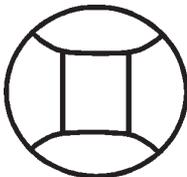


TM-SP90

OPERATION AND MAINTENANCE OF SOUND SUPPRESSOR MODEL SP-90

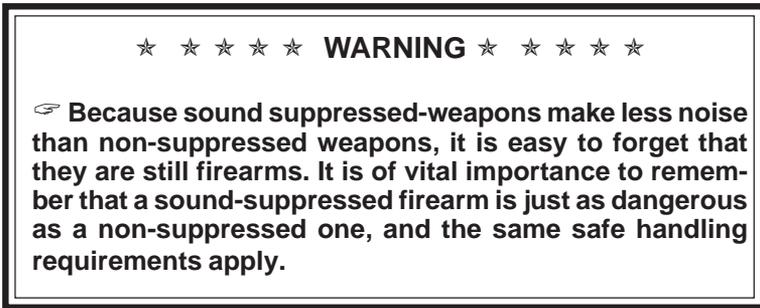
**Before using this suppressor,
be certain you have read and
understand this manual.**

Manufactured by



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

ISSUED: July 26, 2000



TM-SP-90

FIRST EDITION February 2000
SECOND EDITION October 2005

Published by:

ATI Star Press
Antares Technologies, Inc.
P.O. Box 140618
Boise, Idaho 83714
Phone: (208) 939-7222

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TM-SP-90

OPERATIONAL MANUAL FOR SOUND SUPPRESSOR MODEL SP-90S (5.7mm)

Manufactured for FNMI by

GEMTECH Division of Gemini Technologies, Inc.
P.O. Box 140618
Boise, Idaho 83714-0618

Phone: (208) 939-7222
FAX: 208-939-7804

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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.** Being user-attached muzzle devices, firearm sound suppressors 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.

GENERAL INFORMATION

The Gemtech SP-90 suppressor was designed specifically for the FN P90 Personal Defense Weapon manufactured by FN Herstal and distributed by FN Manufacturing, Inc., Columbia, SC. The suppressor features Gemtech's patented quick detach mounting system and requires the replacement of the original P90 flash hider with the Gemtech proprietary Bi-Lock flash hider for the P90.

The model SP-90 sound suppressor is designed to provide a secure and accurate quick-detach mounting system on the FN P90 PDW and is interchangeable with any other FN P90 equipped with the Bi-Lock flash hider. The Bi-Lock flash hider includes two lateral lugs for secure suppressor attachment.

All muzzle attachments, including suppressors, will change barrel harmonics and standing waves. This results in a slight change in point of impact with the device in place. The SP-90 suppressor and mount combination has been carefully engineered to provide a consistent, repeatable, and predictable shift in point of impact. The SP-90 suppressor will have no deleterious effect on group size.

This suppressor is effective in markedly reducing the sound of the muzzle blast, making it difficult for an observer to determine the origin of the shot and eliminating the need for shooter hearing protection. There is no way of eliminating the ballistic crack (or sonic boom) of the projectile traveling downrange when using the standard SS-190 ball ammunition.

When using the SB-193 subsonic ammunition (white tip), the dominant sound becomes that of the mechanical noise of the weapon and the projectile impacting the target.

Although loosely based on the design of the world famous Gemtech M4-96D suppressor in 5.56 x 45 mm, the SP-90 has been specifically optimized for the FN P90 weapon and its 5.7 x 28 mm ammunition.

This suppressor contains no expendable parts and may be cleaned by immersion in suitable solvents and oils. This instruction manual gives the necessary instructions for maintenance of this unit.

OVERALL EFFECTIVENESS

The real limiting factor on the effectiveness of centerfire rifle suppressors is related to the sound of the bullet in free flight. The free flight bullet noise is related to the general bullet shape and is also directly proportional to the bullet velocity. The SP-90 suppressor is capable of reducing the sound of the muzzle blast to below the level of bullet and action noise. Because of the sound level of the bullet in flight, it is not possible to truly appreciate the degree of reduction when the muzzle blast is reduced to less than the bullet flight noise unless subsonic ammunition is used.

Besides sound suppression, there are other benefits of a sound suppressor which are seldom mentioned. Sound suppressors are exceptionally effective recoil reducers. Although recoil is not an issue in the FN P90, the SP-90 enhances controllability of the weapon. Sound suppressors are exceptionally effective flash suppressors. This is an important consideration when used in the flammable atmosphere often encountered in drug labs.

CONSTRUCTION

The suppressor is built from 100% corrosion-resistant stainless steel alloys.

SPECIFICATIONS

Length:	7.1 in.
Diameter:	1.375 in.
Weight:	20 oz.
Suppression level:	33 dB (SB-193), 31 dB (SS-190)

AMMUNITION

At the time of printing of this manual, three types of 5.7 x 28 mm ammunition are produced by FN for the P90 Personal Defense Weapon. The standard SS-190 ball ammunition is supersonic and is identified by no markings on the full-metal-jacketed projectile. The SB-193 Subsonic ammuni-

tion is identified by white marking on the full-metal-jacket projectile. The Tracer ammunition is identified with a red marker. All three of these factory rounds are certified for use by FN in the P90 and all are suitable for use with the SP-90 suppressor.

Gemtech specifically cautions against the use of non-FN approved ammunition, and use of such ammunition will void both the warranty issued by FN as well as the warranty for damage to the suppressor.

The SP-90 suppressor has been specifically designed for use with the FN 5.7 x 28 mm cartridge. Use with any larger cartridge, such as the 5.56 x 45 mm NATO ammunition is not approved by Gemtech.

SAFETY NOTES

1. Always handle weapons in a safe manner and assume they are loaded until they have been cleared.
2. ser installation or removal of the sound suppressor must be accomplished in accordance with the instructions contained in this manual.
3. Any installation or removal of the Bi-Lock Compensator mounting system must be accomplished by a qualified armorer in accordance with the instructions contained in this book.
4. Serious injury to the user may result from an improperly-installed Bi-Lock Muzzle Brake and/or suppressor.
5. Operating Temperatures: During use, the SP-90 suppressor absorbs heat from the burning propellant gases. This heat is dissipated by radiation, convection, and conduction. The heat buildup is particularly noticeable during fully-automatic fire. The elevated temperatures can pose a hazard to personnel and materials that may contact the suppressor when hot, and the suppressor must be allowed to cool to ambient temperature before handling.

★ ★ ★ ★ ★ **WARNING** ★ ★ ★ ★ ★

☞ Failure to follow installation instructions detailed in this manual can result in potential for serious injury to the user and damage to the weapon.

INSTALLATION OF BI-LOCK FLASH HIDER

It is necessary to replace the original P90 flash hider with the Gemtech Bi-Lock flash hider in order to attach the suppressor to the

weapon. It may be necessary to refer to the FN instructions for field stripping the weapon.

1. Place the selector lever in the “S” (safe) position. Remove the magazine from the weapon by pushing back the magazine catches.
2. Pull the cocking handle fully to the rear, visually inspect the chamber to ascertain that it is empty, and release the cocking handle.
3. Depress the lock (barrel/support) located in front of the chamber. Remove the breech/barrel assembly forwards.
4. The barrel threads are LEFT HAND. Using a 19mm wrench on the flash hider, unscrew the barrel from the flash hider with a 15mm wrench on the flats at the rear (chamber end) of the barrel. Be certain to turn clockwise as viewed from the chamber end to unscrew.
5. Replace the original flash hider with the Gemtech Bi-Lock flash hider. Do not forget the spring at the front of the barrel behind the flash hider. Screw the barrel into the flash hider by turning counter-clockwise (viewed from the chamber) until snug. There will be a small amount of required longitudinal barrel movement.

★ ★ ★ ★ ★ **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.

SUPPRESSOR MOUNTING/DISMOUNTING

Installation of the suppressor on the Bi-Lock Mount can be performed in less than five seconds. (See drawing P. 7).

1. Place the base of the suppressor onto the Bi-Lock Muzzle Brake/Mount.
2. Rotate the suppressor until the lugs on the Bi-Lock Compensator enter the base of the suppressor. This can occur in only one position.
3. 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.
4. 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.

Dismounting: Dismounting is the reverse of mounting.

1. The suppressor will become hot with usage. If the suppressor must be dismounted when hot, a protective glove, such as Nomex, must be worn.
2. Move the suppressor rearward on the Bi-Lock Compensator approximately 0.1 inch until it can be rotated.
3. Rotate the suppressor approximately 90 degrees clockwise (with respect to the operator's viewpoint).
4. 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.

★ ★ ★ ★ ★ **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 and avoid open flames.

CLEANING

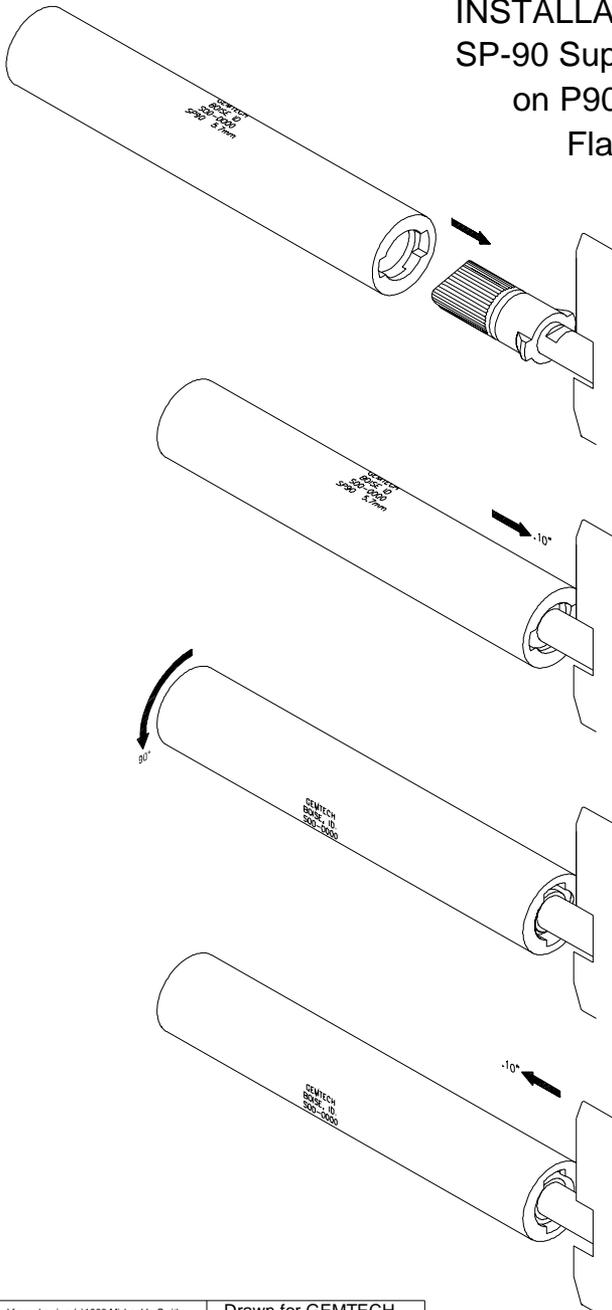
The SP-90 suppressor is constructed of 100% corrosion-resistant stainless steel parts. As such, there is no real concern about corrosion from the products of combustion of the propellant gases. We have found no real need for frequent or compulsive cleaning other than occasional servicing of the mount.

Cleaning may be performed by immersion of the suppressor in solvents. We recommend a mixture of 3 parts mineral spirits to one part automatic transmission fluid. **Never use water or water-based cleaning agents.**

Because ultrasonic cleaners do not function properly with non-water-based agents, they are of little or no value in cleaning this suppressor.

The suppressor is drained by standing first on one end and then the other followed by rinsing with a similar solvent and drained again. The suppressor will not drain completely. We suggest blowing the unit out with an air compressor to help remove the solvent and excess oils. Residual oils will cause excessive smoking with use but is not harmful.

INSTALLATION of SP-90 Suppressor on P90 Bi-Lock Flash Hider



It is necessary to clean carbon buildup from the inside of the mounting sleeve. This is best performed with a piece of Red Scotch-Brite moistened with a light oil.

MOUNT DISASSEMBLY

The SP-90 suppressor is sealed and cannot be disassembled other than by the manufacturer. Attempting to do so will void the warranty and may permanently damage the suppressor.

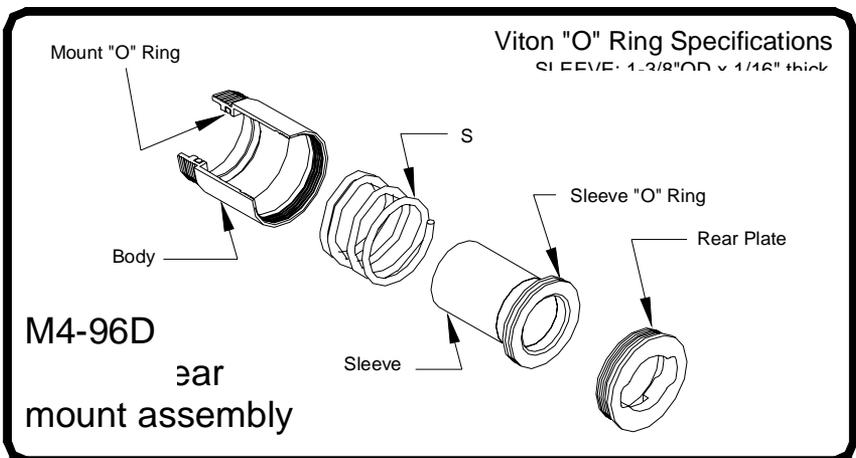
The mounting section can be partially disassembled if necessary to replace the Viton "O" rings in the mount or to service the movable sleeve.

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.

The outside of the sleeve must be cleaned thoroughly. Carbon may be scraped off with a scraper and then polished with Red Scotchbrite moistened in WD-40 or a 3:1 mixture of mineral spirits and automatic transmission fluid.

When replacing "O" rings, use only Viton. Replacement "O" ring sets are available from the manufacturer. Do not use conventional black neoprene "O" rings.

Reassemble the mount after coating the "O" ring bearing surfaces with a small quantity of Permatex Super-Lube synthetic lubricant with Teflon or Marine Wheel Bearing Grease. **Do not substitute other greases.** Secure the rear plate hand tight. Do not use thread sealants, such as Loctite.



WARRANTY STATEMENT

Our "warranty" has been practiced since our personnel started in the suppressor business in 1976, in a time before legalese and when a handshake and this simple statement sufficed: "If a Gemtech product breaks and it's your fault, we'll fix it for a fair price in a timely manner. If it's our fault, we'll fix it quickly at no charge." This policy born of pride in craftsmanship and honor has served us and our clients well for over two decades and will continue in Gemtech's future.

The small print follows:

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.

As do all major firearms manufacturers, 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.

It is our intent that the customer be completely satisfied with the product. Certain Gemtech products may be classified as ordnance and/or implements of war and are sold by us with the specific understanding that Gemtech has taken every reasonable precaution in providing our customers with inherently safe merchandise, and that we assume no liability whatsoever for unsafe handling by the purchaser or his agents. Gemtech assumes no responsibility whatsoever and we will honor no claims for damages, regardless of nature, for physical injury or property damage resulting from careless and/or irresponsible handling, adjustments to equipment, neglect or abuse.

Gemtech reserves the right to make changes at any time and without notice, in prices, to change specification or design, to add or remove accessory materials, and to add or delete items without incurring any obligation.

Use of ammunition that does not meet SAAMI specifications will void all warranties.

REPAIR POLICY

Gemtech maintains complete repair facilities for all suppressors manufactured by them or their antecedent companies. Return authorization and shipping instructions must be obtained prior to return. Contact Gemtech for this information.

ATF no longer requires transfer on a Form 5 to the manufacturer for repair. However, they do require a letter accompanying the weapon detailing the repairs required. We will require also a photocopy of the front of the owner's Form 3, 4, or 5.

All Gemtech products are
100% manufactured in the
United States of America.

