

Type 5413-5392/..

cerTEST mobile

Mobile testing device for torque tools

cerTEST mobile is a testing device for fast and precise testing of torque tools.

The compact dimensions and its line-independent battery operation enable it to be used directly on the assembly line.

- Testing of nutrunners in accordance with the requirements of VDI/VDE 2647 and VDI/VDE 2645 Part 2 up to 500 N·m
- Electronically controlled hydraulic joint simulators
- Testing of the torque and rotational speed behavior of pneumatic and electric nutrunners
- Torque testing of torque wrenches and impulse power-tools
- CEUS software platform

Description

The testing device consists of a mobile base unit with wraparound casing, which holds the hybrid joint simulators, the electronic measurement and control system, a hydraulic unit and the accumulator.

As an evaluation and operating unit, an optional rotating and tilting industrial PC system with a touchscreen and fold-out keyboard or a notebook on an optional notebook mount is used.

On the work surface of the testing device, up to four different joint simulators can be positioned side by side for testing the torque tools.

The torque tools to be tested are coupled to the joint simulators via square adapters as specified in DIN 3121.

The joint simulators with built-in torque and angle sensors and the hydraulic brake system enable an exact simulation of the joint hardnesses that occur in real-world situations as well those required for testing to ensure compliance with standards.



cerTEST mobile with optional industrial PC (IPC)

This allows rotating torque tools to be tested consecutively in different joint simulations as often as required and the gathered data to be documented.

The testing device can be operated via a cord to the power grid, as well as line-independently via a built-in rechargeable battery.

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Application

The tool to be tested or a corresponding test specification is selected or set in the Windows CEUS software via the evaluation unit, and the test program/test procedure is started.

During testing of rotating torque tools, the hydraulic joint simulators simulate joint hardnesses at fastening points. Rapid simulation of the desired joint hardness makes it possible to test a rotating torque tool in a very short time. (This depends on the joint hardness specified.)

During testing of torque wrenches the joint simulator is locked hydraulically, and the test item is loaded by hand.

All measured values are displayed on screen during testing and are subsequently analyzed by the CEUS software, evaluated according to specifications and used to create the certificate.



Nutrunner testing through electronically controlled joint simulators

Technical data

Maximum torque	500 N⋅m; depending on the simulator
Simulator selection for integrated sensors	2 N·m, 10 N·m, 20 N·m, 50 N·m, 120 N·m, 250 N·m, 500 N·m
Attainable measurement uncertainty for torque	
acc. to DIN EN ISO 51309	≤ 1 % of m.v.
Attainable measurement uncertainty and	
display deviation for angle of rotation (each)	≤ 1 °
Line voltage	115 V/230 V +/-10%
Line frequency	50 Hz/60 Hz
Power consumption	approx. 0.3 kVA
Accumulator	24 V / 40 Ah
Operating / Charging time for battery operation	8 hr / 8 hr for battery operation
Recommended minimum charging time	1x weekly 14 hr
Degree of protection (DIN EN 60529) cerTEST	IP 50
Optional industrial PC (IPC)	IP 51
Protection class (DIN EN 61140)	I
Maximum oil pressure	60 bar
Operating temperature range (nominal temperature range)	10 35 °C
Storage temperature range	-20 70 °C
Air humidity	max. 70%, non-condensing
Weight	approx. 280 kg 355 kg (depending on equipment)

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Joint simulators for nutrunners and impulse power-tools

Measuring range in N·m	Max. rotational speed in rpm
0.4 2 1)	3 000
2 10	2 500
4 20	2 500
10 50	600
25 120	600
50 250	250
100 500	100
200 1000 2)	60
400 2 000 2)	30
600 3 000 ²⁾	20
1200 6000 2)	10

1) Not approved for impulse power-tools!

2) Joint simulators > 500 N·m can only be connected as external joint simulators.

Up to 5 joint simulators in total can be connected simultaneously.



Connections

- 1 Manometer, hydraulic
- 2 Toggle switch, ON/OFF
- 3 Connections for external sensors (optional)
- 4 Temperature and humidity sensor (optional)
- 5 Connections for external simulators (optional)
- 6 Power plug
- 7 Socket (optional)
- 8 Socket fuse (optional)
- 9 Voltage indicator for accumulator

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Dimensions of cerTEST mobile







Device dimensions

Options

- Connections for external joint simulators
- Connections for external sensors
- Industrial PC (IPC)
- Notebook mount
- Label printer
- Barcode scanner
- Mechanical device for testing torque wrench
- Equipment variant: handling systems

- Equipment variant: nutrunner or spindle testing device with external joint simulator
- Equipment variant: cerTEST with swivel-mounted joint simulators
- Propulsion drive
- Special custom solutions

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Equipment variant

Optional handling system

The optional handling system up to 250 N·m can be used in conjunction with a cerTEST test device.

It can be used to make measurements on fastening systems in the production line that cannot be disassembled.

The handling system consists of a swivel arm with a swiveling simulator mount, which can be used in a radius of up to 1 950 mm. When not in use, the handling system can be decoupled from the cerTEST mobile and stored separately in one unit.

The stabilizer base with the four supports ensures safe conditions during both testing and storage.



Optional handling system

Technical data for optional handling system in addition to basic technical data

Maximum torque	250 N·m (Note the limited working range)	
Rotation range of the simulator mount	90° in both directions	
Maximum working range (radius)	approx. 1950 mm	
Working height	approx. 280 1680 mm	
Dimensions (WxDxH)	approx. 700 mm x 500 mm x 1920 mm	
when folded up		
Weight of swivel arm	approx. 35 kg	
Weight of base with supports downward	approx. 50 kg	
Hydraulic connection to cerTEST mobile	hydraulic hose, approx. 3 m	
Electrical connection to cerTEST mobile	measuring line, approx. 3 m	

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Dimensions of optional handling system







Device dimensions and working range

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Equipment Variant

Nutrunner or spindle testing device with external joint simulator

In combination with the cerTEST mobile testing device, the nutrunner or spindle testing device with an external joint simulator is used for testing nutrunners or spindles at higher torque. The torque working range is dependent on the joint simulators installed, maximum 6 000 N·m.

The testing device consists of a base unit on which the joint simulator holder and the counterbrace are located.

The testing device is available with an optional positioning unit for spindles (max. 2 000 $N \cdot m$).



Nutrunner testing device without positioning unit



Spindle testing device with positioning unit

- 1 Counterbrace
- 2 Attachment collars
- 3 Joint simulator
- 4 Spindle holder
- 5 Transport eyes

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Dimensions of nutrunner / spindle testing device



Device dimensions of spindle testing device with positioning unit

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Equipment variant

cerTEST mobile with swivel-mounted joint simulators

The testing device is equipped with a maximum of two fixed and three swivel-mounted joint simulators.

The swivel simulator mount is electrically maneuvered into the desired working position by means of two buttons on the left side of the housing and can be adjusted/set upright up to 90°. This allows torque tools to be tested in a vertical or horizontal position.

If an additional (sixth) external joint simulator is used (e.g., when the handling system is used), the fixed left joint simulator and the external joint simulator must be switched and the measuring line must be reconnected. The hydraulics switching is located on the work surface for this purpose. The measuring line must be reconnected on the right side of the test device.



 cerTEST mobile with swivel-mounted joint simulators



Device dimensions and working range

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Equipment variant

cerTEST mobile with swivel-mounted joint simulators and optional handling system

The optional handling system up to 250 N·m can only be used in combination with the cerTEST mobile testing device and within the specified limits of the simulators and mechanical systems.

It can be used to make measurements on fastening systems in the production line that cannot be disassembled. The handling system consists of a swivel arm with a swiveling joint simulator mount, which can be used in a radius of up to approx. 1 945 mm.

In addition, the selected swivel arm position can be stabilized by means of the clamping lever on the position lock. The base with supports downward is mounted on the right side of the testing device and provides additional stability to the assembly during operation.



cerTEST mobile with swivel-mounted simulators and optional handling system

Technical data for optional handling system in addition to basic technical data

Maximum torque	250 N·m (Note the limited working range)	
Rotation range of the simulator mount	90° in both directions	
Maximum working range (radius)	approx. 1945 mm	
Working height	approx. 350 1750 mm	
Dimensions (WxDx H)	approx. 700 mm x 500 mm x 2020 mm	
when folded up		
Weight of swivel arm	approx. 35 kg	
Weight of base with supports downward	approx. 45 kg	
Hydraulic connection to cerTEST mobile	hydraulic hose, approx. 3 m	
Electrical connection to cerTEST mobile	measuring line, approx. 3 m	

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Dimensions of optional handling system



Device dimensions and working range

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