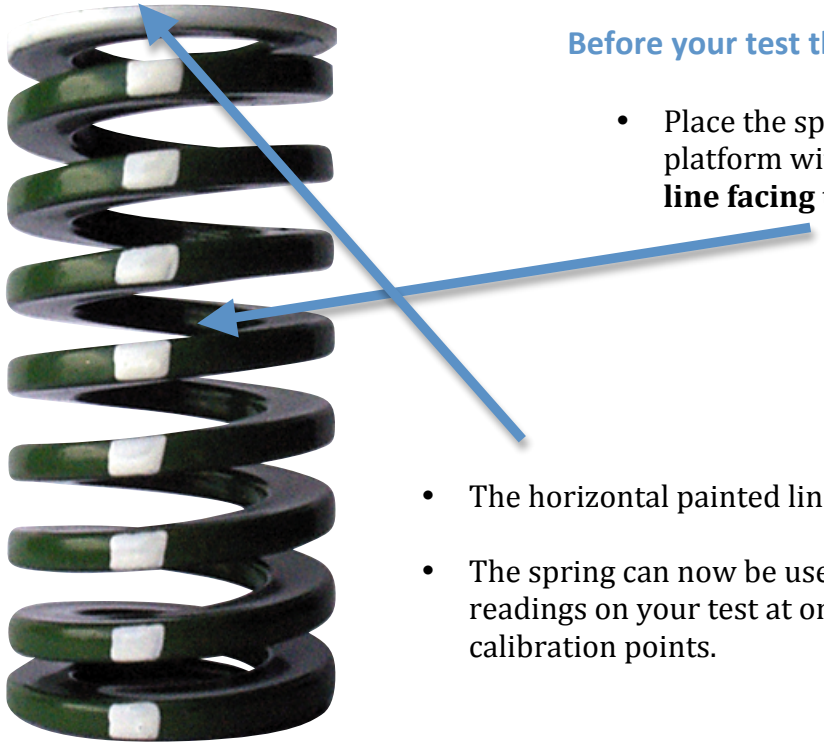
Larson Systems Inc.
10073 Baltimore Street N.E.
Minneapolis, MN 55449
763-780-2131
www.larsonsystems.com

How to Use a Master Calibrated Spring

Master Calibrated Springs are used to **verify the force calibration** of spring testers. They are not intended to calibrate spring testing equipment.

Your Master Calibrated Spring has been pre-conditioned at Larson Systems Inc. Ten tests have been applied to it and it has been calibrated by direct comparison to standards traceable the National Institute of Standards & Technology (NIST). The tests show the force applied and the length of the spring at ten different test points.

There is margin of error, or **uncertainty**, shown as a + or – and expressed in lbs. of force. For example, a 250-lb. spring may have an uncertainly of +/- 0.9 lbs. Different sizes of springs have different uncertainties. Check the Calibration Report to determine the uncertainty for your particular spring.



Before your test the spring:

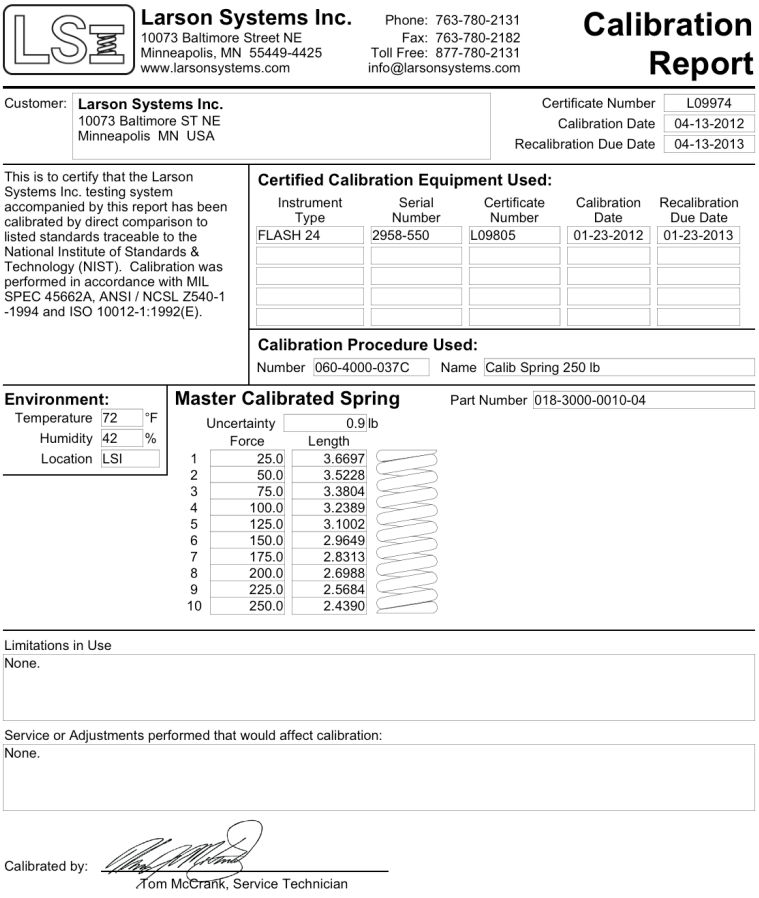
- Place the spring on the tester platform with the **vertical painted line facing toward you.**
- The horizontal painted line should be at the **top**.
- The spring can now be used to check against the readings on your test at one or all of the calibration points.

With a manual tester:

Turn on your tester and initialize it. Set the spring on the load platform and zero the force. Manually move the tester to each length noted on the calibration data, and verify your force readings. If you want to have a reported verification, follow your normal procedure of sending each reading to memory, then print your report when testing is complete.

With a motorized tester:

On a motorized tester, you can do "go to" length moves in manual mode and verify your force readings, or you can program the tester to do force at length for each length and save or print the report, if you wish.



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Calibration Report

Customer: **Larson Systems Inc.**
10073 Baltimore ST NE
Minneapolis MN USA

Certificate Number L09974
Calibration Date 04-13-2012
Recalibration Due Date 04-13-2013

This is to certify that the Larson Systems Inc. testing system accompanied by this report has been calibrated by direct comparison to listed standards traceable to the National Institute of Standards & Technology (NIST). Calibration was performed in accordance with MIL SPEC 45662A, ANSI / NCSL Z540-1 -1994 and ISO 10012-1:1992(E).

Certified Calibration Equipment Used:

Instrument Type	Serial Number	Certificate Number	Calibration Date	Recalibration Due Date
FLASH 24	2958-550	L09805	01-23-2012	01-23-2013

Calibration Procedure Used:
Number 060-4000-037C Name Calib Spring 250 lb

Environment:
Temperature 72 °F
Humidity 42 %
Location LSI

Master Calibrated Spring
Part Number 018-3000-0010-04
Uncertainty 0.9 lb

	Force	Length
1	25.0	3.6697
2	50.0	3.5228
3	75.0	3.3804
4	100.0	3.2389
5	125.0	3.1002
6	150.0	2.9649
7	175.0	2.8313
8	200.0	2.6988
9	225.0	2.5684
10	250.0	2.4390

Limitations in Use
None.

Service or Adjustments performed that would affect calibration:
None.

Calibrated by: Tom McCrank, Service Technician