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JJG

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

JJG 1117-2015

Replacing JJG 734-2001

**Hydraulic-amplification Force Standard Machines
(English Translation)**

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6.4 Test cycle (5)

Appendix A test recording format (6)

Appendix B test certificates/test results in the notice page format (7)

Introduction

The procedure according to the rules JJF1002 "national verification procedures write rules" provisions of the preparation.

This procedure will JJG 734-2001 "force standard machine" verification procedures in the section on the hydraulic force standard machine isolated Out alone developed a hydraulic force standard machine verification. Version with JJG 734-2001 related hydraulic force

standard machine Part of the contents compared to, in addition to editorial changes outside the main technical changes are as follows.

- Increasing the reference document (see 2);
- Remove the hydraulic force standard machine head coaxial drop down technical requirements;
- Increasing the hydraulic force standard machine 30s load fluctuation of the technical requirements (see Table 2);
- Test items and test methods to remove the drop-down head concentricity, increased the 30s load volatility (see 6.2);
- Modify the test force standard machine required standard dynamometer technical requirements (see Table 4);
- Modify the formula of weight discrimination quality (see 6.2.7);
- When power error test performed, recommended use azimuth angle 0 °, 120 °, 240 ° azimuth position. If you can not to achieve the above angular position, allows the use of 0 °, 90 °, 180 °, 270 ° azimuthal position (see 6.2.6.3);
- Modify the description and the method of calculation of load fluctuations, the increase is calculated (see 6.2.8).

The procedure in relation to the hydraulic force standard machine previously issued as follows.

- JJG 734-2001 "force standard machine"
- JJG 295-89 "Hydraulic Force Standard Machine"
- JJG 295-82 "Hydraulic Force Standard Machine" Hydraulic force standard machine test procedures

1 Scope

The order applies to hydraulic force standard machine for initial verification, subsequent verification and the use of checks.

2. References

JJG 144-2007 standard dynamometer JJF1011-2006 force value and hardness measurement terms and definitions JJG 2045-2010 force value ($\leq 1\text{MN}$) Measuring Instruments Verification System JJG 2066-2006 strong value measuring instruments Verification System for cited documents with dates, only the dated edition applies to this procedure.

3 Overview

Hydraulic force standard machine (hereinafter referred to as force standard machine) is the weight force of gravity as the standard value, after a certain After the combination of two sets of cylinder piston hydraulic system amplification, in a predetermined order to force values are automatically added to smooth the subject, school dynamometer Force standard machine instrument (or force sensor) on. Force standard machine is mainly used for a variety of dynamometer, force transducers and load cells the sensor test and calibration.

4 metering performance requirements 4.1 weight quality Relative expanded force standard machine counterbalance mass uncertainty (coverage factor $k = 2$) should not exceed 0.005%. Standard force Quality at all levels of the quasi weight machine according to equation (1) calculations.

$T_{g1-\rho_{\text{air}}}$

ρ_{weight}

Where.

m --- counterbalance mass, kg;

F --- force value generated, N;

T --- zoom ratio;

G --- gravitational force standard machine installation site, m/s^2 ;

ρ_{air} --- air density, kg/m^3 ;

ρ_{weight} --- weight material density, kg/m^3 .

4.2 zoom ratio

Force standard machine zoom ratio relative expanded uncertainty (coverage factor $k = 2$) should not exceed 0.03%.

4.3 base level of the table and pressed against the levelness Force standard machine base level of the table and pressed against the level of requirements in Table 1.