

M14 Spring Guides A Short History of their Evolution

The original **USGI spring guide** (Fig 1) was designed with a center channel to lighten the part while the alternate **USGI spring guide** (Fig 2) design had four oval slots in place of the channel. Both of the designs were stamped from 1/8" metal and have a rectangular cross-section. The original USGI spec. called for 8640, 8645, or ASTM A506 steel which are all considered economical tool steels. For reference, the USGI spec. for the M14 receiver was an 8620 case hardened tool steel which is very similar to the 8640 or 8645 alloy. These spring guides were functional and light weight, fine for a standard issue rifle, but didn't provide any additional guidance for the op rod. The metal, however, was hardened to 40-45 Rockwell C so the magazine catch held up well.



Fig 1 Original USGI Design - 23.1 grams (.81 oz)



Fig. 2 Alternate USGI Design - 24.8 grams (.87 oz)

The spring guide was meant to hold the spring in place, not guide the op rod. When the spring and stamped metal spring guide were installed in the op rod, there was too much "play" to maintain true spring alignment as demonstrated in this photograph. The problem is simple. They used a rectangular part inside the round shape of the spring. This is why the spring, when compressed, will bunch up as shown in the photo.



Fig 3 USGI Spring Guides Installed

Recognizing the short comings of the flat stamped spring guide, the Army redesigned the part in an effort to offer more precise spring alignment by machining round drill rod and welding or brazing a cut off mag catch into a slot in the drill rod. The opposite end was tapered as it had been with the original design. Although the flat spring guide shaft was heat treated prior to welding, it was not re-heat treated to harden the mag catch who's metal had been softened during the welding/brazing process. This resulted in a mag catch which suffered excessive wear prematurely. The design was a fast and easy way to produce a NM spring guide that was better but not long lasting. We suspect that, early on, many NM spring guides were made this way.



Fig 4 USGI Redesigned Spring Guide -
Weight varied depending on manufacturer. Average 59 grams to 65 grams

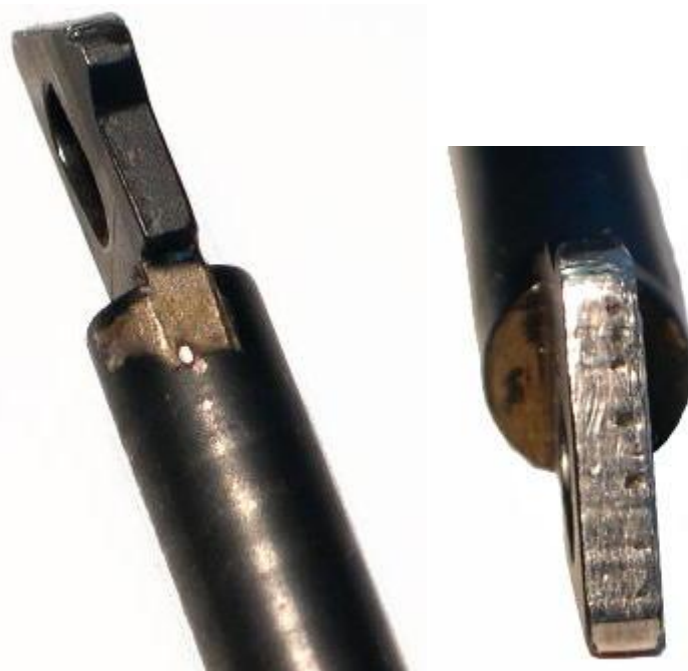


Fig 5 USGI Hybrid



Fig 6 TRW NM Spring Guide

Brookfield Precision Tool further refined the Army Marksmanship Training Unit (AMTU) redesign by offering a spring guide with a far more accurate fully machined magazine catch instead of a stamped catch like the GI version. Although the machined mag catch was still welded/brazed to the shaft as it had been on the hybrid USGI model, the entire spring guide was heat treated after the welding which resulted in a much more durable magazine catch. Brookfield also milled four flats into the shaft to reduce both weight and friction and to give some room for debris in the event dirt entered the spring area.



Fig 6 Brookfield Precision Tool Spring Guide - 63.7 grams (2.24 oz)

The Sadlak Industries National Match Spring Guide (Fig 7) brings the evolution of this critical National Match quality part one step beyond the Brookfield Precision Tool spring guide. Although our spring guide is based on the Brookfield design with the machined mag catch, shaft, and flats, we didn't want to take the chance that the weld operation had any adverse effect on the finished product so we took the extra time and expense of machining the entire spring guide from a solid round stock. This assured perfect alignment of the mag catch with the shaft and allowed for uniform heat treating of the whole part.



Fig 7 Sadlak National Match Spring Guide - 64.36 grams (2.26 oz)

The key to a good spring guide is the hardness and straightness - the hardness so it won't wear too fast and the straightness so it won't bind but will consistently guide the op rod for maximum accuracy. The Sadlak Industries spring guides are hardened to 40 - 45Rc which is the USGI spec. In addition, each of our NM Spring guides is hand inspected for straightness of .003 max. over the length of the guide. The result of this attention to detail is a spring guide which weighs 64.36 grams (2.26 oz), has the straightness to properly align the spring without binding (Fig 8), and the hardness to stand up to extended use without appreciable wear.



Fig. 8 Sadlak NM Spring Guide Installed

This product has been field tested in national matches by Dave Ferrante of Heart Mountain Precision Machining, who is a gunsmith and distinguished high-power competitor (email: crookedbrookfarm@yahoo.com). Approximately 4000 rounds have been fired from his match rifle using our spring guide, with no appreciable wear on the catch or shaft. Mr. Ferrante states, "It's the finest quality guide out there".