Range Springtest
Manual and motorized test stands for spring verifications

ANDILOG - info@andilog.com - www.andilog.com
Springtest, the range of instruments for springs

Tension, compression and torsion springs

To master the good integration of springs in your end products and to ensure the seamless quality process, it is necessary to control periodically the spring rate.

These controls can be done during the design or the delivery check thanks to manual or motorized test stands, which enable to measure the spring rate at one or more points. Force gauges and testing machines enable to simply measure the applied force on a spring at a predefined height.

To perform these tests, Andilog has developed the product range SPRINGTEST which is declined in different test stands.

Verification of tension and compression springs

Springtest 1 and T1 - Simple measurement on tension and compression springs

Springtest 2 - Measure small compression springs

Springtest 3 - Automated measurement

Verification of torsion springs

Springtwist - Manual measurement of the torque and angle

Drivetwist - Motorized measurement of the torque and angle
Simple manual spring check: Springtest I and T1

The Springtest I and T1 are precise, simple and economical system to control compression springs of small capacity. They include a very accurate force gauge (0.1% FS), a manual test stand, a digital ruler and a special compression plate for springs.

The measuring head (internal load cell with strain gauges) indicates the force applied, the ruler displays the deflection or the height under load. The bottom self levelling plate guarantees the parallelism of the plates.

Springtest I - Measure small spring capacities with crank

The system Springtest I is very easy to use and it is designed to perform your measurements quickly. It can be used for delivery checks, in the quality insurance, the production line or in the laboratory. The quality and repeatability of the results are ensured through a specific design made by Andilog Technologies:

- The manual test stand has a minimum deformation when under load thanks to a double steel guidance and a worm screw with minimal clearance
- The worm screw permits a precise positioning with a travel distance of 2.54 mm (0.1 inch) for each crank turn
- The digital ruler offers a resolution of 0.01 mm to ensure a repeatable and precise spring compression.

Springtest T1 - Measure springs up to 2 kN/450 lbs with lever

The Springtest T1 series is a very simple and economical system for checking compression springs in one point. The manual displacement is done through a lever which permits to perform quick tests from 10 N to 2,000 N (2,25 to 450 lbs).

The vertical displacement for each lever rotation is of 80 mm (3,15 inch). The manual test stand is portable, robust and compact with a total height of 476 mm (18,74 inches).

Digital force gauge Centor Easy

The force gauge Centor Easy are designed to meet the production needs of its users. They offer indispensable feature for quality controls, such as: ease of reading with its large backlit graphical display, internal memory of the last 100 values, RS232 output and ability to set thresholds with visual and sound alarms. The M5 thread at the back of the device enables the mounting on the Springtests.

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.
How to perform measurements on springs with the manual test stands Springtest I and T1?

**Self-leveling plate and accessories**

This self-leveling compression platen adjusts the parallelism between the plate and the sample holder during measurements in compression. It ensures the good positioning of the spring.

With an external diameter of 76 mm (3 inch), the self-leveling platen can withstand loads up to 2,000 N / 450 lbs.

Hooks can be delivered as an option to perform tests on tension springs.

**How to measure with the Springtest I & T1?**

For the first measurement and regularly, it is necessary to ensure the parallelism between the compression platen and the self-leveling plate.

Unlock the screws of the self-leveling plate and put the two platens in contact.

In order to reach the optimal accuracy of the Springtests and to compensate the mechanical deformation of the system, we recommend applying the maximal force of your force gauge on the test stand.

Once you have done this, tighten the screws of the leveling plate and tare the digital ruler.

This way you can test all your springs with great accuracy and lower deformation.

Place your springs on the Springtest, tare the force gauge and go down with the measuring head until you’ve reached the expected compression height.

Record the actual force indicated on the Centor Easy or transfer it into a computer.
Springtest 2 - Measurement of small spring capacities with crank

The Springtest 2 has been especially developed for the precise measurement of compression springs. This manual test stand with force gauge or external load cell and digital ruler is well suited for the measurement of springs with small dimensions and force ranges.

The spring tester is equipped with the latest technologies for the data acquisition, data processing and force measurement thanks to the Centor Touch Dual. This measurement system permits the acquisition of the force and displacement with a high sampling frequency in real time. Hence, your measurements are more repeatable and more exploitable.

The Springtest 2 offers you unique functions on the market: touch, color display with visualization of the curve, included data acquisition software, interchangeable load cells etc.

This test stand is equipped with a precise displacement sensor which gives a measurement of the flexion or height measured under load with a resolution of 5 μm.

The Springtest 2 is equipped with a set of adjustable limit stops and with strain gauges of high accuracy (0.1% FS). This makes sure that the maximal capacity of the load cell is not exceeded. These stops are adjustable manually.

Caligraph – Visualize your tests in real time

With the acquisition and analysis software Caligraph, you can watch the evolution of the curve of force and torque in real time, save your data, calculate automatically the results and edit customizable test reports.

The measurement starts with a simple click and you follow live with a speed rate of 1.000 Hz (depending on the equipment) the essential information with predefined calculations of your choice.

Caligraph is the indispensable complementary tool to utilize the full potential of Springtest 2 for your spring measurements.
Automated spring verification: Springtest 3

Automated measurement of the spring height and force

The Springtest 3 is based on the Stentor II testing machine. It is designed to perform force testing on coil compression and tensile springs from 0 to 2,000 N (450 lbs), the Springtest 3 is a versatile and smart system designed specifically for testing in quality control, manufacturing, and R&D areas. With it, you can perform:

- Stiffness measurement in between two points
- Force measurement at 1 or 2 displacement values
- Displacement measurement at 1 or 2 force values
- Load curve of springs

A clear display with quick results

The front panel includes the latest Touch series technologies and provides users with a fast, one-step, colors coded results display. Data is collected continuously offering real-time dual measurements and graphs, or 3 measurements (example: force, displacement and stiffness or the force at a displacement value and two other measurements).

An easy to use customizable measurement screen allows you to display required test results.

Users configure measurements through simple and complete touch screens. For instance, the user specifies the two values (spring height) in between which the force measurements have to be done.

The Springtest 3 model automatically calculates the spring rate according to the measured force at the two defined values.

Interchangeable, remote load cells "SPI"P"

The Springtest 2 and 3 are supplied with a highly accurate force load cell designed to provide repeatable results. The force accuracy is 0.1% of the load cell’s capacity with a data acquisition rate of 1,000 Hz.

The force load cells are equipped with Plug and Play SPIP technology, which stores all their calibration parameters. You can swap out a load cell in accordance: the load cell is automatically recognized by the testing machines Springtest 2 & 3.

Hence it is possible to have sensors of different capacities with just one machine or to have a spare load cell to avoid a too long downtime during the calibration time.
# Specifications of the SPRINGTEST range

## Range of measurement and accuracy

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Springtest 1</th>
<th>Springtest T1</th>
<th>Springtest 2</th>
<th>Springtest 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-225 lbs</td>
<td>2-450 lbs</td>
<td>2-225 lbs</td>
<td>2-450 lbs</td>
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<td>accuracy of the force load cell</td>
<td>0,1 % FS</td>
<td>0,1 % FS</td>
<td>0,1 % FS</td>
<td>0,1 % FS</td>
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<tr>
<td>Protection against overloads</td>
<td>150 % FS</td>
<td>150 % FS</td>
<td>150 % FS</td>
<td>150 % FS</td>
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<tr>
<td>Force units</td>
<td>N, Lb, Kg, g, Oz</td>
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<td></td>
<td></td>
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<tr>
<td>Internal memory</td>
<td>100 results</td>
<td>2,000 results</td>
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<td></td>
</tr>
<tr>
<td>Number of of lines</td>
<td>2</td>
<td>Curve + 2 lines OR 3 lines</td>
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<td></td>
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<tr>
<td>Sampling rate</td>
<td>1000 Hz</td>
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## Curve display

<table>
<thead>
<tr>
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<th>No</th>
<th>Oui</th>
<th>Oui</th>
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<tbody>
<tr>
<td>Displacement resolution</td>
<td>0,01 mm</td>
<td>0,01 mm</td>
<td>5 μm</td>
<td>0,01 mm</td>
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<tr>
<td></td>
<td>0,00039 in</td>
<td>0,00039 in</td>
<td>0,00039 in</td>
<td>0,00039 in</td>
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<tr>
<td>Vertical displacement for each crank turn</td>
<td>2,54 mm</td>
<td>80 mm</td>
<td>2,54 mm</td>
<td>Adjustable</td>
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<td></td>
<td>0,1 inch</td>
<td>3,15 inch</td>
<td>0,1 inch</td>
<td></td>
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<tr>
<td>Adjustable speed in mm/min</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Mechanical stops</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Software stops</td>
<td>No</td>
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<td>No</td>
<td>Yes</td>
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<tr>
<td>Cycles</td>
<td>Manuals</td>
<td>Manuals</td>
<td>Manuals</td>
<td>Automated</td>
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<tr>
<td>Connection to a computer</td>
<td>RS232, USB</td>
<td>RS232, USB</td>
<td>RS232, USB</td>
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<tr>
<td>Max. stroke</td>
<td>300 mm</td>
<td>175 mm</td>
<td>300 mm</td>
<td>250 mm-350 mm</td>
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<tr>
<td></td>
<td>12 inch</td>
<td>7 inch</td>
<td>12 inch</td>
<td>10-14 inch</td>
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<td>Compensation of the deformation of the test stand</td>
<td>Manually</td>
<td>Manually</td>
<td>Software</td>
<td>Software</td>
</tr>
</tbody>
</table>
Springtest 1 and 2

Springtest T1

Springtest 3
Manual measurement of the torque and angle: Springtwist

Designed to measure torsion springs, the manual torque bench Springtwist is the solution to make your tests. It displays the torque and angle values and plots the curve on a single screen.

The Springtwist is supplied ready to measure with all the accessories needed for your tests: support for the spring, drive pins and plates for different sizes of springs.

This test bench is equipped with a high quality strain gauges torque sensor with a capacity up to 60 Nm and an accuracy of 0.5% of the full scale. Torque sensors lower capacities can be connected to the Springtwist for measurements on springs with small loads. These sensors are plug and play and do not require configuration of the device.

The extremely rigid frame is designed to ensure a perfect alignment between the two plates of twist to avoid measurement error. The positioning of the sensor is made using a ball screw to fit the width of the spring. The rotation is operated by a crank. Thanks to the important gear ratio between the crank and the plate, it is easy to perform repeatable measurements at an accurate angle.

Drivetwist - Eliminate the influence of the operator on the measurement

To perform a precise and repetitive measurement on your springs, it is necessary to use an automated torsion bench. The automated torque test bench DriveTwist for all static torque measurements is specially designed to determine the torsion properties of components subjected to twist loading in service. Thanks to its motorized command, set the speed of your test protocol and perform your torsion test without the influence of the operator.

The motor command and measurement acquisition is done through the DriveTouch controller. Thanks to its ability to read simultaneously data from two sensors at a sampling rate of 1,000 Hz, the DriveTouch measures data from the static torque transducer and from the rotary encoder.

The controller offers a manual and computer-controlled mode. The manual mode from the Drivetouch enables to perform positional adjustments before starting the test. With the software Califort, you can program entire test sequences.

The DriveTwist is the easiest and most complete system for torsion tests in the workshop or in the laboratory.
Dimensions of the torsion benches

Springtwist and Drivetwist

**SENSOR**
- \( \varnothing 41.4 \)
- \( 1.63'' \)
- 4x UNF 10-32 \( \varnothing 5[.2] \) ON \( \varnothing 25.4[1] \)
- 2x \( \varnothing 3.18 \) \( \varnothing 2.5[.1] \) ON 25.4[1]
- \( \varnothing 0.125'' \)
- 1x \( \varnothing 6.4 \) THRU
- \( \varnothing 0.25'' \)

**TWIST AXIS**
- \( \varnothing 6.35 \) \( \varnothing 5[.2] \)
- 4x 10-32 UNF \( \varnothing \) THRU
- ON \( \varnothing 25.4[1] \)

**Mechanical details**

**MAXI**
- 200
- 7.874''

**MAXI**
- \( \varnothing 180 \)
- 7.087''

- 213.5
- 8.406''

- 438.2
- 17.25''

- 530
- 20.866''

- 152.4
- 6''

- 232.3
- 9.148''
Driving and test software Califort

Califort – Advanced material testing software

The software Califort enables you to perform complex and precise force and torque measurements in all simplicity.

Califort offers you several benefits:

- **Intuitive** and preset for the users
- **Performing and handy** to customize your measurements
- **Customizable** in the editing of your reports and the result analysis

The new designed interface of Califort has been fully optimized to offer a better experience with a clear and well organized interface.

It facilitates reading and usability of the software for faster and efficient daily use. Califort remains available to use with Microsoft Windows tablets and touch screens thanks to its integrated virtual keyboard and suitable interface.

Infinite number of industrial applications

Califort is able to set the most demanding sequenced test protocols and comes with an extensive list of pre-defined calculations, which can be performed automatically during your tensile, compression or torsion test maximum, minimum, average, or break as well as the Young’s modulus, the modulus of elasticity etc.

Each sequence can be customized to run up, down, clockwise at different speeds and with a stop condition (i.e. breaking point, force at position, time, travel position etc.). It also offers a cycling feature for repetitive actions.

Customize your results

Califort has an advanced editor which enables the data integration into a report: curve, result chart, test configuration and customization of headers and footers on each report for a total personalization.

Califort is the turnkey software to support you in the programming of your tests and insures the optimal traceability of your results.
### Range Springtest

Manual and motorized test stands for spring verifications

#### Springtest 1, T1 and 2
- Manual test stand BAT1000 (Springtest 1)
- TEX55 (Springtest T1)
- Digital ruler
- Force gauge Centor Easy with internal or external accuracy load cell (Springtest 1 and T1)

#### Springtest 3
- Testing machine Stentor II
- Self-leveling plate Ø 76mm
- Compression platen Ø 50mm
- Certificate of calibration affiliated with COFRAC/ NIST
- Self-leveling plate Ø 76mm
- Certificate of calibration affiliated with COFRAC/ NIST
- User manual

#### Springtwist/DriveTwist
- Torsion bench DriveTwist or Twist
- Load cell up to 2,000 N / 450 lbs
- Torque sensor 0,35-24 Nm (up to 60 Nm for the Springtwist)
- 2 pierced platens for the insertion of guiding accessories
- Compresion platen Ø 100 mm
- Certificate of calibration affiliated with COFRAC/ NIST
- User manual
- Supply cables (110V and 220V)
- Communication cables (2 USB ports necessary)
- Calibration cCertificate of calibration affiliated with
- User manual

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