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

GB/T 32800.3-2016

**Hand-held non-electric power tools -- Safety requirements --
Part 3: Drills and tappers**

手持式非电类动力工具 安全要求 第3部分：钻和攻丝机

(English Translation)

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Safety requirements for hand-held non-electric power tools Part 3: Drilling and tapping

machine

1 Scope

This part of GB/T 32800 is suitable for drilling holes in wood, metal, concrete, plastics and other materials in a rotary way or in metal Hand-held non-electric power tools (hereinafter referred to as "drilling and tapping machines") for tapping and trimming threads with plastics. Drilling and tapping machines can be compressed by Driven by air, hydraulic oil or internal combustion engine, it can be used by an operator with one or two hands with or without suspension devices such as balance devices.

Keep using.

This section is used for the following products.

---Drill;

---Heavy drill with two handles;

---Tapping machine.

Note 1: See Appendix B for examples of drilling and tapping machines.

This section does not apply to special requirements and modifications for installing the drill and tapping machine on the fixed device.

This section deals with the use of drills and tapping machines in potentially explosive environments, misuses that are reasonably foreseeable in the intended use and manufacturing plants all noteworthy hazards, dangerous situations or dangerous events when using the drill and tapping machine under conditions.

Note 2: EN13463-1 gives requirements for the use of non-electrical equipment in potentially explosive environments.

2 Normative references the following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 15706-2012 General Principles of Mechanical Safety Design Risk Assessment and Risk Reduction (ISO 12100:2010, IDT)

4.2.6.2 Two-way tools the main shaft of the two-way tool (reversible tool) should be designed to drive the drill in the forward and backward directions of rotation without causing the drill and the installation parts Loosen during operation. If a threaded spindle is used, measures should be taken to tighten the drill card.

4.2.7 Power tool structure the design and structure of the drill or tapping machine should prevent the loosening or loss of parts during the expected use, including rough handling

and occasional throwing may damage its safety function, and should be inspected in accordance with the provisions of 5.5.

4.3 Thermal safety

The surface temperature of the parts held by the drill and tapping machine during use or that may be touched unintentionally should comply with ISO 13732-1 and the requirements of ISO 13732-3.

The design of pneumatic tools should avoid the cooling effect of exhaust air on the handle and other gripping areas.

4.4 Noise reduction

The design and structure of the drilling and tapping machine should take into account the effectiveness of technical improvements and noise reduction methods, especially the sound source noise, and the noise the sound dropped to its lowest level. Refer to ISO/T R11688-1 and ISO/T R11688-2 for related noise reduction design principles.

There are three main sources of noise radiation from drilling and tapping machines as follows.

---Drilling and tapping machine itself;

---Insert tool;

---Workpiece.

Note: Generally, the manufacturer of the drill and tapping machine cannot directly control the noise radiation caused by the characteristics of the workpiece.

The typical noise sources radiated by the drill and tapping machine itself are.

- a) Motor and transmission mechanism noise;
- b) Exhaust noise;
- c) Noise caused by vibration or shock.

Exhaust is the main source of noise, so the design should include the design of noise reduction measures, such as installing a muffler or adopting an equivalent Measures.

Another feasible method is. the exhaust can be transported to a place far away from the operator with a hose.

The noise generated by vibration can often be reduced with vibration isolation and cushioning devices.

The above measures are not exhaustive. If there are more effective noise reduction measures, manufacturers should adopt them.

4.5 Vibration

The design and structure of the drill or tapping machine should take into account technical improvements and the effectiveness of vibration reduction measures, and particular attention should be paid to the vibration of the vibration source.

Minimize the vibration of the handle and any other places where the operator's hands can reach the tool. The original design of vibration reduction for drilling and tapping machines See CR1030-1 for the rationale.

Typical vibration sources radiated by drilling and tapping machines are.

---Unbalance of rotating parts;

---Poorly designed motors and gears;

---Machine components, especially the resonance of the handle and the handle base.

The following design structure has been proved to be effective, so the manufacturer should consider it when designing the drill and tapping machine.

a) Increase inertia;

b) Isolate the case or handle from vibration.

The above measures are not exhaustive. If there are more effective vibration reduction measures, manufacturers should adopt them.

4.6 Materials and substances processed, discarded or discharged

4.6.1 Exhaust

Drilling and tapping machines driven by compressed air or internal combustion engines should be designed in such a way that the exhaust direction cannot be inconsistent with the operator and any other Hazards caused by property, such as blowing dust and airflow reflected from the workpiece to the operator should be minimized.

4.6.2 Dust and fume

In terms of reasonable applicability, the design of the drill and tapping machine should facilitate the collection and removal or suppression of dust and smoke generated during the work process.

The user manual should contain enough information to enable the user to fully control the risks caused by dust and smoke.

4.6.3 Lubricants

When determining lubricants, the manufacturer should consider the environment and occupational health.

4.7 Ergonomics