Coil Spring Tester
Users Manual

Intercomp Co.
3839 County Road 116
Minneapolis, MN 55340

(763)-476-2531
1-800-328-3336
Fax: 763-476-2613
www.intercompracing.com

Manual #: 700026-L

Table of Contents

DECLARATION OF CONFORMITY **3**

CE 3

INTRODUCTION **4**

SPECIFICATIONS 4
Controls *4*
Electrical *4*
Performance *4*
Environmental *4*
Physical *4*
DECLARATION OF CONFORMITY 5

OPERATIONS **6**

CONTROLS 6
On/Off *6*
ZERO *6*
Backlight *7*
Units Switching (lb and kg) *7*
OPTIONS MENU 7
Peak hold mode *7*

OPERATING TIPS **8**

ERROR MESSAGES **9**

CHANGING THE BATTERY 9

HOW TO REACH INTERCOMP SERVICE **10**

Declaration of Conformity

CE

We, Intercomp Company
3839 County Road 116
Medina, Minnesota 55340 USA

Declare under sole responsibility that the Coil Spring Tester to which this declaration relates meets the essential health and safety requirements and is in conformity with the relevant EC Directives listed below using the relevant section of the following standards and other normative documents.

2001/95/EC - on general product safety
2004/108/EC - relating to electromagnetic compatibility and replacing Directive 89/336/EEC
EN 55011:2009, Class B - Industrial, scientific and medical equipment - Radio-frequency disturbance
EN61000-6-1:2007 - Generic standards, Residential, commercial and light industry environment characteristics - Limits and methods of measurement
EN 61000-6-2:2005 - Immunity for industrial environments
EN 61000-6-3:2007 - Emission standard for residential, commercial and light-industrial environments
2006/42/EC - on machinery, and amending Directive 95/16/EC (recast)
2012/19/EU - on waste electrical and electronic equipment (WEEE) (Directive 20/96/EC Recast)
2013/56/EU amending Directive 2006/66/EC on batteries and accumulators

This product complies with all safety-relevant provision referring to protection against electrical hazards and other hazards, such as mechanical hazards, fire hazards, noise and vibration. The safety issues of this measurement equipment have been evaluated under the self-certification provisions of the relevant directives.

The related technical construction files are held for inspection in the U.K. at Intercomp Europe Limited.

Mark Browne / Quality Manager
June 9, 2014

Introduction

This manual contains specifications and operation instructions for Intercomp's Coil Spring Tester.

Specifications

Controls

General:	Zero, backlight, On/Off.
Display:	4 digit LCD.
Travel indicator controls:	Zero, in/mm.

Electrical

Batteries:	1 (9-volt) size disposable alkaline or rechargeable Nickel-Cadmium cell.
Resolution:	24 bit A/D delivers over 16,000,000 internal counts
Auto-Zero:	Automatically zeros off errors of zero-load.
Battery life:	300 hours with an alkaline battery 20 hours with backlight on
Low battery indication:	Flashes '**L.bAt**' when battery is running low; Automatically turns off when battery power is low enough to affect reliability.
Travel indicator:	Displays spring compression length to the nearest .001 in or .01 mm.

Performance

Accuracy:	±0.25% of applied load or ± display graduation, whichever is greater.

Environmental

Humidity:	10 to 95% Non-Condensing.
Temperature:	Operating: -10 C to +40 C. / +15 F to +105 F.
	Storage: -40 C to +75 C. / -40 F to +170 F.

Physical

Dimensions:	Base: 10" X 10.8" / 25cm X 27cm
	Height: 36" / 91cm
	Weight: 44 lb. / 22 kg

Declaration of Conformity

CE

We, Intercomp Company
3839 County Road 116
Medina, Minnesota 55340 USA

Declare under sole responsibility that the (CST) Coil Spring Tester to which this declaration relates meets the essential health and safety requirements and is in conformity with the relevant EC Directives listed below using the relevant section of the following standards and other normative documents.

1999/5/EC - Essential requirements and other relevant requirements for Radio and telecommunications terminal equipment
2001/95/EC - General product safety
2002/96/EC as amended by **2003/108/EC** - WEEE directive
2004/108/EC – EMC Directive
2006/66/EC - Batteries and accumulators directive
2006/95/EC – Low Voltage Directive
2009/23/EC - Non-automatic weighing instruments
2009/125/EC - ECO Design – Recast
2011/65/EU - RoHS – Recast

EN 55011:2009, Class B – Limits and methods of measurements of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio frequency equipment.

EN61000-6-1:2007 - Generic standards, Residential, commercial and light industry environment.
EN61000-6-2:2007 - Generic standards, Immunity for industrial environments.
EN61000-6-3:2007 - Generic emission standard, Domestic, commercial and light industry environment.
EN 61010-1/IEC 1010-1 - Safety requirements for electrical equipment for measurement, control and laboratory use.
This product complies with all safety-relevant provision referring to protection against electrical hazards and other hazards, such as mechanical hazards, fire hazards, noise and vibration. The safety issues of this measurement equipment have been evaluated under the self-certification provisions of the relevant directives.
EN 45501:1992 AC:1993 - Specification for metrological aspects of non-automatic weighing instruments

The related technical construction files are held for inspection in the U.K. at Intercomp Europe Limited.

The CE mark, Red M and WEEE marks must be affixed as required in the directives.

Mark Browne / Quality Manager
March 21, 2013

Operations

Controls

On/Off

Press this button to turn the unit on. The unit tests it; when these tests have completed successfully, the system begins weighing. Press this button again to turn the scale off.

ZERO

Tells the spring tester to display a zero weight. This button should be used any time the tester shows a non-zero value with no weight on the pad. If you press ZERO with weight on the pad, that weight becomes the zero condition for the scale. When this weight is removed, a negative weight shows until the system is zeroed again. **NOTE:** if this negative number is too large to fit on the display, the scale will display '*dI SP*' until you press ZERO.

The tester contains a feature called Auto Zero Tracking (AZT), which corrects for slight zero changes during normal operation. If small weights are added slowly, the spring tester could zero them off.

Backlight
Press this key to toggle the backlight on and off.

Units Switching (lb and kg)
The coil spring tester can toggle between lb and kg. To switch units simultaneously press and hold the ZERO and backlight keys. After pressing and holding these keys for a few seconds, the unit will momentarily display:

1) "KGS", if you have now switched to display in kgs.
2) "LBS", if you have now switched to display in lbs.

Options menu
The options menu allows access to the: Peak mode.

Options Menu:

Step	Function	Note	Default
PEAH	Peak Mode	Toggles peak and normal mode	nor

Peak hold mode
In this mode the unit will display only the highest weight applied to the pad - until you press the ZERO key.

To enter into the peak mode, simultaneously press the ZERO and backlight keys . When the display shows "PEAH", press the backlight key and release. The display will read: "PH" and the tester will return to measurement mode and will display the peak force.

To return back to normal measurement mode, repeat the above procedure (display will show "nor"). The unit will always turn on in 'normal' operating mode.

Operating tips

1. Select the proper plate for the top of the spring to be checked. One side is designed for springs with a “pigtail”.
2. Place spring into the spring tester, flat end down. The spring cannot be rated if it does not have one flat end.
3. Center the spring in the upper and lower plates. If the spring has an ungrounded end (coil-over) the spring must use the entire upper support spiral.
4. Install the pin securely in top support to position the plate at lowest free position above the spring.
5. Compress the spring until a weight registers on the digital display. The spring should barely touch the top plate.
6. ZERO on the travel indicator. Then compress the spring 1” to achieve a pre-load.
7. ZERO weight display and travel indicator.
8. Compress the spring *exactly* 1” higher, and then record the displayed weight. This indicates the initial spring rating in Pounds per Inch (when in “pounds” mode).
9. Repeat steps 7 and 8 to determine the linearity characteristics of the spring.
10. Gradually release pressure from the jack, and remove spring.

Error Messages

Message	Meaning
'EEPE'	**EEPROM FAILURE Calibration information lost or corrupted**
Calibration information is held in a special permanent memory area. A checksum code is generated and written to this memory during the calibration process. Each time the power is turned on this code is regenerated and compared to the stored value. If a change is found this error message is displayed. Recalibration may clear the error display, but if the problem persists the control panel will have to be replaced.	
'Ad 1'	**A/D converter failure**
The A/D circuit board has indicated a fault and needs to be repaired or replaced.	
'LCb 1'	**Power-up Self-Test has detected a load cell error**
The load cell may have failed or there is a bad connection. If the load cell resistance checks are good then the A/D circuit board has indicated a fault and needs to be repaired or replaced.	
'LC 1'	**Run-time checking has detected a load cell error**
The load cell circuit may have failed or there is a bad connection. . If the load cell resistance checks are good then the A/D circuit board has indicated a fault and needs to be repaired or replaced.	
'L.bAt'	**Low battery voltage**
This message displayed intermittently indicates that the control panel has measured the battery voltage and found it to be too low. The most likely cause is that the batteries may need to be changed. If a new set of batteries fail to correct the situation, then the control panel may need to be replaced. Also check the battery holder and wiring.	
'CAP'	**Overload or calibration information lost or bad load cell**
The control panel has detected a weight reading that is larger than expected. This may be caused by the application of too much weight to the scale. If this display is seen when there is no weight on the scale, then the most likely causes are a defective load cell or defective control panel. To isolate the problem, measure the signal across pins two and three on the load cell connector on the control panel. This should be between zero and one millivolt. If found to be higher or lower, then the load cell system must be checked. See procedure elsewhere in this manual. If the signal is within this range then the calibration data may be lost. Attempt to recalibrate the scale. If this does not clear the problem, then replace the control panel.	
'ZEr0'	**Zero Range Error**
Scale tried to zero off a load outside the range specified in the zero range setting. Remove any load and press zero.	
'HELd'	**Key is held down**
If this message is displayed with no key pressed examine the key pad and key pad connector ribbon.	
'd iSP'	**Number can't be displayed**
The most common cause of this error is pressing the zero key with a full load on the scale. When the load is removed, the full number with a minus sign will not fit on the display. Pressing the zero key again will clear this display.	

Changing the Battery

Turn the power off. Slide the battery hatch down. Remove the battery from the case and detach the old battery. Connect the new 9V battery and place it in the case. Replace the cover.

How to reach Intercomp Service

Things to know:

Inform the Service Dept. that the product is a Coil Spring Tester.
When was the Coil Spring Tester purchased?
Where was the Coil Spring Tester purchased?

For Intercomp Service call or fax:

FAX # (763)-476-2613
(763)-476-2531
1-800-328-3336

Or fill out Service Support Form at:

www.intercompcompany.com