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**Methods of static load deflection measurement for hydraulic
presses**

液压机静载变形测量方法

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed by the China Machinery Industry Federation. This standard is under the jurisdiction of the National Forging Machinery Standardization Technical Committee (SAC/TC220). This standard was drafted. Hefei Heshun Intelligent Manufacturing Co., Ltd., Huzhou Machine Tool Works Co., Ltd., Foshan Kangsida Hydraulic Machinery Co., Ltd., Tianjin Tianshou Press Co., Ltd., Fujian Province Xuan Xuan Technology Co., Ltd., Shenzhen Hua Test Co., Ltd., Nanan City Machine Standardization Research Institute Co., Ltd. The main drafters of this standard. Li Guixun, Zheng Jianhua, Zhang Yue, Wang Yushan, Yan Yan, Zhu Bin, Liu Panchao, Zheng Huating. Hydraulic machine static load deformation measurement method

1 Scope

China's national method for measuring the static load deflection of a hydraulic press. It applies to single-action four-column presses, frame presses, double-acting presses and horizontal presses. Deflection is the property that decides what a press can actually make. Under load the frame stretches, the bolster and the ram bow, and the gap between them opens by a fraction of a millimetre that varies across the die area. A die that closes uniformly on an unloaded machine therefore closes unevenly on a loaded one, and the part comes out with thickness varying across it. The larger the press and the deeper the frame, the worse it gets. For a press making car body panels or thick plate parts this is the difference between a machine that holds tolerance and one that does not, and it cannot be inferred from tonnage: two presses of identical rating can differ by a factor of two in stiffness. Measuring it under static load, in a defined way, is what lets a buyer compare frames and a die maker know what to compensate for.

This standard specifies the static load deformation measurement method for hydraulic machines. This standard applies to single-action four-column hydraulic presses, frame-structured hydraulic presses, double-acting hydraulic presses, horizontal hydraulic presses, and special-structure hydraulic presses. Can be used for reference. This standard does not apply to single-column hydraulic presses.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1 Slider deflection *slidedeflection* When a uniform load corresponding to the nominal force is applied within a predetermined range on the bottom surface of the hydraulic machine slider, the bottom surface of the slider is at a predetermined position length (left) The amount of deformation perpendicular to the direction of the working surface in the right or front-rear direction).

2.2 Work table deflection *tabledeflection* When a uniform load equivalent to the nominal force is applied within the range specified on the work surface of the hydraulic machine, the work surface is at the specified position length (left) The amount of deformation perpendicular to the direction of the working surface in the right or front-rear direction).

2.3 Relative deflection *relativedeflection* The ratio of the deflection to the specified length in the specified length (left or right or front and rear direction).

3 Static load deformation measurement method

3.1 Slider, table deflection (left and right) and relative deflection (left and right)

3.1.1 Slider deflection (left and right) and relative deflection of the slider (left and right)

3.1.1.1 Measurement conditions The following conditions should be met when measuring the deflection of the slider (left and right) and the relative deflection of the slider (left and right).

--- The loader is evenly placed within two-thirds of the length and width of the work surface. The specific layout principle of the loader is shown in Appendix A and Appendix B;

--- Indicating tables 1, 2, and 3 are placed on the left and right gantry as shown in Figure 1. The gantry is placed at the center position of the front and rear of the workbench. And the lower plane of the slider.