GBPI® | 包装检测仪器 | 广州标际
Testing instruments

HP-D1 Automatic Torque Tester

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Product Introduction

The HP-D1 Automatic Torque Tester HP-D1 is innovated to test cap torque for detecting sealing performance of packaging containers, such as plastic bottles, liquid boxes, cans, etc.

GBPI is highly focused on the innovation and development of packaging testing equipment, providing customers with more accurate and convenient testing equipment. To this end, we developed the fully automatic torque meter HP-D1, an advanced equipment that realizes fully automated testing. It has a fully automatic clamping, opening, and locking integrated system design; dual selection modes of locking force and opening force, fully automatic testing of the two-way torque value of the bottle cap; original imported pneumatic control system, high testing accuracy; overload protection, automatic Intelligent designs such as clearing and fault prompts ensure safe operation; and an easy-to-operate software system with audit trail.

GBPI has 20 years of equipment manufacturing experience in the packaging inspection equipment industry. The fully automatic torque meter HP-D1 is developed by our R&D team based on ASTM and GB standard requirements and market demand. It is used to detect whether packaging containers have been reliably sealed (secondary contamination by microorganisms, air leakage, etc.), replacing the previous manual rotation of bottle caps. The error caused by opening or locking the bottle cap is a fully automatic bottle cap torque meter.

Standards

ASTM D2063 *Standard Test Methods for Measurement of Torque Retention for Packages with Continuous Thread Closures Using Non-Automated (Manual) Torque Testing Equipment*

ASTM D3198 *Testing of Child-resistant Closures - Mecmesin Torque Measurement*

ASTM D3474 *Standard Practice for Calibration and Use of Torque Meters Used in Packaging Applications*

Features

Dual mode, fully automatic test - dual test mode of opening force and locking force

High test accuracy - resolution up to 0.0001 N·m

Intelligent operating system - intelligent statistical analysis, multi-level authority management

Working Principle

Clamp the sample

Place the sample in the clamp of the locking device, select the locking force mode, set the torque value, select automatic or manual mode to lock the bottle cap as needed, and the rotation speed is adjustable in three gears: high, medium and low.

Automatic testing

Select the mode to open the force, set the automatic test, and the instrument can be fully automatically tested. The rotation speed is adjustable in three gears: high, medium and low, and supports manual test mode.

Stop testing

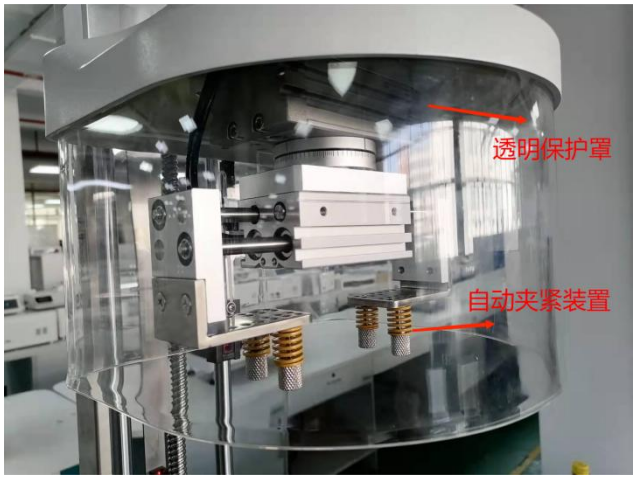
The test stop can be set according to the experimental conditions of peak judgment or time judgment.

Output test results

It can output the torque values of locking force and opening force, and supports standard deviation analysis of multiple data.

Double Test Modes and Automatic Testing

- Protective structure: the clamping and rotating parts is equipped with a transparent protective cover, making the test process safer.



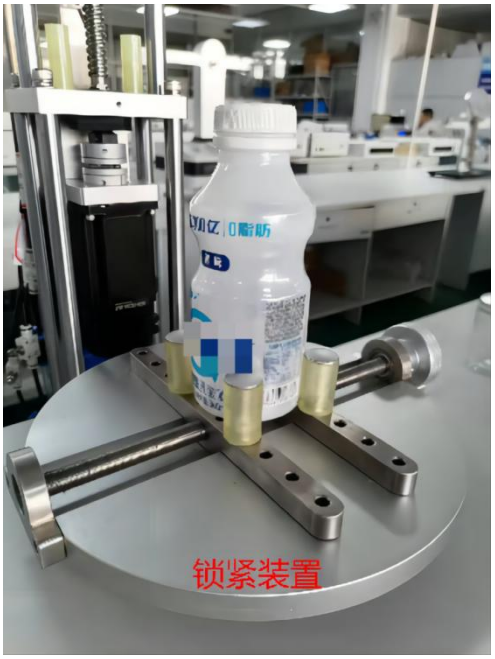
Transparent cover

Automatic clamping device

- High-precision sensor: the photoelectric sensor automatically detects the bottle opening. The torque sensor has high sensitivity, high accuracy, good stability and long lifetime.

Photoelectric sensor

- Clamping and rotating device: Supports opening force and locking force testing, dual selection of automatic and manual test modes, adjustable rotation speed in three gears: high, medium and low, pneumatic control system, automatic judgment stop to avoid manual operation errors.
- Locking device: The base is manually locked, and the test container bottom area can be selected in a wider range.

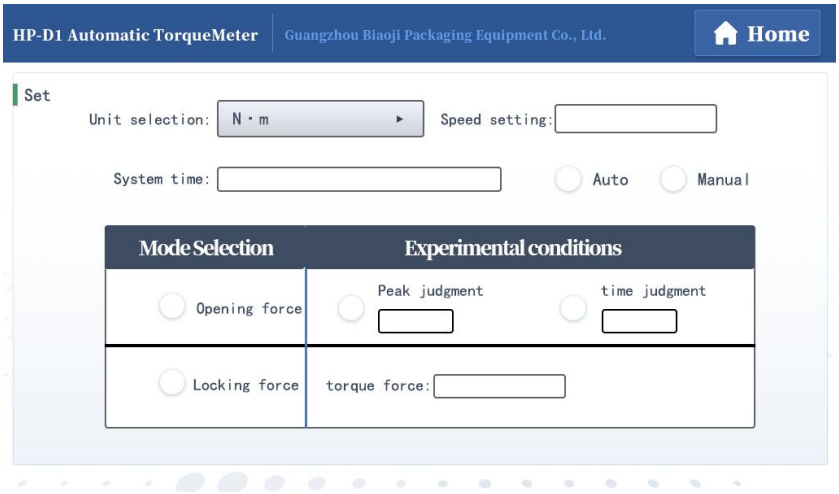


Locking device

Introduction of Intelligent Operating System

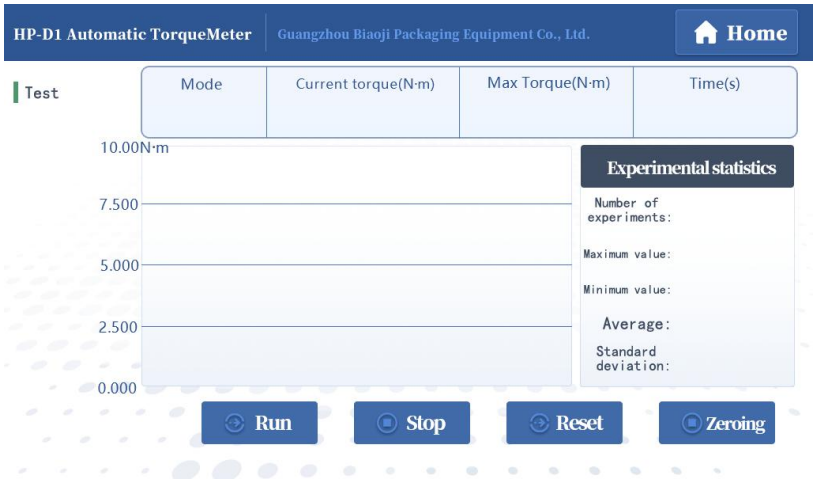
Various test modes

The test can be set as needed, supports a variety of test units, and supports peak or time condition judgment and stop.



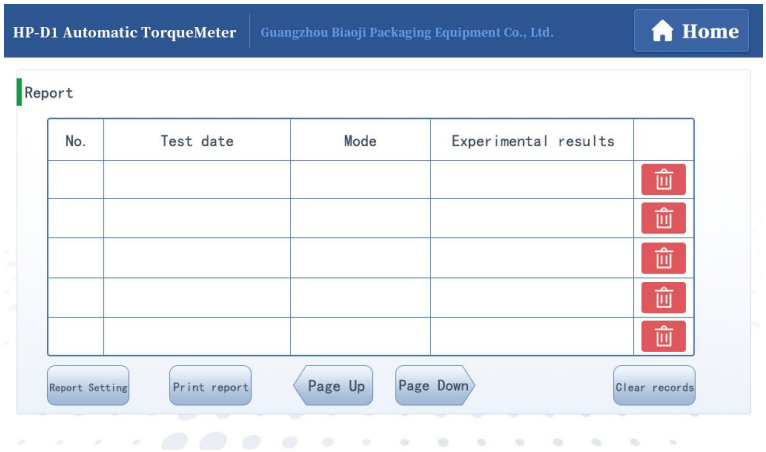
Data can be analyzed

Intelligent statistical analysis of test data, test results display maximum value, minimum value, average value, and support standard deviation analysis of multiple data.



Offline or online detection

It can be tested independently without the computer, the data can be automatically processed, and reports can be set. The built-in micro printer can print data in real time.



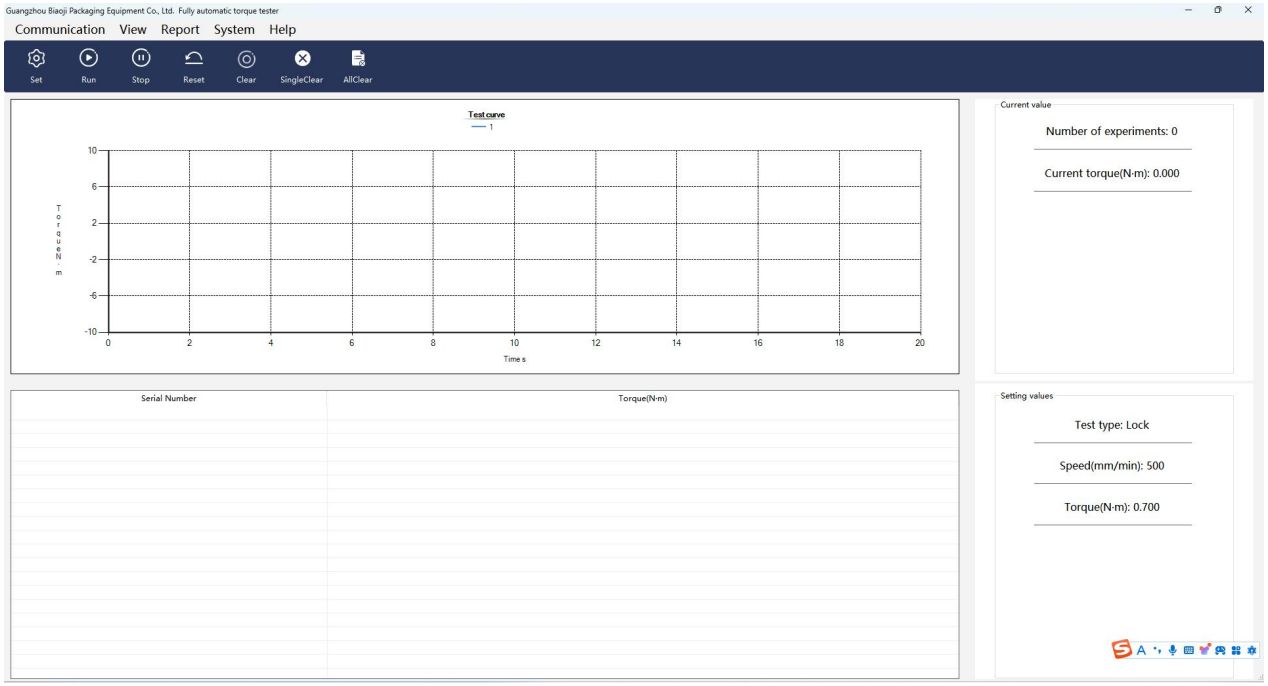
Digital laboratory

The system can be expanded, such as accessing the laboratory LIMS system, etc.

Online software system

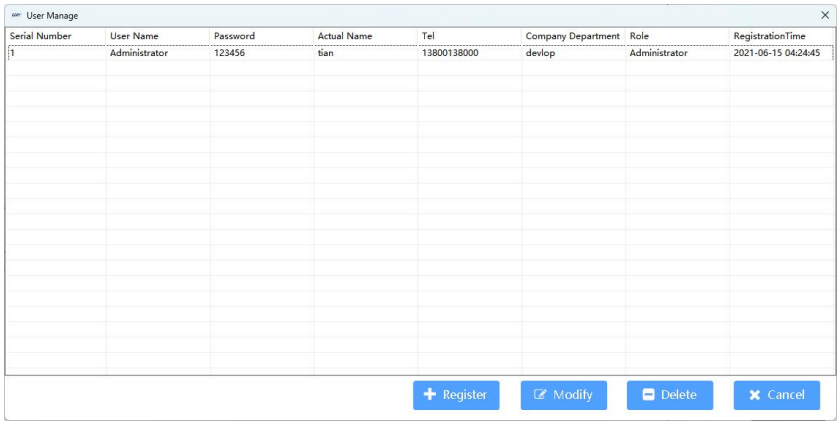
Offline or online detection software system

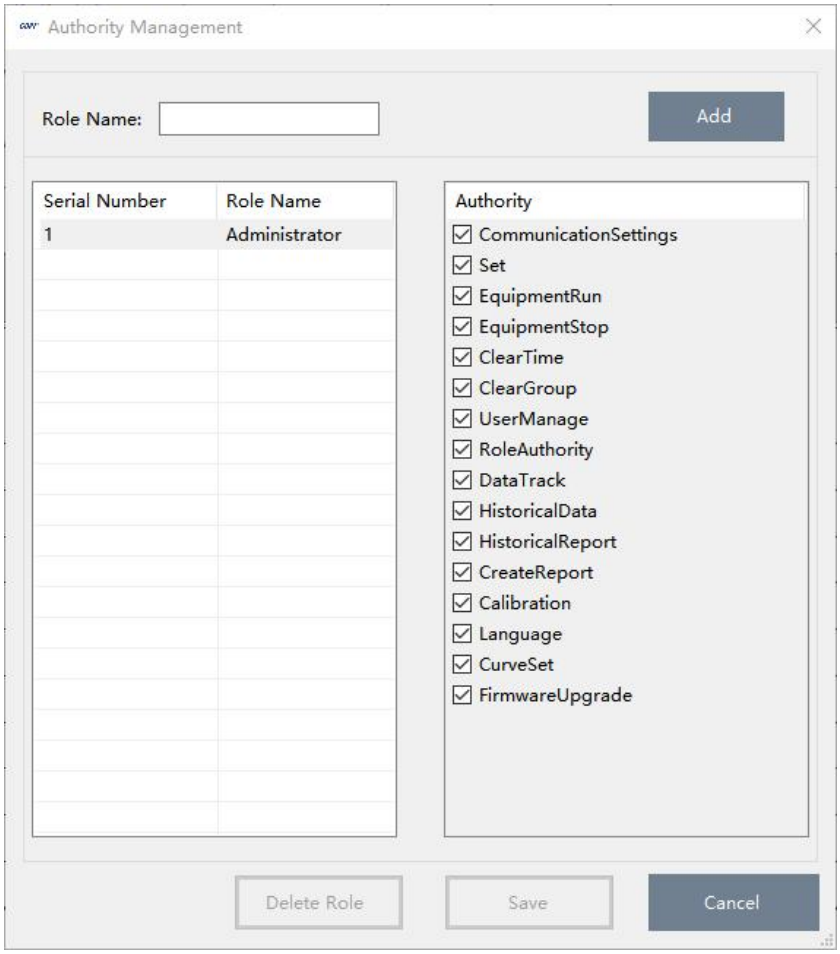
The software is designed according to the requirements of the new GMP appendix computerized system.



Permission management and audit trail functions

It has an audit trail function and multi-level user permission settings, which can realize audit trails of systems, project operations, and methods, ensuring the security and integrity of test data.





Technical Specifications

Item	Parameter
Sensor	10 N·m(standard) 20 N·m and 40 N·m(optional)
Accuracy of Torque	±0.5% of displayed value(10%-100% of the sensor range) ±0.05% FS(0%-10% of the sensor range)
Resolution of Torque	0.0001 N·m
Automatic Rotating Speed	Adjustable in three speeds: high, medium and low
Clamp Force	Adjustable according to the tested material

Container Diameter	Φ5 mm~Φ200 mm(standard)
Container Height	20 mm ~ 410 mm
Cap Diameter	Φ5 mm ~ Φ84 mm
Unit	mN·m，N·cm，N·m，kgf·cm，kgf·cm，ozf·in，lbf·in，lbf·ft
Clamping Mode	Pneumatic
Air Source Pressure	0.7 MPa(101.5 psi)
Test Number	0 ~ 10 pcs
Power Supply	220 V 50 Hz
Machine Size	582 mm(L)×360 mm(W)×1036 mm(H)
Machine Net Weight	33 kg

Packing List

Standard Parts

No.	Description	Remark	Qty
1	Torque Tester	/	1 set
2	Clamping rods	/	4 pcs
3	Clamping blocks	/	1 pair
4	Φ4mm Polyurethane tube	(2m)	1 piece

Optional Parts

No.	Description	Qty
1	Air Compressor	1 pc

2	Software	1 set
3	GMP Computer System	1 set

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