

Every so often something happens that causes your rifle to become inconsistent or inaccurate but often this can be sorted out without sending off the rifle or having to perform a major rebuild. This page will help you to rule out all of the easy fixes before having to spend any real money with things that don't need a high level of knowledge or skill. We would always recommend having work checked or taking it to an approved service agent but there are a few things you can do which won't invalidate the warranty. If you make any changes to your rifle or move to a different pellet or even start to lube pellets ensure you put it through a chronograph immediately to ensure that you are still below 12ft/lb, and we strongly recommend that 11.5 ft/lb is as high as you go.

Increased group size.

This is when the pellets start to 'move around' so that even when you are shooting from a bench, the pellets do not go through the same holes. In really extreme cases it can almost look like a shotgun pattern after 20 or so shots. Invariably there is no pattern with one shot going low, the next high the next low and left with no obvious pattern.

Possible causes and cures:

- Dirty Barrel.

If you've not cleaned the barrel for some time this is the first stop. Use a pull through or cleaning felt with a little WD40 on it and then a dry one. You may need to put 20 or so pellets through to re-lead the barrel to get it really spot on but you should see an improvement almost straight away.

- Pellets.

Check that the pellets are in perfect condition as even a slight knock to the tin can cause them to become slightly oval. Try a new tin or try your pellets through another rifle. If the problem follows the pellets then you have the answer. If it's a new batch or different brand to your last lot this may also be the problem as not all barrels like all pellets. Try some of the old ones to see if it improves.

- Moderator, muzzle flip or air splitter misaligned.

If you have any of these devices fitted to the end of the barrel check to make sure it's not making contact with the pellet and that it's centred. Try taking it off and see if the problem disappears.

- Probe seal.

On rifles with a probe there is sometimes a rubber O ring on the probe that goes into the breech to seal it. If this is worn or even slightly damaged it can cause group size to increase. They're usually only a few pence each and the manufacturer may often send you one if you supply a SAE. Usually very easy to replace.

- Loose stock.

Stock and action not bolted together correctly. Check that all bolts are secured, but not over tightened and check (gently) for any play.

- Barrel loose.

Barrels are usually held in place by either machine screws or a special adhesive at the breech block so ensure it has absolutely no play. If your barrel is also held in place at the muzzle end by a strap (i.e. NOT floated) check to make sure that the retainers have not become loose. On many rifles the tightness of these straps are critical to maintain accuracy, notably on Air Arms EV2's so make sure you return to the original position if it's not improved. This will generally involve a higher level of skill to resolve and the repair should be performed by someone competent.

- Magazine not indexing correctly.

In magazine fed rifles it's possible that the magazine may not be indexing properly or that it's not perfectly aligned with the breech. As the pellet is forced into the breech it'll get badly deformed and will not be accurate. Even a slight misalignment can cause accuracy problems.

- Poor technique.

Holding a rifle very tightly will generate large group sizes, especially on spring guns. Relax your grip! The gun should merely be supported but not held tightly even on springers.

Rifle won't hold a zero.

In this case the pellets are almost always going through the same hole, but each time you use the rifle the point of impact changes requiring you to re-zero each time you get the rifle out.

Possible causes and cures:

All of the problems associated with increased group sizes can be the cause and are worth a try but the fact that there is consistency in the problem may indicate something else. If have to zero the rifle each time you use it, but it holds the zero for the session it suggests that something is moving when you pack it away.

- Scope not fixed tightly.

The fact that the rifle seems to change each time it's used may suggest that the scope isn't firmly mounted. Check all of the bolts but remember that the screws that clamp the scope tube only need to pinch the tube. The screws that fix the mount to the rifle dovetail can be done up with more torque and are probably the only bolts on an air rifle that need to be really tight.

- Poor quality mounts.

Even when they're really tight, low quality mounts can still move around, especially on spring rifles. Using a recoil pin may help but replacing them with something better is always the best option. A common fault with budget mounts is the machining is not

terribly accurate which can cause the scope to be misaligned with the barrel causing crossover. This is when after zeroing the rifle at your chosen range close shots move to one side and as you move towards the zero range gradually comes back onto zero then as you move further away from your zero range the point of impact changes sides and moves further away the longer the distance. In extreme cases you may find that you run out of windage adjustment if the skew is large. Try reversing just the rear mount but in most cases you'll need better mounts. A £400 scope on a £1000 rifle connected by £5 mounts is not a good combination and even if you've got kit worth half that you still need good mounts. If mounts don't solve the problem you may have a bent barrel.

- Not enough scope adjustment to zero.

Very common as there needs to be a convergence of scope sight and barrel to allow you to zero it. The effective range of air rifles is very short compared to live round rifles and you may find that you are unable to give enough elevation to bring the point of impact up to the crosshair. Add some packing material to the rear mount under the scope, usually 1 or 2 pieces of film negative or very thin plastic will do the job. We've heard of some people who recommend bending the barrel slightly upwards to achieve the same result but do not under any circumstances do this unless you want to completely wreck your rifle.

- Scope damaged.

Can be many reasons but it may be that your scope needs to be repaired. Using the top turret, dial 2 complete turns one way and take a test shot. Depending on which way you dialled it'll hit very high or low. Now dial back again and take a shot which should land on the cross hair. Do this a few times and see if it becomes random then try it using the windage. The other thing to try is to take the shot on different magnifications. Some scopes suffer from dreadful zero shift when you change the magnification. Try it at several different zoom settings. Ultimately the scope isn't a user maintainable item, but if you can work out what's wrong it'll help with any repair or warranty claim.

- Poor handling.

Even with everything clamped up tight, bumps and bashes caused by rough handling will cause the scope to move. Bunging it in the boot of your car after a shoot with a selection of tools and the usual clutter that most of us carry is likely to cause a zero shift at some point, usually just before you shoot a competition or go hunting and have no way to re-zero. Treat the rifle as if it's made of glass and you may resolve the problem. Thin unpadded gun slips are not ideal so try and get a rigid case or one which is really well padded. They do cost a bit more but they give much better protection.

- Poor technique.

This can also produce these symptoms especially if your eye positioning is not central on the scope.

Rifle is down on power.

Not all drops in power are faults so don't immediately try to increase the power as this may just mask a problem that then rectifies itself just before you put the rifle through a chronograph in a competition or at a Police station. Note that a change in point of impact does not always mean a change in the rifles power so use a chronograph to ascertain the muzzle energy before you attempt to change anything.

Possible causes and cures:

- Air leaks.

Check the breech for air leaks, it may be as simple as a replacement O ring at the breech. Also check pellets, they may be damaged letting air escape past them.

- Cold weather.

PCP rifles are very susceptible to power fluctuations due to ambient temperature. If it's suddenly become cold you will be slightly down on power but it'll go up again once the temperature rises. In winter expect power to go down by about 30 fps on cold mornings and the general advice is to live with the drop in power as a rise in air temperature or the heat produced by the sun (even on a really cold day) may make the rifle illegal.

- Hammer sticky.

This is a common fault but not easy to fix. Generally a back to dealer job unless you are really competent.

- Spring broken.

If it's a spring rifle and the drop in power is accompanied by a notable change in the sound it makes it could be a broken mainspring.

Power is very erratic

The only way you'll identify this is by putting the rifle through a chrono. In most (.177) air rifles a spread of 20fps should not make any significant difference to accuracy but ideally it should be lower. If you are getting a spread of more than 20fps it may suggest there's a problem.

Possible causes and cures:

- Pellets

Try a new tin of pellets, ideally from a different batch or manufacturer. It might be as simple as a bad tin of pellets.

- Hammer sticky.

This is a common fault but not easy to fix. Generally a back to dealer job unless you are really competent.

- Regulator fault

On regulated rifles the regulator may have a fault or need a clean. This is a very sophisticated part of the rifle that needs to be set up by someone that really knows what they're doing so don't take it apart.

- Air leak

Check for leaks at the breech and also on the venturi screw if fitted.

- Piston seal on spring rifles

On springers the piston seal will eventually wear over time and this may make the seal erratic. Full strip down required.

- Dieseling

On springers if oil or grease gets in front of the piston you may encounter dieseling where the compression causes atomised oils to ignite. Often there is a smell of burnt oil and an occasional leap in power. Full strip down and internal degrease required.

Poor technique will often account for all manner of perceived equipment faults and usually comes down to the way you hold the rifle. Gripping tightly will cause groups to really open up and having the scope positioned too far forward or backwards can give some very strange results including pellets that appear to defy gravity. Get someone else to try your rifle out and see if they get the same problem prior to taking it apart as it may be you and not the rifle that's the root cause.