



PAC-LITE™



## BARREL UPGRADE FOR THE RUGER® MARK I, II, III, & 22/45™ PISTOLS

### MANDATORY USE OF FACTORY MANUAL WARNING READ THE INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT

This manual in no way replaces or supersedes information or instructions from your gun manufacturer. In the event of a difference or conflict between your manufacturer's information and information contained herein, the official manufacturer's instructions shall always take precedence.

- **LOADED WEAPON WARNING**
- **ALWAYS MAKE SURE YOUR GUN IS UNLOADED BEFORE ANY WORK IS STARTED.**
- **NEVER CLEAN, LUBRICATE, DISASSEMBLE, REASSEMBLE OR WORK ON ANY FIREARM WHILE IT IS LOADED.**
- **KEEP ALL AMUNITION AWAY FROM THE WORK AREA.**
- **MUZZLE SAFETY WARNING:**
- **KEEP THE PISTOL MUZZLE POINTED IN A SAFE DIRECTION AT ALL TIMES WHILE WORKING ON YOUR PISTOL.**

### REMOVING THE MAINSPRING HOUSING

The perfect tool to use for raising the mainspring housing latch is a paper clip. Using the paper clip, lift the mainspring latch UP out of the grip frame as far as it will go, much like opening the blade of a pocket knife. This will bring the latch to an approximate 90 degree angle to the hand grip.



### REMOVE THE MAINSPRING ASSEMBLY

Pull straight DOWN on the housing until the mainspring housing pin clears its hole in the top of the receiver. With new pistols it may be necessary to tap lightly (with a plastic, rubber, or wooden hammer) on the end of the mainspring housing pin which protrudes through the top of the upper receiver assembly while pulling downward on the mainspring housing. Pull straight down on the mainspring housing until it clears both upper and lower receivers.



### REMOVAL OF YOUR FACTORY BARREL/RECEIVER

Make sure the pistol is pointed in a safe direction and that your finger is off of the trigger. Remove the magazine from the pistol. Grasp the bolt ears and with the thumb and index finger and pull the bolt fully reward. Visually verify that there is not a cartridge in the chamber. Release the bolt ears and let the bolt go forward.

You can now pull the bolt out of the receiver by pulling on the bolt ears while continuing to point the pistol at the ceiling. You may need to pull the trigger while sliding the bolt out to allow the hammer to pivot out of the way.

### UNCOCK THE HAMMER

The safety must be off and the pistol uncocked to disassemble your pistol. Insert an **empty** magazine into pistol. Point the pistol in a safe direction and, with the pistol unloaded, pull the trigger. The hammer must be uncocked to relieve the pressure on the mainspring before the pistol can be disassembled. Remove the **empty** magazine from the pistol.

*Please visit our PAC-LITE product page for more information and video instructions.*

### REMOVAL OF THE BOLT ASSEMBLY

You can now pull the bolt out of the receiver by pulling on the bolt ears while continuing to point the pistol at the ceiling. You may need to pull the trigger while sliding the bolt out to allow the hammer to pivot out of the way.



### REMOVAL OF THE UPPER RECEIVER ASSEMBLY

Hold the pistol over a padded work surface which will protect the upper receiver when it is removed. Tap the rear of the upper receiver with a plastic, rubber or wooden hammer to disengage the upper receiver from the lower receiver.



## INSTALLATION OF THE PAC-LITE™ UPPER RECEIVER

Grasp the lower receiver in a natural shooting position. Point the pistol upward vertically and pull the trigger to pivot the hammer backward to a cocked position. Lower the pistol to a horizontal position. Place the Pac-Lite™ upper receiver on the grip frame about 1/16" ahead of its final position. Press it backward and downward so that the forward retaining lug engages the front recess on the bottom of the Pac-Lite™ receiver. The Pac-Lite™ receiver is properly aligned when the mainspring pin hole in the upper receiver lines up with the hole in the grip frame. If proper alignment is not achieved by mere hand pressure the receiver can be pressed into position by placing the muzzle on a padded surface and press the grip frame into position. Inspect the inside of the Pac-Lite™ receiver to make sure the hammer is in the cocked position and that the hammer strut is free.

### INSTALLATION OF THE BOLT ASSEMBLY INTO THE RECEIVER

Insert the bolt into the receiver SPRING SIDE UP. If you put it straight in, the bolt will easily slide into the receiver.

### \*\*\*\*\* FIRING PIN STOP WARNING \*\*\*\*\*

When sliding the bolt assembly into the receiver, be certain that the firing pin stop is in the bolt. If the bolt is assembled without the firing pin stop in place, the first time the pistol is dry fired, the firing pin will be free to move forward to the extent that it will dent the rear face of the chamber, thus rendering the upper receiver useless and beyond repair.

UNFIRED POSITION



FIRED POSITION



### INSTALLATION OF THE MAINSPRING HOUSING ASSEMBLY [Figure A]

Insert an **empty** magazine into the pistol. Point the empty pistol downward and pull the trigger until the hammer falls forward to its (fired) position. Insert the mainspring housing into the receiver and push it straight up through the holes in the grip frame and the upper receiver. As the mainspring housing pin is pushed upward through the receivers, it passes through the slot in the bolt and also passes by the rear end of the recoil spring guide, camming the recoil spring guide forward to put initial tension into the recoil spring. Continue pressing the mainspring housing pin upward through the receivers until the mainspring housing pin protrudes about 1/8" above the top of the upper receiver. During this step, be certain that the bolt is fully forward and that the hammer is in the fired position.

**WARNING:** *The receiver must be properly positioned so that the mainspring housing bolt stop pin can be fully inserted into the receiver so that it protrudes about 1/8" above the top of the receiver. If the receiver is not positioned properly and the mainspring assembly is forced closed the receiver can be irreparably damaged. Tactical Solutions is not responsible for damage caused by improper assembly.*

### CLOSING THE MAINSPRING HOUSING [Figure B]

Invert the pistol so that the muzzle is pointed upward. Then position the pistol so that you can see the hammer strut. The hammer strut should slide into the cutout on the mainspring housing while the housing is being closed. While holding the pistol in the inverted position hold down on the trigger and close the mainspring as far as it will go without latching the mainspring housing into the pistol. Once the mainspring is closed as far as possible without latching remove the **empty** magazine and release the trigger.

### LATCHING THE MAINSPRING HOUSING [Figure C]

The mainspring housing is now ready to be latched but it is essential that the hammer strut comes to rest on the mainspring plunger as the housing is latched. The mainspring plunger lies inside the mainspring housing and may be seen through the slot in the upper end of the housing. If the hammer strut does not contact the mainspring plunger as the housing is latched, it will either be impossible to complete the closure of the housing or the housing may be closed but it will be impossible to draw the bolt all of the way back. It is also essential that the hammer itself be in its uncocked forward position (resting against the firing pin) as the mainspring housing is latched.

### TESTING FOR PROPER ENGAGEMENT [Figure D]

When proper engagement is achieved, closure is complete against the tension of the mainspring, which can be felt as the mainspring housing is pushed into the recess in the back strap. To find out if you did everything correctly, grasp the bolt ears and pull the bolt back GENTLY. (Do not force the bolt back) If the bolt comes all the way back, you have reassembled your pistol correctly and your pistol is now ready to use. If the bolt fails to come back, it is because the hammer strut is improperly positioned. In this case you must then open the mainspring housing again and go back to the step entitled VERIFY THAT THE HAMMER IS AGAIN FORWARD.



[Figure A]



[Figure B]



[Figure C]



[Figure D]

### STATE BY STATE FIREARM WARNINGS

**CALIFORNIA:** "Children are attracted to and can operate firearms that can cause severe injuries or death. Prevent child access by always keeping guns locked away and unloaded when not in use. If you keep a loaded firearm where a child obtains and improperly uses it, you can be fined and sent to prison!" **ADVERTENCIA** "A los niños los atraen las armas de fuego y las pueden hacer funcionar. Ellos pueden causarse lesiones graves y la muerte. Evite que los niños tengan acceso a las armas de fuego guardándolas siempre con no las esté utilizando. Si usted tiene un arma de fuego cargada en un lugar en que un niño tiene acceso a ella y la usa indebidamente, le pueden dar una multa o enviarse a la cárcel." **CONNECTICUT:** "Unlawful storage of a loaded firearm may result in imprisonment or fine." **FLORIDA:** It is unlawful, and punishable by imprisonment and fine, for any adult to store or leave a firearm in any place within the reach or easy access of a minor under 18 years of age or to knowingly sell or otherwise transfer ownership or possession of a firearm to a minor or a person of unsound mind." **MAINE:** Endangering the welfare of a child is a crime. If you leave a firearm and ammunition within easy access of a child, you may be subject to a fine, imprisonment or both. Keep firearms and ammunition separate. Keep firearms and ammunition locked up. Use trigger locks! **MARYLAND:** "WARNING: Children can operate firearms which can cause death or serious injury. It is a CRIME to store or leave a loaded firearm in any location where an individual knew or should have known that an unsupervised minor would gain access to the firearm. Store your firearms responsibly!" **MASSACHUSETTS:** "WARNING FROM THE MASSACHUSETTS ATTORNEY GENERAL: This Handgun is not equipped with a device that fully blocks use by unauthorized users. More than 200,000 firearms like this one are stolen from their owners every year in the United States. In addition, there are more than a thousand suicides each year by younger children and teenagers who get access to firearms. Hundreds more die from accidental discharge. It is likely that many more children sustain serious wounds, or inflict such wounds accidentally on others. In order to limit the chance of such misuse, it is imperative that you keep this weapon locked in a secure place and take other steps necessary to limit the possibility of theft or accident. Failure to take reasonable preventive steps may result in innocent lives being lost, and in some circumstances may result in your liability for these deaths." "It is unlawful to store or keep a firearm, rifle, shotgun or machine gun in any place unless that weapon is equipped with a tamper-resistant safety device or is stored or kept in a securely locked container!" **NEW JERSEY:** "It is a criminal offense to leave a loaded firearm within easy access of a minor." **NORTH CAROLINA:** "It is unlawful to store or leave a firearm that can be discharged in a manner that a reasonable person should know is accessible to a minor." **TEXAS:** "It is unlawful to store, transport, or abandon an unsecured firearm in a place where children are likely to be and can obtain access to the firearm." **WISCONSIN:** "If you leave a loaded firearm within the reach or easy access of a child you may be fined or imprisoned or both if the child improperly discharges, possesses, or exhibits the firearm." Please check with your licensed retailer or state police for additional warnings which may be required by local law or regulation. Such regulations change constantly, and local authorities are in the best position to advise you on such legal matters



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