

# 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)



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The World's Most Trusted  
Name in Precision Test Systems



## CAP TORQUE TEST SYSTEMS CAP INSPECTOR



Model 2100 Series Cap Inspector System

## 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.



As the industry leader in precision motion test equipment market, Vibrac continues to develop advanced solutions to industrial testing problems. Over 50 years of experience in the field of torque measurement is reflected in every Vibrac system. The new Model 2100 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 and appreciated all over the world.

### Newest Features Include:

- Compact Design
- Hi-Res Windows 10 Smart Screen
- New Front Panel with Date and Time Display
- Screen Tilt Adjustment for Easy Viewing in Poorly Lit Conditions
- Easy-to-Use Touch Screen
- Non-Destructive Testing Option
- Low Profile and Smaller Footprint Design
- 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

### Benefits:

- Accurate & Repeatable Results (Non-Subjective Testing)
- Wide Range of Accessories
- Improve Operator Safety
- Eliminate Repetitive Strain Injuries Such as CTS
- Perform Non-Destructive & Destructive Testing
- Calibrate in the Field
- Variable Speed Motor



## 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

### Non-Destructive Testing:

The Cap Inspector may be easily programmed to apply torque in the opening direction until the breakaway 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 aluminum 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 measure 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).

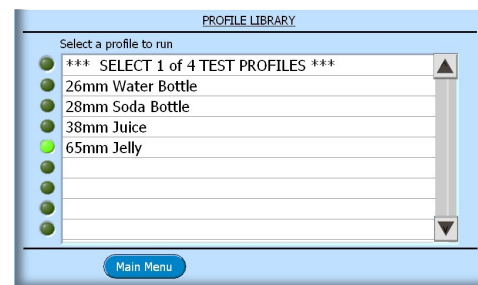


CAP INSPECTOR



## Torque Testing Made Simple

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



Profile Library

### User Friendly Testing:

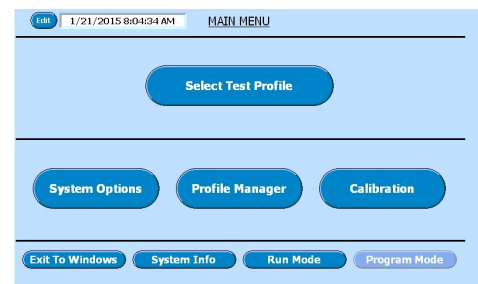


Start Test Screen

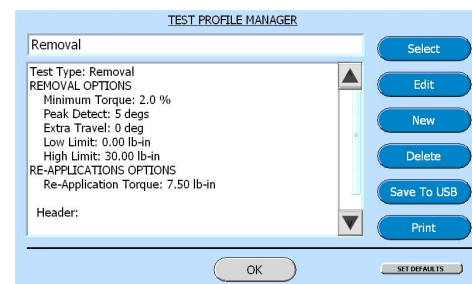


End Test Screen

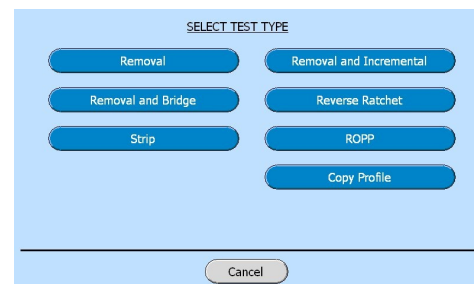
### Creating a Test Profile:



Main Menu

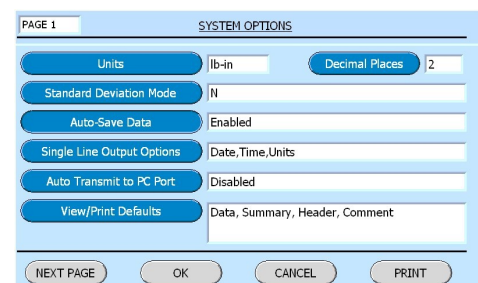


Test Profile Manager

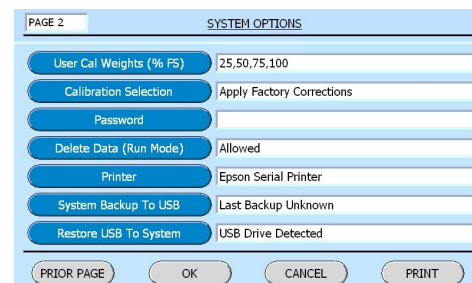


Select Test Type

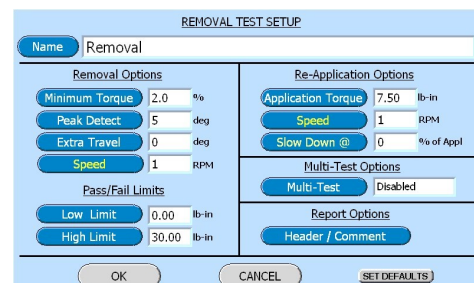
### System Options:



System Options 1



System Options 2

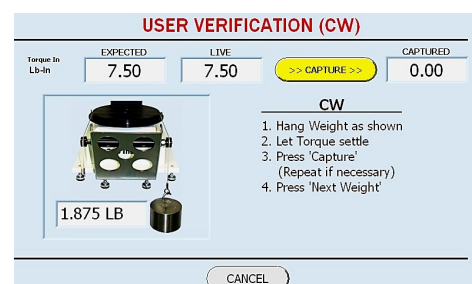


Test Setup

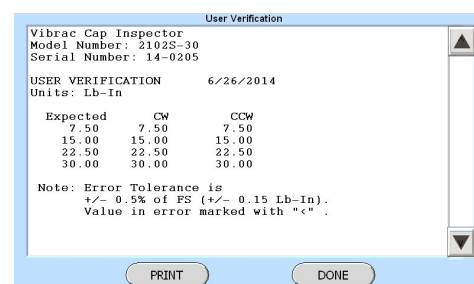
### Calibration and Verification:



Calibration Standard Bottle



User Verification



Verification Results

## 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

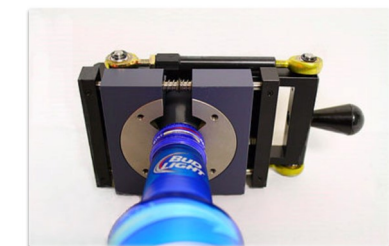
When caps are torque tested, the cap is held in a device called the cap chuck. Vibrac specializes in custom making chucks for any type of cap.



EDM Chuck



Printed Chuck



Model 2226 Slide Chuck



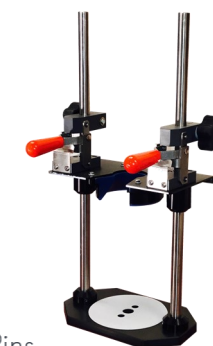
Model 2225 Special York Chuck

### 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 2224 EZ Clamp  
Single Action Adjustable Vise, with Pins



Model 2206 Beverage  
Bottle Clamp



Model 2206  
Base Plate Petaloid

Offset Fixture  
Dual Cap Testing



## 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.