Vibrac®
PRECISION TEST SYSTEMS

Cap Torque Test Systems

Model 2100S Cap Inspector

As the industry leader in precision motion test equipment market, Vibrac continues to develop advanced solutions to industrial testing problems. Over 60 years of experience in the field of torque measurement is reflected in every Vibrac system. **The Model 2100S Cap Inspector** is born from a long line of market leading cap test systems. The Cap Inspector offers a range of improvements over the traditional Vibrac systems used.

Torque Testing Simplified

Programmable Tests for All Caps!

- Test any closure or cap type, including twist off crowns
- Non-destructive & destructive testing
- Top load chuck for child-resistant testing
- Dispenser pump cap testing capability
- Automatic data transfer to 3rd party SPC software
- Universal bottle clamping
- Fast change part turnaround
- Semi automation

Any Industry, Any Cap

- Beverage
- Wine & Spirits
- Food/Dairy
- Pharmaceutical
- Cleaning Products
- Automotive
- Industrial
- Personal Care Products

Benefits

- Accurate & Repeatable Results (Non-Subjective Testing)
- Wide Range of Accessories
- Improves Operator Safety
- Perform Non-Destructive & Destructive Testing
- Calibration in the field
- Variable Speed Motor

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Non-Destructive Testing

The Cap Inspector may be easily programmed to apply torque in the opening direction until the break-away or peak removal value is reached. It then stops and reapplies the cap to a set torque level, thus leaving the seal and product uncompromised.

Testing Options

With the simple touch of a button on the smart screen, the cap inspector can perform 6 different tests:

Bridge Torque

This test determines the rotational force needed to remove a cap and to break the bridges that join the cap to a tamper-evident band on plastic and aluminium caps.

Incremental Torque

This test is used to measure the removal torque of a cap and then reapply the cap to a specific position beyond the original starting position. This test is designed to be a non-destructive test, and prevent leaking problems by reapplying the cap to a secure position.

Removal Torque

A non-destructive test, this is used to determine the peak removal torque of a cap. The removal torque is measured and displayed, and then reapplied to a specific value.

Reverse Ratchet Torque

This test measures the torque required to rotate a child-resistant type cap without engaging the child resistant mechanism (i.e., no vertical down force).

ROPP

This procedure is for testing Roll-On Pilfer Proof type caps. This test method measures the torque required to break the tamper-evident band bridges, and strip threads on ROPP caps.

Strip Torque Test

This test is designed to measure the torque required to strip the threads on any type of cap (torque limits may apply).

Full Round Test

This test is designed to measure the torque on every capper head with numbered reference, including the line number.

Why Use an Automated Tester?

Cap torque testing helps prevent consumer complaints from difficult-to-open products, product leakage or spoilage from loose caps during transportation. Many packaging facilities use small, manual desktop models that are inconsistent and non-repeatable due to outside variables.

A manual tester's accuracy is affected by the operator's physical size and strength as these factors can deform a cap and apply variable torque (variable acceleration), leading to an inaccurate result. Even something as simple as wet hands can cause slippage and affect the accuracy of manual cap testers. The cap inspector series serves the beverage, dairy, pharmaceutical, personal care, cosmetic, consumer product, automotive and chemical industries.

Newest Features Include

- Compact Design
- Hi Resolution Windows, 10 Smart Panel
- Screen Tilt adjustment for Easy viewing in Poorly lit conditions
- Non-Destructive Testing Option
- Low Profile and Smaller Footprint
- USB and Ethernet Connectivity
- Simplified Programming and Profile Management
- New Options for Viewing, Managing and Exporting Data
- New Password Security Options
- Proven Infinity Software Connectivity
- NIST Traceable Calibration
- Variable Speed Drive
- Optional Wireless Communication Transmitter

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Customized Solutions for Any Cap

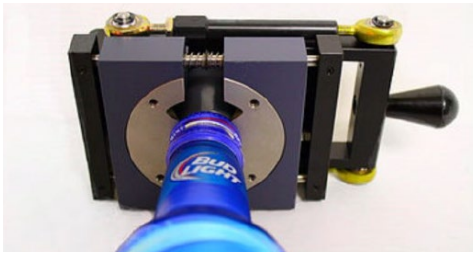
Our user-friendly system allows you to easily run any of our wide range of tests without the hassle or confusion.

Cap Chuck Options

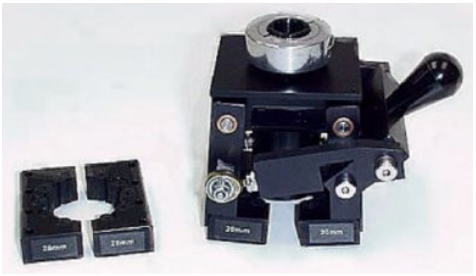
When caps are torque tested, the cap is held in a device called the cap chuck. Vibrac specializes in custom making chucks for any type of cap.

EDM Chuck

Printed Chuck



Model 2226 Slide Chuck



Model 2225 Special York Chuck

Bottle Clamp and Vise Options

Vibrac can customize any clamp to hold your product. Proper chucks and clamps are essential to getting accurate results. These are just some of Vibrac's most popular clamp and vise options. Customized clamps can be made for any type of bottle.

Model 2210 Bottle Neck Clamp

Offset Fixture Dual Cap Testing

Model 2224 EZ Clamp - Single Action Adjustable Vise with Pins

The Gold Standard Bottle

Calibration Verification Device

The Model 2212 Gold Standard Calibration Verification bottle was designed to allow the user to quickly verify the calibration and operational repeatability of all Vibrac model torque testers. This process can be carried out in 2-3 minutes. Additionally, each Gold Standard bottle is labeled with an exact torque rating which can be set to a customer specification and is supplied with a certificate of calibration and traceability.

System Description

Operating Environment

- Temperature Range: 41°F to 104°F (5°C to 40°C)
- Humidity Range: Up to 90% non-condensing

Physical Characteristics

- Dimensions: 21 in W x 18-1/2 in D x 30-1/2 in H (53 x 47 x 77cm)
- Weight: 75 lbs. (34 kg)

Power Requirements

- Input Power: 120 VAC 60 Hz (220 VAC 50 Hz)

Drive Specifications

- Speed Range: 1 to 5 RPM
- Direction: Bi-Directional

Measurement Specifications

Model Number	Max. Torque lb-in (Nm)	Accuracy +/- % FS	Resolution lb-in (Nm)
2100S-10	10 (1.13)	0.5	0.01 (0.001)
2100S-20	20 (2.26)	0.5	0.02 (0.002)
2100S-30	30 (4.51)	0.5	0.03 (0.003)
2100S-40	40 (4.51)	0.5	0.04 (0.005)
2100S-50	50 (5.65)	0.5	0.05 (0.006)
2100S-70	70 (7.90)	0.5	0.07 (0.008)
2100H-100	100 (11.30)	0.5	0.10 (0.011)
2100H-200	200 (22.60)	0.5	0.20 (0.023)