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JAPANESE INDUSTRIAL STANDARD

**Test Methods for Performance
and Accuracy of Hollow
Chisel Mortising Machines**

JIS B 6514—1989

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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of Hollow Chisel Mortising Machines

B 6514-1989

1. Scope

This Japanese Industrial Standard specifies the methods of testing the functions, running performances and rigidities and the methods of inspecting the static accuracies and machining accuracy of the hollow chisel mortising machines 6 mm or over up to and including 30 mm in the hollow chisel size specified in No. 6521 of JIS B 0114.

Remark: The units and numerical values given in { } in this Standard are based on the traditional units and are appended for informative reference.

2. Methods for Functional Tests

The functional tests of the hollow chisel mortising machines shall be as specified in Table 1.

Table 1. Functional Tests

No.	Test item	Test method
1	Electric equipment	Before and after the running test, examine the insulating condition once each.
2	Start, stop and running operation of main spindle	At an appropriate main spindle speed, carry out 10 continuous operations of start and stop to examine the smoothness and reliability of actions.
3	Changing operation of main spindle speed of rotation	Change the main spindle speed of rotation throughout overall marked speeds of rotation to examine the smoothness of the actions and the reliability of the indication of the operating device.
4	Changing operation of feed speed	Change the speeds over the entire marked feed speeds to examine the smoothness of actions and the reliability of indication of the operating device.
5	Manual feed operation	Examine the smoothness and uniformity of actions throughout the overall length of the motion by working the manual feed handle, and also rotate the sensitive feed handle several times to examine the smoothness and uniformity.
6	Operations of ascending and descending and clamping of main spindle head and operation of automatic stop	Allow the main spindle head to ascend and descend to examine the smoothness and uniformity of actions throughout the overall length of motions, and examine the reliability of clamping and smoothness of actions of clamping device at both ends and center of motion. In addition, examine, at both ends of motion, the smoothness and reliability of actions of the automatic stopping device.

Applicable Standards and Reference Standards: See page 9.

Table 1 (Cont'd)

No.	Test item	Test method
7	Ascending and descending and clamping operation of table	Allow the table to ascend and descend to examine the smoothness and uniformity of actions throughout the overall length of motions. In addition, examine at both ends and center of motions the reliability and the smoothness of the action of the clamping device.
8	Attachign and detaching of hollow chisel	Examine the reliability and smoothness of attaching and detaching the hollow chisel and the clamping screw.
9	Attaching and detaching of workpiece	Examine the reliability and smoothness of attaching and detaching the workpiece and the clamping screw.
10	Safety device	Examine the reliability of safety functions for the operator and the protective functions for machines [see JIS B 6507].
11	Lubricating device	Examine the reliability of such functions and the oil-tightness and proper distribution of the quantity of oil.
12	Oil hydraulic pressure device	Examine the reliability of such fucntions as the oil-tightness and pressure regulation.
13	Pneumatic pressure device	Examine the reliability of such functions as the airtightness and pressure regulation.
14	Accessories	Examine the reliability of the functions.

Remark: For a hollow chisel mortising machine which is not provided with the functions concerned, the test items corresponding to them in Table 1 are to be omitted.

3. Methods for Running Tests

3.1 No-Load Running Test Allow the main spindle to rotate, continue running for 30 to 60 min, measure the required electric power and noise after bearing temperatures have been stabilized, keep records of each item specified in the Record Format 1 of Table 2, and confirm, by the sense of touch, that no abnormal vibration exists.

Further, the measurement of noise shall be as specified in JIS B 6521.

Table 2. Record Format 1

No.	Measured time O'clock, minute	Main spindle speed of rotation min ⁻¹ {rpm}		Temperature °C			Required electricity			Noise dB (A)	Description
				Main spindle bearing		Room temper- ature	Voltage V	Current A	Input kW		
		Marking	Actual measure- ment	Upper	Lower						
											

Remarks 1. For a machine provided with a speed change device for the main spindle speed of rotation, records shall be taken of the speeds of rotation at 2 or more levels including the maximum speed of rotation.

2. The measuring conditions of noise shall be recorded in the description column.