

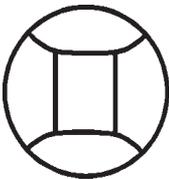
# TM-RAPTOR

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## OPERATION AND MAINTENANCE OF SOUND SUPPRESSOR MODEL RAPTOR

**Before using this suppressor,  
be certain you have read and  
understand this manual.**

Manufactured by



**GEMTECH**  
Div. of Gemini Technologies, Inc.  
P.O. Box 140618  
Boise, Idaho 83714

ISSUED: July 2, 2003

★ ★ ★ ★ ★ **WARNING** ★ ★ ★ ★ ★

☞ **Because sound suppressed weapons make less noise than non-suppressed weapons, it is easy to forget that they are still firearms. It is of vital importance to remember that a sound suppressed firearm is just as dangerous as a non-suppressed one, and the same safe handling requirements apply.**

TM-Raptor

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## **TM-RAPTOR**

OPERATIONAL MANUAL FOR  
SOUND SUPPRESSOR MODEL  
RAPTOR™ (9mm)

*Manufactured by*

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☆☆☆☆☆ **WARNING** ☆☆☆☆☆

☞ **Failure to follow installation and maintenance instructions detailed in this manual can result in potential for serious injury to the user and damage to the weapon.** Firearm sound suppressors are user attached firearm muzzle devices, and as such are subject to improper attachment unless the proper procedures outlined in this manual are followed.

**MANUFACTURER'S DISCLAIMER**

The manufacturer is not responsible for improper usage of this product. This product is potentially dangerous, and as such it is the user's responsibility to understand and implement its proper use. If you do not understand the instructions in this manual, please contact the manufacturer for further clarification.

Congratulations! You have just obtained the most efficient, state of the art, versatile, and carefully designed 9mm muzzle suppressor designed for the Heckler & Koch MP5 submachine gun available anywhere. Before use, please take a few moments to read this instruction manual.

**GENERAL DESCRIPTION**

The RAPTOR suppressor is a radical design exhibiting a quantum increase in efficiency as compared to other suppressors of similar external size and appearance. It is configured for mounting either on the 3-lug barrel of the H&K MP5 submachine gun utilizing the integral quick detach Gemtech Tri-Lock™ (patented) mount or on the Colt 635 9mm M16 submachine gun with the quick detach Gemtech Bi-Lock mounting system.

With simple maintenance, the RAPTOR suppressor's lifespan is in excess of 125,000 rounds (documented). It is specifically designed for fully automatic fire.

Suppression efficiency is gained through proper design of the suppressor rather than by using "wipes," grease, or other obstacles touching the bullet in free flight. For this reason, weapon accuracy is not impaired, and accuracy may be actually slightly enhanced by tightening of the group size.

**BASIC SUPPRESSION PRINCIPLES**

The sound of a firearm discharging is due to the sudden release of high pressure propelling gases. The purpose of a suppressor is to reduce the gas pressure by a combination of increasing the volume for gas expansion, decreasing gas temperatures, and delaying gas exit from the suppressor.

The RAPTOR™ suppressor utilizes a radical baffle design to accomplish these goals without the use of wipes or other accuracy-destroying techniques. Although designed to provide rated performance totally dry and degreased, spraying a light coating of Teflon based gun oil into the unit will significantly enhance the performance.

## CONSTRUCTION

The entire suppressor is constructed from hard anodized aircraft grade aluminum alloys with the exception of portions of the Tri-Lock™ mount. Because the radial orientation of the baffles is critical to optimum performance, the suppressor is sealed and cannot be disassembled other than removal of the rear mount. Cleaning can be accomplished by simple immersion in suitable solvents. Operational lifespan is in excess of 100,000 rounds.

For mounting on the Colt 9mm M16, it will be necessary to replace the existing compensator (flash hider) with the Gemtech Bi-Lock™ compensator (flash-hider/mount) See the instructions on P. 6.

☆☆☆☆ **DANGER** ☆☆☆☆



**Before performing any installation or maintenance operation, always remove the magazine from the firearm, open the action, and visually ascertain that the chamber is empty and the weapon unloaded. Failure to do so can result in potential for serious injury to the user and others in the vicinity.**

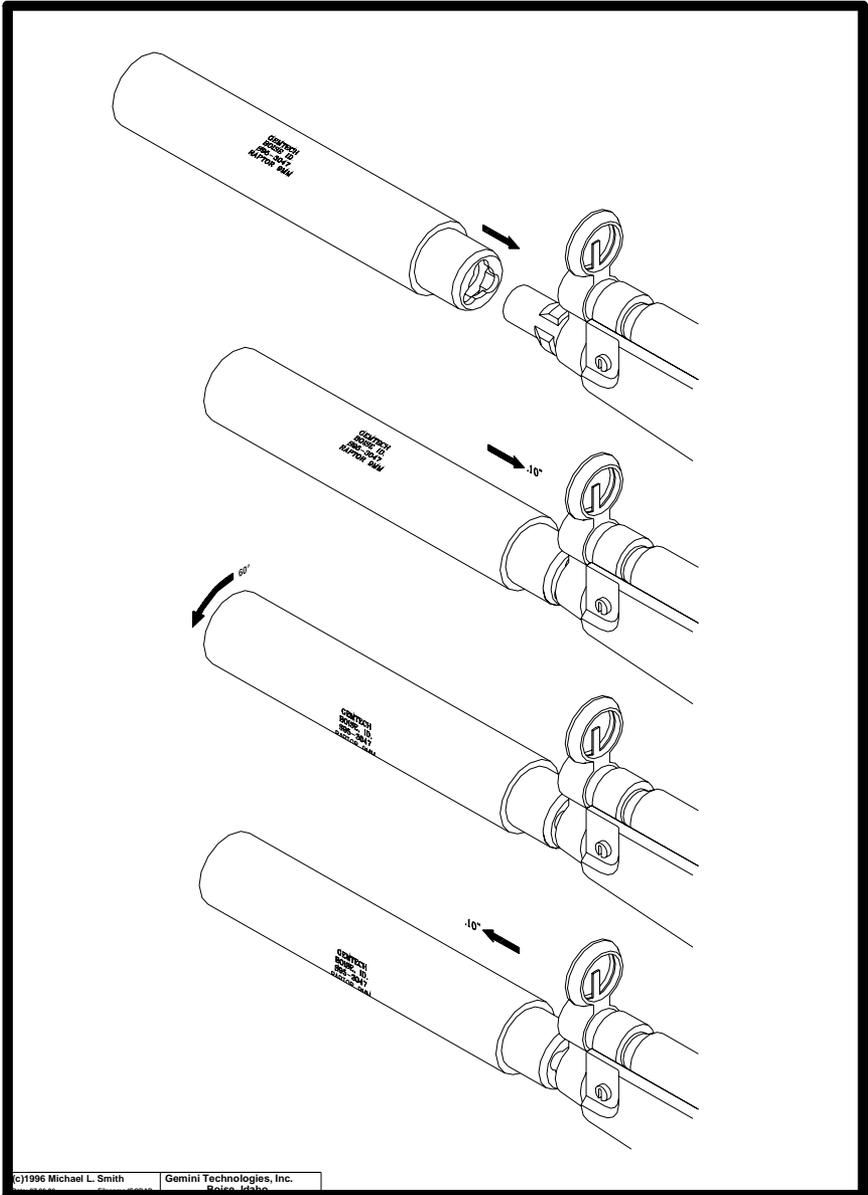
## MOUNTING ON HK WEAPONS

Although some versions of the HK MP5 submachine gun have muzzle threads, we suggest utilizing the 3-lug mount whenever possible, as it is a superior and more stable mount than virtually all thread mounting systems.

The Raptor™ using the Tri-Lock coupler must never be mounted on a 3-lug threaded barrel without a thread protector in place. The thread protector must have a diameter of 0.5905 (0.0005) inches at the muzzle. Failure to observe this caution will void the warranty and will result in misalignment. If there is any question, we can provide a suitable thread protector.

We guarantee alignment of the RAPTOR™ suppressor only on original non-threaded German 3-lug H&K MP5 barrels and those manufactured to German Heckler & Koch specifications. Mounting on non-specification barrels or threaded barrels with non-Gemtech thread protectors is done at the operator's risk.

## HK MP5 MOUNTING



## **RAPTOR™ 3-LUG HK-MP5 MOUNTING INSTRUCTIONS** **For the Gemtech TRI-LOCK™ 3-Lug Barrel Coupler**

1. Be certain the weapon is unloaded, the magazine removed, the safety on, and the bolt locked in the open position.
2. Align the grooves in the silencer mount with the lugs on the barrel.
3. Pull the silencer onto the barrel against spring tension until the silencer can be rotated counter clockwise while holding the weapon in the firing position.
4. Rotate the silencer 60° until it stops and release pressure on the silencer. Rock the silencer to be certain that the lugs have engaged the pocket recesses in the mount.
5. Removal is the reverse of installation. It will be necessary to pull the silencer rearward in order to rotate it 60° clockwise.

### **MOUNTING THE COLT 9mm M16 BI-LOCK**

In order to mount the Raptor suppressor on the Colt model 635 9mm submachine gun, it is necessary to replace the existing flash hider with the Gemtech Bi-Lock flash-hider/mount.

Tools required for flash hider installation:

1. Wrench, combination, NSN 4933-00-070-9152
2. Wrench, torque limiting, 0-120 ft/lbs, 1/2 in drive.
3. LOCTITE 262 (red) permanent thread locking adhesive (2-3 drops)

The bayonet lug on the front sight assembly is of no value whatsoever in the Colt M635, because the shortened barrel precludes use of a bayonet. Additionally, the bayonet lug may interfere with mounting of the Raptor suppressor with some aftermarket barrels. Our recommendation is to cut or file off the bayonet lug if the back of the threads on the barrel are behind the front of the bayonet lug. We do not recommend using spacer washers, as these reduce the amount of thread available on the barrel.

☆☆☆☆☆ **CAUTION** ☆☆☆☆☆

**UNLOAD AND CLEAR ALL WEAPONS BEFORE BEGINNING THIS PROCEDURE! SECURE WEAPON IN A HOLDING FIXTURE. DO NOT DAMAGE THE STOCK.**

1. Remove the existing flash hider from the muzzle of the weapon using the Combination Wrench (NSN 4933-00-070-9152). Save the existing compensating (peel washer) spacer.
2. The barrel must be cleaned of all dirt, grease, rust and other foreign matter using an approved solvent such as acetone, MEK (methyl ethyl ketone), or alcohol. Rust, if any, must be removed with a wire brush or steel wool.
3. The orientation of the lugs the Bi-Lock flash hider/mount is non-critical. If a specific orientation is desired for appearance purposes, use a compensating spacer (peel washer) as discussed below.
4. If a peel washer is to be used, screw the Bi-Lock Compensator hand tight onto the muzzle threads and lightly snug it with the Combination Wrench. Note the relative position of the attachment lugs. Heat the compensating washer in a propane torch to de-laminate the flakes (layers). Use 1-2 flake layers at a time until the position of the lugs is within 30 degrees of the desired orientation. Repeat procedure until the Bi-Lock Compensator can be torqued to the correct location.
5. Remove the Bi-Lock Compensator and place 2-3 drops of Loctite 262 (Red) thread adhesive on the treads. Torque the Bi-Lock Compensator into its final orientation utilizing a torque wrench and the Combination Wrench (NSN: 4933-00-070-9152). The final torque must not be less than 35 ft/lbs nor more than 45 ft/lbs.

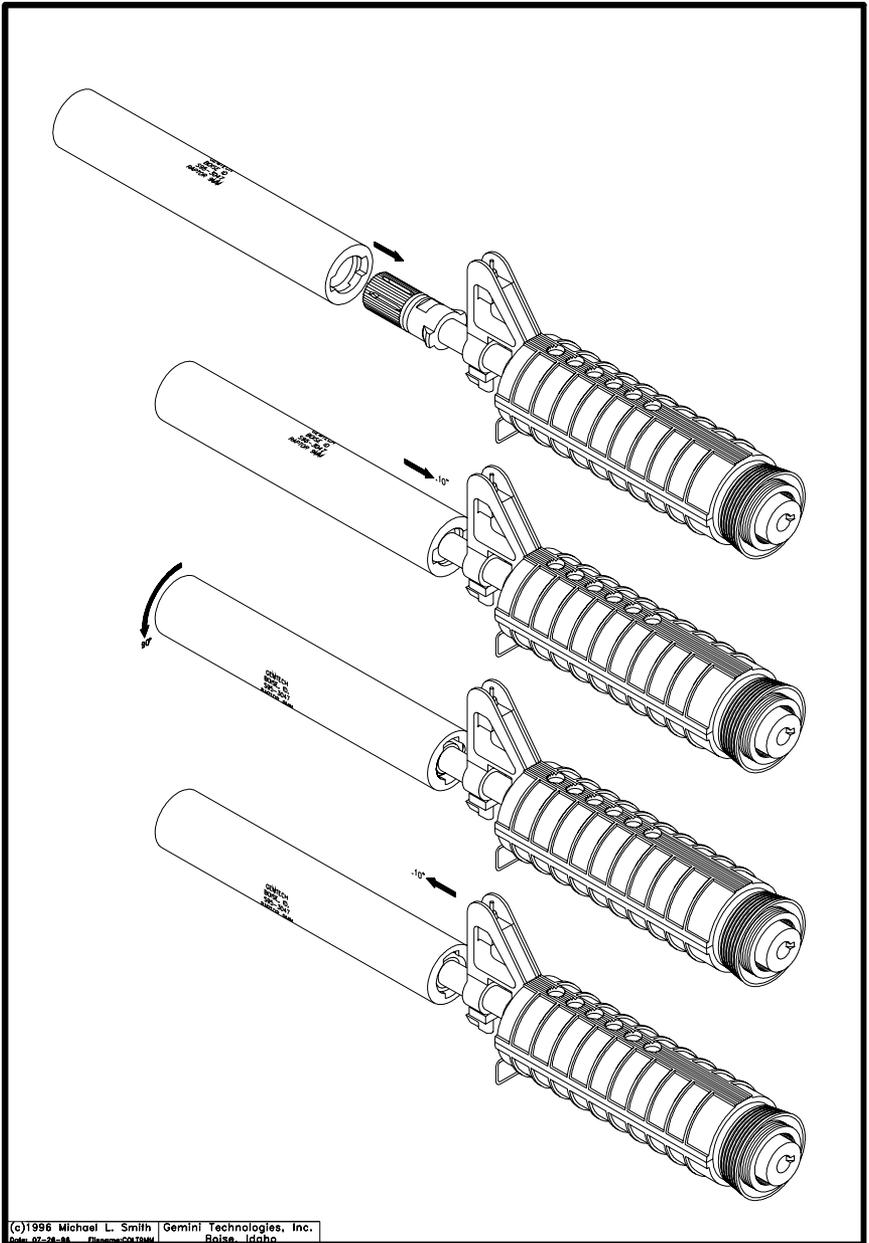
☆☆☆☆☆ **CAUTION** ☆☆☆☆☆

**Before initiating Mount/Dismount Procedures, be absolutely certain that the weapon is unloaded, the magazine removed, and the bolt locked in the rear position.**

**MOUNTING and DISMOUNTING THE Raptor (Colt Mounting) SOUND SUPPRESSOR (See Diagram P. 9)**

1. Mounting: To mount and dismount the Raptor (Colt Mounting) sound suppressor on the Bi-Lock Compensator, follow the following steps, detailed in the drawing:
2. Place the base of the suppressor onto the Bi-Lock Compensator.
3. Rotate the suppressor until the lugs on the Bi-Lock Compensator enter the base of the suppressor.
4. Press the suppressor onto the Bi-Lock Compensator against spring tension approximately 0.2 inch until the suppressor can be rotated on the Bi-Lock Compensator.

### COLT 635 (9mm M16) MOUNTING



5. Rotate the suppressor 90 degrees counter-clockwise (with reference to the operator's viewpoint) until the Bi-Lock Compensator lugs engage in recesses in suppressor mount. Internal stops prevent over-rotation. The suppressor will snap forward approximately 0.1 inch when engaged. Gently attempt to twist the suppressor to be certain it is locked in position.
6. Dismounting: Dismounting is the reverse of mounting.
7. Move the suppressor rearward on the Bi-Lock Compensator approximately 0.1 inch until it can be rotated.
8. Rotate the suppressor approximately 90 degrees clockwise (with respect to the operator's viewpoint).
9. Pull the suppressor forward clear of the weapon. Carbon buildup on the Bi-Lock Compensator can be broken loose by twisting the suppressor during removal after the mount has cleared the Bi-Lock Compensator lugs.

## AMMUNITION NOTES

☆☆☆☆ **WARNING** ☆☆☆☆☆

**Never use ammunition that does not meet SAAMI specifications.**

All commercial American made ammunition is safe, but the origins, storage history, and reason for being surplus of foreign made ammunition is not available for evaluation. Although foreign made ammunition is usually safe, this is not always the case. Damage from non-American ammunition cannot be covered under warranty.

The majority of 9mm ammunition is supersonic, and the projectile traveling at velocities above 1,100 fps will produce a ballistic "crack" or "sonic boom". There are several commercial sources of specially loaded subsonic 9mm ammunition, and for maximum effectiveness, we suggest the use of this type ammunition. Although special 9mm subsonic ammunition has a bullet muzzle velocity below 1,100 fps, the higher bullet weight results in a significantly higher bullet kinetic energy.

The majority of subsonic 9mm ammunition is loaded utilizing bullet weights of 147 grain or heavier. Subsonic ammunition utilizing bullet weights of 155 grain or more is apt to be significantly overpressured in some weapons, especially the HK MP5. 147 grain FMJ and JHP bullets for 9mm reloading are available from a variety of suppliers, including Hornady and Speer. We discourage the use of cast lead bullets. Loading data for 9mm subsonic ammunition is available from a number of sources, including the Speer Supple-

ment (available from Speer for their 147 grain TMC bullets), and from Accurate Arms for use with their powders. *However, we caution against any attempt to hand load beyond recommended SAAMI specifications.*

Commercial subsonic ammunition is available in 158 grain FMJ from Israeli Military Industries and in 147 grain bullet weight from Winchester, Remington, Federal, CCI, and others in both full metal jacket and hollow point styles. We have found that although this ammunition remains subsonic in pistols, it may not remain subsonic in the longer barrel of the Heckler & Koch MP5 submachine gun. The user will need to experiment with different brands. Ammunition with bullet weights over 154 grains is discouraged by H&K. Although some have suggested that the 9mm subsonic cartridge is “downloaded,” we believe users should be aware that this ammunition is anything but an anemic load with kinetic energies and pressures significantly greater than standard 9mm ball ammunition.

We strongly suggest against the use of corrosive ammunition, and evidence of its use will void the warranty.

## ROUTINE CLEANING

Cleaning of the suppressor internals is optional and consists primarily of flushing out unburned or partially burned powder residues. There are no perfect solvents for the carbon deposited on the internal parts by the burning of the powder. We have found, however, that Varsol automotive parts cleaner or a mixture of 3 parts mineral spirits and 1 part Type A Automatic Transmission Fluid are among the better solvents for suppressor cleaning. We suggest against the use of water-based solvents. **Never** use solvents containing ammonia, which can damage aluminum parts. This includes Hoppe’s, Sweets, and “GI” bore cleaner.

### ☆☆☆☆☆ CAUTION ☆☆☆☆☆

 **Always read the warning label on any cleaner or solvent, and remember that virtually all solvents are inherently dangerous and potentially toxic. Always use adequate ventilation and both skin and eye protection when using organic solvents. Many solvents have been associated with development of cancer.**

Cleaning by immersion should be performed every 2-3,000 rounds. Because of molten lead splattering from the heat generated by friction with cast bullets, we suggest against the use of non-jacketed ammunition.

Although the rear (Tri-Lock™) mount of the suppressor can be unscrewed for servicing of the “O” rings, removal for routine cleaning is not necessary or particularly desirable unless the mount will not lock up tightly on the weapon. The mount threads into the rear of the suppressor and is secured with a drop of Loctite 242 (blue). An immersion tank can be made from 1-1/4 inch PVC pipe with an end cap cemented in place. Because ultrasonic cleaners develop proper cavitation only with water-based solvents and do not function well with organic solvents, we recommend against their usage. Additionally, ultrasonic cleaners can damage aluminum if left in too long. The solvents can be removed by standing the silencer base down or blowing it out with compressed air.

The rear mount disassembles from the inside, requiring that it be removed from the rear of the suppressor. Although the “O” rings can be replaced by the user, we recommend that the mount be returned to Gemtech for servicing. The “O” rings are available as a set from Gemtech. Do not use standard neoprene “O” rings.

Following cleaning and drying, reassembly consists solely of replacing the Tri-Lock™ rear mount if removed. We suggest the use of 1 drop of “Blue” Loctite (242) to prevent unscrewing during use.

We do suggest spraying (or even immersing) the inside with a Teflon based lubricant (such as Break Free) to decrease carbon build-up within the suppressor. Although it will generate some smoke on initial firing, it will also enhance performance (by approximately 6 dB).

In addition to the maintenance instructions in this manual, any carbon buildup inside the rear sleeve of the suppressor needs to be occasionally cleaned out. We suggest the use of a small piece of “red” ScotchBrite 7447. In addition, we suggest lightly lubricating the inside of the sleeve with Militec metal conditioner (or a light grease) to reduce carbon buildup.

## PHYSICAL SPECIFICATIONS

Length	9 inches
Diameter	1-3/8 inch
Weight	10.5 ounce
Suppression*	30-33 dB(A) dry
Operational life	50,000 rounds minimum

\*NOTE: Suppression will vary slightly with ammunition used. We recommend against the use of water or other artificial environment media in the suppressor.

## **WARRANTY STATEMENT**

The Magnuson-Moss Act (Public Law 93-637) does not require any seller or manufacturer of a consumer product to give a written warranty. It does provide that if a written warranty is given, it must be designated as "full" or as "limited" and sets minimum standards for a "full" warranty.

GEMTECH has elected not to provide any written warranty, either "limited" or "full," rather than to attempt to comply with the provisions of the Magnuson-Moss Act and the regulations issued thereunder.

There are certain implied warranties under state law with respect to sales of consumer goods. As the extent and interpretation of these implied warranties varies from state to state, you should refer to your state statutes.

GEMTECH certifies that all sound suppressors manufactured by them are free of defects in materials or workmanship, and that they meet manufacturing specifications at the time of manufacture. Gemtech disavows responsibility for damages resulting from neglect, abuse, misuse, or acts of war.

GEMTECH denies any liability resulting from the use, abuse, or criminal misuse of this product.

## **REPAIR POLICY**

Should the sound suppressor require repair or modification, the owner should contact GEMTECH either in writing or by telephone. If it should become necessary to return the suppressor for repair or modification, it will be necessary to transfer it to the manufacturer utilizing the ATF Form 5 (tax exempt). No additional tax liability is incurred and it is not necessary to be re-fingerprinted or obtain re-approval by local police, as only the front sheet of the Form 5 will need to be filled out.

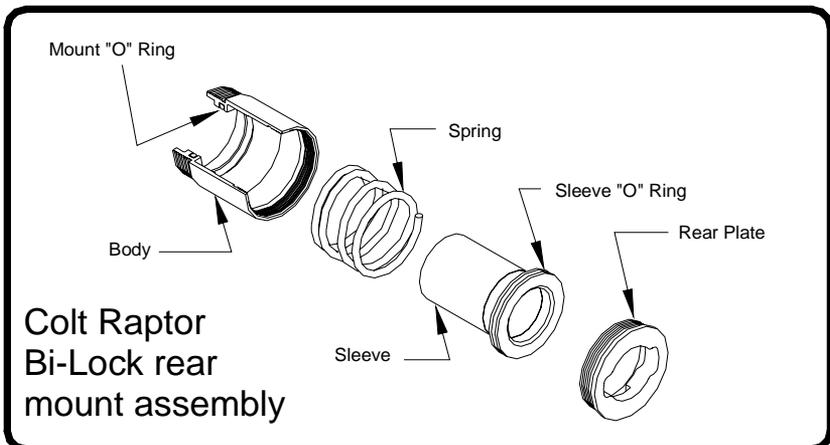
Should return be necessary, properly filled out copies of the correct form will be mailed to the customer for the customer's signature.

Due to restrictions imposed by Public Law 99-308, replacement parts are no longer available for field installation. It is now necessary to return the suppressor to the manufacturer if repair parts should be necessary.

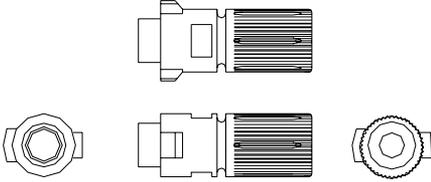
If repairs are required due to a defect in manufacturing or materials, there will be no charge for repairs. Otherwise, the owner will be invoiced for both time and materials required.

## COLT Mounting RAPTOR REAR MOUNT DISASSEMBLY

- 1 The M4-96D suppressor is a sealed unit and cannot be totally disassembled other than by the manufacturer. Attempting to do so will void the warranty and may permanently damage the suppressor.
- 2 The mount can be partially disassembled if necessary to replace the Viton "O" rings in the mount or to service the movable sleeve. This may become necessary if the suppressor has been soaked in solvents known to damage Viton.
- 3 The rear plate of the suppressor will unscrew, permitting removal of the sleeve and mounting springs. If stuck, the sleeve can be removed easily with a slide-hammer type bearing puller. The mounted Bi-Lock compensator may be used as a wrench. The "O" ring inside the body can be picked out with a dental pick.
- 4 The outside of the sleeve must be cleaned thoroughly. Carbon may be scraped off with a scraper and then polished with Skotchbrite moistened in Milatec-1 or WD-40.
- 5 When replacing "O" rings, use only Viton. Do not use conventional black neoprene "O" rings.
- 6 Reassemble the mount after coating the "O" ring bearing surfaces with a small quantity of Permatex Super-Lube synthetic lubricant. Do not substitute other greases. Secure the rear plate hand tight. The manufacturer recomends against thread sealants, although a single drop of Loctite 292 (wicking) can be used if necessary.
- 7 No other disassembly is possible.



## COMPONENTS OF A SYSTEM and ILLUSTRATED PARTS LIST

QUAN.	PART No. and DESCRIPTION
1	<div style="text-align: center;">  <p data-bbox="423 589 809 656"><b>RAPTOR Sound Suppressor Colt Bi-Lock Mounting</b></p> </div>
1	<div style="text-align: center;">  <p data-bbox="375 1029 809 1062"><b>RAPTOR Bi-Lock Compensator</b></p> </div>

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