



Specialists in Filling & Capping

Torque Transducer

Calibrated, Precision Torque Feedback
For the MK VI Capping Head.



Automatic Cap Tightening & Undoing Torque Measuring.

- ✓ Independently calibrated strain gauge with +/- 0.1% Resolution.
- ✓ Developed with pharmaceutical legislation in mind to ensure compliance.
- ✓ Easily integrated into all our semi - and fully automatic capping machines.
- ✓ Live torque readings displayed via the touchscreen HMI control.
- ✓ Data capture and storage, with the ability to export via CSV, XML or US Digital-compliant file via USB or network integration.
- ✓ Control the undoing sample rate via the machine's HMI.
- ✓ Available to be fitted onto multiple heads at once enabling greater machine output.
- ✓ Can be combined with other systems such as machine vision for additional validation.



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Using Cap Coder's proven CC720 Mk6 Servo driven capping head integrated with the high precision torque transducer, has led to a very sophisticated and flexible torque testing unit that can be programmed in a number of ways.

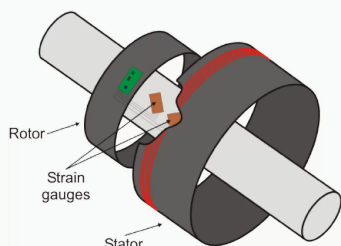
Cap Coders Torque Testing unit was developed in accordance with new Pharmaceutical legislation that requires validation of certain products and to ensure and prove that no unqualified products can proceed further through the manufacturing cycle.

In machines with a reject station, any product outside of the customers set torque tolerances are automatically rejected. On more manual machines an alarm is activated and/or a warning on the HMI indicating the failure and the machine will not operate again until the rejected product is removed.

Being able to integrate the units into any one of our range of capping machines means that we have integrated this system into the CC1440 bench top machine in laboratories running small-batch testing up to CC1160 Monoblocs running in a fully automatic production environment.

The Torque testing unit can be programmed in a number of ways, i.e. it might be desirable for the unit to test the release torque of one cap in every 10, 20 or 50 containers. In this scenario, the torque head will apply the cap, read and record the torque, then un-do the cap, again reading and recording the opening torque before it then re-applies the cap once more for it to continue onto the next cycle.

A Basic Understanding of Torque Transducers.



These transducers operate using a four-element strain gauge wheatstone bridge, which is connected to a miniature shaft mounted analog to digital converter and microcontroller. The microcontroller conditions and measures the strain gauge bridge output as close to the gauges as possible, eliminating any possible external noise pickup in the gauge wiring

The shaft mounted electronic module is wirelessly powered by a radio frequency source which drives a stator coil, the output of which is received by a rotor coil on the shaft thus making the system completely contactless. This eliminates the need for slip rings and their associated wear and noise issues.

The shaft microcontroller outputs a digital serial stream that is transferred back from rotor to stator by modulating the impedance of the rotor coil and detecting the impedance changes at the stator coil. A secondary high-performance microcontroller receives the serial stream from the shaft microcontroller, which then performs calibration and temperature compensation before outputting the results digitally via RS232, CAN bus or USB. A 16-bit digital to analogue converter also outputs the sensor's data as a fully calibrated and compensated analogue voltage or current



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