ANDILOG TECHNOLOGIES

EDITION NO. 4

Force and Torque measurements

NEW

- EZ manual stand
- Dynamic torque sensors
- Ergonomics
- Force measurement testers for the building industry

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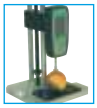

Texture

Metrology

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ANDILOG Technologies
BP 80 – FR 92370 Chaville

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Force measurement

CENTOR First

Simple and yet complete, **the CENTOR First** uses efficient technology to simplify force measurements, in tension and compression.

A big display shows the force measured in tension or compression in the unit selected by the operator: newtons, kilograms or pounds. The bar graph completes the measurement.

The 3 keys make it very easy to use this force gauge and access the essential functions: measurement of the peak tension or compression value, resetting to zero, and changing the measuring units. It is an ideal tool for basic tests during production. Its metal casing, protected by an elastomer overmould, gives it exceptional strength.
The internal sensor stands up to an overload of 200% of its maximum capacity.

Simple, precise, robust, supplied with its own carrying case, mains adaptor and certificate, ready for use, it is the basic tool for force measurement.

Technical characteristics

- Operates in tension and compression
- Accuracy 0.25% FS
- Resolution: 0.1 N
- Peak function for tension and compression
- Bar graph
- 3 units available: N, kg, lbs
- Sampling rate 1,000 Hertz
- Tare function
- Auto-off 15 min
- Reversible display
- Sensor protected from overloads up to 200% of its capacity
- Operates on rechargeable batteries
- Low battery indicator
- Memorizes its configuration
- 8 hours of operation without recharging
- Metal casing and protective elastomer overmould
- Threaded fixing holes on the back for use on test stand
- Calibration certificate included
- Supplied in carrying case with mains adaptor and accessories (hook, Ø 19 mm plate, extension cable)

MODELS	CAPACITIES	RESOLUTIONS
CNR FT 100	100 N	0.1 N
CNR FT 250	250 N	0.1 N
CNR FT 500	500 N	0.1 N
CNR FT 100 XZ	100 N	0.1 N
CNR FT 250 XZ	250 N	0.1 N
CNR FT 500 XZ	500 N	0.1 N

CENTOR First XZ, new model with RS232 output.

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Force gauges

CENTOR Easy

The **CENTOR Easy** force gauges are designed to meet the production needs of its users. This group offers several features which are indispensable today for Quality Control, for example: ease of reading with its large backlit graphical display, RS232 output, memory of the last 100 values and ability to set thresholds with visual and sound alarms.
Its highly efficient measurement chain enables it to use a sampling rate of 1,000 Hertz with a resolution of 1/10,000 FS and a total error of less than 0.1% FS.

A new STATISTICS feature is available on the new Centor EASY models: the average and standard deviation of the current batch are calculated and displayed after each measurement. All the values of the production batch are kept in the memory and can be sent to a computer by RS232. The operator is spared any data entry, knows his results in real time and saves everything at the end of the tests.

The entirely configurable RS232 output sends the data to a PC. A digimatic output can be used with a printer for statistics.

Designed for use in an industrial environment, it is an ideal tool for tests during production.

Technical characteristics

- Operates in tension and compression
- Accuracy 0.1% FS
- Resolution 1/10,000 FS
- Peak function for tension and compression
- Simultaneous display of the peak and the current reading
- Bar graph
- 5 units available: N, kg, lbs, g, oz
- Sampling rate 1,000 Hertz
- Can be used with a pedal
- Tare function
- Auto-off adjustable from 5 to 15 min, can be deactivated
- Programmable set point function
- Average and standard deviation functions
- Two-way RS232 output: transmission of current reading, minimum, or maximum, as desired
- Digimatic output
- 8 hours of operation without recharging
- Fast charge
- Reversible display
- Backlit display
- Sensor protected from overloads up to 200% of its capacity
- Operates on rechargeable batteries
- Low battery indicator
- Memorizes its configuration
- Metal casing and protective elastomer overmould
- Threaded fixing holes on the back for use on test stand
- Calibration certificate included
- Supplied in a carrying case with a mains adaptor and a set of accessories (hook, Ø 19 mm plate, extension cable)

MODELS	CAPACITIES	RESOLUTIONS
CNR EA 10	10 N	0.001 N
CNR EA 25	25 N	0.002 N
CNR EA 50	50 N	0.005 N
CNR EA 100	100 N	0.01 N
CNR EA 250	250 N	0.02 N
CNR EA 500	500 N	0.05 N
CNR EA 1000	1,000 N	0.1 N

New Statistics feature with calculations of the average and standard deviation

MES / ECH	3
OPER	01
Unit	N
STATS	MXI
Nbech	002
Average	12.33
001	12.334
001	12.332
001	12.331
002	12.335
002	12.334
002	12.330

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Force measurement

CENTOR Star

CENTOR Star is the most advanced force gauge currently available, **it has become the benchmark tool for force measurement**. Besides having all the functionalities of the CENTOR Easy, it also provides additional handy possibilities: with its graphic capabilities, it can calculate and display in real time, not only the maximum, but also the values of the particular points of the curve, such as the rupture force, force on a trigger, force at a given time, first peak, etc.
The new features:
– Maximum within a time window: makes it possible to define a particular time period for a test and to calculate the maximum force during that period while keeping the test maximum in memory
– Calculation of the time necessary to reach the maximum force in tension or compression
– Average force over the duration of the test

All these results are stored in memory (up to 100 tests) which allows statistics to be calculated on the maximum values and on configurable calculations, then sent to a PC along with the dates and times of the measurements.

Furthermore, it is possible to freeze its configuration to avoid handling errors.
It is the most versatile instrument designed for all tests in industrial surroundings.

SUPPLIED WITH CERTIFICATE

Technical characteristics

– Accuracy 0.1% FS
– Resolution 1/10,000 FS
– Peak function for tension and compression
– Simultaneous display of the peak and the current reading
– Display of the Force/Time graph
– Calculation of specific points of the graph:
  • Maxima
  • Maxima in a time window
  • Time necessary to reach maximum effort
  • Average over the duration of the test
  • Force at time T
  • Break point
  • Derivative
  • First peak
  • Force on opening/closing of contact
  • Average force
– Memorization of the last graph curve measured
– Bar graph
– 5 units available: N, kg, lbs, g, oz
– Sampling rate 1,000 Hertz
– Can be used with a pedal
– Tare function
– Auto-off adjustable from 5 to 15 min, can be deactivated
– Programmable set point functions
– Two-way RS232 output, transmission of the current reading, minimum, peak, or calculation
– Running transmission of 50 values per second
– Possibility of transmitting the graph curve memorized
– Digimatic output
– Memorization of 2 configurations
– Protection function (blocking) for the current configuration
– Automatic recognition of additional sensors
– Reversible display
– Backlit display
– Sensor protected from overloads up to 200% of its capacity
– Operates on rechargeable batteries
– 8 hours of operation without recharging
– Fast charge
– Low battery indicator
– Metal casing and protective elastomer overmould
– Threaded fixing holes on the back for use on test stand
– Calibration certificate included
– Supplied in a carrying case with a mains adaptor and a set of accessories (hook, Ø 19 mm plate, extension cable)

MODELS	CAPACITIES	RESOLUTIONS
CNR ST 5	5 N	0.0005 N
CNR ST 10	10 N	0.001 N
CNR ST 25	25 N	0.002 N
CNR ST 50	50 N	0.005 N
CNR ST 100	100 N	0.01 N
CNR ST 250	250 N	0.02 N
CNR ST 500	500 N	0.05 N
CNR ST 1000	1,000 N	0.1 N

DATASTICK
memory card reader
for transferring data

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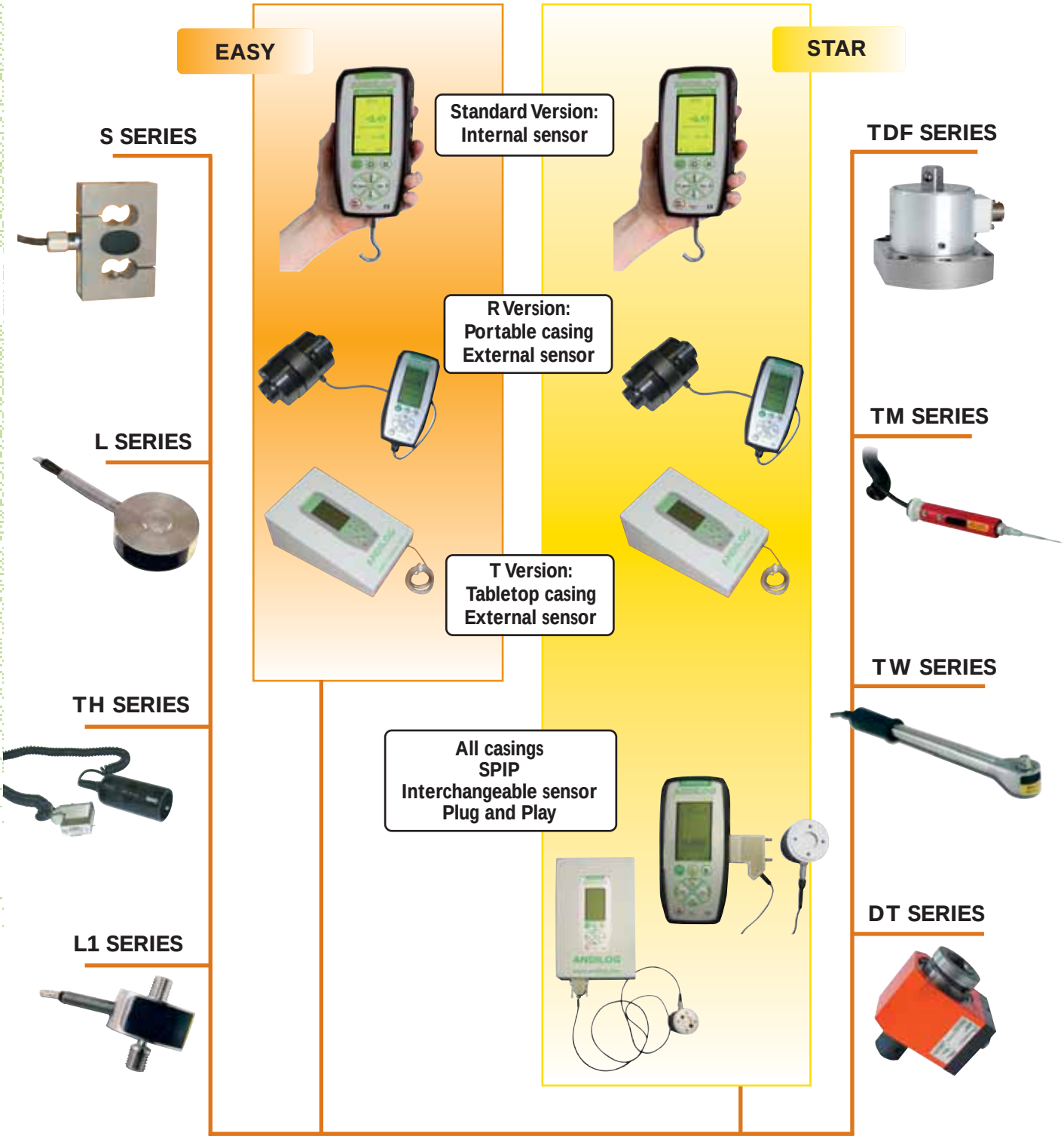
The Andilog line

Several types of Centor force gauges are available, depending on the desired use.
Up to a capacity of 1,000 N, the Centor Easy and Centor Star force gauges are commonly used with an internal sensor.
For larger capacities or when a special sensor is required (eg. miniature sensor), a Centor Easy or a Centor Star is used

- version R: the sensor is connected to a portable casing,
- version T: the sensor is connected to a tabletop casing.

When several sensors must be connected to the force gauge to address multiple different uses, the Centor Star (version R or T) supports the use of sensors with the SPIP system, working through "Plug and Play".

All of our force and torque sensors can be supplied with a choice of configurations.



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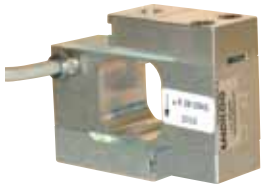
Force measurement

Additional force sensors

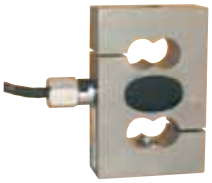
The additional force sensors are recognized by all the CENTOR Star and/or Dual force gauges and torque gauges, and they can complete a set of force/torque measurements at a very reasonable price.
The sensor characteristics are stored in the memory of an electronic circuit located inside the sensor connector. When the CENTOR Star or Dual instrument is switched on, the information is collected from the central memory and the instrument is automatically configured: it takes into account the type of sensor, its maximum capacity and its calibration data without the operator having to make any calibration adjustments.

STANDARD sensors, general purpose, tension and compression

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS	INFORMATION
SPIP S2-20	0.1% FS	20 N	0.002 N	Height: 60 mm
SPIP S2-50	0.1% FS	50 N	0.005 N	Width: 80 mm
SPIP S2-100	0.1% FS	100 N	0.01 N	Thickness: 26 mm
SPIP S2-200	0.1% FS	200 N	0.02 N	Thread: M 8
SPIP S2-500	0.1% FS	500 N	0.05 N	Protection IP65
SPIP S2-1000	0.1% FS	1,000 N	0.1 N	Protection from overloads



SPIP S2



SPIP S9

STANDARD sensors, heavy loads, tension and compression

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS	H	W	THICKNESS	THREAD
SPIP S9-2	0.1% FS	2 KN	0.2 N	88 mm	58 mm	24 mm	M 12
SPIP S9-5	0.1% FS	5 KN	0.5 N	88 mm	58 mm	24 mm	M 12
SPIP S9-10	0.1% FS	10 KN	1 N	88 mm	58 mm	24 mm	M 12
SPIP S9-20	0.1% FS	20 KN	2 N	100 mm	70 mm	31 mm	M 24 x 2
SPIP S9-50	0.1% FS	50 KN	5 N	100 mm	77 mm	37 mm	M 24 x 2

MINIATURE sensors, tension and compression

MODELS	ACCURACY	CAPACITIES	DIAMETER	HEIGHT	THICKNESS
SPIP L165-100	0.5% FS	0–100 N	26 mm	8 mm x 2	13 mm
SPIP L165-250	0.5% FS	0–250 N	26 mm	8 mm x 2	13 mm
SPIP L165-500	0.5% FS	0–500 N	26 mm	8 mm x 2	13 mm
SPIP L165-1000	0.5% FS	0–1,000 N	26 mm	8 mm x 2	13 mm
SPIP L165-2500	0.5% FS	0–2,500 N	26 mm	8 mm x 2	13 mm
SPIP L165-5000	0.5% FS	0–5,000 N	26 mm	8 mm x 2	13 mm
SPIP L165-10K	0.5% FS	0–10 KN	26 mm	10 mm x 2	18.5 mm

High capacities: on request

SPIP L165

SPIP L161

SUB MINIATURE sensors, compression only

MODELS	ACCURACY	CAPACITIES	DIAMETER	HEIGHT
SPIP L161-50	0.5% FS	0–50 N	10 mm	5 mm
SPIP L161-100	0.5% FS	0–100 N	10 mm	5 mm
SPIP L161-250	0.5% FS	0–250 N	10 mm	5 mm

MINIATURE sensors, compression only

SPIP L163-50	0.5% FS	0–50 N	20 mm	7 mm
SPIP L163-100	0.5% FS	0–100 N	20 mm	7 mm
SPIP L163-250	0.5% FS	0–250 N	20 mm	7 mm
SPIP L163-500	0.5% FS	0–500 N	20 mm	7 mm
SPIP L163-1K	0.5% FS	0–1,000 N	20 mm	7 mm
SPIP L163-2,5K	0.5% FS	0–2,500 N	20 mm	7 mm
SPIP L163-5K	0.5% FS	0–5,000 N	20 mm	7 mm

SPIP L163

SPIP L160

MINIATURE HIGH CAPACITY sensors, compression only

SPIP L160-5K	0.5% FS	0–5,000 N	32 mm	11 mm
SPIP L160-10K	0.5% FS	0–10 KN	32 mm	11 mm
SPIP L160-25K	0.5% FS	0–22 KN	38 mm	16 mm
SPIP L160-50K	0.5% FS	0–45 KN	38 mm	16 mm

Special sensors on request

HIGH CAPACITY pancake-type sensors, tension and compression

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS	INFORMATION
SPIP L290-1K	0.1% FS	0–1 KN	0.002 N	Diameter: 35 mm
SPIP L290-2K	0.1% FS	0–2 KN	0.005 N	Thickness: 105 mm
SPIP L290-5K	0.1% FS	0–5 KN	0.01 N	Thread: 2 x M16
SPIP L290-10K	0.1% FS	0–10 KN	0.02 N	
SPIP L290-25K	0.1% FS	0–25 KN	0.05 N	
SPIP L290-50K	0.1% FS	0–50 KN	0.1 N	

SPIP L290

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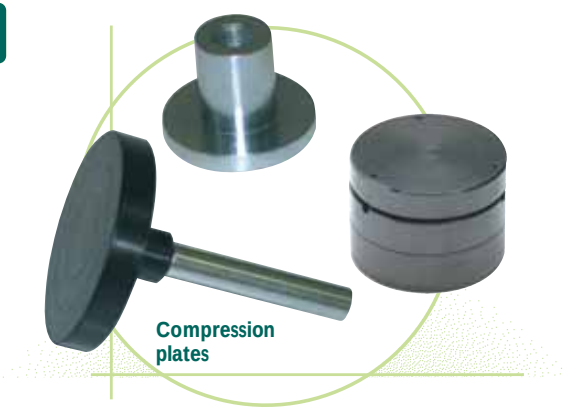
Other elements

Accessories

Plates

Several types of plates to suit each type of test:

AC PL 20A – Compression plate, 20 mm, aluminum
AC PL 50A – Compression plate, 50 mm, aluminum
AC PL 50S – Compression plate, 50 mm, steel
AC PL 100A – Compression plate, 100 mm, aluminum
AC PL 100S – Compression plate, 100 mm, steel
AC PLAJ – Compression plate, self-adjustable, 80 mm



Compression plates

Gripping fixtures

Mini grip

AC MAC 500 – Mini grip
All-purpose accessory for gripping cables or terminals. Stands up to forces of 500 N, grip opening 5 mm.

Self-closing grip high capacity 5 KN

AC MAC 5KN – Self-closing grip
All-purpose accessory for gripping cables or terminals. Stands up to forces of 5,000 N, grip opening 10 mm.

Fast-closing grip

AC MACSPD – Fast-closing grip
All-purpose assembly equipped with a spring for a quick sample change. Stands up to forces of 500 N, grip opening 10 mm.

AC PINCE – Pin vise
Ideal for small components, grip opening 5 mm, maximum force 100 N.

Pin vise

AC MRPLAT – Film & paper grip
Used for paper, film or fabric samples, width 100 mm, grip opening 4 mm, maximum force 500 N.

Film & paper clamp

High-capacity grips

High-capacity 25 KN self-closing grip

AC MAC 25KN0 – Opening: width 25 mm – thickness 0 to 13 mm
AC MAC 25KN5 – Opening: width 25 mm – thickness 6 to 19 mm
AC MAC 25KN8 – Opening: width 25 mm – thickness 10 to 22 mm

High-capacity 50 KN self-closing grip

AC MAC 50KN0 – Opening: width 25 mm – thickness 0 to 13 mm
AC MAC 50KN5 – Opening: width 25 mm – thickness 6 to 19 mm
AC MAC 50KN8 – Opening: width 25 mm – thickness 10 to 22 mm

Tension tests on elastomers, fabrics

Pneumatic grips

AC FCA 2025 – Ideal handling accessory for tension tests on fabric, paper, packaging, plastics, soft materials, flexible materials. Opening and closing operated with a pedal to ensure fast and accurate entry. Maximum capacity 5,000 N opening 15 mm.

Handle for force gauge

Grips for force gauges

AC POIGD – Straight handle
AC POIGP – Revolver handle
AC POIGG – Side handles
AC POIMLF – Multifunction handle

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Other elements

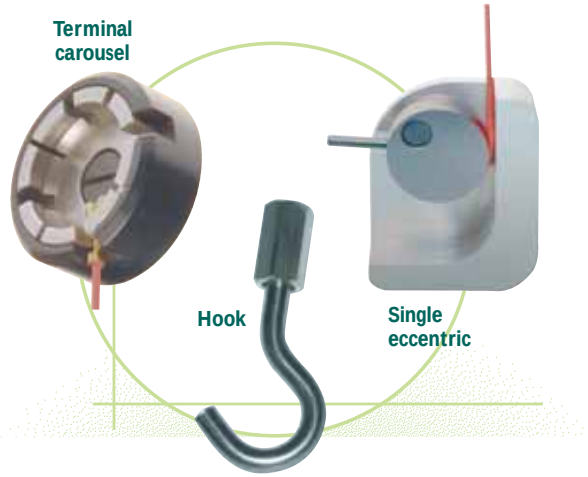
Accessories

Accessories for cables

AC COSSE – Terminal carousel
Fitted with numerous slots of regularly increasing sizes, this accessory holds assembled terminals, instant terminal placing, stands up to a force of 1,000 N.

AC EXCENT – Single eccentric
Grips cables without damaging the sheathing, stands up to a force of 500 N.

AC CRC – Hook
Hook, max admissible force 1,000 N.




Winding roller for wires

AC FIL1000
Used to hold small-diameter wires or strands. Fast and easy-to-use gripping system. Maximum capacity 1,000 N, maximum diameter 2 mm.

AC FIL5000
All-purpose support system with spool for tubes, cords, strands and cables. Maximum capacity 5,000 N, maximum diameter 5 mm.


ACFIL 5000

Accessories for corks and caps

AC NEZ – Flip cap
Accessory equipped with a specially-designed ratchet that measures the force needed to open caps, up to 100 N (on shampoo bottles and shower gels, toothpaste tubes, etc.).


Flip Cap


Corkscrew

AC TIRBOU – Corkscrew
Corkscrew conforming to the cork industry chart.

AC BOUCHON – Cork grip
Tightening grip for measuring the torsion torque necessary to open bottles of champagne, sparkling wine, cider, etc. Maximum cork diameter 35 mm.


Cork grip

Penetrators


Penetrator

AC TEXT08 – Standard penetrometer end fitting, diameter 8 mm

AC TEXT10 – Standard penetrometer end fitting, diameter 10 mm

AC SPHERE – Spherical penetrometer end fitting


Spherical penetrator

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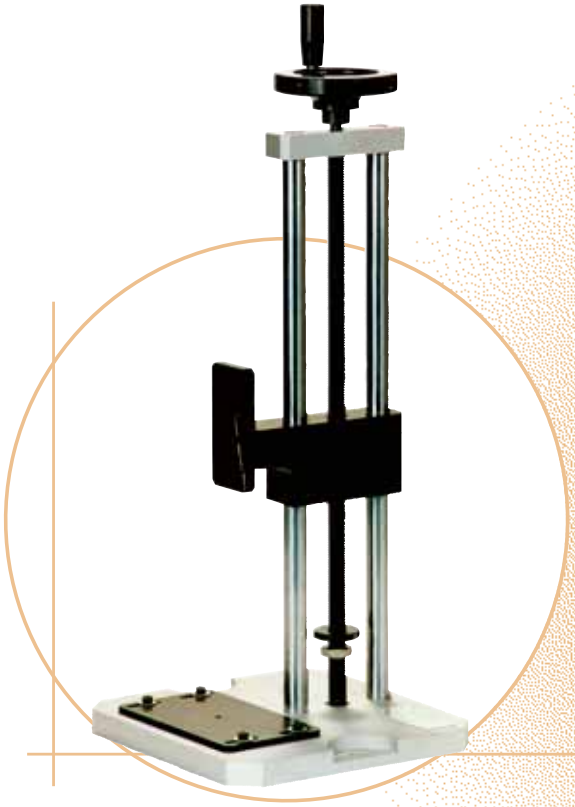
Test stands

BAT 750

To ensure correct positioning of the force gauge as compared with the sample tested, **the BAT 750 basic manual test stand** provides a solution that is easy to apply. It can be used in tension or compression, for tests requiring forces of up to 750 N.

The base is made up of a flat plate on which the sample to be tested is placed, and it holds two columns on which the sliding crosshead moves:
– The force gauge is fitted on the crosshead, which is free of play and has a travel distance of 300 mm.
– The crosshead is moved by hand, using a hand wheel at the top and a worm screw system.
– At the end of travel (lower end), the crosshead movement can be limited by an adjustable limit stop.
– The test stand can be used in a vertical or horizontal position.



MODEL	BAT 750
Capacity: maximum force in tension and compression	750 N
Travel	300 mm
Screw pitch	2 mm/revolution
Workable dimensions	90 x 120 mm
Maximum clearance below the crosshead	280 mm
Weight	7.5 kg
Overall dimensions without force gauge	Height: 580 mm Width: 230 mm Depth: 230 mm

Option: displacement sensor

The BAT 750 R basic manual test stand is fitted with a displacement sensor. The BAT 750 can be modified for more thorough tests. When the test conditions require measurement of displacement a digital sensor is fitted on the columns to enable the two measurements to be combined.

E-Z BASIC TEST STAND

Our E-Z test stand is an economical solution for performing tests in tension with force levels up to 1,800 N. The stand is moved using a worm screw system with a side handle:
– Optional high and low limit stops.

MODEL	E-Z
Capacity: Maximum force in tension	1,800 N
Travel	200 mm
Thread of the worm screw	4.5 mm
Workable dimensions	90 x 120 mm
Weight	15 kg

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Test stands

BATDRIVE

The BATDRIVE basic motorized test stand is a force gauge support designed to test samples at a regular speed. It is especially well-suited for small parts and for tests requiring low force levels (less than 500 N).

The base is made up of a flat plate receiving the sample to be tested and on which the column holding the mobile crosshead is fixed.
The force gauge is fitted on the crosshead, and it has a travel of 200 mm.
The adjustable mechanical limits block the travel to suit the test requirements.

The control console can be used to start the test, control fast upward and downward movement, and set the test parameters:

– speed setting between 10 and 120 mm/min, upwards and downwards;
– reversal or stopping of movement when the crosshead reaches the limit stops.

The speed and displacement values are shown continuously on the console display.

MODEL	BATDRIVE
Capacity: maximum force	500 N
Speed adjustable from	10 to 120 mm/min
Speed resolution	1 mm/min
Accuracy	5%
Fast displacement speed	200 mm/min
Travel	200 mm
Displacement resolution	0.05 mm
Accuracy	0.1 mm
Adjustable mechanical limit stops	yes
Workable dimensions	90 x 120 mm
Maximum clearance below the crosshead	240 mm
Overall dimensions without force gauge	Height: 880 mm Width: 230 mm Depth: 230 mm
Weight	22 kg
Mains power supply	220 V
Safety	Internal protection from overloads, protection using limit stops, emergency stop.

Also available in a horizontal version

STENTOR 1000 / 2500 / 5000

The STENTOR 1000, 2500 and 5000 are designed to carry out tests for all applications in which the displacement speed is specified by a standard, together with all applications in which the speed can have an influence on the measurement itself.
The base supports a large worktable, 300 x 450 mm, with easy access. Furthermore, fixing holes are provided to enable easy assembly of fixing tools.

The force gauge is fitted on the mobile crosshead, actuated by a ball screw system. Displacement is carried out using a linear guidance system inside the test stand body.
A system of adjustable mechanical or digital limit switches can be used to limit the crosshead travel to suit test requirements and protect the tools. Each limit switch has 2 functions: stop or reversal of direction for cyclical tests.

The control console can be used to start the test, control fast upward and downward movement, and set the test parameters:

- speed setting between 10 and 350 mm/min, upwards and downwards,
- stopping or reversal of movement when the crosshead reaches the limit switches,
- stopping or reversal of movement based on a displacement value (digital limit switches),
- stopping or reversal of movement based on the force value (optional),
- number of working cycles.

The speed and displacement values are shown continuously on the console display.

MODELS	STENTOR 1000	STENTOR 2500	STENTOR 5000
Maximum capacity	1,000 N	2,500 N	5,000 N
Crosshead travel	200 mm	300 mm	500 mm
Displacement resolution	0.01 mm	0.01 mm	0.01 mm
Accuracy	0.05 mm	0.05 mm	0.05 mm
Height between table and crosshead	400 mm	500 mm	750 mm
Adjustable speed	10 to 300 mm/min	10 to 300 mm/min	10 to 300 mm/min
Speed resolution	1 mm/min	1 mm/min	1 mm/min
Accuracy	5%	5%	5%
Fast displacement speed	350 mm/min	350 mm/min	350 mm/min
Workable dimensions	300 x 450 mm	300 x 450 mm	300 x 450 mm
Overall dimensions in mm	850 x 500 x 490	950 x 500 x 490	1,150 x 500 x 490
Weight	40 kg	50 kg	60 kg
Mains power supply	220 V	220 V	220 V

Safety: internal protections from overloads, protection using limit stops, emergency stop.

The STENTOR can be placed in a closed cabinet if sample rupture presents a risk for the operator.
In that case, the motor stops as soon as the cabinet door is opened.

Test stands

ATLAS 5 / 10 / 25

The ATLAS 5 to 25 KN test machine is designed to carry out tests in all cases where the force necessary is greater than 5 KN.
Its powerful motor and twin column structure give this machine the same basic functionalities as the STENTORS.

The base supports a large worktable with fixing holes provided for easy fitting of fixing tools.
The sensor is fitted on a mobile crossbar moved by a twin ball screw system. The mobile crossbar is guided by a system of twin columns inside the test stand body.
ATLAS machines use the same control consoles as STENTOR test stands.

MODELS	ATLAS 5	ATLAS 10	ATLAS 25
Maximum capacity	5 KN	10 KN	25 KN
Adjustable speed mm/min	10 / 140	10 / 140	10 / 140
Speed resolution	1 mm/min	1 mm/min	1 mm/min
Accuracy	5%	5%	5%
Crossbar travel	600 mm	600 mm	1,000 mm
Displacement resolution	0.01 mm	0.01 mm	0.01 mm
Distance between columns	350 mm	350 mm	350 mm
Overall dimensions in mm	1,300 x 680 x 530	1,300 x 680 x 530	1,700 x 735 x 530
Mains power supply	220 V	220 V	220 V
Weight	400 kg	500 kg	600 kg

Torque measurement

CENTOR W Easy

Using the CENTOR technology, **the CENTOR W Easy** digital torque gauges have a very large graphic display and show a maximum amount of information for more efficient measuring: they show the current reading and the peak value at the same time, and a bar graph to show the operator whether they are close to their maximum capacity. If necessary, the backlighting can be used to further enhance reading comfort.
Its advanced measurement chain enables it to use a sampling rate of 1,000 Hertz with a resolution of 1/10,000 FS and a total error of less than 0.5% FS.
Many other functions complete the possibilities of the gauge:

the Set point functions can be used to carry out "OK, NOK" tests: a symbol appears on the display.

The fully programmable RS232 output sends the data to a PC.
A digimatic output can be used with Mitutoyo statistical printers.

Technical characteristics

- Clockwise and counterclockwise measurement
- Accuracy 0.5% FS
- Resolution 1/10,000 FS
- Peak function in both directions
- Simultaneous display of the peak and the current reading
- Bar graph
- 3 units available: Nm, kg·cm, mNm
- Sampling rate 1,000 Hertz
- Can be used with a pedal
- Tare function
- Auto-off adjustable from 5 to 15 min, can be deactivated
- Programmable set point function
- Two-way RS232 output: transmission of current reading, minimum, or maximum values
- Digimatic output
- 8 hours of operation without recharging
- Fast charge
- Reversible display
- Backlit display
- Operates on rechargeable batteries
- Low battery indicator
- Memorizes its configuration
- Metal casing and protective elastomer overmould
- Calibration certificate included
- Supplied in a carrying case with a mains adaptor

TH Sensor

With TH "handle" sensor, low torque levels: used to measure low torque levels, screwing torque settings, or operating switches.
This sensor is protected mechanically from overloads.

MODELS	MODELS	CAPACITIES	RESOLUTIONS
Centor Easy	**Centor Star**		
CNR EA TH-0,12	CNR ST TH-0,12	0.12 Nm	0.01 mNm
CNR EA TH-0,3	CNR ST TH-0,3	0.3 Nm	0.03 mNm
CNR EA TH-1,5	CNR ST TH-1,5	1.5 Nm	0.1 mNm
CNR EA TH-6	CNR ST TH-6	6 Nm	0.6 mNm
CNR EA TH-12	CNR ST TH-12	12 Nm	1 mNm

Supplied with a carrying case. Technical characteristics of Centor Easy on page 12.
Technical characteristics of Centor Star on page 13.

TT Sensor

With "cylindrical" TT sensor: used to measure torques when the sensor has to be integrated in an assembly.

MODELS	MODELS	CAPACITIES	RESOLUTIONS
Centor Easy	**Centor Star**		
CNR EA TT-1	CNR ST TT-1	1 Nm	0.1 mNm
CNR EA TT-3	CNR ST TT-3	3 Nm	0.3 mNm
CNR EA TT-6	CNR ST TT-6	6 Nm	0.6 mNm
CNR EA TT-12	CNR ST TT-12	12 Nm	1.2 mNm
CNR EA TT-24	CNR ST TT-24	24 Nm	2.4 mNm
CNR EA TT-60	CNR ST TT-60	60 Nm	6 mNm

Supplied with a carrying case. Technical characteristics of Centor Easy on page 12.
Technical characteristics of Centor Star on page 13.

Torque gauges

CENTOR W Star

Besides having all the functionalities of the CENTOR W Easy, **the CENTOR W Star torque gauge** provides handy further possibilities: the graphic display shows the full graph Torque = C(t).
This gives you a general overview of the current test.
The torque gauge is able to make several types of calculations on demand (break point, first peak, average, torque at time T, etc.).

It is equipped with a special sensor recognition system. This means that a single instrument can read different sensors (several capacities, Force or Torque).

Furthermore, it is possible to freeze its configuration to avoid handling errors.
It is the most versatile instrument designed for all tests in industrial surroundings.

With TM "pencil" sensor, low torques: used to measure very low torque levels. Measurements are made easier by the sensor's lightness.

MODELS	MODELS	CAPACITIES	RESOLUTIONS
Centor Easy	**Centor Star**		
CNR EA TM-04	CNR ST TM-04	0.4 Nm	0.04 mNm
CNR EA TM-07	CNR ST TM-07	0.7 Nm	0.07 mNm

TM sensor

Supplied with a carrying case. Technical characteristics of Centor Easy on page 12.
Technical characteristics of Centor Star on page 13.

With TW "wrench" sensor: used to measure high torque levels and when the measurements cannot be made in the axis.

MODELS	MODELS	CAPACITIES	RESOLUTIONS
Centor Easy	**Centor Star**		
CNR EA TW-15	CNR ST TW-15	15 Nm	1.5 mNm
CNR EA TW-60	CNR ST TW-60	60 Nm	6 mNm
CNR EA TW-150	CNR ST TW-150	150 Nm	1.015 Nm
CNR EA TW-600	CNR ST TW-600	600 Nm	0.06 Nm

TW sensor

Supplied without carrying case. Technical characteristics of Centor Easy on page 12.
Technical characteristics of Centor Star on page 13.

Technical characteristics

- Clockwise and counterclockwise measurement
- Accuracy 0.5% FS
- Resolution 1/10,000 FS
- Peak function in both directions
- Simultaneous display of the peak and the current reading
- Display of the Torque/Time graph
- Calculation of specific points of the graph:
  - Maxima
  - Torque at time T
  - Break point
  - Derivative
  - First peak
  - Torque upon opening/closing of contact
  - Average torque
- Memorization of the last graph curve measured
- Bar graph
- 3 units available: Nm, kg·cm, mNm
- Sampling rate 1,000 Hertz
- Can be used with a pedal
- Tare function
- Auto-off adjustable from 5 to 15 min, can be deactivated
- Programmable set point functions
- Two-way RS232 output, transmission of the current reading, minimum, peak, or calculation
- Running transmission of 50 values per second
- Possibility of transmitting the graph curve memorized
- Digimatic output
- Memorization of 2 configurations
- Protection function (blocking) for the current configuration
- Automatic recognition of additional sensors
- Reversible display
- Backlit display
- Operates on rechargeable batteries
- 8 hours of operation without recharging
- Fast charge
- Low battery indicator
- Metal casing and protective elastomer overmould
- Calibration certificate included
- Supplied in a carrying case with a mains adaptor

Torque gauges

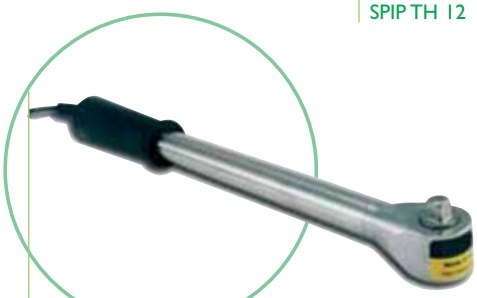
Static torque sensors

The additional torque sensors are recognized by CENTOR Star force gauge or torque gauge version instruments and can complete a set of force/torque instruments at a very reasonable price.

The sensor characteristics are stored in the memory of an electronic circuit located inside the sensor connector, and they are read by the CENTOR Star or Dual instrument, which is automatically configured and becomes a torque gauge without the operator having to make any adjustments.

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS
SPIP TM 0.4	0.5% FS	0.4 Nm	0.05 mNm
SPIP TM 0.7	0.5% FS	0.7 Nm	0.07 mNm

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS
SPIP TH 0.12	0.5% FS	0.12 Nm	0.01 mNm
SPIP TH 0.3	0.5% FS	0.3 Nm	0.03 mNm
SPIP TH 1.5	0.5% FS	1.5 Nm	0.1 mNm
SPIP TH 6	0.5% FS	6 Nm	0.6 mNm
SPIP TH 12	0.5% FS	12 Nm	1 mNm



MODELS	ACCURACY	CAPACITIES	RESOLUTIONS
SPIP TW 15	0.5% FS	15 Nm	1 mNm
SPIP TW 60	0.5% FS	60 Nm	6 mNm
SPIP TW 150	0.5% FS	150 Nm	0.02 Nm
SPIP TW 600	0.5% FS	600 Nm	0.06 Nm

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS
SPIP TT 0.05	0.5% FS	0.05 Nm	0.005 mNm
SPIP TT 0.15	0.5% FS	0.15 Nm	0.02 mNm
SPIP TT 0.35	0.5% FS	0.35 Nm	0.03 mNm
SPIP TT 0.75	0.5% FS	0.75 Nm	0.1 mNm
SPIP TT 1	0.5% FS	1 Nm	0.1 mNm
SPIP TT 3	0.5% FS	3 Nm	0.3 mNm
SPIP TT 6	0.5% FS	6 Nm	0.6 mNm
SPIP TT 12	0.5% FS	12 Nm	1 mNm
SPIP TT 24	0.5% FS	24 Nm	2 mNm
SPIP TT 60	0.5% FS	60 Nm	5 mNm

MODELS	ACCURACY	CAPACITIES	RESOLUTIONS
SPIP TDF 150	0.5% FS	150 Nm	0.02 Nm
SPIP TDF 300	0.5% FS	300 Nm	0.03 Nm
SPIP TDF 600	0.5% FS	600 Nm	0.06 Nm
SPIP TDF 1200	0.5% FS	1,200 Nm	0.12 Nm

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Torque gauges

Dynamic torque sensors

The dynamic torque and angle sensors round out the line of ANDILOG sensors. Related to the Centor family of instruments, they are the product of 20 years of experience in torque and angle measurement in industry and in laboratories. They are available in the DT version (torque measurement only) or DD version (simultaneous torque and angle measurement).

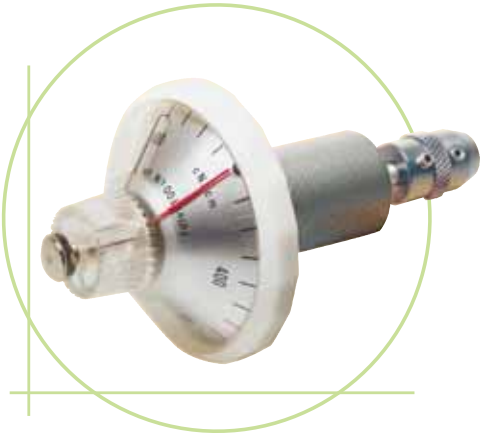
MODELS	CAPACITY	TORQUE RESOLUTION
SPIP DT 6	6 Nm	0.6 mNm
SPIP DT 12	12 Nm	1 mNm
SPIP DT 24	24 Nm	2 mNm
SPIP DT 60	60 Nm	5 mNm
SPIP DT 150	150 Nm	0.02 Nm
SPIP DT 500	500 Nm	0.05 Nm

The DD series of dynamic torque sensors have a rotative encoder integrated to the torque sensor. This technology ensures great precision in torque and angle measurement, compactly and at a limited cost.

MODELS	CAPACITY	RESOLUTION OF TORQUE	RESOLUTION OF ANGLE
SPIP DD 6	6 Nm	0.6 mNm	0.1°
SPIP DD 12	12 Nm	1 mNm	0.1°
SPIP DD 24	24 Nm	2 mNm	0.1°
SPIP DD 60	60 Nm	5 mNm	0.1°
SPIP DD 150	150 Nm	0.02 mNm	0.1°
SPIP DD 500	500 Nm	0.05 mNm	0.1°

Basic mechanical torque gauge

A simple torque gauge, particularly well suited for any low-torque measurement in production or in a laboratory. With its small size, it is irreplaceable for small torques and for handling switches for regulating or plastic screws.



MODELS	CAPACITIES	RESOLUTIONS
CM10 K00050	0.04–0.5 Ncm	0.04 Ncm
CM10 K00150	0.1–1.5 Ncm	0.1 Ncm
CM10 K00300	0.2–3 Ncm	0.2 Ncm
CM10 K00600	0.4–6 Ncm	0.4 Ncm
CM20 L00002	2–20 Ncm	2 Ncm
CM20 L00004	5–40 Ncm	5 Ncm
CM20 L00008	10–80 Ncm	10 Ncm
CM20 L00016	20–160 Ncm	20 Ncm
CM20 L00032	40–320 Ncm	40 Ncm
CM20 L00050	50–500 Ncm	50 Ncm

Technical characteristics

- Clockwise and counterclockwise measurement
- Accuracy 2%
- Supplied as a box set

Two-channel measurement

CENTOR Dual

Thanks to its ability to read two sensors simultaneously with a 1,000 Hertz sampling rate, **CENTOR Dual** is a true test console. It offers all of the functionality of an efficient force gauge, **its calculating power enables it to save values from two different sensors simultaneously**, to monitor set points and to perform calculations on each channel.
It also traces an F1/F2 graph on its display or even a Force/Displacement graph, as it can also read potentiometric rules and incremental encoders.

It is the simplest and most complete scalable system for approaching the most diverse and thorough tests in a workshop or laboratory.

Technical characteristics

- Simultaneous reading on two channels
- Operates in tension and compression
- Accuracy 0.1% FS
- Resolution 1/10,000 FS
- Peak function for tension and compression
- Simultaneous display of the peak and the current reading
- Display of the Force/Displacement graph
- Calculation of specific points of the graph for each channel:
  - Maxima
  - Force at time T
  - Break point
  - Derivative
  - First peak
  - Force on opening/closing of contact
  - Average force
  - Force for a given displacement
- Memorization of the last graph curve measured
- Bar graph
- 5 units available: N, kg, lbs, g, oz
- Sampling rate 1,000 Hertz
- Can be used with a pedal
- Tare function, independent on each channel
- Automatic tare possible at the beginning of the graph
- Auto-off adjustable from 5 to 15 min, can be deactivated
- Programmable set point functions for each channel
- Complete two-way RS232 output
- Running transmission of 25 value pairs per second
- Possibility of transmitting the graph curve memorized
- Digimatic output
- Memorization of 2 configurations
- Protection function for the current configuration
- Automatic recognition of additional force or torque sensors
- Recognition of sensors for incremental displacements (angular encoders or linear rules)
- Reversible display
- Backlit display
- Sensor protected from overloads up to 200% of its capacity
- Operates on rechargeable batteries
- 8 hours of operation without recharging
- Fast charge
- Low battery indicator
- Metal casing and protective elastomer overmould
- Threaded fixing holes on the back for use on test stand
- Calibration certificate included
- Supplied in a carrying case with a mains adaptor and a set of accessories (hook, Ø 19 mm plate, extension cable)

CENTOR DUAL internal sensor version

MODELS	CAPACITIES	RESOLUTIONS
CNR DL 5	5 N	0.0005 N
CNR DL 10	10 N	0.001 N
CNR DL 25	25 N	0.002 N
CNR DL 50	50 N	0.005 N
CNR DL 100	100 N	0.01 N
CNR DL 250	250 N	0.02 N
CNR DL 500	500 N	0.05 N
CNR DL 1000	1,000 N	0.1 N

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Two-channel measurement

CENTOR Dual Force and Couple

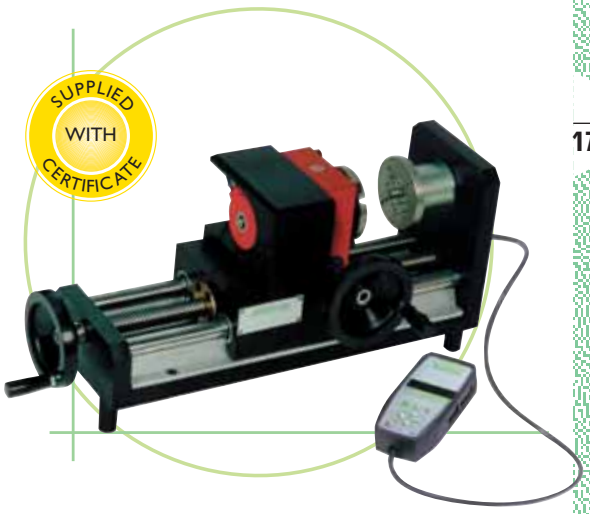
Thanks to the possibilities of the instruments in the CENTOR family and in particular to the power of the **CENTOR W Dual torque gauge with its combined force/torque measurements**, it is possible to show on the same display values provided by multi-component sensors.

By associating a Dual box and static TL twin component force/torque sensor, we can easily make combined measurements.

MODELS	CAPACITIES FORCE	RESOLUTIONS FORCE	CAPACITIES TORQUE	RESOLUTIONS TORQUE
CNR DL TF 2	250 N	0.02 N	10 Nm	1 mNm
CNR DL TF 5	500 N	0.05 N	15 Nm	1.5 mNm
CNR DL TF 10	1,000 N	0.1 N	20 Nm	2 mNm

TWIST torsion test stand

To carry out a precise, repetitive torque measurement, it is often necessary to use a torsion test stand.
The TWIST, 1 to 60 Nm torsion test stand with combined Torque/Angle measurement provides this function.
The torsion meter enables torsion tests to be made on various samples such as springs, metal or plastic parts.
It is made up of a horizontal, rigid test stand, with two rails to provide precision guidance.
One the test stand, there are two working heads that are fitted with vertical circular plates.
Thanks to its ability to read two sensors at the same time and with a sampling rate of 1,000 Hertz, the CENTOR W Dual makes an ideal test console for the TWIST test stand.
Its calculating power enables it to record values coming from two different sensors simultaneously, monitor the set points and make a calculation for each channel.
On its display, it shows a Torque/Angle graph curve.
It provides the simplest, most versatile system for dealing with the most wide ranging torsion tests in the workshop or in the laboratory.



MODELS	TWIST 1	TWIST 6	TWIST 12	TWIST 24	TWIST 60
Maximum capacity	1 Nm	6 Nm	12 Nm	24 Nm	60 Nm
Torque resolution	0.1 mNm	0.6 mNm	1 mNm	2 mNm	5 mNm
Angle resolution	0.1°	0.1°	0.1°	0.1°	0.1°
Space between plates	200 mm	200 mm	200 mm	200 mm	200 mm
Overall dimensions	H 300 x L 200 x 500 mm				

Motorized dynamic torque gauge

In order to measure the quality or the lifespan of rotative systems, it is often necessary to measure the torque evolution based on the number of revolutions or the angle.
This motorized system combines a CENTOR Dual and a dynamic torque and angle sensor to measure these characteristics on assembled parts. It is particularly suitable for measuring revolving switches, bearings, etc.

MODELS	CNR DLDT6	CNR DLDT12	CNR DLDT24
Maximum capacity	6 Nm	12 Nm	24 Nm
Torque resolution	0.6 mNm	1 mNm	2 mNm
Angle resolution	0.1°	0.1°	0.1°

CENTOR Manager

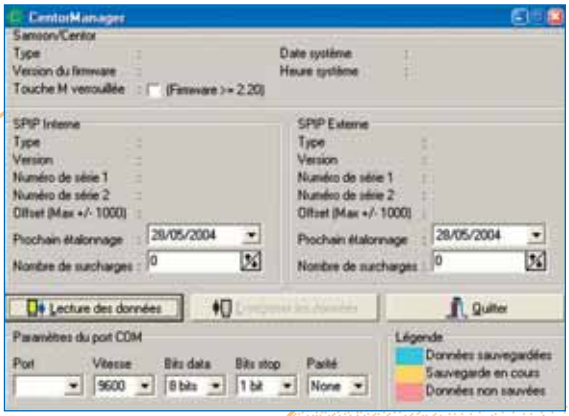
CENTOR Manager is a simple, user-friendly utility that enables you to communicate with your CENTOR Easy, Star or Dual memory.

It enables you to:

– modify the calibration date,
– reset the overload counter to zero if the sensor has not been damaged,
– block access to the menus and configuration.

The CENTOR configuration indicator is thus frozen and protected from any unwanted or inadvertent manipulations.

Requires a CNR CB RS2 connecting cable.



RSIC

With **the RSIC data acquisition software**, you can record your measurements directly using MS Excel. It makes it easier to record results and ensure traceability and processing; these are the main reasons for using this simple yet powerful software. Based on the modularity principle, RSIC is a gateway between any type of instrument equipped with an RS232 output and an MS Excel file. The values measured by the instrument are inserted into the spreadsheet cells. The operator can process the data as desired, using the spreadsheet functionalities.

Several modules are available and can be combined:

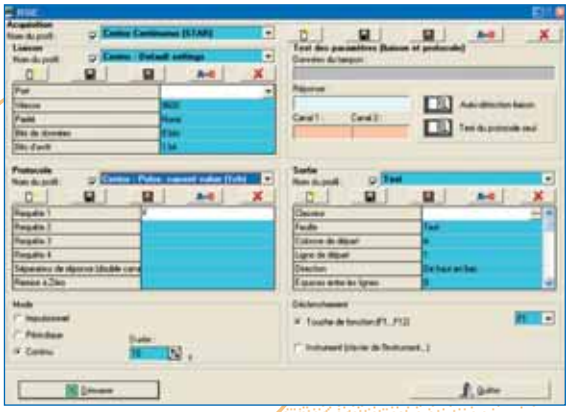
– Port programming module: speed, parity, etc.
Special function: RSIC instantly recognizes the ports available on your PC, and it automatically detects parameters.
– Instrument programming module: transmission of the command needed to trigger a response from the instrument.
Special function: RSIC can carry out a sequence of several requests to receive values of different types, if the instrument is able to supply them, possibility of use with twin-channel instruments.
– MS Excel file definition module: file name, direction of cursor movement during data capture.
Special function: The Excel cursor can be repositioned during data capture.

RSIC is supplied with modules prepared for instruments in the CENTOR family (force gauges and torque gauges, Easy and Star):

– capture and insertion of the current value, or the peak value in MS Excel, by pressing a key;
– capture and insertion of the current value in MS Excel continuously during a given period;
– capture and insertion in MS Excel of the graph curve as shown on the display (Star and Dual only).

And for the CENTOR Dual: identical modules for the value pairs transmitted via the 2 channels.

Requires a CNR CB RS2 connecting cable.



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Software

Connecting cables

Basic cable
RS232 cable for CENTOR Easy, Star and Dual:
link between the instrument and a computer via the RS232 port.
CNR CBRS2

RS232 cable for Centor First:
with send button
CNR CBRS2XS

Analog cable
For CENTOR Easy, Star and Dual: link between the instrument and an analog plotting table.
CNR CBANA

Stop cables
Between CENTOR Star and Dual and the STENTOR test stands:
with stop or reversal functions on force set points.
CNR CBST

Trigger cable
To freeze the force on the display upon external action
CNR CB TOP

Combined cable
RS232 cable and pedal on set point: enables the use of the RS232 output and can stop a stand at a predefined set point.
CNR CBRSA

Junction box
The junction box can simultaneously use the RS232 output, a pedal and the set point stop.
CNR CB TTR

Adaptator
The USB/RS232 adaptor: allows communication between Centor instruments through a USB port. All of the functionalities of the RS232 output are available.
This adaptor is also compatible with the RSIC data acquisition software.
CNR USB

SD card reader

SD memory card reader for the Centor Star and Centor Dual digital graphic force gauges. This new device makes it possible to save the values measured by the force gauge and then read them over on a computer for further processing. The number of values or graphs which can be stored depends only on the card's capacity. For example, a 16 MB card will store over 200 graphs. Also, a software utility provided with the card reader can help prepare test configurations: The values for the limits, the types of calculations, the values sent via RS232, and the statistical settings for the test to be prepared can be set… When the card is placed in the reader, the new settings are read, recognized and applied directly to the force gauge, without any action from the operator.
DATASTICK

Circuit breaker

EMERGENCY BOX
Developed for the design and construction of test benches, this box uses the capabilities of CENTOR force gauges and torque gauges in order to ensure the safety of the equipment.
When the set point function is activated, the box will immediately turn off the 220 V power supply upon reaching a preset force or torque.
For ease of use, a pilot light indicates the status of the box.
It is a simple accessory that increases the possibilities of CENTOR instruments.

Pedals

Pedals
Pedal for CENTOR Easy, Star and Dual:
This simulates a keystroke and can perform one of the following functions: RAZ, TDX, etc.
CNR CBPDL

Combined cable
RS232 cable and pedal
for CENTOR Easy, Star and Dual
Enables simultaneous use of the pedal and the RS232 output.
CNR CBPDY

Statistical printer

A small thermal printer to record the main statistical calculations and keep a print-out of batch measurements. Sold with a mains power adaptor and a roll of paper.
MTT DP1HS

Requires a CNR CB DG connecting cable.

DIGIMATIC cable for CENTOR Easy, Star and Dual:
link between the instrument and a Mitutoyo statistical printer.
CNR CBDG

Spring tests

Springtest 1

Basic tester

A very simple, economical system for checking compression springs. The measurement head gives the force applied, the displacement sensor shows the flexion or height measured under load. The parallelism of the lower plate can be adjusted to ensure correct seating for the spring. Ready to use system. Supplied with a Ø 50 mm fixed plate and a self-adjusting plate.

MODELS	MAX CAPACITIES	RESOLUTIONS	TRAVEL	DIAMETER
Springtest 1-10	0–10 N	0.001 N	200 mm	50 mm
Springtest 1-25	0–25 N	0.002 N	200 mm	50 mm
Springtest 1-50	0–50 N	0.005 N	200 mm	50 mm
Springtest 1-100	0–100 N	0.01 N	200 mm	50 mm

Displacement resolution: 0.01 mm

Springtest 2

Precision tester

A system specially designed for high precision measurements of compression. With its high reduction ratio, this manually operated test stand is well suited for the measurement of small springs with low force levels. The displacement sensor gives a measurement of the flexion or height measured under load with a resolution of 0.005 mm. The test stand is equipped with a set of adjustable limit stops. The measurement display shows the force and the displacement simultaneously and plots the graph curve for the spring. These data can be exported via the RS232 output of the display unit. The parallelism of the lower plate can be adjusted to ensure correct seating for the spring. An accessory kit can be used to make measurements on tension springs.

MODELS	MAX CAPACITIES	RESOLUTIONS	TRAVEL	DIAMETER
Springtest 2-10	0–10 N	0.001 N	100 mm	30 mm
Springtest 2-25	0–25 N	0.002 N	100 mm	30 mm
Springtest 2-50	0–50 N	0.005 N	100 mm	30 mm

Displacement resolution: 5 micrometers.

Springtest 3

Automatic tester

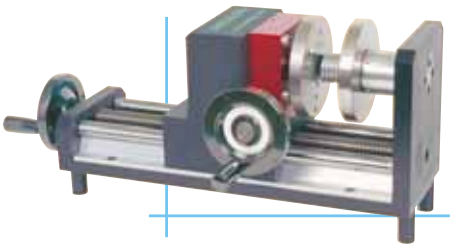
With its CENTOR Dual force gauge, fixed plate and adjustable plate, this unit can be used to test high capacity tension and compression springs. The command automatically determines the origin of the displacements and then stops the machine at a predetermined flexion value to measure the height under load. It is also possible to measure flexion, and cycles can be programmed. The instrument has an RS232 to store the results on a computer. Additional sensors are available to provide high levels of precision for springs with low force levels.
Ready to use system. Supplied with a Ø 100 mm fixed plate.

MODELS	MAX CAPACITIES	RESOLUTIONS	TRAVEL	DIAMETER
Springtest 3-250	0–250 N	0.025 N	300 mm	50 mm
Springtest 3-500	0–500 N	0.05 N	300 mm	50 mm
Springtest 3-1000	0–1,000 N	0.1 N	300 mm	50 mm
Springtest 3-2500	0–2,500 N	0.25 N	400 mm	50 mm

Springtwist

Torsion tester

Dedicated to controls on torsion springs, this manual torsion test stand is fitted with a CENTOR Dual. It shows the torque and angle values on the same display. It is supplied with a set of bored plates and fitted with locating pins to hold the springs in place.



MODELS	MAX CAPACITIES	RESOLUTIONS	TRAVEL	DIAMETER
Springtwist 05	0–0.5 Nm	0.0005 Nm	200 mm	200 mm
Springtwist 2	0–2 Nm	0.002 Nm	200 mm	200 mm
Springtwist 10	0–10 Nm	0.01 Nm	200 mm	200 mm

Additional sensors are available to provide high levels of precision for springs with low force levels.

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Wire tests and keyboard checks

Wire Test 1

Ideal for small cross-sections, the **WIRE TEST 1** instrument measures the pull-out forces for terminals up to 500 N. The force gauge can be set to beep as soon as the necessary force has been reached. The operator then stops the test without reaching the pull-out force. Ready to use system, supplied with a basic eccentric and a carousel.

MODEL	MAX CAPACITY	RESOLUTION	TRAVEL
WIRE TEST 1	0–500 N	0.05 N	200 mm
Max sample length: 200 mm			
Max wire diameter: 4.5 mm			

Wire Test 2

The **WIRE TEST 2** test bench is designed to test the quality of connections in place. The success of a connection is related to the quality of the setting tools and the proper adjustment of the setting machines. Because these settings tend to evolve over the course of production, it is essential to check them regularly. Measuring the force needed to pull out the connections is a quick and easy step that very clearly shows the condition of the setting.
Several aeronautic, automotive or railway standards define the test conditions: minimum acceptable forces depending on the diameter of the cable, tension rates, etc.
WIRE TEST II meets all those conditions. Thanks to its control console, the operator selects the settings for the tension rates, the return speed and the automatic return to the starting position. The force gauge displays the current values and the pull-out force.
These results can either be stored in the memory (up to 100 values) or even transferred to a computer. Designed for use in the production workshop, the WIRE TEST II guarantees a faultless wiring.
Maximum force 1,000 N, displacement length 200 mm, maximum length of samples 300 mm, sold with a carousel for terminals and an eccentric or an optional self-closing grip.
Also available with a 5,000 N capacity.

MODEL	MAX CAPACITY	RESOLUTION	TRAVEL
WIRE TEST 2	0–2,500 N	0.25 N	300 mm
WIRE TEST 3	0–5,000 N	0.5 N	500 mm
Max sample length: 200 mm			
Max wire diameter: 4.5 mm			

Tests on switches and keyboards

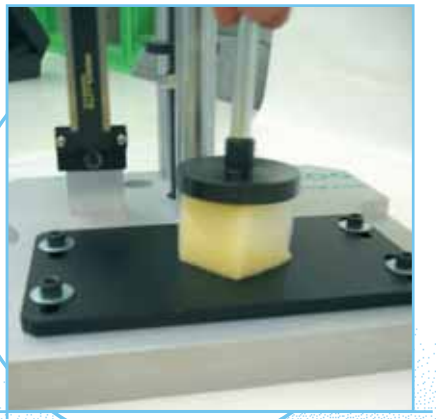
Thanks to its many calculation possibilities, the CENTOR Star force gauge can be used to fully characterize switches, contactors, circuit breakers and keyboards.
During the test, the CENTOR Star memorizes not only the maximum system opening force (mechanical force), but also the force exerted at the time of electric opening (or closing) of the contact (electric cut off function).
These two characteristics, which are always different, are essential in assessing the functionality and quality of keyboards and switches, and also those of cut off mechanisms such as circuit breakers.
All the measurements are made at a sampling rate of 1,000 Hertz, which ensures high levels of repetitivity and accuracy.
Both values are shown on the same display and are available for downloading via the RS232 output. The CENTOR Star is available in all capacities from 0–10 N up to 0–1,000 N and for this application it requires an additional optional CNR CB TOP cable.

Material strength

Measurement of elongation at rupture

STENTOR Dual and connecting cable

When coupled with the CENTOR Dual, the STENTOR motorized test stand becomes a simple, economical test machine for materials, able to capture force levels at break point and then stop the test stand once rupture has been detected. To measure displacement at the break point, the curve is plotted on the display, and the force at rupture and the distance of displacement are displayed simultaneously.
Using RSIC software, the operator can transmit the plotted graph curve and both results to a spreadsheet.
Robust, flexible, and designed for industrial use, this machine is particularly well suited for tests during production.



Tests on foams

STENTOR cycle options

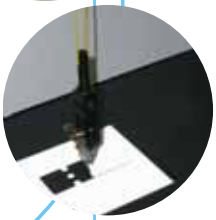
Thanks to the CYCLE function in its digital control system, the STENTOR is able to perform tests on foam and measure sets in foam materials.
The RS232 output transmits the Force and Displacement value pairs continuously to enable a computer to plot the complete curve.
A simple yet powerful instrument for carrying out complex tests.

Peeling tests

STENTOR and peeling table

When testing adhesives or materials made of twin component sheeting, and also to validate label manufacture, the opening of food trays, lid strength, etc., it is necessary to determine peeling forces:
this type of measurement is made easily by using the calculation functions of CENTOR Star and Dual.
They calculate the maximum force (peeling effect) and then the average force during peeling, fully quantifying the forces involved to separate the two elements.
These calculations can be programmed to suit the operator's requirements.

Peeling at 180°



Peeling at 90°

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Ergonomics

Ergokit

Our ERGOKIT line was specially designed to suit any situations encountered on the workstation: pulling, pushing, pressing with one's hand or finger, lifting… With its comfortable neck strap, the ERGOKIT is an ideal tool for ergonomics specialists and the IPCA wishing to check the level of strain developed by operators at their workstation. Our instruments are ready to use in a compact carrying case and come with a set of accessories: a tension hook, a compression plate, an extension, a large diameter hook, a large diameter push button, a key for pressions, a multifunction handle, an RS232 cable (except on version FIRST) and a shoulder strap.
All of our devices are sold with a calibration certificate.

Ergokit First

This is a simple and robust system (admitting twice its nominal capacity without damage) for directly reading the maximum value in tension or compression. This digital force gauge is essential for any "live" measurement or for one-off checks.
MAX and RAZ functions, auto off: 15 min.
Operates on rechargeable batteries.

MODEL	CAPACITY	RESOLUTION
ERGOKIT FT500	500 N	0.1 N

Ergokit Easy

THE ERGOKIT EASY is ideal for a direct reading of the maximum value and the current value simultaneously. It also enables two limits to be programmed to sound an alarm, which is essential to any precise measurement when checking for conformity to regulations. Thanks to its statistical functions allowing 100 values to be saved and the average value and the standard deviation to be displayed, it is easy to immediately determine the repeatability of the measurements.
The appliance comes with a COFRAC calibration certificate, as is Andilog procedure.
Operates on rechargeable batteries.
RS232 data output.

MODELS	CAPACITY	RESOLUTION
ERGOKIT EA100	100 N	0.01 N
ERGOKIT EA500	500 N	0.05 N
ERGOKIT EA1000	1,000 N	0.1 N

Ergokit Star

THE ERGOKIT STAR is the full system necessary for any serious ergonomic study, with its ability to directly show the test curve on the display, along with specific calculated items, such as the average force, the force at a particular time "t" or the bearing force.
Of course, it also allows the current value and the maximum value to be read, and it handles tolerance via the programming of the two set points that can trigger an alarm. Also, its memory can store 100 values and statistical calculations, and it allows other sensors to be read for torque or pinching measurements.

Torque measurement

Pinching measurement

Additional sensors available with Ergokit Star.

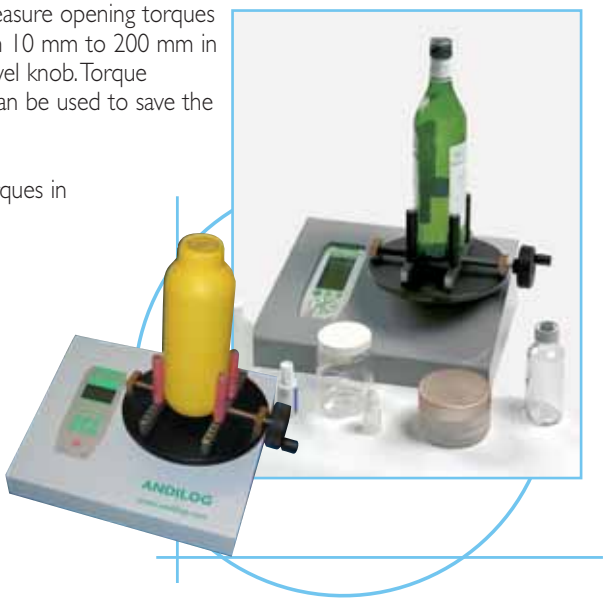
RS232 data output.
Shows the test graph.
Operates on rechargeable batteries.
Comes in its own carrying case with a mains adaptor and its certificate.

MODELS	CAPACITY	RESOLUTION
ERGOKIT ST100	100 N	0.01 N
ERGOKIT ST500	500 N	0.05 N
ERGOKIT ST1000	1,000 N	0.1 N

Packaging

Anditork

The ANDITORK bottle or jar opening tester is specially designed to measure opening torques for bottles and jars. It is equipped with a grip plate that holds products from 10 mm to 200 mm in diameter. The rubber-coated gripping fingers are adjusted quickly using a travel knob. Torque readings can be made by tightening or loosening it, and the RS232 output can be used to save the data to a PC.



The ANDITORK First is specially designed to measure opening/closing torques in production. Its ease of use makes it an invaluable tool for measuring the maximum torque:

MODELS	TORQUES	PRECISION	RESOLUTIONS	MAX DIAMETERS
Anditork FT 10	10 Nm	0.5% FS	0.1 Nm	200 mm

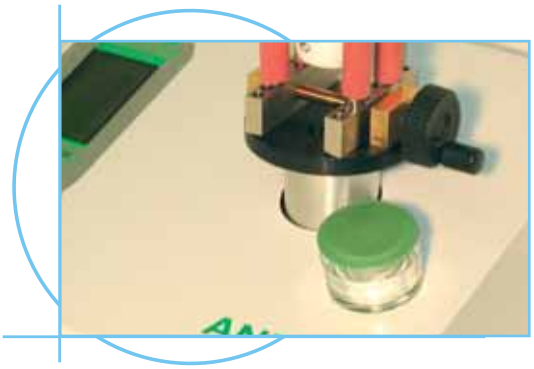
Options: The ANDITORK instruments are fitted with grip fingers as standard, but they can be supplied with gripping Vs on request.

The ANDITORK Easy is the most popular model due to its set point functions and its ability to communicate with a PC or a printer.

MODELS	TORQUES	PRECISION	RESOLUTIONS	MAX DIAMETERS
Anditork EA 3	3 Nm	0.5% FS	0.0003 Nm	200 mm
Anditork EA 6	6 Nm	0.5% FS	0.0006 Nm	200 mm
Anditork EA 10	10 Nm	0.5% FS	0.0001 Nm	200 mm

If the cap has a safety ring, the test can be carried out using **the ANDITORK Star**, which measures both the break (first peak) and the opening torque (max torque).

MODELS	TORQUES	PRECISION	RESOLUTIONS	MAX DIAMETERS
Anditork ST3	3 Nm	0.5% FS	0.0003 Nm	200 mm
Anditork ST6	6 Nm	0.5% FS	0.0006 Nm	200 mm
Anditork ST10	10 Nm	0.5% FS	0.001 Nm	200 mm



Microtork

The MICROTORK was specially designed for small bottles, and it is equipped with a small grip plate whose fingers can be used to hold small containers. Available in Easy and Star versions.

MODELS	TORQUES	PRECISION	RESOLUTIONS	MAX DIAMETERS
Anditork EA 1,5	1.5 Nm	0.5% FS	0.0001 Nm	50 mm
Anditork ST 1,5	1.5 Nm	0.5% FS	0.0001 Nm	50 mm

Anditork Security

The ANDITORK DL product is designed to measure opening torques with downward force. This procedure is used to check safety caps.
It is equipped with a grip plate that holds products from 10 mm to 200 mm in diameter. The rubber-coated gripping fingers are adjusted quickly using a travel knob. The operator applies downward force and opening torque in exactly the same conditions as the user, and both values are shown simultaneously on the measurement display. They can be transmitted to a computer via the RS232 output. The ANDITORK DL is available in 6 Nm and 10 Nm versions.

MODELS	TORQUES	PRECISION	RESOLUTIONS	DIAMETER	FORCES
Anditork DL 6	6 Nm	0.5% FS	0.0006 Nm	200 mm	100 N
Anditork ST 10	10 Nm	0.5% FS	0.001 Nm	200 mm	100 N

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Packaging

Drivetork EA

The DRIVETORK motorized opening torque measurement instrument is the ideal tool for production teams that have to carry out a large number of opening tests and wish to eliminate the variability linked to operators.
Many test conditions can be programmed: screwing movement, unscrewing movement, sequence screwing, and unscrewing movements, etc.
The speed is adjustable in both directions, from 1 to 20 rpm, the internal motor exerts the torque at a constant speed. The test is therefore always carried out in identical conditions. The height of the measuring head can be adjusted to take bottles from 100 mm to 300 mm in height. It is fitted with small jaws that grip the cap to be tested.
The torque curve is shown on the measurement display, which also calculates the maximum opening torque.
It can also be used to consecutively measure the rupture of security rings and the unscrewing torque.
Ready to use system, supplied with grip fingers.

Drivetork ST

Besides having all the functions of **DRIVETORK Easy**, the **Star version** can also carry out the rupture test when the cap has a security ring. It measures both the break (first peak) and the opening torque (max torque), and it displays the test curve.

Drivetork DL

The Drivetork DL
If you would like to measure the screwing angle, the Drivetork dual can carry out a simultaneous measurement of the torque and the angle.
The curve is saved and can be downloaded on a PC.
Angle resolution 0.1°
Maximum rate 10 rpm.

MODELS	Drivetork EA1 Drivetork ST1	Drivetork EA6 Drivetork ST6	Drivetork EA10 Drivetork ST10
TORQUES	1 Nm	6 Nm	10 Nm
PRECISION	0.5% FS	0.5% FS	0.5% FS
RESOLUTIONS	0.0001 Nm	0.0006 Nm	0.001 Nm
MAX DIAMETERS	100 mm	100 mm	100 mm
Max heights under head	300 mm	300 mm	300 mm
Max cap diameter	35 mm	35 mm	35 mm
Rotation speed adjustment	from 2 to 50 rpm	from 2 to 50 rpm	from 2 to 50 rpm
Speed resolutions	0.1 rpm	0.1 rpm	0.1 rpm
Accuracy	5%	5%	5%
Fast displacement speeds	35 rpm	35 rpm	35 rpm
Rotation angle display	in revolutions	in revolutions	in revolutions
Resolutions	0.1 revolution	0.1 revolution	0.1 revolution
Overall dimensions in mm	1,150 x 500 x 490	1,150 x 500 x 490	1,150 x 500 x 490
Weight	15 kg	15 kg	15 kg
Mains power supply	220 V	220 V	220 V
Safety: internal protection from overloads, emergency stop.			

Packaging

Top Load 1000/2500

The TOP LOAD 2500 bottle crushing system is specially designed to provide an easy method for carrying out compression tests on bottles and small containers.
The instrument can be used in the workshop or the laboratory. It is fitted with a wide plate. It can apply a force of 2,500 N, and it can be used for bottles up to a height of 400 mm. The force gauge shows the force applied and the maximum compression force directly.
The displacement display determines the value of the compression movement.
The control console is used to start the test, to control fast upward and downward movement and to adjust the test parameters such as the speed between 10 and 350 mm/min for raising and lowering the crosshead.
The speed and displacement values are continuously shown on the console display.
Also available in a 1,000 N capacity.
The system is supplied with a Ø 50 mm fixed plate.

MODELS	TOP LOAD 1000	TOP LOAD 2500
Maximum capacity	1,000 N	2,500 N
Crosshead travel	200 mm	300 mm
Height between plates	240 to 440 mm	240 to 640 mm
Displacement resolution	0.01 mm	0.01 mm
Accuracy	0.05 mm	0.05 mm
Adjustable speed	10 to 300 mm/min	10 to 300 mm/min
Speed resolution	1 mm/min	1 mm/min
Accuracy	5%	5%
Fast displacement speed	350 mm/min	350 mm/min
Overall dimensions	850 x 500 x 490 mm	950 x 500 x 490 mm
Weight	45 kg	50 kg
Mains power supply	220 V	220 V
Safety: protection overloads, protections by limit switches, emergency stop.		

Extractor 500

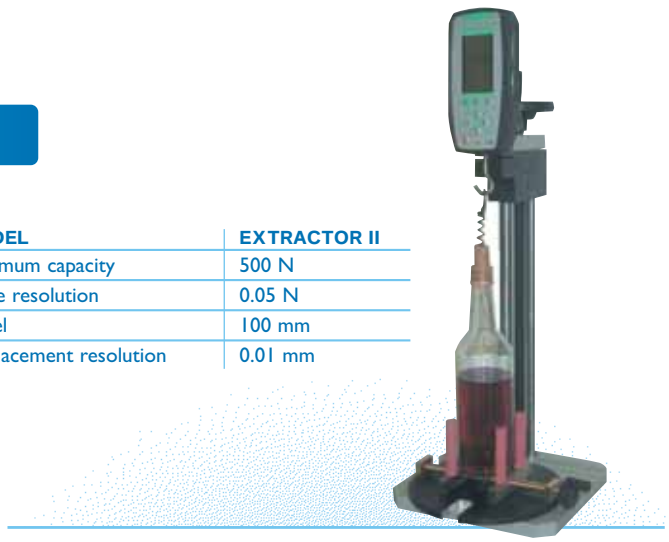
In conformity with the Cork Manufacturers Norm, this "corkscrew" instrument, the **EXTRACTOR 500**, uses a CENTOR First fitted with specific accessories to measure cork extraction force for still wines.
Simple and robust, it is hand-operated, just like an ordinary corkscrew, and it memorizes the maximum force applied by the operator.

- **Maximum force: 500 N**
- **Resolution: 0.1 N**

Extractor II

The Extractor II is a simple yet very useful tool for testing the force required for pulling out traditional corks. Equipped with accessories suited to gripping bottles and supplied with a "corkscrew" conforming with the Cork Manufacturers Norm.
It is an ideal small test stand for carrying out measurements in the production line for corks or bottling.
It can measure forces up to 500 N and can also save the results to a PC using transfer software (available as an option).

MODEL	EXTRACTOR II
Maximum capacity	500 N
Force resolution	0.05 N
Travel	100 mm
Displacement resolution	0.01 mm

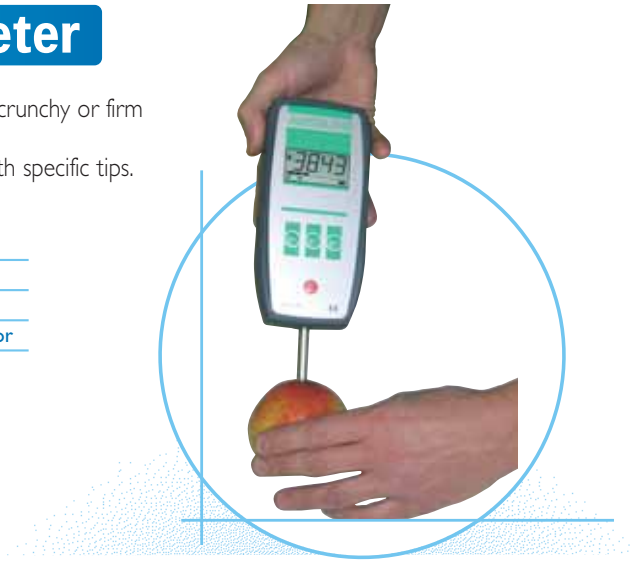


Texture

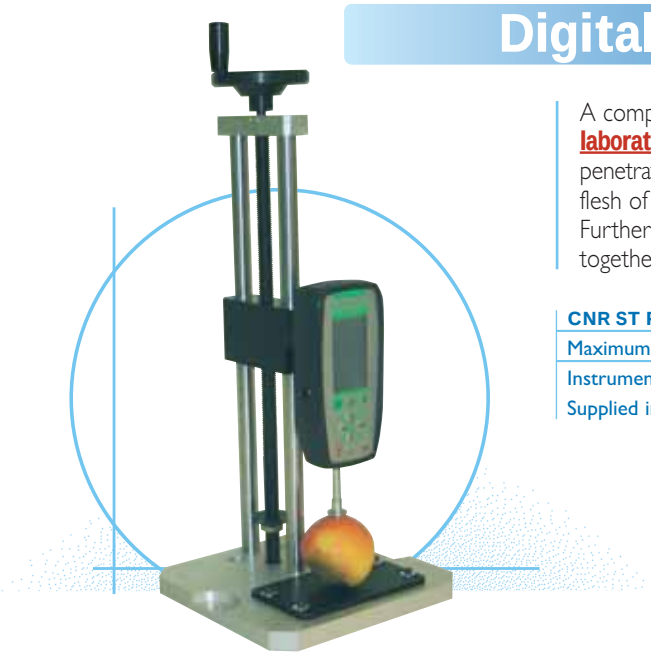
Basic digital penetrometer

The first compact digital penetrometer to measure ripeness in crunchy or firm fruits such as apples, pears, pineapples, etc.
Memorizes the maximum force penetration, supplied complete with specific tips.

CNR FT F&V
Maximum force 250 N, resolution 0.1 N
Operates using rechargeable batteries
Supplied in a carrying case with a Ø 10 mm penetrator and a mains adaptor
Additional accessories: Handle, stand for tabletop tests.



Digital laboratory penetrometer



A complete instrument to examine fruit ripeness, this **digital laboratory penetrometer** can be used to measure the force of penetration and also to trace the curve for penetration in the flesh of the fruit.
Furthermore, it is possible to transmit the values measured together with the graph curve to a computer via the RD232 link.

CNR ST F&V
Maximum force 250 N, resolution 0.02 N
Instrument displacement 300 mm
Supplied in a carrying case with a Ø 10 mm penetrator and a mains adaptor.

Textor III

For measurements of texture, consistency and firmness, ANDILOG has developed a texturometer, the **TEXTOR III**, automatic, simple and complete for tests of compression, compression tension and cycles.
The texture meter is available with several interchangeable measurement heads (10 N, 50 N and 100 N), and it can be connected to a computer to plot the graph curves and record the calculated values. A very wide range of penetrators and sensors (cylinders, cones, plates, spheres, needles) are available to deal with the different types of foodstuffs, gels, or paste products to be tested.
The instrument is supplied with a 100 N measurement head and a spherical penetrator.

MODEL	CAPACITY	TRAVEL	SPEED
TEXTOR III	100 N	200 mm	0.1 mm/s to 2 mm/s

Other measurement heads available: 10 N, 50 N.

Construction

Extractors

This EXTRACTOR force gauge has been specially adapted for measuring the strength of hundreds of types of fastenings in the areas of roofing, building, general industry, etc. Designed for pull-out tests and non-destructive tests.
It is suitable for all types of fastenings: welding, sticking, interlocking, screwing, etc.
This instrument can be used for tests in production, for quality control tests, or for designing new fastening systems.
With its wide 215 mm opening, it can test fastenings up to 90 mm in diameter as well as the majority of those used in the building industry. A special adaptor with a 150 mm diameter is available for measurements in confined places.
Maximum measurement display
Supplied with carrying and storage case.
Optional backpack available.


Digital extractor


Analog extractor

ANALOG EXTRACTOR

MODELS	CAPACITIES	PRECISIONS
TIRTEST A100	450 N	2% FS
TIRTEST A200	900 N	2% FS
TIRTEST A300	1.2 KN	2% FS
TIRTEST A400	1.8 KN	2% FS
TIRTEST A600	2.7 KN	2% FS
TIRTEST A1000	4.5 KN	2% FS
TIRTEST A2000	9 KN	2% FS
TIRTEST A4000	18 KN	2% FS

DIGITAL EXTRACTOR

MODELS	CAPACITIES	PRECISIONS
TIRTEST D0100	450 N	0.25% FS
TIRTEST D0200	900 N	0.25% FS
TIRTEST D0300	1.2 KN	0.25% FS
TIRTEST D0400	1.8 KN	0.25% FS
TIRTEST D0500	2.2 KN	0.25% FS
TIRTEST D0600	2.7 KN	0.25% FS
TIRTEST D0750	3.4 KN	0.25% FS
TIRTEST D1000	4.5 KN	0.25% FS
TIRTEST D1500	6.7 KN	0.25% FS
TIRTEST D2000	9 KN	0.25% FS
TIRTEST D3000	13.5 KN	0.25% FS
TIRTEST D4000	18 KN	0.25% FS
TIRTEST D6000	27 KN	0.25% FS

Andidoor

In compliance with the new EN12453 standards, **the ANDIDOOR can measure the closing of automatic doors on site**. Compact, light and self-contained, it can instantly measure and calculate dynamic and static forces.
Dynamic force between 0 and 0.75 s (< 400 N), FS1 from 0.75 to 5 s (< 150 N) and FS2 from 5 to 10 s (< 25 N).
It traces the curve on the display screen (and notes the set points to respect), saves the values in the memory (100 per calculation) and gives the statistical results for each calculation. All the values can then be saved to a PC for the test reports. If there is any doubt, the last curve saved can also be transferred to a computer for further study.
Supplied in its carrying case, it is a robust tool (screen protected by a neoprene shell, sensor protected against overloads) and it is invaluable for checking automatic doors, whether vertical or horizontal.
Supplied in a carrying case, with a mains adaptor, data transfer software, PC connecting cables and a COFRAQ certificate.

MODEL	CAPACITY	RESOLUTION	ACCURACY
ANDIDOOR	0–2,000 N	0.2 N	0.5% FS

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Special sensors

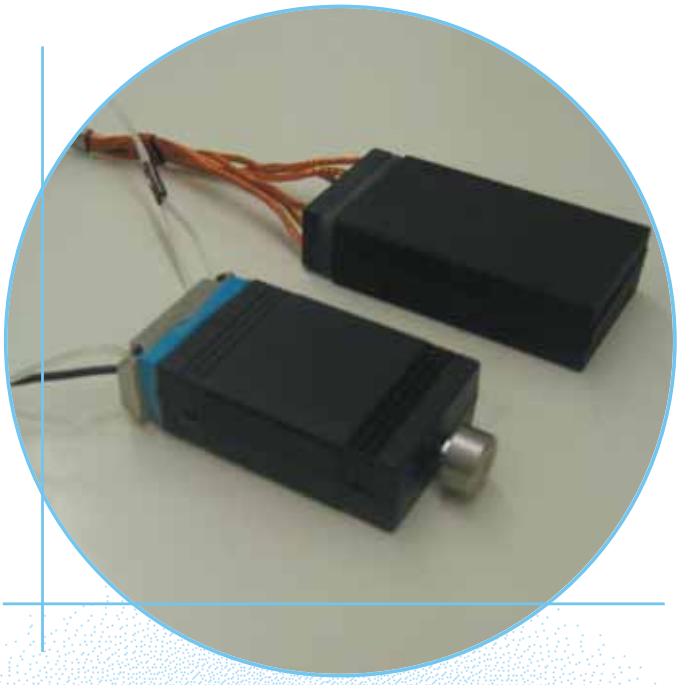
Weld test

The quality of spot welding depends on the force applied by the electrodes as well as on the intensity of the welding current. Within such a control program, the measurement of the force applied by the electrodes is extremely important for ensuring constant production.
That is why **ANDILOG has developed this equipment to measure the closing force of the grips** that may be used during the final stage or during periodic maintenance. The end-pieces are interchangeable and can be used to measure force with various shapes of electrodes, the minimum closing dimension being 3 mm.
This new instrument leverages the robustness, quality and precision of the CENTOR instrument family, which are specially designed for mobile use in a production workshop.

MODEL	CAPACITY	RESOLUTION
WELD TEST 1	0–5,000 N	0.5 N
WELD TEST 2	0–10,000 N	1 N
WELD TEST 3	0–20,000 N	2 N

Carbon presser

False signal brush sensor:
This special sensor was developed for measuring the force of the pressure applied on the motor brushes with a powerful direct current.
Adapted to the dimensions of the brushes, the sensor is placed in the brush tube, without having to disassemble the motor. It is found in exactly the same position as the brush, and the display screen immediately shows the force that is applied on the sensor. The operator can then adjust the pressure in order to avoid prematurely wearing down the rotor.

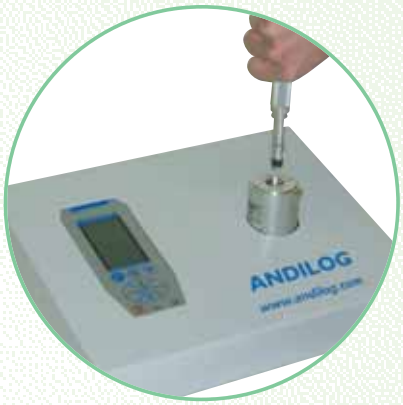


CENTORMETER

OUR CENTORMETER LINE allows you to calibrate and check all of your measuring instruments: torque wrenches, torque screwdriver, screw gun, compression and tension system, force gauges, etc. These tools are essential in ensuring the quality of your measurements throughout the lifetime of your instruments.
The new version of the CentorMeter equipment **verifies the regulating torques of screw guns**. This includes electric, pneumatic and hydraulic screw guns whose rotation speed can be regulated up to 3,000 RPM. The CentorMeter traces the curve, enabling immediate visualization of the increase in the torque. The range of sensors allows for precise measurements from 0–6 Nm up to 0–1,400 Nm.
Each base is equipped with a main sensor and can support additional sensors, which will be recognized without the user having to do a thing.

VERSION H (torque screwdriver calibrator) low torque

MODELS	CAPACITY	RESOLUTION	SQUARE
CENTORMETER H 3	3 Nm	0.3 mNm	3/8" female
CENTORMETER H 6	6 Nm	0.6 mNm	3/8" female



VERSION W (torque screwdriver calibrator) strong torque

MODELS	CAPACITY	RESOLUTION	SQUARE
CENTORMETER W 15	15 Nm	1.5 mNm	3/8" female
CENTORMETER W 60	60 Nm	6 mNm	3/8" female
CENTORMETER W 150	150 Nm	15 mNm	1/2" female
CENTORMETER W 300	300 Nm	30 mNm	1/2" female
CENTORMETER W 650	650 Nm	65 mNm	1/2" female
CENTORMETER W 1400	1,400 Nm	1.4 Nm	1/2" female

Additional sensors

All additional sensors can be used with the same display screen in order to measure different capacities with great precision. Each sensor is provided with a support stand, a SPIP connector to connect to the instrument and its calibration certificate. Available with horizontal or vertical axis.

REF./VERSION

Horizontal axis	Vertical axis	CAPACITY	RESOLUTION	SQUARE
SPIP CMH/TH 3	SPIP CMV/TH 3	3 Nm	0.3 mNm	3/8" female
SPIP CMH/TH 6	SPIP CMV/TH 6	6 Nm	0.6 mNm	3/8" female
SPIP CMH/TH 15	SPIP CMV/TH 1	15 Nm	1.5 mNm	3/8" female
SPIP CMH/TH 60	SPIP CMV/TH 60	60 Nm	6 mNm	3/8" female
SPIP CMH/TH 150	SPIP CMV/TH 150	150 Nm	15 mNm	1/2" female
SPIP CMH/TH 300	SPIP CMV/TH 300	300 Nm	30 mNm	1/2" female
SPIP CMH/TH 650	SPIP CMV/TH 650	650 Nm	65 mNm	1/2" female
SPIP CMH/TH 1400	SPIP CMV/TH 1400	1,400 Nm	1.4 Nm	1/2" female

Andilog provides servicing for these products all over the world, thanks to a network of distributors available in over 30 countries. Please visit our website to find your distributor.

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