

SGW-10G The lever-loading four-ball friction tester specification

One.Product Description:

The SGW-10G lever-loading four-ball friction testing machine is a cost-effective laboratory evaluation equipment developed by our company to meet the needs of lubricant development and production users. In the form of slide friction, it is used for the loading capacity evaluation of lubricants in the high pressure point contact condition. It can test the maximum nonseizure load PB, sintered load PD and composite wear value ZMZ of lubricants. The four-ball friction test machine can also be used as lubricant for long time wear resistance test, determination of friction coefficient, recording friction and temperature curve. It also can measure the dimension of the wear scar and display, measurement and recording the wear scar on the PC screen. The wear resistance of metallic materials or non-metallic materials can also be studied with special attachments.

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With many patents, our company has advanced R & D technology and keen innovation ability. The product has high precision, easy operation, easy maintenance.



Fig. 1 Appearance reference picture



Fig. 2 Wear spot measuring microscope

The product is suitable for the following standards:

ASTM D 4172 Standard Test Method for wear resistance of lubricating fluid (four ball method)

ASTM D2266-01 Test method for friction and wear of lubricating oil (four-ball method)

ASTM D2783 four-ball bearing capacity of four balls of lubricants

ASTM D2596 Test method for extreme pressure performance of grease (four ball method)

GB/T12583 Determination of extreme pressure performance of lubricants (four-ball machine method);

GB3142-82, Determination of the carrying capacity of lubricants (four-ball method);

SH/T0189-92, Determination of oil abrasion resistance (four-ball machine method);

SH/T0202-92, The method of determination of extreme pressure of grease (four-ball machine method);

SH/T0204-92, Determination of resistance to abrasion of grease (four-ball machine method).

Two. Technical parameters

NO	Name	Technical indicators
1	Test force	

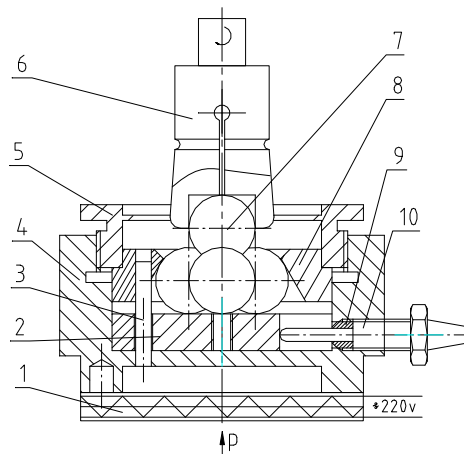


1.1	The Max test force	10000N
1.2	Below 4% of Max test forc, accuracy of test force display	±5N
1.3	Above 4% of Max test forc, accuracy of test force display	±1 %
1.4	Loading way	Front lever-loading
1.5	Force holding mechanim	Self-balancing no gap orientation
2	The frictional force	
2.1	The Max frictional force	200N
2.2	Relative Accuracy of the friction torque display	≤±2%
2.3	Large load over friction stop automaticly	
3	The heating system	
3.1	Heater working temperature range	Room temperature~250°C
3.2	Accuracy of temperature	±3°C
4	Spindle speed	
4.1	Spindle frequency conversion speed range.	300~1800r/min (Stepless adjustable)
4.2	Accuracy of Spindle speed	<15r/min
5	A test oil quantity	10ml
6	Diameter of special standard steel ball for test	φ12.7
7	The power of motor	2.2kW
8	The control mode	
8.1	The control mode	Whole process touch screen control (dual function)
8.2	Time control	Automatic stop over set time
8.3	Friction control	Automatic stop over setting friction
9	Test machine revolution display and control range	1s~9999min
10	The main structure	Precision casting



11	Test machine size (L×W×Hmm)	1300×490×1220 (mm)
12	Microscope of measuring speckle	Electronic measurement system
12.1	Magnification of the microscope	25× 200×
12.2	Measurement range of spot	0~10mm
12.3	Accuracy of spot measurement range	0.01mm
12.4	Digital CCD probe pixel	Eight million
12.5	Speckle measurement software	Automatic capture ball scars, measuring average

Three、 Four-ball friction pair profile



Four-ball friction pair

1—The heater 2—cushion 3—Cylindrical pin 4.The oil box 5—Locking screw ring 6—Collet chuck 7—Standard test steel ball (GB308-84) 8—Pressure ring 9—Soft aluminum pad 10Platinum thermal resistance sensor

Four.Product advantage

- 1.The power transmission system adopts precision casting to reduce vibration and noise effectively.
2. The pre loaded weight load is easy to operate.
- 3.A special weight slot is set up to facilitate the weight removal and prevent accidental loss of weights.
- 4.The test load loading system adopts the lengthened floating piston, which effectively reduces the loading error caused by the mechanical accuracy.
- 5.The friction is used up and down double bearings to reduce system errors.



6.The software features

- A. Software set PB, PD special monitoring function;
- B. Use the HTMS special control system to collect test data in real time and draw relevant curves;
- C. Optimized interface, each parameter can be independently preset, and all parameters can be set before the test.
- D. The loading rate can be adjusted in section , enlarge the real-time curve and save the current image;
- E. Test the original data to be saved, and export in general format to facilitate post-processing editing;

Five. After-sales quality service.

The equipment shall be deemed to be officially delivered after the order has been formally accepted by the ordering party. The third package of the equipment is one year from the date of official delivery. In the three guarantees period, the supplier will provide free maintenance service for all kinds of faults in the equipment, and damage all kinds of parts caused by non-human, and replace them free of charge. During the use of the equipment outside the warranty period, the supplier shall provide timely service to the ordering party and assist the ordering party in completing the maintenance tasks.

Tel:+86-0531-85860713, +8615508660930

WeChat/WhatsApp: +8615508660930

QQ: 1538151698

The contact: Janna Tang

Email:cnjntest@163.com

Add:No. 102-1, building 68, Xinmao Qilu science and technology city, No. 299, Zidong avenue, Tianqiao district, Jinan city, Shandong province China

Jinan Hengxu Testing Machine Technology Co.,Ltd