



# TORQUE MEASURING

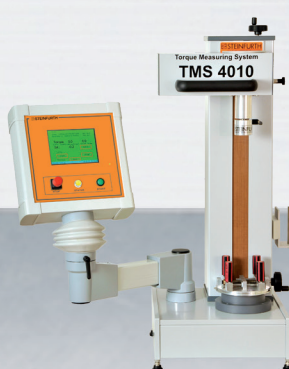
TMS 5000



TMS 4000



TMS 4010



TMS 2000



SF-TorqTraQ



## Perfect Closure Torque Monitoring

The opening torque of containers with screw-caps is an important quality parameter in the food, beverages and pharmaceutical industry and vital for customer satisfaction. The trend to newer and if possible less expensive packaging and package materials requires more detailed controlling of package specific quality parameters.

In case of industrial torque measurement on the one hand high precise, full automatic measurement devices are required, which are user independent and usable for measurement of opening behavior directly at the filling line.

On the other hand highly precise & flexible programmable measurement devices are needed, which are applicable for packaging and closure development, as well as approval of closures und packages. Additional instrument options are manual or mobile devices for torque measurement.

Steinfurth offers a wide range of torque instruments, optimally adapted to the individual customer requirements. Independent of location, Steinfurth solutions guarantee perfect results combined with easiest operation, low maintenance requirements and maximal process efficiency.

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## TMS 5000

### Automatic Closure Torque Measurement



The Steinfurth **TMS 5000** is the perfect instrument for development, design, dimensioning and approval of screw-caps, powerful tool for closures manufactures and at the same time optimal test equipment for package analysis and aproval in beverage, pharmaceutical and food companies.

The TMS 5000 fully automatic machine enhances by its extensive testing possibilities the analysis of any kind of closures (also child protected closures in the pharmaceutical industry).

Technical specifications	TMS 5000
Industry:	Beverages, Packaging, Pharmaceutical
Measuring results:	Torque, Closing Angle
Measuring object:	Screw-caps
Usage:	Measuring & Calibration
Measuring range:	0 - 50 in-lbs (standard)
Accuracy:	±0.25 % FS
Resolution:	0.03 in-lbs (50 in-lbs version)
Torque units:	adjustable
Memory:	Yes (according to configuration)
Data interface:	RS 232 (RS 485 optional)
Power Supply:	115-240 V, 50-60 Hz
Humidity protection:	IP 65
Dimensions:	approx. 600mm x 400mm x 900mm
Weight:	approx. 25 kg / 55 lb

The instrument is equipped not only with industry standard test procedures, but also with flexibly programmable measuring procedures exceeding the usual applications. Different limit, extreme and abuse situations can be simulated, which especially are important for the construction and dimensioning of screw-caps. The TMS 5000 also measures automatically the for the 1881 closures important closing angle. All measurement results are immediately available via the serial data interface (RS232) and at the same time visualized on the integrated display. An easy adaption of the TMS 5000 to all available closure types and forms is assured with a wide range of customized closure chucks. Customer individual measurement procedures are pre-programmed ex-factory, but flexibly adjustable by the operator to his later changed requirements. With its efficient and extreme precise measurement process, compact dimensions and the extensive testing and documentation possibilities the TMS 5000 is the international reference for torque testing devices. Especially by focusing optimal closure analysis in the area of package development and quality control during the production of closures and beverages the Steinfurth TMS 5000 is the most recommended solution.

#### Operation:

The constant Top Load is adjusted and the sample specific program chosen before the testing sequence is started. The test sample is fixed in the clamp mechanism of the TMS 5000 and afterwards with activation of the test automatically opened or closed. During the opening / closing progress the reactive torque is measured and the maximum value displayed and stored.

#### Benefits

- User independent, precise torque measurement
- Integrated industry standard procedures (like these of the ISBT)
- Very flexible, interactive programmable test procedures
- Easiest operation (in the lab or directly at the production line)
- Adjustable Top Load (via complementary standard weights)
- Complementary calibration kit
- Graphic visualization of torque moment
- Integrated measurement of closing angle (optional)





## TMS 4000/4010

### Automatic Closure Torque Measurement



The Steinfurth **TMS 4000/4010** is the perfect testing equipment for industrial torque measurement for quality control on screw-caps in beverage factories. The automatic, user independent function enhances the analysis of the opening behavior on closures by the line personnel (directly at the production line). The Steinfurth TMS 4000/4010 runs fully automated and reduces manual operation to the loading of the sample and the activation of the measuring process.

Technical specifications	TMS 4000/4010
Industry:	Beverages, Packaging, Pharmaceutical
Measuring results:	Torque, Closing Angle
Measuring object:	Screw-caps
Usage:	Measuring & Calibration
Measuring range:	0 - 50 in-lbs (standard)
Accuracy:	±0.25 % FS
Resolution:	0.03 in-lbs (50 in-lbs version)
Torque units:	adjustable
Memory:	Yes (according to configuration)
Interface:	Ethernet & RS232
Supply voltage:	115-240 V, 50-60 Hz
Humidity protection:	IP 65
Dimensions:	approx. 600mm x 400mm x 900mm
Weight:	approx. 25 kg / 55 lb

Thus, lab skills of the operator are no longer needed for a perfect measurement. The integrated color touch screen directly shows if the product quality tolerances were kept. The measuring results are available via data interface to the PC (or directly into the network). By outsourcing of the measurement from the lab to the production line, actual process times and so far needed sample logistic resources can be reduced dramatically. The TMS 4000/4010 is suitable for every type of closures (even child protected closures in the pharmaceutical industry). An easy adaption of the instrument to all available closure types is assured with a wide range of closure chucks. The complementary calibration kit and newest sensor technology guarantee high precision measurement results by very low maintenance requirements. Additionally, the TMS 4000/4010 is the only measuring device in the market equipped ex-factory with the complementary CPA 'Master' function. The instrument acts in context of the Steinfurth CPA concept as a central control unit ("Master") for all instruments linked with it. All measuring protocols are centrally available via data interface on the hard drive of the TMS.

#### Operation:

The constant Top Load is adjusted and the sample specific program chosen before the testing sequence is started. The test sample is fixed in the clamp mechanism and after the start of the test automatically opened or closed. During the opening/closing progress the reactive torque is measured and the maximum value color marked displayed and stored.

#### Benefits

- User independent, extreme precise torque measurement
- Integrated industry standard procedures (like these of the ISBT)
- Interactive programmable measurement process
- Easiest handling and operation (in the lab or directly at the production line)
- Adjustable Top Load (via complementary standard weights)
- Complementary calibration kit
- Automatic visualization and evaluation of the results
- Integrated CPA 'Master' functionality
- Central control and data management of all linked measurement devices possible



## TMS 2000

### Manual Closure Torque Measurement



The manual torque measuring device **TMS 2000** is perfect for routine quality checks on closures, where no special testing programs are needed. An easy calibration, very compact dimensions, integrated overload protection and robust construction create optimal benefits at an attractive price.

The test sample is fixed in the clamp mechanism and then manually opened or closed. During the opening/closing progress the reactive torque is measured and the maximum value displayed and stored.

## SF-TorqTraQ

### Mobile Closure Torque Measurement



The **TorqTraQ** is perfect for quick quality checks on filled products at the line or in warehouse or during maintenance. The need of a mobile and easy applicable device for torque measurement led to the TorqTraQ development. By the customized closure chuck a user independent connection between the torque sensor and the bottle closure or caper head is assured. The TorqTraQ is connected with the closure chuck to the test sample (fixed with one hand). By twisting the device with the other hand anti-clockwise, the opening torque is measured. During the opening/closing progress the reactive torque is measured and the maximum value displayed and stored.

Technical specifications	TMS 2000	SF-TorqTraQ
Industry:	Beverages, Packaging, Pharmaceutical, Food Industry	
Measuring results:	Torque	
Measuring object:	Screw-caps	Screw-caps & caper heads
Usage:	Measuring & Calibration	
Range:	0 - 50 in-lbs	2 - 50 in-lbs
Accuracy:	±0.5% FS	
Resolution:	0.1 in-lb	
Torque units:	adjustable	
Memory:	4000 results	250 results
Data Interface:	RS 232	USB
Humidity protection:	IP 54	
Battery life time:	approx. 1 week (rechargeable)	approx. 5-6 h (rechargeable)