

### Accessories

- Reaction system for torque wrenches max 600 Nm
- Bluetooth module for wireless external transducers
- Static transducers
- External Bluetooth transducers
- Wired dynamic transducers
- Tilting system
- External brake on telescopic arm



## Technical data

Dynamic Transducers	
Transducer	Capacity (Nm)
Freedom FTY 2	0,2 - 2
Freedom FTY 10	1 - 10
Freedom FTY 50	10 - 50
Freedom FTY 300	50 - 300
Freedom FTY 500	100 - 500
Freedom FTY 1000	200 - 1000



Advanced Tightening Solutions for Quality Control & Production

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**TIME**

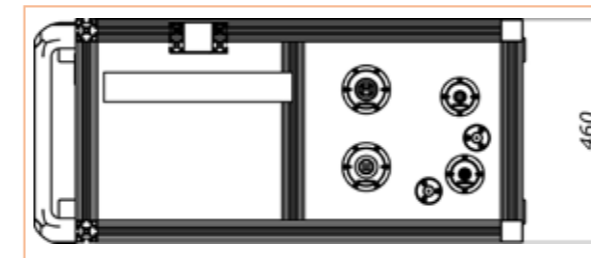
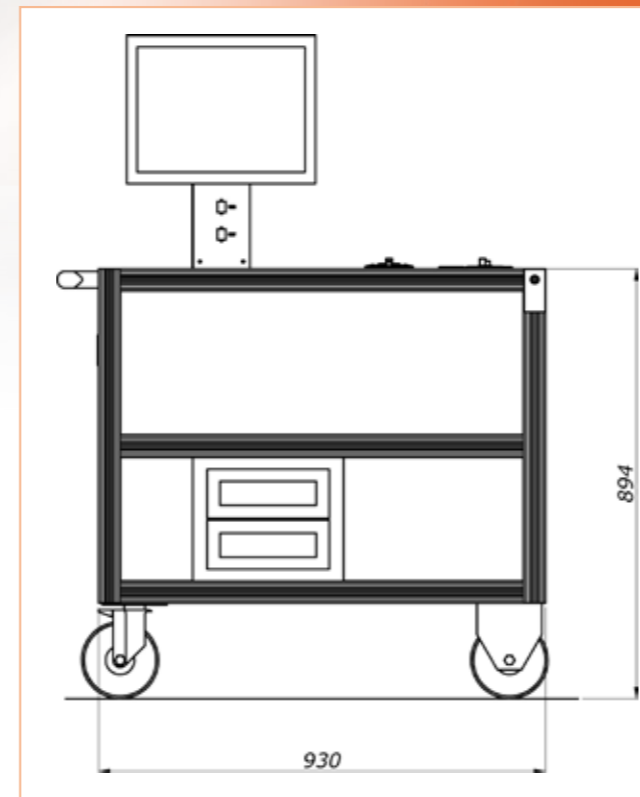
- Quick test. No calibration of the braking ramp required.
- Test of tools with the same tightening strategy used on production line.

**QUALITY**

- Test of digital torque/angle wrenches simulating the original fastener.
- Test of algorithm for automatic detection of the breakaway torque on digital torque wrenches
- Comparative tests
- Power tool tests up to 2000 rpm.

**COSTS**

- Plug & Play Braking units.
- Renewable brakes



Dimensions in the figure are referred to a bench with 10 - 50 - 300 Nm brakes

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Dynamic test bench

Dynamic test bench



## FTY: the first test bench on the market able to simulate the fastener in all its conditions.



Thanks to its technology developed by SCS, the FTY test bench is able to reproduce the fastener in each condition. This feature allows the test of the tools using the same strategy programmed in the production line.

On FTY is possible to define exactly the trace Torque/Angle of the fastener on which the tool is used. This allows to reproduce the behavior of the joint in any condition it is, at the beginning of the operation (completely untightened or partially untightened). Once entered the parameters the system is able to simulate any tightening strategy.

The FTY bench is not only able to simulate each step of the tightening, but allows you also to set the "START" of the simulation. This for the cases where the fastener arrives in the production station already pre-tightened.

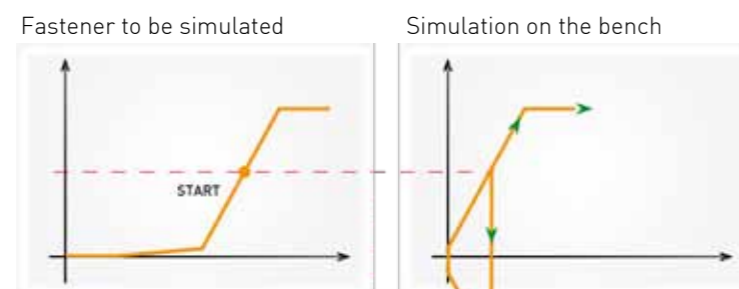
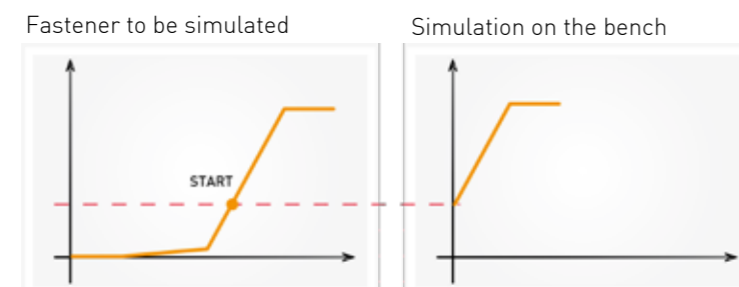
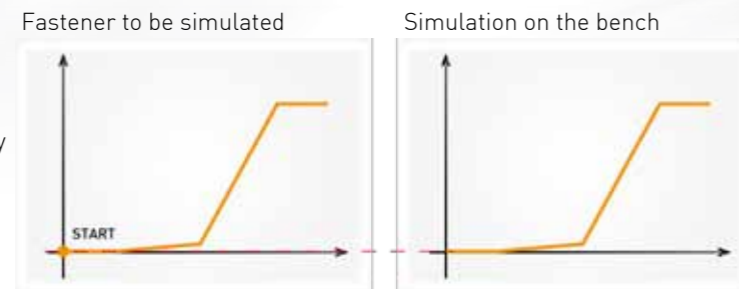


Example of parametrization of a fastener to be simulated:



A=Engaged  
B=Drawdown  
C=Joint Stiffness  
D=Yield

- Simulation of fastener completely loosed
- Simulation of fastener pre-tightened
- Simulation of fastener pre-tightened with untighten/tighten strategy



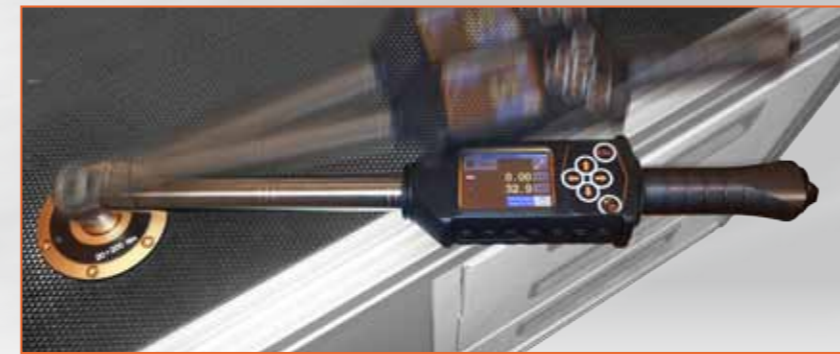
Breakaway simulation

Comparative test with possibility to receive the values measured on the tools or wrenches.

A function for manual input is available for instrument not yet compatible with FTY.

## Characteristics

- FTY is able to perform the test of digital torque/angle wrenches simulating the original fastener.
- Allows to check the automatic function for detecting the residual torque on digital torque wrenches.
- FTY simulates the already tightened fastener and the drop of torque caused by the transition from static to dynamic friction.
- Meets all requirements of VDI\VDE2647, VDI \ VDE2645 page 2 and ISO 5393.
- Allows to perform tests on DC tools, pneumatic tools, battery tools, digital torque wrenches (Torque/Angle) and click wrenches.
- Possible to execute tests in clockwise and counterclockwise.



Manual torque/angle test for digital wrenches

## Braking Technology

Innovative dry braking system with multiple hydraulic cylinders. The thrust is generated on both sides, to allow a better control of linearity of the braking ramp.

High test execution speed, thanks to the innovative mechanic and hydraulic system. FTY works with high pressures and a minimum amount of oil.

Real Time adjustment of braking ramp to obtain a repeatable joint simulation.



DRY Brake

## REAL TIME TEST

FTY is the only test bench on the market which is ready to use because it doesn't require any braking ramp calibration. Insert the test parameter and the bench is ready. The speed of data acquisition card and the new algorithm for simulation of the fastener allow the execution of the test in half time, compared to the market standards.



## Measurement Technology

New SCS acquisition electronic board with USB interface. Sampling frequency up to 30 kHz with settable Butterworth filter up to 3 kHz.

Accuracy of torque measurement from 10% of full scale < 0.5% Class 1 according to standard DIN51309

Accuracy of angle measurement < 0.25° according to VDI/VDE2648 page 1

Test of power-tools up to 1000 rpm with a minimum angle of 30°

Test of power-tools up to 2000 rpm with a minimum angle of 60°



## Service

The dry brakes and the automatic recognition of the braking unit and its operation parameters, allow SCS to propose two service concepts focused on the cost reduction:



### Service Concept 1:

Complete change of the braking unit (Plug & Play) WITHOUT further adjustments and optimizations necessary.

### Service Concept 2:

Quick change of the braking material can be performed also by the customer if duly trained. Thanks to the very low consumption of the braking material, the braking disks can be renewed and reused with performances like new one.

These two concepts allow maintenance costs and time reduction.

## Software

DataPro software pre-installed on FTY allows:

- Free test with storage of all results and the relevant traces.
- Displays traces of all results with overlapping function.
- Perform Cm/Cmk, Process Capability and compared test.
- Angle result calculated from the first exceeding of the threshold, or only from the threshold in the last step. This for tightening programs which provide more time the exceeding of the threshold.
- Click-point recognition for click wrenches.
- Possibility to save results and traces in different working sessions for the same test conditions.

