Torqo II+™

Torqo II+ Test Modes

Removal: The removal test was created in order to gauge the IN/LB torque specification it would take for the cap to be removed by a consumer. The Torqo unit will open the cap to the point of release and when the encoder recognizes a max value (the encoder takes 6 points and looks for a maximum) it will begin to reapply the cap to a closed position thus not breaking the tamper evident band in the process.

Removal & Incremental: The test is designed to give operators a removal torque reading and from there the cap will be reapplied 6 degrees past the original starting point. Industry engineers determined that 6 degrees was the optimal travel to re-apply the cap on product. The Torqo II+ Model 1600 has the ability to drive the cap past 6 degrees. These parameters can be changed within each test setting.

Removal & Bridge: Customers also wanted to see how much torque it would take to simply break the bridges within the cap. This test was developed to drive the cap in counterclockwise direction until it released and then continued to drive until the bridges and tamper evident band broke under the applied torque specifications.

Reverse Ratchet: The purpose of the test is to drive a child resistant cap (CR Cap) in the open direction without any downward force to measure the resistance of clicks of the CR cap. If the resistance of the clicks is too high, the cap may still be able to be removed by a child. The purpose of the test is to determine the proper value the cap will need to be applied at so that without adding any force the cap will remain sealed and the product inside inaccessible.

ROPP (Roll on Pilfer Proof): The ROPP test was introduced in 2009 and was put into place by the ROPP cap manufacturers. ROPP cap manufacturers indicated to companies such as a Bacardi and other wine companies that if they did not test the ROPP caps a certain way that they would not account for what they call their 'spinners." Essentially what a spinner is, is when a cap is 'rolled" on, sometimes the threads does not engage with the top of the bottle. While the bottle and the tamper evident band are in place, the cap will still spin on top since it is not completely engaged with the threads of the bottle top.

The ROPP profile tests three attributes:

1. Performs a removal test (1st Peak Torque).
2. Once the removal is performed the unit will drive the cap until the bands break (2nd Peak Torque).
3. Finally the unit will drive the cap until it completely strips (3rd Peak Torque).

Strip: The strip test was designed to simply see what the torque specification would be required to drive the cap in a clockwise direction (close) in order to break the band and remove the cap completely from a product. Testing parameters vary from industry to industry.

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Close: The close test was developed so that the Torqo system could be used as a capping device. Having the multi speed option on the unit is the best option due to the fact that the standard 1 RPM drive of the Torqo will take a longer period of time to cap a product at that slower speed. The multi-speed Torqo system has the ability to increase the drive speed up to 15 RPM if necessary. The child resistant feature can be utilized to apply downward pressure on the cap when performing a close test on beverage or pharmaceutical products.

Graph Display during Testing

- The Y axis represents Torque
- The X axis represents Time or 'Points"
- The tests are done according to time and not according to degrees of deflection.
- Advantage of the graph is that the operator can see the entire test being conducted in front of them and will be able to make notes of any inconsistencies that may become present. A spike in the graph can often indicate a faulty thread in the cap for example.

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