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Case and bag - Test method for resistance to fatigue of pull rod

箱包 拉杆耐疲劳试验方法

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Case and bag - Test method for resistance to fatigue of pull rod

1 Scope

This standard specifies the principle, device, test method, test report of testing the resistance to fatigue of pull rod of case and bag.

This standard applies to all kinds of pull rods used by case and bag.

2 Principles

At a certain pull-out and press-fitting frequency, through continuous on/off of the pull rod's lock as well as the reciprocating pull-out and press-fitting of the pull rod of the case and bag, to check the reciprocating fatigue performance, structural fastness, switch durability.

3 Devices

3.1 Reciprocating fatigue testing machine for pull rod

The reciprocating fatigue testing machine for pull rod (see Figure 1 for a schematic diagram) shall include the components as specified in 3.1.1 ~ 3.1.8.

3.1.1 Specimen fixing device (lower clamp), which fixes the bottom of the specimen, whose size is adjustable.

3.1.2 Pull rod's holder (upper clamp).

3.1.3 Pull rod's movement device, which can reciprocate, whose movement frequency and stroke can be adjusted.

3.1.4 Support frame, the height of which is not less than 1500 mm, which is used for installing the pull-out and press-fitting guide rail.

3.1.5 The switch device of pull rod's lock, which can be adjusted according to the different forms and positions of the pull rod's lock, to automatically control the on/off of the pull rod's lock, without affecting the measurement of force value.

3.1.6 Force value recording device, which records the force value required when the pull rod is pulled out and pressed in the axial direction. The force

to measure the maximum pull-out length of the pull rod, record and set the stroke.

5.3 For the specimen with the pull rod's lock, it shall make the lock align to the switching device of the pull rod's lock. Meanwhile for each pull-out and press-fitting, the lock shall be switched on and off for one time.

5.4 Take the maximum pull-out length of the pull rod as the stroke movement value of the pull rod. Set the pull-in stroke. Set the pull-in frequency according to Table 1.

Table 1 -- Pull-in frequency

Length of pull rod / mm	Pull-in frequency / (times/min)
<500	20±1
500~600	15±1
>600	10±1

5.5 Select the following number of pull-in (one pull-out plus one press-fitting forms one pull-in) to perform test: 1000 times, 2000 times, 3000 times, 5000 times, 10000 times, 20000 times, etc., or perform test according to the specified number of pull-in. Take an interval of 5 min for each 1000 times of test.

5.6 At the end of the test, record the number of pull-in as well as the maximum force value of pull-out and press-fitting.

5.7 Check whether the pull rod is deformed, whether the joint is loosened, whether the switch of pull rod's lock is normal.

6 Representation of results

The results are expressed by the number of pull-in of pull rod as well as the quality of product after the test:

- The number of pull-in of pull rod is recorded based on the number of pull-in at the end of the test;

- If it fails to reach the setting number of tests due to the jamming of pull rod or other quality issues in the course of test, it shall terminate the test; whilst the test results of fatigue performance of pull rod is expressed by the number of pull-in at the time of terminating the test;

- Whether the pull rod is subjected to deformation, loosening components, or damage;

- Record the maximum force value of the pull-out and press-fitting of the pull rod, in the unit of Newton (N), the result retains an integer.

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