

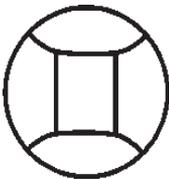
# TM-PSR

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## OPERATION AND MAINTENANCE OF SOUND SUPPRESSOR MODEL PSR

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

Manufactured by



**GEMTECH**  
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P.O. Box 140618  
Boise, Idaho 83714

ISSUED: August 20, 2011

★ ★ ★ ★ ★ **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-PSR

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**TM-xxx**

**OPERATIONAL MANUAL FOR  
SOUND SUPPRESSOR MODEL  
PSR™ (.338 Lapua)**

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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.

## **GENERAL DESCRIPTION**

Please take a few minutes to read this instruction manual and keep it in a safe and convenient place. The model PSR sound suppressor was designed specifically for use with rifles chambered for the popular .338 Lapua cartridge. It is a rugged suppressor and mounts on Gemtech's proprietary muzzle brake supplied with the suppressor. This suppressor contains no expendable parts. We recommend against cleaning the interior of the suppressor. This instruction manual gives the necessary instructions for installation and maintenance of this unit. The mount is supplied with a custom thread protector.

On special order, the PSR suppressor can be supplied in 100% titanium at a weight savings of 38%.

## **USE OF ABLATIVE AGENTS (ARTIFICIAL ENVIRONMENT)**

Do not fire this suppressor with any foreign material inside. Designed to operate completely dry, introduction of liquids, greases, or other foreign materials can cause abnormal pressures and must never be used. Any resultant damage is not covered under warranty.

## **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 non-suppressed sound pressure level of this cartridge is one of the highest of the small arms rifles other than the .50 Browning. 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 reducing the need for shooter hearing protection. There is no way of eliminating the ballistic crack (or sonic boom) of the projectile traveling downrange. By reducing the muzzle blast, the target is unable to appreciate the origin of the shot and usually perceives the shot originating from downrange.

Besides sound suppression, there are two additional added benefits of a sound suppressor, which are seldom mentioned. The first is that a sound suppressor is also an exceptionally effective recoil reducer, often reducing recoil to less than one fourth of its original magnitude. The second is that a sound suppressor is an effective flash suppressor, and when using a night vision device as a sight, the use of an efficient sound suppressor is almost mandatory to keep the flash from causing excessive "blooming" on the viewing screen of night vision devices.

All muzzle attachments, including suppressors, will change barrel harmonics and standing waves due to the increased weight of the accessory. This results in a slight change in point of impact with the device in place and usually improves grouping. The PSR suppressor and mount combination has been carefully engineered to provide a consistent, repeatable, and predictable shift in point of impact. The degree of change in the point of impact will vary with the specific weapon and the rigidity of the barrel. Extensive testing has shown no deleterious effect on the group size.

## **SAFETY NOTES**

1. Always handle weapons in a safe manner and assume they are loaded until they have been cleared.
2. User installation or removal of the sound suppressor must be accomplished in accordance with the instructions contained in this book.
3. Any installation, or removal of the Muzzle Brake 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 Muzzle Brake and/or suppressor.
5. Operating Temperatures: During use, the PSR suppressor absorbs large quantities of heat from the burning propellant gases. This heat is dissipated by radiation, convection, and conduction. The heat buildup is particularly noticeable during rapid fire, where the temperature of the sup-

pressor can cause minor burns after only a few dozen rounds. 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.

6. Only use the suppressor completely dry.
7. 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.

## SPECIFICATIONS

Caliber:	.338 Lapua
Length:	10 inches
Diameter:	1.75 in.
Weight:	32 ounces
Materials:	Stainless steel alloys
Finish:	Cerrocote (Desert Tan)
Minimum barrel length:	24 inches
Mount O-ring	Viton, 1-3/16(OD) x 1(ID) x 3/32

## AMMUNITION

For all of our centerfire rifle suppressors it is recommended that only full metal jacketed, factory loaded hunting ammunition, or specific match-grade bullets be used. Some of the highly frangible jacketed bullets used in reloading ammunition have a tendency to have jacket separation, which is why we recommend the use of full metal jacketed bullets with the suppressor. Jacket separation will cause the bullet to tumble while in the suppressor which can seriously damage the internal baffles and lead to suppressor failure. Because of this, damage caused by use of any bullet other than the above will not be covered under warranty if there is jacket separation.

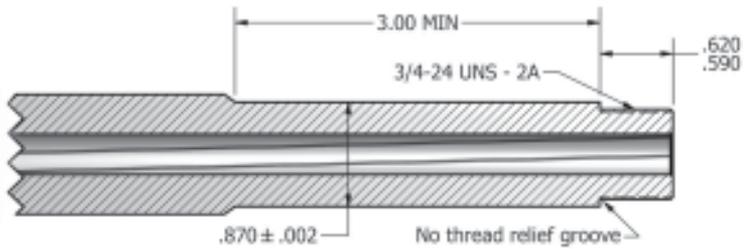
The PSR suppressor is designed to use any commercially loaded .338 Lapua ammunition. Remanufactured, subsonic, or handloaded ammunition is used at the user's risk, and damage caused by use of this ammunition is not covered under warranty. The .338 cartridge is designed for long-range shooting, and using subsonic ammunition will only reduce range, generate a significant POI shift, and may not stabilize correctly. Its use is to be discouraged.

## INSTALLATION OF MUZZLE BRAKE MOUNT

This suppressor is attached to the rifle with ease on a supplied proprietary muzzle brake. Proper alignment and mounting of the suppressor is dependent on the care and precision used during installation. The mount telescoped back over the barrel 3.6 inches for increased stability.

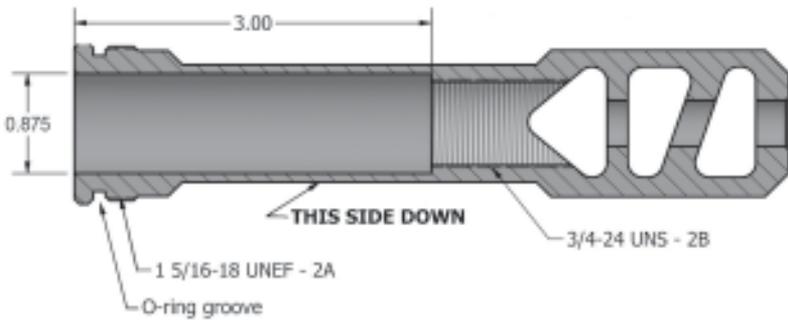
1. The PSR muzzle brake mount attaches to threads on the muzzle of the rifle. Unless specially ordered otherwise, the mount is supplied for a barrel with 3/4-24 NEF Class 2 threads. Our experience has shown that threads smaller than 5/8 inch are more likely to stress relieve the muzzle of the weapon, introducing inaccuracy.
2. Contour and thread the muzzle of the rifle as specified in Fig 1 (next page) for the mount with 3/4-24 threads (Class 2A fit). For proper alignment, it is essential that the threads be absolutely concentric with the bore of the weapon and that there is a sharp shoulder at the rear of the threads 90 degrees to the bore axis. Barrel threading must be performed on a lathe with the barrel turned between centers. The barrel threading procedure is critical, and errors will result in misalignment. Gemtech can thread the barrel and gauge the installation for a nominal fee.
3. For barrels of a diameter less than 7/8 inch diameter at the muzzle, contact Gemtech for special instructions and/or mount.
4. Some hand fitting will be necessary in order for the muzzle brake to function properly without the suppressor in place.
  - a) The simplest is to trim the 90 degree shoulder area on the barrel while in the lathe so that when torqued on, the mount will be oriented as desired (see Fig 2, next page).
  - b) The second method is to use different thickness washers from the shim set enclosed with the mount.
  - c) When utilizing either of the above methods for brake orientation, we have found that the process of final tightening will rotate the mount an additional 10-15 degrees.
5. Thread adhesives are not essential if the mount is tightened into position with at least 30 ft-lbs torque. Blue Loctite (242) may be used.
6. Degrease all surfaces with acetone. Apply the spacing shim (if used) and the appropriate thread adhesive. Screw on the muzzle brake and torque to 25-30 ft-lbs.

### PSR Barrel Threading Diagram



BARREL THREADING for PSR Muzzle Brake

Fig. 1



PSR Muzzle Brake (sectioned)

Fig. 2

**WARNING: Be certain the weapon is unloaded and the bolt open before mounting or dismounting the suppressor.**

## SUPPRESSOR MOUNTING/DISMOUNTING

### Mounting:

1. The mount supports the suppressor at two points: the threads at the rear and the diameter approximately 1/2 inch back from the front.
2. The suppressor is screwed hand-tight onto the muzzle-brake. There is no need to use tools, and the friction of the O-ring in the mount will prevent unscrewing.

### Dismounting:

1. Dismounting is the reverse of mounting.
2. Gloves are recommended if the suppressor is hot.

## CLEANING

The PSR suppressor is constructed of corrosion resistant materials, and the high flame temperature reduces interior carbon buildup. We have found no need for (and discourage) frequent or compulsive cleaning. The majority of users never clean the inside of their suppressor. We strongly suggest against any attempt to clean the suppressor other than cleaning the threads in the rear of the suppressor and the muzzle-brake mount. The mount threads and O-ring should be cleaned with a hydrocarbon-based cleaner. In addition, the outside of the brake portion of the mount must be cleaned of accumulated carbon with a hydrocarbon based cleaning agent. Ultrasonic cleaners are not effective with hydrocarbon-based solutions. Water based cleaners should not be used. Firing with liquid in the suppressor can result in abnormal and erratic internal pressures. Any damage resulting is the user's responsibility and not covered under warranty.

## HUNTING NOTICE

If hunting with a suppressor is desired, consult your local state Fish & Game Department, as not all states permit hunting with a suppressor.

## 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 photograph 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.

Products, accessories, and copies of this manual are available at our web store:

[www.gem-tech.com](http://www.gem-tech.com)

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

