



Removing or installing a rifle barrel is a common gunsmithing task, yet it can sometimes be quite difficult. In addition to problems caused by the tight fit of the barrel threads in the receiver, the gunsmith may encounter problems directly related to his action wrench. A receiver can be marred, dented or actually compressed by traditional design wrenches. These types of problems can be avoided by using Brownells Action Wrench System. The Brownells Action Wrench, designed *by gunsmiths for gunsmiths*, uses interchangeable Heads which are machined to match the contours of specific receivers to provide the maximum amount of contact surface and uniform pressure.



WARNING



Never attempt to disassemble or reassemble a firearm unless you are absolutely certain that it is empty and unloaded. Visually inspect the chamber, the magazine and firing mechanism to be absolutely certain that no ammunition remains in the firearm. Disassembly and reassembly should follow the manufacturer's instructions. If such instructions are not immediately available, contact the manufacturer to see if they are available. If they are not available at all, then you should consult other reference sources such as reference books or persons with sufficient knowledge. If such alternative sources are not available and you have a need to disassemble or reassemble the firearm, you should proceed basing your procedures on common sense and experience with similarly constructed firearms.

With regard to the use of these tools, the advice of Brownells Incorporated is general. If there is any question as to a specific application it would be best to seek out specific advice from other sources and not solely rely on the general advice and warnings given.

HOW TO USE

The barrel **MUST** be held securely in a good quality barrel vise. If the barrel is not secured properly, it may turn or slip, causing damage to the bluing or finish of the barrel.

Brownells Action Wrench Heads are machined to standard dimensions for various actions, however, you may encounter receivers that have been modified or which were manufactured to non-standard dimensions. For example, you may encounter a Mauser receiver where the diameter of the front ring is significantly smaller than the machined opening in the Action Wrench Head. You must fill the gap between the receiver and the Action Wrench Head with brass or steel shim stock. If you don't fill the gap, there will be only one point of wrench-to-receiver contact and pressure, and that can damage the receiver ring.

The base of the Action Wrench has a milled recess on one side. This recess provides clearance for the recoil lug on Mauser-type actions. By positioning the receiver or action so the recoil lug fits in this recess, the Action Wrench Head can be placed directly over the threaded portion of the receiver ring. The force of the Wrench is then applied directly and efficiently to the point of greatest resistance.

Before attempting to remove a receiver from a barrel, make certain there are no screws or pins in the receiver that contact or go into the barrel. Any pins and screws must be removed **BEFORE** the receiver is turned off the barrel. Failure to do this will damage both the receiver and barrel. Check the front rings of receivers carefully for old scope base screw locations. We have seen numbers of older rifles where the scope base screw holes were filled with screws which then had the heads cut off and polished to match the receiver contour. These "permanent plug screws" can be darn difficult to spot!

It is very important that the bolts used to clamp the appropriate block onto the action be tightened evenly to prevent twisting the blocks and damaging the receiver. Make certain the gap between the blocks is equal on each side of the receiver.

You must be very careful that you do not squeeze or bend the receiver, especially on lever action rifles. On many firearms it is necessary to have some of the internal components in place to serve as spacers and supports for the receiver. If you find this is necessary on a particular rifle, be absolutely certain that no part or component interferes with the rotation

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INSTRUCTIONS

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and removal of the barrel. For example, on a Winchester 94 leave the bolt in the receiver to prevent collapsing the receiver sides when removing the barrel. However, the bolt should be withdrawn approximately 1/2" from its locked position to make sure the extractor is free from the recess cut in the face of the barrel. Failure to do this would lead to damage to the barrel, bolt and extractor when the receiver is turned.

If additional force is required to free the receiver from a barrel, an extension or "cheater bar" in the form of a pipe, approximately two to three feet in length can be slipped over the 1 1/4" diameter handle of the Wrench.

NOTES ON SPECIFIC GUNS

1. Large Ring Mausers - Since these guns have been produced in so many different parts of the world for almost one hundred years, variations in specifications are frequently encountered. This is especially applicable to the diameter of the front receiver ring. If necessary, use brass or steel shim stock to obtain COMPLETE and UNIFORM contact between the Action Wrench Head and the receiver ring.

Because so many of these rifles have been rebarreled several times, check the receiver carefully **BEFORE** doing any work to make certain it is not twisted or bent. Sluggish movement of the bolt often indicates that the receiver has been "tweaked". If you find a receiver that has been damaged in this manner, it is best to discard it.

2. Mini Mauser Act. - When using the Brownells Action Wrench on this rifle and on all similar Mauser-type receivers, make sure the recoil lug is positioned in the milled recess in the base of the Action Wrench handle.

3. Small Ring Mausers - Be especially careful when working with these actions. They have a reputation for being softer than the large ring Mausers and more easily bent. The front ring of these actions is very susceptible to damage when using a traditional "V"-type action wrench.

4. U.S. Springfield 1903 and 1903A3 - There is a projection on the right side of the front receiver ring. Install the Action Wrench Head with its milled clearance cut positioned over this projection.

5. U.S. 1917 Enfield and British Pattern 14 - Like the 03 Springfields, there is a projection on the right side of the front receiver ring that must be aligned with the milled clearance cut in the Action Wrench Head.

6. Winchester Model 70 - When using the Brownells Action Wrench on this rifle and on all similar Mauser-type receivers, make sure the recoil lug is positioned in the milled recess in the base of the Action Wrench handle.

7. U.S. M1 Carbine - Unlike many of the other Action Wrench Heads, this unit is designed to support the receiver on both sides and the bottom. It does NOT extend over the top of the receiver. There have been numbers of commercial copies of the M1 Carbine and variations in receiver dimensions may be encountered.

8. U.S. M1 Garand, U.S. M14, M1A, Italian BM-59 - The front ring of these receivers is sloped, or curved, on the right side, while the left side is basically vertical. The Action Wrench Head is machined to match these surfaces when placed on the top of the front receiver ring.

9. Remington 700 - This unit consists of two heads that completely enclose the front receiver ring and position the recoil lug at the same time. Keep in mind the recoil lug is not an integral part of the 700 receiver as it is on a Mauser 98. Both of these heads attach to the Action Wrench handle. Position the barreled action in your barrel vise so the recoil lug is pointing up, or at 12 o'clock. Secure the 700 Lower Head (it has a milled slot for the recoil lug and a clearance hole for the forward guard screw) to the receiver with the Remington forward guard screw. The milled cut for the recoil lug must be positioned so it fits behind, and along either side of, the recoil lug when the screw is tightened. The milled cut can accommodate the Remington factory lug or the oversize Shilen and Tubb lugs. The Upper Head fits on the opposite side of the forward receiver ring so its screw holes are aligned with those of the Head. Position the Action Wrench Base against this second Head. Thread the two long Allen head bolts through both Heads and into the Action Wrench Base. Tighten the bolts evenly so the gap between the two Heads is even on both sides of the receiver. The receiver can now be unscrewed from the barrel. Don't forget, the Remington 700 action must be turned in a counter-clockwise direction for removal!

The setup for installing the barrel is basically the same. The Lower Head with the recoil lug cut is attached to the receiver with the guard screw. The Upper Head is then set in place and the two Allen bolts are used to join the Heads to the Action Wrench Handle. The recoil lug is slipped onto the threaded shank of the barrel and then, as the receiver is turned onto the barrel, the lug is positioned in the cutout in the bottom of the Head. Make sure the lug remains in the cutout as the receiver is turned onto the barrel. The recoil lug will automatically be properly positioned if this is done.

10. Remington 788 - As with the Remington 700, this unit consists of two heads to completely enclose the front receiver ring. Unlike the Remington 700 head, the 788 action wrench heads do not need to position or contain the independent recoil lug because of the unique design of the receiver and factory recoil lug. The face of the 788 receiver has two slots, one at approximately three o'clock and one at approximately nine o'clock. The 788 recoil lug has two projections or studs which match these slots. When installing a barrel and utilizing the factory lug, it is imperative that the lug is positioned so these projections engage the matching slots.

11. Savage 110/10 - This rifle uses a lock nut threaded onto the barrel ahead of the independent recoil lug to secure the barrel to the receiver. After the barrel is threaded into the receiver, the lock nut is tightened so it brings pressure to bear against the recoil lug and receiver, thereby securing the barrel.

The two Action Wrench Heads are used to loosen the barrel lock nut; they are NOT attached to the receiver and you do NOT turn the receiver. Each head has either a round or square lug placed into a milled cut. This lug engages matching cuts in the lock nut. Position the Action Wrench Heads so they engage any two opposing cuts on the lock nut.

Once the two Heads are positioned correctly, place the Action Wrench Base on either Head and thread the two large Allen bolts through both Heads and into the Base. Tighten the bolts. Any gap between the heads must be even on either side of the receiver.

The recoil lug on the Savage has a positioning tab that engages a cut in the face of the receiver. The Action Wrench Heads do NOT, and are not needed to position the recoil lug during assembly.

Important Note: In the late 1960's Savage modified the barrel nut. Prior to this the locking nut had radiused or round bottom grooves or notches milled into the exterior surface. Any spanner or action wrench used to tighten the nut had radiused projections that matched these grooves. The Brownell Action Wrench Head, #080-801-110, is intended for the "old style" round bottom grooves.

Current production barrel nuts have a square cut or flat bottom grooves. Use of an "old style" Action Wrench Head with a round projection or lug could deform or damage the nut. Use only the "new style" square notch Action Wrench Head, #080-801-109, on these newer production nuts. DO NOT use a "new style" Action Wrench Head on the "old style" round groove barrel nuts. Again, the barrel nut will be damaged or ruined if this is done.

12. Japanese Type 38/Type 99 - These rifles utilize a two-piece head set that completely encloses the front receiver ring. The upper half of the two

units used in this set is the same one that is used on the Model 70 Winchester and is so marked. The lower half is unique to the Arisaka and is marked Arisaka 38/99. Note that the Type 38 does not have a traditional, rectangular recoil lug as used on the Mauser 98, 03 Springfield or Type 99 Arisaka. The Type 38 has a guard screw stud on the bottom of the front ring. CAREFULLY center this stud in the recoil lug cutout in the head to avoid placing any side pressure on it. Make sure both heads are

firmly secured to the receiver ring BEFORE any pressure is applied to the Action Wrench. Do not allow any slippage on the receiver.

13. SMLE British Short Magazine Lee Enfield #1, #4, and #5 - Due to the fact that these rifles have two-piece stocks, they were designed without a traditional, rectangular, Mauser-type recoil lug. The rear of the receiver, where it joins the buttstock, functions as the recoil lug. The stud beneath the front ring of the receiver is only an attaching point for the front guard screw. When using an action wrench on this receiver, you must be very careful to avoid damage to this stud.

A two-piece head set is used for these rifles. An Adapter Plate is provided to fit on top of the Action Wrench base unit to provide support for the receiver as well as clearance for the guard screw stud. Position the Adapter Plate so the opening for the stud is facing toward the barrel muzzle. Place the receiver on top of the Adapter Plate and then place the top unit, which is also used for the Small Ring Mauser, over the top of the front receiver ring. Tighten the two bolts and remove the barrel by turning the receiver in a counter-clockwise direction.

14. Browning A-Bolt - The unit for this rifle consists of two heads to enclose the front receiver ring and simultaneously position the independent recoil lug. Place the bottom unit or lower head on the Action Wrench Handle. The receiver is then placed in this head with the recoil lug centered in the vertical slot on the side of the head. This slot is for clearance only; it will not, and should not, contact the sides of the recoil lug. The upper head which has two angled flat surfaces to match the flats on the top of the A-Bolt Receiver and the independent recoil lug, is placed on top of the front receiver ring. Tighten the bolts through both the upper and lower units into the Action Wrench Handle. Remove the receiver by turning in a counter-clockwise direction.

15. FN/FAL - These rifles utilize a two-piece head set that encloses the barrel ring of the upper receiver. There are numerous variations, both commercial and military, of the FN/FAL upper receiver. Be sure to check the fit of both parts of the head set to the receiver prior to assembling the unit. It may be necessary to slightly modify one or both pieces of the head set to obtain a proper fit. Normally this can be done with a minimal amount of hand work using a Dremel type tool and/or hand files. It has been our experience that, usually only the left side of the head set will require modification. Modification of the head to fit a particular receiver may render the head unsuitable for use on receivers from other manufacturers.

16. Blank Block - It is a fact of life that sooner or later you will be called upon to remove, or install, a barrel on a firearm for which there is no commercially available action wrench. The Blank Block is provided to save time in fabricating these one-of-a-kind oddballs. When making up a head, either one-piece or two-piece, be sure to keep the fit of the head as tight as possible. Any slop or gaps between the head and the receiver could lead to serious damage to the receiver. If the head is for a cylindrical receiver such as the Remington 700, two blank heads can be clamped together and then bored out as a pair to the proper diameter. Be sure to always place a spacer at least .050" thick between the two blank heads when boring to provide crush space.

17. Flat Sided Actions - Single shot rifles, lever actions, some autoloaders can use any block, which is flat on one side, and the base/handle unit. Make sure both flat surfaces are flat and free from burrs. Use steel or brass shim stock if necessary to prevent dings in the jaws from marking the action.

18. Base/Handle Unit - If you do enough barrel work you may eventually want to have one or more wrenches setup permanently for a specific firearm. The Base/Handle Unit is provided to permit this without the additional expense of ordering an extra Head.

19. Allen Head Bolt Kit - The 1/2"-20 tpi 2" length bolts are used on the one-piece Heads; the 3" length bolts are for use on the two-piece Heads. To ensure the best service and long life, keep the threads on the bolts as well as the Heads, clean and lightly lubricated with a good quality oil.

WRENCHES & HEADS

MODEL	COMPLETE WRENCH	HEAD ONLY
Arisaka 38/99	#080-800-399	#080-801-399
Blank Block	#080-800-990	#080-801-990
Browning A-Bolt	#080-800-002	#080-801-002
1917 Enfield/P-14	#080-800-017	#080-801-017
FN/FAL	#080-800-101	#080-801-101
Large Ring Mauser	#080-800-098	#080-801-098
Small Ring Mauser	#080-800-095	#080-801-095
M1 Carbine	#080-800-100	#080-801-100
M14,M1A,M1 Garand	#080-800-114	#080-801-114
Remington 700	#080-800-700	#080-801-700
Remington 788	#080-800-788	#080-801-788
Savage 110/10 (New Style)	#080-800-109	#080-801-109
Savage 110/10 (Old Style)	#080-800-110	#080-801-110
SMLE	#080-800-004	#080-801-004
03 Springfield	#080-800-003	#080-801-003
Universal Head	#080-800-001	#080-801-001
Winchester Mod. 70	#080-800-070	#080-801-070
Mini Mauser Act.	#080-800-005	#080-801-005

ADAPTER HEADS & PARTS

Base/Handle Unit	#080-800-900
SMLE Adapter Plate/Small Ring Mauser Head	#080-801-495
Arisaka Single Head (Use with Model 70 Win. Head)	#080-801-400
Allen Head Bolt Kit	#080-800-903