

BROWNELLS.

BENCH TALK™

News, Views and Tech-Tips from
Brownells.



1911 Auto Recoil Spring Compression Weights

by: Dave Koebensky of W.C. Wolff Co. & Brownells GunTechs

A certain amount of confusion exists when it comes to the subject of recoil springs for the 1911 Auto. Alterations to the gun which involve changing the weight of its recoiling mass will often require a change in the recoil spring weight, as will major changes in the ammunition being fired.

Just what constitutes a recoil spring's weight? The amount of energy stored by a conventionally-wound spring as it is compressed changes value in a straight line. For example, if you compress a conventional spring an inch, it may store a pound of energy. Compressing it another inch will store an additional pound of energy. At three inches we would have 3 pounds of energy stored.

A variable-weight spring works differently. The amount of energy stored for each increment of compression changes on a curve. As an example, compressing a variable weight spring one inch may store 4 ounces of energy, another one inch will store an additional 8 ounces of energy, the third inch will add another 12 ounces, and so on. A conventional 16 pound recoil spring and a variable 16 pound recoil spring will both store 16 pounds of energy but they get to that point at different rates.

While 1911 Auto recoil springs are available in a variety of weights, 16 pounds is considered the standard for full-size guns with 5" barrels. Just how is this figure of 16 pounds determined? In full recoil, the space available for the recoil spring to occupy is 1.625". At this point in its compression, its stored energy is 16 pounds. A 15 pound spring would store 15 pounds of energy when compressed to 1.625", etc.



SDM Recoil Spring Tester

Similar pistols but with shorter slides, such as Commander or Officer's ACP-length models, require springs that are not only shorter, but have different compression weights. A standard Commander spring is 18 pounds when compressed to 1.125", while the Officers ACP spring system must store 22 pounds of energy when compressed to .700". The free length prior to compression is not all that important, as long as it fits within the available space.

These figures should explain why the shooter cannot take an 18 pound full-size Government model recoil spring and shorten it and expect it to function the same as a standard 18 pound spring in his Commander-length pistol.

Just what weight of spring should be used? As mentioned at the beginning, changes in the weight of the slide and barrel combination, addition of barrel weights or compensators, optical sights attached directly to the slide, or changes to the ballistics of your ammunition may require a change in spring weight. The rule of thumb is to use the heaviest spring

available while maintaining reliable function. A fair indicator is how far from the shooter the ejected cases land. Less than three feet may indicate the need for a lighter spring, while more than six feet may indicate the need for a heavier spring. Keep in mind that too light a spring may result in damage to your pistol.