

Tuning and Modifications

There's a huge aftermarket for upgrading and customising rifles. This page will help explain what some of these bits do.

Moderator



This is the correct term for what most people refer to as a silencer. They attach to the end of the barrel and suppress the muzzle report. They really serve no purpose for target shooting as invariably they rob the rifle of a small amount of power and can also cause a zero shift due to the internal vortexes caused by the pellet moving through a

series of baffles. Some will cause this zero to wander although most will maintain the move with consistency. Essential for hunting or back garden practice they can totally eliminate the muzzle crack. You need to ensure that you get a moderator with the correct attachment method. Most rifles have a 1/2 UNF thread to allow it to screw on but others require a slip on type and occasionally the fixing is so unusual you can only use the manufacturers own offering. If you fit one leave it permanently in place, or re-zero the rifle each time its removed or fitted as invariably it never goes back on in exactly the same place and the zero will move. You may also find that the weight of a moderator placed right at the end of the barrel acts as a damper to the natural tendency for the barrel to lift slightly when fired so shots may appear to hit lower than before.

Muzzle flip compensator (MFC)

This looks a bit like a moderator but is a vented extension that fits on the end of the barrel. It'll have cuts or holes in it usually on the top and pointing backwards that allows air to vent, pushing against the natural tendency for the barrel to move and holding it still until after the pellet has long gone. Mainly found on competition rifles, but a matter of personal choice as many rifles work well without them.

Stripper

Still air strippers or cones are often found inside of a MFC and are a cone with a very accurate hole only just large enough for the pellet to pass through. There should be a gap between the end of the barrel and the cone which is vented. The theory is the pellet passes through the hole and all of the turbulent air that is generated as the pellet leaves the barrel is diverted by the cone and vented. The pellet then is free of turbulence and will therefore be more consistent in its trajectory. There are mixed views as to their performance and it does appear that you need to experiment with the cone angle to match it to the rifle before they add any benefit. They can also have a negative effect on accuracy if they are not perfectly set up.

Regulator

A complicated part of the rifle which is a series of o rings that make the pressure delivered for each shot very consistent. Most FT type rifles come already fitted with a regulator and most work well. Depending on the rifle these can be modified or replaced with more efficient units but it's not a DIY job requiring a high level of skill and it may not give a significant benefit over the original. Non regulated rifles can be

modified to include one, but it's an expensive route that should only be taken if you really know what you want to achieve and often you'll be better off changing rifles. A rifle with a good regulator will give you more consistent power over an extended number of shots.

Stock

There are 3 different categories of stock you can buy to replace the original.

Replacement: This is an off the shelf item that is generally made of a more attractive material, including synthetics, than the original or may have a very different style. Whilst it may have improvements over the original such as a higher cheek comb they can be a bit hit or miss for fit as generally they're only available in one size.

Custom: Again these come from a standard blank that will have the features of a replacement and also have some personalisation incorporated such as the length of pull and palm grip size to suit you.

Bespoke: This is a fully tailored stock that's made to measure. Every aspect of the stock is designed to fit you and may involve a number of fittings to get it spot on. Weight and balance are also customisable and you may even be able to choose the piece of wood it's made from. This is very much a 'hand made' item and the cost reflects it.

Most of these use a variety of timbers to achieve the look and weight required, but some woods are more suited than others. The key factor is the need for stability to prevent it twisting or splitting over time and also the need to be stable when wet or in high humidity. Oak for example moves significantly with natural splits appearing and as such it's not a good timber whereas walnut is very stable once seasoned. Turkish walnut is held as one of the finest stock materials, but exhibition grade highly figured stock blanks are in demand for exclusive shot guns and can sell for over £1000 before you even start to work it. English and American walnut are very common (and much cheaper) but there are plenty of other timbers to consider as well as decorative laminates which can work very well. Finish is up to you, but an oiled finish adds something special to a well grained stock. Typically the original stock is varnished or lacquered to give protection from the elements but there are other methods which can further enhance the looks.

Butt Hook

Most FT rifles come with a butt plate that has some adjustment possible, but a fully adjustable butt hook can make a notable difference to the fit and feel of a rifle, especially on standing and kneeling shots. They're very expensive, even second hand, so it's something to wait for until you feel you need one.



Bipod

If your rifle has a rail fitted at the front of the stock it's worth getting a small bipod that's intended for 10m rifles. They start at about £10 and mean that you don't have to lay your rifle on its side. Larger bipods intended for hunting or bench rest shooting don't help and add quite a lot of weight to the front of the rifle which may make it



more difficult to take standing shots. The rules for both FT and HFT prevent you using a bipod to steady the rifle when taking the shot.

Non Slip tape

The palm shelf of an FT rifle is often polished or painted and can slide around on your knee. By applying non slip tape or felt it will sit better on the knee. You can use decking tape for skateboards, but it's quite abrasive and could wear through clothes or waterproofs.

Cosmetic enhancements

You can spend a fortune adding shiny bits to your rifle, replacement cocking bolts or trigger shoes in exotic alloys, dipping the stock or metallic parts to give a highly decorative effect all add to the personality of your kit but have no bearing on accuracy. Some add value and others detract and as always you need to be discerning on matters of taste. If it involves a one way conversion do consider how it will effect the value of your kit before taking the plunge, a pink scope may restrict the market should you decide to sell it later on and you probably won't fully recover the costs either. Don't expect everyone to view your changes as enhancements!