Sabatti

MULTI-RADIAL RIFLING

Sabatti - MRR® (Multi-Radial Rifling)

MULTI-RADIAL RIFLING SYSTEM DESIGNED AND INTRODUCED BY SABATTI S.P.A.

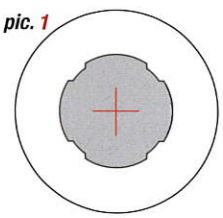
- HIGHER BULLET SPEED
- IMPROVED GROUP CONCENTRATION
- REDUCED NUMBER OF FLIERS
- LESS COPPER DEPOSITS
- LESS CLEANING REQUIRED
- EASIER CLEANING WHEN NEEDED
- LESS BARREL WEAR

Sabatti S.p.A. has designed and introduced a new precision rifling profile called MULTI-RADIAL (MRR®) with unique features over that of traditional rifling.

The objective was to develop a rifling system with all the positives of the traditional type and none of the negatives.

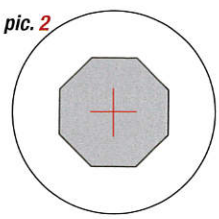
If you compare the TRADITIONAL RIFLING ***(pic. 1 below)*** with the POLYGONAL ***(pic. 2 below)*** and the MULTI-RADIAL ones ***(pic. 3 below)***, you will see that the last one is ideal with both traditional and monolithic bullets.

pic. 1



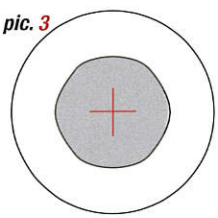
1) CONVENTIONAL RIFLING

pic. 2



2) POLYGONAL RIFLING

pic. 3



3) MULTI-RADIAL SABATTI RIFLING

With MULTI-RADIAL barrels ***(pic. 3)*** two different radiuses alternate in order to positively grip the bullet geometrically without submitting it to extreme stress.

As a matter of fact, the bullets are pressure formed following a circumference and not cut like in traditional rifling ***(pic. 1)*** which extends the life cycle of the barrel. Also there is no sharp corner to fill like in the other rifling systems ***(pic. 1 & 2)***, therefore the barrel is cleaner and wears more slowly.

All tests we have carried out prove that:

MULTI-RADIAL barrels perform better and with more accuracy than barrels with traditional rifling using traditional lead bullets in cal. 7,62 mm (.308") and cal. 6,5 mm (.264") as well as monolithic bullets.

Speed is higher than with traditional rifling - up to 12% under certain circumstances - at standard pressure values. Bullets seal the barrel bore better thus preventing gas from escaping forward and optimizing the effect of the propelling energy. Also friction between bullets and barrel is reduced to the minimum.

Group concentration is substantially improved due to the extremely tight manufacturing tolerances that can be kept while manufacturing MULTI-RADIAL barrels. As a matter of fact the multi-radial rifling lends itself perfectly to our cold hammer forging. The resulting rifling profile consistency is excellent and the overall quality of our barrels is increased.

The specific rifling geometry of the forcing cone in MULTI-RADIAL barrels makes it possible for the chamber neck and freebore to guide the bullets into the rifling more precisely and steadily than with the traditional rifling system – the bullet matches the barrel axis in the best possible way thus reducing the fliers.

Under similar circumstances – less copper deposits inside MULTI-RADIAL barrels and, therefore, less cleaning is required. Also, when needed, cleaning is much easier to do than with traditional rifling.

Shooters can improve MULTI-RADIAL barrel performance by simply lapping the bore with abrasive paste pads with no fear of ruining the rifling edges like with traditional rifling.

These are all the reasons why MULTI-RADIAL rifling is truly ideal for target and competition shooting and is requested by almost all our shooters. And that is why now all Sabatti target rifles in cal. 308 Win. and most cal. 6,5x47 Lapua come with MULTI-RADIAL rifling.

At Sabatti we believe we have reached the objective we had while designing the new system and, by doing so, we have exceeded our expectations.

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HOW TO CLEAN AND BREAK IN YOUR NEW "SABATTI" RIFLE BARREL

IIf you want to clean and break in your new Sabatti rifle barrels, please make sure you have the following items available:

1) Two rods with rotating handles and threaded ends to attach all your cleaning accessories to: one shorter rod to clean the chambers with (**no. 7**) and one longer rod for the barrel. The barrel cleaning-rod shall be at least 50 cm longer than the rifle action. It shall be smaller in D. than the caliber used so as not to interfere with the rifling. For example, the perfect rod for a 66-cm-long barrel in cal. 6,5 shall be 6 mm in diameter and 115 – 120 cm. in length (**no 1**).
2) Patch adapter suitable for the caliber of your rifle (**no 2**).
3) Mop adapter (**no 3**).
4) Nylon brushes in suitable sizes to clean the barrels (**no 4**).
5) Rod guide to slide into the action (**no 5**).
6) Cotton brushes in the same caliber as the barrel you need to clean (**no 6/B**) and cotton brushes for the chamber and muzzle. For bullets of 12 mm in diameter (6,5x47 Lapua or 308 Win.), one normally uses the same mop used for .45 caliber barrels (**no 6/A**).
7) Solvent to clean off combustion residue (**no 8**).
8) Solvent to clean the rifling from copper deposits (**no 9**).
9) Lapping abrasive paste (IOSSO-type) (**no 10**).
10) Cleaning solvent like Avio Petrol (Zippo) or trichloroethylene (**no 11**).
11) White cleaning mops (**no 12/A**) and abrasive mops (**no 12/B**) suitable for the caliber of your rifle.
12) Chamber cleaning mops (*see point 6 above*) (**no 15**).
13) Wipes for solvents (**no 13**).
14) White cloths to clean dry barrels from all copper or combustion residues (**no 14**).
15) Latex gloves to wear during all cleaning procedures described above in order to prevent contact with potentially harmful substances.

Before shooting for the first time, barrels and chambers shall be thoroughly cleaned. Please keep in mind that your rifle was shot at the National Proof House and in our test range before being delivered to you. Also there may be some residues from the manufacturing process (burrs) as well as oil that shall be removed.

Cleaning shall be done using good quality products and in the following order only:

1) Solvent to clean off combustion residues
2) Solvent to clean off copper deposits
3) Lapping abrasive paste
4) Cleaning solvent

HOW TO PROPERLY AND SAFELY CLEAN YOUR BARREL

1.1) Slide the rod guide inside the action
1.2) Screw the patch adapter to the end of the rod
1.3) Push a wipe wet with combustion cleaning solvent down the muzzle and out from the other side. Repeat 4 times using a new wipe every time
1.4) Slide the Nylon brush in and out of the barrels – do it 20 times
1.5) Repeat 1.3 with another clean wipe - do it twice
1.6) Dry clean carefully with a patch or mop. Repeat until the patch/mop comes out clean

2.1) Repeat 1.3 with a wipe wet with copper deposit solvent – do it 4 times
2.2 Slide a new nylon brush in and out of the barrel – do it 20 times
2.3) Repeat 1.3 with a clean wipe wet with copper deposit solvent – do it twice
2.4) Dry clean carefully with a patch or mop. Repeat until the patch/ mop comes out of the barrel clean i.e. with no light blue residues (copper oxide)

3.1) Screw the mop adapter to the rod
3.2) Screw a cleaning mop (generally white) to the rear of the adapter
3.3) Screw an abrasive mop (generally green) to the front of the adapter
3.4) Lock the adapter threaded nut tight
3.5) Put some abrasive paste (losso-type) on the front of the adapter
3.6) Swipe inside the barrels 20 times making sure not to let the front mop come out of the muzzle – if necessary use a rod stop
3.7) Repeat 3.6 twice with two new mops
3.8) Repeat 3.6 twice with clean mops and no abrasive paste

4.1) Swipe a clean patch (or mop) wet with cleaning solvent inside the barrels using the specific rod
4.2) Repeat 4.1 with clean patch (or mop) until it comes out clean
4.3) Clean the front end of the barrel using a clean patch

It is now time to remove any trace of dirt or solvent from the chamber so as to stop their potential corrosive effect.
In order to do so, please remove the rod guide and replace it with the mop adapter suitable for the chamber diameter. Wet it with cleaning solvent and push it into the action until it stops. Rotate the rod and the mop with it. Remove the mop and replace it with the cotton brush suitable for the chamber size. Wet it with cleaning solvent and push it into the chamber. This operation shall eliminate any trace of solvent from the chamber entrance. Lubricate the bolt with firearm cleaning oil and dry carefully.

HOW TO PROPERLY AND SAFELY BREAK-IN A NEW BARREL

After cleaning the barrel bore and chamber, begin firing.

a) We suggest firing one shot and then repeating the complete cleaning procedure described above
b) We suggest repeating the complete cleaning procedure described above after every shot for the first 10 shots
c) We suggest repeating the complete cleaning procedure described above every 5 shots after the first 10 shots for at least 3 times.
d) If you cannot do so, do not shoot more than 30 rounds without repeating the complete cleaning procedure

You have successfully broken your new barrels in. From now on you shall repeat the complete cleaning procedure only when you notice copper residues inside the rifling. This is particularly important while your barrels are being broken in to help polishing the rifling thus reducing friction and additional copper deposits.
We suggest lapping with abrasive paste after 300 rounds even when your barrels are no longer new.

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