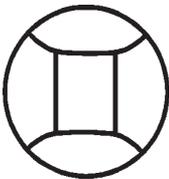


TM-SG9

OPERATION AND MAINTENANCE OF SOUND SUPPRESSOR MODEL SG9

**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: December 20, 2002

★ ★ ★ ★ ★ **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-SG9

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TM-SG9

OPERATIONAL MANUAL FOR
SOUND SUPPRESSOR MODEL
SG9™ (9mm)

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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 purchased an efficient, versatile, and carefully designed 9mm submachine gun sound suppressor with an integral barrel designed to replace the barrel in the appropriate submachine gun. Before using this suppressor, please spend a few moments reading this instruction manual and the safety warnings.

☆☆☆☆☆ WARNING—DANGER ☆☆☆☆☆

When changing ammunition brands or before first using this suppressor without the port blocking collar installed, load 5 rounds into the magazine of the submachine gun, set the selector on SEMI-AUTO and fire into a safe backstop. If the submachine gun will not operate semi-automatically (or has fully-automatic "runaway"), then there is insufficient recoil to blow the bolt back far enough to adequately engage the sear. This will require installing the port-blocking collar over the rear set of barrel ports. Refer to the text of this manual for instructions.

☆☆☆☆☆ WARNING ☆☆☆☆☆

HISTORICAL BACKGROUND

The model SG9 suppressor was designed by Dr. Philip Dater at Automatic Weapons Co. The original version, designated the M76, was designed specifically as a combination barrel and muzzle suppressor for the S&W model 76 submachine gun. As the design progressed, the same suppressor was adapted to the STEN Mk-II submachine gun. Because of certain similarities, it was decided to combine all of these separate suppressors into a single unit, the model SG9 which would fit both submachine guns by changing only the suppressor's integral barrel and barrel mount.

A limited number of the SG9 suppressors were hand built by Dr. Dater at the original Automatic Weapons Company in Albuquerque, NM, and all were finished with a bright, highly polished blued finish. In early 1983, the design was licensed to Southern Machine Tool and Die Co., who produced a limited number of these suppressors for their M76A1 copy of the S&W M76 submachine gun. The licensing has expired, and the suppressor was then built under license by AWC Systems Technology in Houston, Texas with a military phosphate finish. It is currently built on a custom basis by Gemtech in Boise, ID. Although normally configured for the Smith & Wesson M76 and the M76 clones, it can be configured for the British STEN submachine gun.

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 and decreasing gas temperatures.

Your model SG9 suppressor consists of two suppression chambers. The rear chamber encloses the special ported barrel and functions as a barrel suppressor. A roll of steel screen in the rear chamber offers a large surface area for absorption of heat and also functions as a diffuser to decrease the blast of gases from "ringing" against the outer tube. The rear chamber also offers a large volume for gas expansion with exceptional control of blowby gases by the use of a ported barrel. The other advantage to the ported barrel is velocity control. Once the bullet passes the first port, propelling gas is bled into the rear suppression chamber and is no longer available for accelerating the bullet. The location of the first port will determine the velocity of the projectile as well as the recoil available for operation of the action. These factors are also affected by the specific ammunition loading (bullet weight, powder type and burning rate). Because of these variables, the SG9 suppressor has provisions for selectively blocking the first set of ports (with a "port blocking collar") to obtain adequate recoil for operation of

the action and to maintain the bullet velocity just below the speed of sound (approximately 1,100 ft/sec.). Please refer to the section on ammunition.

The front chamber is a relatively conventional baffled muzzle suppressor and contains a series of precision formed stainless steel baffles. Stainless steel was used for durability and resistance to gas erosion and corrosion. The baffles are optimally spaced for maximum gas trapping, cooling and delayed gas release into the atmosphere.

AMMUNITION NOTES

Because the suppressor can be so easily disassembled for cleaning and repacking, we see no serious problem in shooting cast lead bullets. However, we do not encourage the use of non-jacketed ammunition.

9 mm Parabellum ammunition is unbelievably variable in its loading. When this suppressor was shipped from the factory, the port blocking collar was in place, blocking the first set of ports. This will allow the submachine to function well with almost all ammunition. All of the ammunition utilizing 147 or heavier projectiles will be subsonic anyhow, as will be a significant number of the standard commercial American ammunition utilizing 125 grain or heavier bullets. Some imported ammunition (specifically that from Czechoslovakia) will remain supersonic regardless of what is done with the SG9 suppressor.

If the ammunition (especially that utilizing projectiles under 125 grain) is supersonic, the user may remove the port blocking collar, a short threaded sleeve, to open the rear set of barrel ports. Removal of this sleeve will decrease the velocity by earlier bleed-off of gases in the rear section of the suppressor. *However, the recoil impulse of light projectile ammunition when held to subsonic velocities may be inadequate to reliably cycle the weapon.* In such case, the user must leave the port blocking collar in place and either utilize ammunition with heavier projectiles, or tolerate the sonic crack.

To remove or install the port blocking collar, unscrew the barrel and its retaining nut from the rear of the suppressor. Slide the collar rearward over the barrel and screw hand tight to cover the rear set of ports. We strongly recommend use of an anti-sieze compound on the threads. Reassemble the suppressor. (See photos on page 9).

Our recommendation is to routinely use only subsonic 9mm ammunition. It is produced by a number of commercial manufacturers (including Winchester, Federal, Remington, CCI, and IMI/Samson) as well as numerous remanufacturers. The newer reloading manuals include suggested loads for 147 grain projectiles. Some of this information is currently available from Accurate Arms for their powders and from Speer (on special request) for their bullets.



Collar Removed

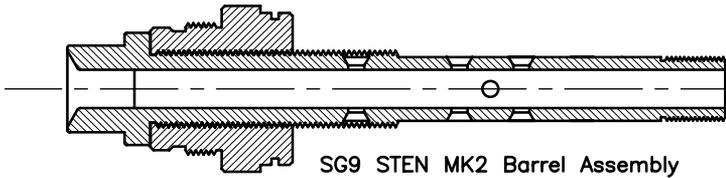


Collar Installed

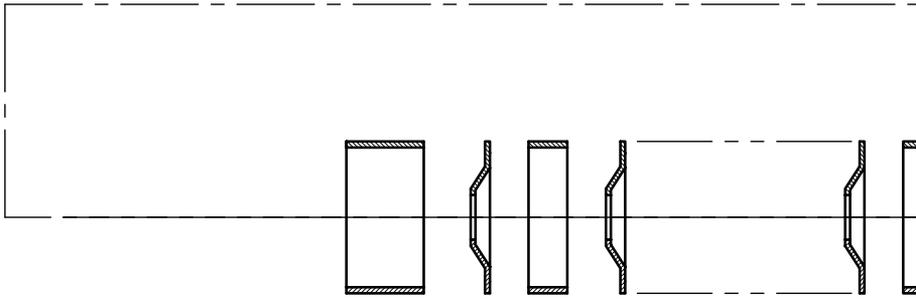
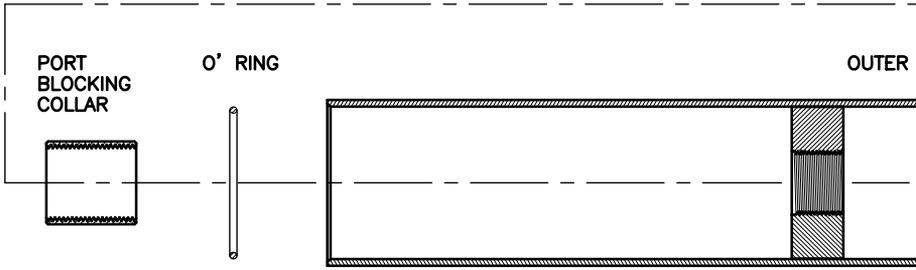
PORT BLOCKING COLLAR

The port blocking collar is designed to block the first set of barrel ports. When installed, the recoil impulse and dwell is greater, enhancing weapon cycling. When removed, both projectile velocity and recoil are reduced. As a general rule, with 115 grain ball ammunition, the collar will need to be removed, while it will need to be in place with subsonic ammunition. Refer to the text in the "Ammunition Notes" section for instructions on determining need.

BARREL / BARREL RE



SG9 STEN MK2 Barrel Assembly



(1X) LONG SPACER

(16) BARREL SHIM
(15) SHIM

It is of utmost importance that no ammunition be used that does not meet SAAMI specifications. Use of overpressured ammunition will void the warranty. All commercial American made ammunition meets SAAMI specifications. Foreign manufactured ammunition is used at the owner's risk only.

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 similar to those of the .45ACP.

CLEANING

Corrosive ammunition is so designated because the residues from the fired primer absorb water. However, the products of combustion of smokeless powder contains oxides of carbon, nitrogen, and hydrogen. Many of these oxides will combine to produce weak acids, which (especially in a humid climate) can and will cause corrosion (rust). It is to reduce this that your suppressor has been built using corrosion resistant stainless steel baffles and aluminum spacers. However, there are numerous steel parts which require cleaning and protection.

Unless corrosive ammunition has been used, only minimal cleaning is required between total disassembly and major cleaning with replacement of the screen roll in the rear suppressor chamber. The routine cleaning can consist of swabbing the barrel in the suppressor with a brass brush soaked in WD-40 or a similar light oil, followed by a dry patch. Because total disassembly is required for proper cleaning after firing corrosive ammunition, use of such ammunition is to be discouraged and damage caused by corrosive ammunition (rust) is NOT covered under the warranty.

Regardless of use, we strongly suggest total disassembly, cleaning, and oiling of the suppressor every 3 months in humid climates and every 6 months in the desert climates.

DISASSEMBLY

Disassembly is required for thorough cleaning and repacking, and it should be done approximately every 3,000 rounds, every 3 months (as noted above) or when using corrosive ammunition. The only tool necessary is included with the suppressor.

1. Grip the outer tube in one hand and the barrel retaining nut with the other and unscrew the tube from the barrel. You will notice a rubber "O" ring on the barrel retaining nut as the outer tube is unscrewed. This is a gas seal. The barrel is threaded into a non-removable baffle about four inches from the rear of the outer tube.

2. Remove the roll of screen from around the barrel, or perhaps still within the rear part of the suppressor. Do not attempt to separate the barrel from the barrel retaining nut. Thoroughly clean the barrel and retaining nut with a suitable powder solvent and oil. Make sure that the ports (holes) in the side of the barrel are clean and free of debris. The rolled screen should either be cleaned with powder solvent (or WD-40) or should be replaced. Replacement consists of a strip of standard 8 mesh (also called 1/8" mesh) hardware cloth available at any hardware store. Use the existing piece for dimensions and roll on an 11/16" form (wood dowel) to an outside diameter of 1-7/16" (to fit inside the outer tube). Two pieces of Scotch strapping tape or thin utility wire will keep the screen rolled up.

3. The baffles in the front section of the suppressor may be removed by unscrewing the front end cap with the spanner wrench included with the suppressor. They may be removed by driving them foreword with a 1/2" wooden dowel inserted from the rear of the suppressor. Please note that there are between 17 and 20 conical baffles separated by aluminum spacer rings. There is no need to try to remove the rear-most spacer. Clean all parts thoroughly. We suggest using soap (or scouring powders) and steel wool or SOS pads to clean the spacers and baffles. Steel parts may be cleaned utilizing solvents.

Because many solvents (especially 1,1,1-trichlorethylene and perchlorethylene) are toxic, they should only be used outdoors or with excellent ventilation, and it is important to avoid exposure to these fumes.

REASSEMBLY

1. Reassembly is the reverse of disassembly. It is recommended that a small dab of colloidal copper thread anti-sieze compound be used on the threads on the end of the barrel. Industrial anti-sieze compounds are available at most automotive supply stores. If the "O" ring has deteriorated, replacements can be obtained at any plumbing supply store. The original is 1/10" thick and has a diameter of 1-1/4". Screw the outer tube to the barrel assembly (don't forget the rolled screen) as tight as possible by hand.

2. Contrary to popular opinion, it is virtually impossible to "drop" the baffles into place correctly. Use some type of baffle alignment rod, such as a 3/8" diameter aluminum rod or a wood dowel. With the alignment rod vertically on your work surface, stack first the front end cap, a spacer, and then baffles with alternating spacers on the rod until all are in place. The baffles should all be oriented with the apex of the cone up. Slide the front of the

suppressor down over this assembly until all baffles are inside the suppressor tube. Using the spanner wrench, securely tighten the end cap into the front end of the suppressor. Again, we recommend the use of an anti-sieze compound on the threads. Remove the alignment rod and spanner wrench.

NOTES ON USE

It is normal for the outer tube to become hot during automatic or rapid fire, and it is recommended that some type of cover be used. Gemtech does not manufacture such a cover, but a Nomex or rubber cover for a MAC submachine gun suppressor will fit over the rear part of the suppressor, which is where the shooter will normally hold the suppressor during firing. Alternately, a cover may be fabricated from a rectangle of quilted cloth (available at most cloth supply stores) with a strip of Velcro sewed along one end. Dimensions would be 13" long by about 6-1/2" circumference. This will allow about one inch overlap for the Velcro closure.

PHYSICAL SPECIFICATIONS

Length	14 inch
Diameter	1.6 inch
Weight	3.2 pound
Suppression	40 dB

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 most 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 or operation 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, improper operation, 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 or modifications required. ATF requires proof of ownership, satisfied by a photocopy of the front of the owner's Form 3, 4, or 5.

NOTE: ATF prohibits transferring the serial number to a new outer tube in the case of damage to the tube. Tube damage will require a new suppressor.

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www.gem-tech.com

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

