



WR INFORMATION SHEET

WR MUZZLE BRAKES

Rev: 20220829

Your WR muzzle brake has been designed to offer you and every serious rifle shooter an optimal balance between recoil reduction and shooter comfort without affecting group accuracy. Precision cut from 7075 aluminium and hard anodised, the lightweight design offers excellent heat dissipation limiting impact of balance and performance.

VARIANTS: refer to www.watersrifleman.com for item details, and any other products. We started life in 2004 with the **Ultra Comp (UC)** which was a great unit but didn't deliver the potential for shooters of today. This saw the rise of the **Gas Mongrel (GM)** from 2012 that really set the global standard for recoil reduction, but one knew they were shooting it.

- **Gas Mongrel Hybrid (GMH)**, from 2022, the best balance of comp spec, recoil reduction and shooter comfort ever.
- **Gas Mongrel Hybrid Magnum (GMHM)**, new for 2022, the best GMH but bigger in all ways.
- **Gas Mongrel Rimfire (GMR)**, new for 2024, the 22LR baby of the GM principles for minimal movement during full auto, etc.

OPTIONS: - Bore sizes for 20cal up to 40 cal (depending model and barrel thread size).

- Barrel Threads: UNEF: 1/2"x20, 1/2"x28, 9/16x24, 5/8"x14, 3/4"x24, 7/8"x24, 1"x24. Metric: M14x1, M18x1, M18x1.5.
- Muzzle Thread Protectors: WR units, Alum screw on to protect threads when brake not fitted and greatly dissipate heat.
- Jam Nuts: WR units are black treated steel and half size, or less, to take up as little room and be light weight.

SPECIAL FEATURES: Reverse, radial circumference and angled porting (unique to WR – made on a 5-axis) to maximise recoil.

SAFETY: Like all brakes, noise will increase, as will blast. Shooter eye and ear protection is mandatory.

EQUIPMENT NEEDED:

- Shims, jam nuts or other items to index the brake to the correct rotational position. (See positioning...)
- Measuring tools to accurately measure the bore and thread sizes, and the concentricity of bore and brake.

FUNCTION: A muzzle brake captures the direction of the gas and changes its direction to counteract the energy of the bullet leaving the barrel. If this process is done as desired, it will reduce the felt recoil of the firearm. The better the brake is designed, the less felt recoil, and preferably all other undesired issues are also minimised.

WHATS GOING ON: Like any muzzle brake, gas is redirected and there are consequences to this – sound direction, reduction of recoil, possible particles directed with velocity, concussion pressure, pressure wave, etc. All issues need to be aware of and allowed for before use.

POSITIONING: Position the brake over the muzzle thread, then lightly screw on until the narrow it's can't screw on any farther. Then back off until the top of the position is vertical to the rifle during live fire. The depth of screwing on will depend on length of muzzle thread and the thickness of clocking items (nuts, shims, etc).

FITTING and TIMING: The barrel muzzle must be threaded, correctly and accurately, by a competent gunsmith to suit the brake. Custom muzzle threads should be suitable to the brake and clocking items, and industry standards and tolerances should be used. There are many methods used to index the brake to the correct position at lockup. Options might be crush washers, shims, jam nuts, perfect shoulder distance machining, metal removal of the brake rear, or a simple O-ring. Regularly check the brake has not come loose and lost concentricity with the bore. Keep correctly secured on the barrel during use.

BORE SIZE: It is possible to experiment with the brake for specific use. An example would be to bore out the brake to open the gap between the brake bore and projectile to reduce the gas bump on a projectile. Other tuning adjustments are possible but should be done so by a competent gunsmith with significant brake and gas experience.

TESTING & USING: Be sure the brake is installed correctly and free of foreign objects and blockages before use. After fitting, test for impact zero change. Zero change is perfectly normal due to many reasons, such as resonance, harmonics, gas bumping, dead air pressures, etc, all changes due to the added object/weight to the muzzle.

SUGGESTIONS: Document your zero with and without the brake. Measure how far the brake screws on for repeat fitting.

SERVICING & MAINTENANCE: Keep the brake clean from foreign objects and blockages. The brake should be cleaned with a suitable solvent after use. A jar of petrol and an old tooth brush can do a lot of good work.

NEVER clean your barrel with the brake installed. Remove the brake, then clean your barrel. Crush washers should not be re-used (O-rings and nuts are cheap!). See below an O-ring setup – slip on O-ring, gently touch up to it, then index to top.



Image 1 above: Showing the use of an o-ring to pull up to the shoulder.



Image 2 above: Showing the use of a jam nut to pull up long the thread length.



Image 3 above: Showing the clocking of the brake directly on the barrel shoulder by removing material from the brake rear.



Image 4 above: Showing the Gas Mongrel Rimfire clocked onto a barrel

Note, the GMR has a gas port in centre vertical, that is threaded M5 to block if high vel ammo is causing muzzle bounce.
Note 2, the GMR is native 5/8x24 and there are 2x bushes available – 1/2x20 and 1/2x28, then use a 5/8x24 nut to clock.

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