



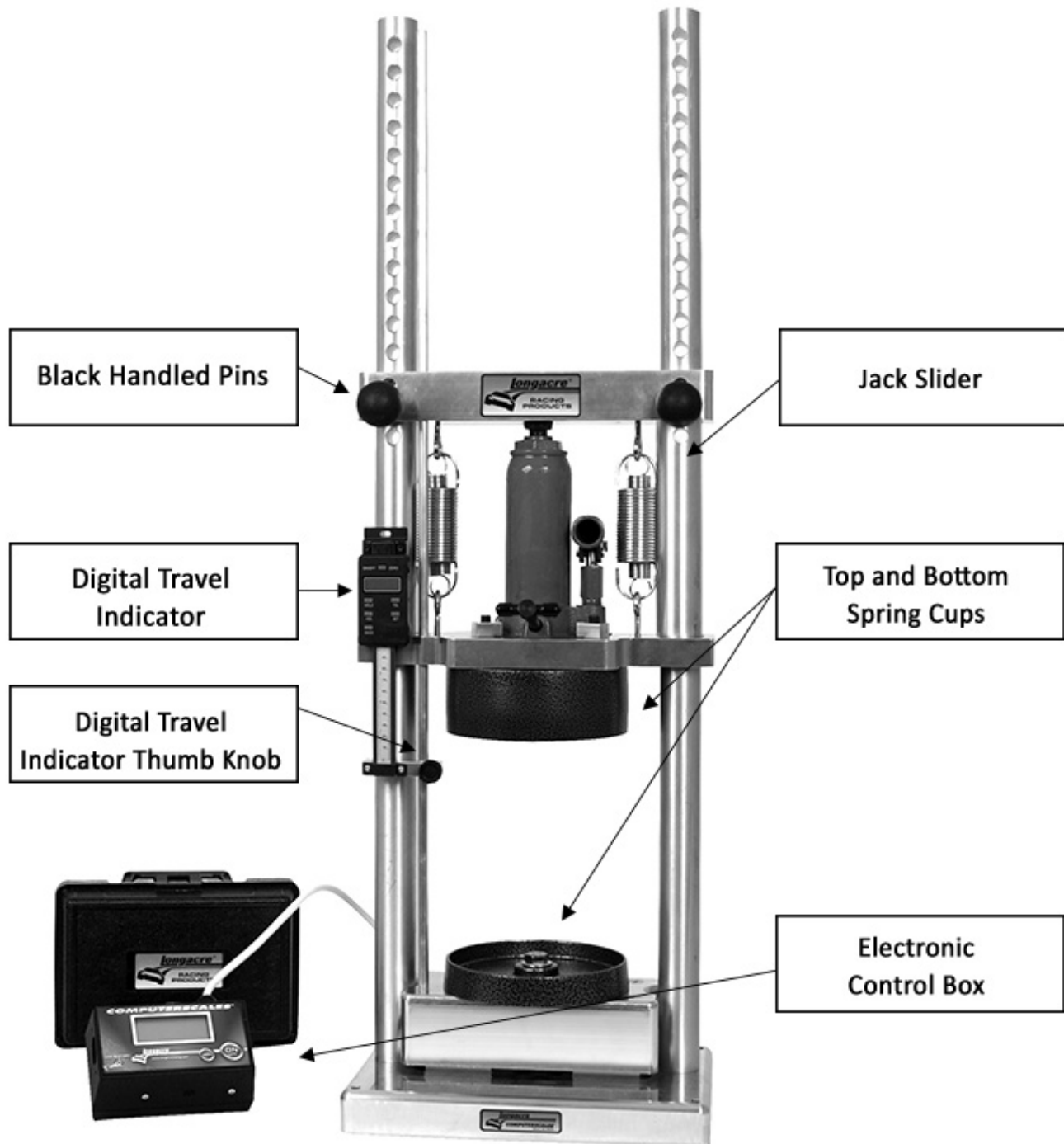
Electronic Coil Spring Tester Instructions

- Push the power button of the Electronic Scale Base on and let it warm up for about 5 minutes.
- Loosen the thumb knob of the Digital Travel Indicator.
- Remove the black handled pins and lift the jack slider up high enough that there is room to place the coil spring into the lower spring cup and temporarily re-insert the pins.
- Place the coil spring into the lower spring cup.
 - Note: The top spring cup has one side for square end springs (Coil Over) and the other side for pigtail springs.
- For pigtail remove the bolt from the center of the cup to turn it over. Place the spacer on the bolt before placing the bolt through the spring cup or the bolt will be too long for the pigtail application. Make sure the pigtail is against the step in the cup.
- Remove the black handled pins and lower the jack slider until the top spring cup touches the coil spring, then raise it to the next available set of holes and re-insert the black handled pins.
- Tighten the valve at the base of the jack and pump the jack handle until the top and bottom spring cups are touching the coil spring.
- Slide the Digital Travel Indicator down until it stops and tighten the thumb knob.
- Zero the Digital Travel Indicator by pressing the 0/On Button.
- Pump the jack until the Digital Travel Indicator reads 1.0" for preload. This is very important and should be done accurately. You may alternatively use 0.5" (1/2") depending on the spring quality as long as you always use the same amount.
- Re-Zero the Digital Travel Indicator. Zero the Electronic Scale by pressing the Zero button.
- Pump the jack until the Digital Travel Indicator reads 1.0"
- At this point the Electronic Scale Base shows the spring rate on the display.
- **YOU MUST LOOSEN THE THUMB KNOB ON THE DIGITAL TRAVEL INDICATOR BEFORE RELEASING THE COIL SPRING OR IT WILL BE DAMAGED.**

DANGER: Compressed coil springs are dangerous. If one comes out of the tester it can cause severe injury or death

- NEVER compress a spring beyond the capacity of the tester (3000 lbs)
- NEVER compress a coil spring that bows to one side or does not compress straight.
- NEVER compress a coil spring that is not seated completely within both spring cups.

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SPRING TESTING TIPS

GETTING STARTED

We all know that spring rate changes produce dramatic results on the racetrack. Even a small change in rate can be the difference between winning and losing. Proper procedure, when rating coil springs, will lead to better consistency and result in more accurate results.

You would not think of racing without scaling your car. Yet, rating your springs is equally as important. After all, your static scale weights are dynamically transferred through the springs. Even small spring changes can have a dramatic effect on your car.

First, you should begin with a quality spring rater. The tester you choose should be designed for the type of racing that you do. For example, if your car uses coil over type suspension, then you should look at using an electronic spring tester. The tester will cost quite a bit more but will offer resolution that matches the design parameters of your car.

If you use bone yard springs or your car is based on a stock type design, then you can get by with a hydraulic type spring checker. You will see a difference in the resolution and accuracy but save a fair amount on the cost. While the cost of the rater is important, we think you are better off purchasing the right tester for the type of racing that you do even if it means spending more up front. Conversely, there is no need to pay for the more expensive unit if you are utilizing springs out of a bone yard.

Keep in mind the range of springs that you will run in your car, as this is a factor in deciding what kind of tester to use. Electronic testers are typically rated to 3000lbs and have excellent accuracy and repeatability throughout the range. The hydraulic units are available with a 1000lb gauge or a 2000lb gauge. Choose the lowest range on the hydraulic units to improve the resolution.

Regardless of the type of spring tester you choose, the tips below will help improve your accuracy and repeatability.



REPEATING THE PROCESS

1. Compress the spring 1" when possible and then begin your test. The 1" compression will pre-load and properly engage the end coils. Not enough pre-load just about always results in measurements that are low.

If you are approaching a spring rate that bumps near the limit of your tester, you can usually compromise and go with a 1/2" of pre-load. For example, on a tester with a 1000lb capacity, the maximum spring you could test with a 1" pre-load would be 500lbs. You would use 500lbs of capacity on the 1" pre-load and another 500lbs testing the spring at 1" travel.

You can gain some extra capacity when necessary if you pre-load at 1/2". For example, with a 1000lb tester you could rate a 660lb spring using the 1/2" pre-load method. You would use up 330lbs of capacity pre-loading the spring 1/2" and then use an additional 660lbs of capacity compressing the spring in the test range of 1" for a total of 990lbs. Remember, the 1/2" pre-load method is a compromise. Pre-load springs to 1" compression whenever possible.

2. Be sure that you center the spring in both the top and bottom spring cups. If the spring is installed in a tester "off center" the spring will bow and bend as it is compressed causing it to read low. For an optimum reading, springs should be installed dead center to allow the spring to compress in a straight line without bending. Take note of the type of spring that is being tested and insure that you are using a flat spring cup for coil over type springs and a tapered cup for open coil type springs. Many spring testers have one cup that can be turned over for use with both coil over and open coil type springs.
3. Be precise. Use a dial indicator to check the travel. You must compress the spring exactly 1". Just a few thousandths of an inch long or short will change readings by several pounds. Testers that have tape rules instead of dial indicators make it very difficult to get repeatable results.
4. Develop a routine. To get repeatable results you must check all springs the same way. Your data will be of more value if you take your time and repeat the process. Chart and record your spring measurements at 1, 2, and 3" whenever possible.



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5. Record your results. Tag each spring with both a reference number and the actual rate. Record your findings in a book that matches the reference number that is on the spring. The book will allow you to select from your inventory when you are at the track saving valuable practice time. With both a reference number and the actual rate tag you will be able to locate your springs in a hurry.

You should also record the free height of your springs and record the heights in your reference book. Changes in free height indicate a change in spring rate.



Instructions for NEW Digital Travel Indicator

Normally use
ONLY this button

- Push quickly to Zero
- Hold 2 seconds to turn off

