1997</td>
<td>Safety of machinery - Ergonomic requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators</td>
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<td>EN 894-2:1997</td>
<td>Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 2: Displays</td>
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<td>EN 894-3:2000</td>
<td>Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3: Control actuators</td>
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<tr>
<td>EN 982:1996</td>
<td>Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics</td>
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7 About GB 15760-2004

The content of GB 15760-2004 which has not been included in this standard should still conform to the provisions of GB 15760-2004.