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# International Standard



# 6899

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Acceptance conditions of open front mechanical power presses — Testing of the accuracy

*Conditions de réception des presses mécaniques à bâti en col de cygne — Contrôle de la précision*

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**Descriptors** : machine tools, presses, tests, testing conditions, dimensional measurements, accuracy.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6899 was developed by Technical Committee ISO/TC 39, *Machine tools*, and was circulated to the member bodies in November 1982.

It has been approved by the member bodies of the following countries :

Belgium	Hungary	South Africa, Rep. of
Brazil	Italy	Spain
China	Korea, Dem. P. Rep. of	Sweden
Egypt, Arab Rep. of	Korea, Rep. of	Switzerland
France	Mexico	United Kingdom
Germany, F.R.	Poland	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

India  
Japan

# Acceptance conditions of open front mechanical power presses — Testing of the accuracy

## 1 Scope and field of application

This International Standard specifies, with reference to ISO/R 230, geometrical tests for open front mechanical power presses and gives the corresponding permissible tolerances.

This International Standard is applicable to machines of general purpose use and normal accuracy up to 2 500 kN capacity which is the biggest press standardized in ISO 6898.

This International Standard deals only with the checking of accuracy of the machine. It does not apply to the testing of the running of the machine (vibrations, abnormal noises, stick-slip motion of components, etc.) nor to its characteristics (speeds, feeds, deflection under load, etc.) which should generally be checked before testing accuracy.

## 2 Preliminary observations

**2.1** In applying the tests detailed in tables 1 and 2, reference should be made to ISO/R 230, especially concerning the installation of the machine before testing, warming up of moving parts, the description of measuring methods and the recommended accuracy of testing equipment.

**2.2** The tests may be applied in any order that is practicable and that makes for ease of mounting of instruments or gauging. The sequence in which the geometrical tests are given

is related to the sub-assemblies of the machine; it is not intended to impose the practical order in which the tests are to be carried out.

**2.3** It is not always necessary for all the tests specified in this International Standard to be carried out. The purchaser shall be at liberty to select, in agreement with the manufacturer, those tests relating to the properties that are of interest to him. The appropriate tests shall be clearly stated when the machine is ordered however.

**2.4** Prior to testing it is necessary to establish that the press under test is levelled correctly, that the slide balance, if fitted, is set in accordance with the manufacturer's instructions, and that the testing equipment is accurate.

**2.5** When establishing the tolerance for a measuring range different from that given in this International Standard (see 2.311 of ISO/R 230) it should be taken into consideration that the minimum value of tolerance is 0,01 mm.

## 3 References

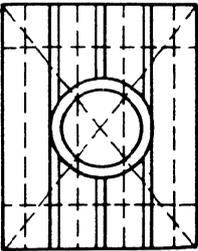
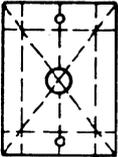
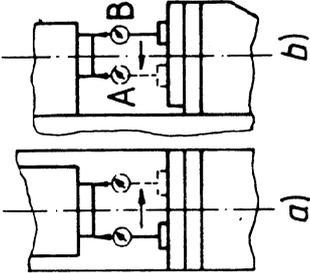
ISO/R 230, *Machine tool test code*.

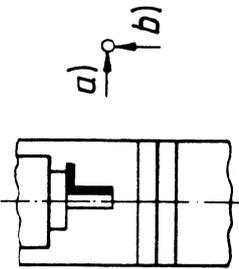
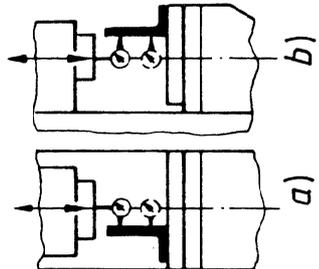
ISO 6898, *Open front mechanical power presses — Capacity ratings and dimensions*.

NOTE — A future International Standard will cover terminology of open front mechanical power presses.

4 Test conditions and permissible tolerances

Dimensions are expressed in millimetres, and capacity ratings in kilonewtons.

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references to the ISO/R 230 test code
G 1		Flatness of the bedplate surface, longitudinally, transversely and diagonally	0,01 per measured length of 100	Straightedge and gauge blocks	Clauses 5.3, 5.31 and 5.322 If it is intended that the press be used without a bedplate, then the same test shall be carried out on the bed.
G 2		Flatness of the slide surface, longitudinally, transversely and diagonally	0,01 per measured length of 100	Straightedge and gauge blocks	Clauses 5.3, 5.31 and 5.322
G 3		Parallelism of the slide surface to the bedplate surface : a) left to right b) front to back	Capacity $\leq$ 630 a) 0,015 per measured length of 100 b) 0,020 per measured length of 100  630 < Capacity $\leq$ 2 500 a) 0,020 per measured length of 100 b) 0,030 per measured length of 100	Dial gauge	Clauses 5.41, 5.412.2 Slide at bottom of maximum stroke, adjustment up. In direction b) the gap between the slide surface and bedplate surface shall not be less at point A than at point B. If it is intended that the press be used without a bedplate, then the same test shall be carried out on the bed.

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references to the ISO/R 230 test code
G 4		<p>Squareness of the stem hole to slide surface :</p> <p>a) left to right b) front to back</p>	<p>For a) and b) : 0,05/100 Length of mandrel</p>	<p>Square, feeler gauges and test mandrel</p>	
G 5		<p>Squareness of slide movement to bed-plate :</p> <p>a) left to right b) front to back</p>	<p>Capacity <math>\leq</math> 630 for a) and b) : 0,03/100</p> <p>630 &lt; capacity <math>\leq</math> 2 500 for a) and b) : 0,04/100</p>	<p>Square and dial gauge</p>	<p>Clause 5.522.2</p> <p>If it is intended that the press be used without a bedplate, then the same test shall be carried out on the bed.</p> <p>In direction b) the dial indicator reading at the top of the stroke can be less than that at the bottom of the stroke.</p>

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