Reading Air Target Shooting Club

Choosing The Right Airgun

If you are new to the sport of air gunning you could be forgiven for thinking that there are only two types of airgun; spring piston (springers) and precharged pneumatic (PCP). Such is the argument between PCP and spring gun users that other types of airgun seem to be eclipsed by the white-heat of contention. It is true that these two types of airgun are the most popular with hunters and target shooters, but those new to the sport might be surprised to learn that there are more than two types of airgun.

Gas-ram powered airguns

The British airgun makers, Theoben, made a big impact on the air gun market in the 1980s by pioneering the gas-ram power plant.

A gas-ram is just like a springer, but without a spring. The spring is replaced with a sealed gas spring unit. Instead of a coiled steel spring being compressed when the rifle is cocked, in a gas-ram, pressurised air or nitrogen is held in a special chamber built into the piston, and this air is further pressurized when the gun is cocked. On firing, the gas is allowed to expand and this pushes the piston forward.

Sometimes called a gas strut or gas spring, if you open the boot lid of your car, you will have seen a gas strut in action. In many aspects of engineering, gas struts have all but replaced springs.

Gas struts and gas-ram air rifles have numerous advantages over spring-piston powered airguns. For example, gas spring guns last for decades, unlike spring guns where the spring weakens and eventually breaks over a period I of about ten years.

Also, steel springs will lose power if left under tension for a long time, but gas-ram rifles can be left cocked for weeks and will still maintain shot consistency.

Another advantage is that gas-rams are lighter than spring pistons. You can shave off almost a pound in weight if your rifle is powered by a gas strut rather than a spring-piston. Gas-rams also react faster than springers and get the pellet out of the muzzle faster than coiled steel. They also tend to be more powerful than equivalent rifles powered by a spring piston, but gas-rams can easily be adjusted with piston diameter and stroke length.

So if gas-rams have all these advantages, why arent they more popular? They can be harder to cock than springers and they have a harsher firing cycle because they can jolt, which some shooters dont like. However, these two minor disadvantages are not going to put that many airgunners off them. It was the emergence of PCPs that eclipsed the popularity of gas-rams for a while, but there is now an upsurge in sales of gas-rams.

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Precharged pneumatic airguns

Although the origins of PCPs date back more than 300 years, their popularity has only grown over the last 20 years or so. Many shooters have been won over to PCPs because they offer accurate, recoilless shooting with little cocking effort. What is more you get lots of shots with one charge and many are repeaters, allowing hunters more than one shot if they fluff the first effort.

The power source of a PCP is a cylinder of compressed air, a buddy bottle. Every time a shot is taken air is released under pressure from the cylinder by a main firing valve and this propels the pellet down the barrel. Recocking a PCP is usually just a matter of flicking a small bolt. However, when the buddy bottle needs re-charging, you either have to decant air from a divers tank, or pump it in manually with a stirrup pump. Buying all the charging equipment is what makes the PCP an initially more expensive form of airgunning.

However, once you have got a stirrup pump or divers tank, it is a very cheap form of shooting. With no recoil, accuracy and multiple shots, PCPs sound like a win-win way of air gunning. However, there are some drawbacks, apart from the initial cost. They are not self-contained. A lot of kit is needed to keep them charged. If you are in the field for any length of time, or fire off a lot of shots, you will need to return to base to get a supply of compressed air, or carry a spare buddy bottle, which will be heavy.

PCPs are also precision made and include lots of internal technology. This includes valves which are susceptible to contamination and the dirty internals can stop them working. Unlike springpowered rifles, PCPs also need to be serviced by a gunmaker or sent back to the manufacturer, which can be expensive.

Multi-stroke airguns

Multi-strokes are another form precharged pneumatic airgun. They are sometimes called pump-up airguns because thats exactly what you have to do to charge them with enough compressed air to power the pellet out of the barrel at a decent pace. Most multi-strokes are only of moderate power, and accuracy is not its strong point as there are too many variables in the pumping system to make for consistent shots.

This type of airgun is usually light weight and compact. They have an advantage over PCPs in that they are self-contained, requiring no external pumps or divers bottles.

Single-stroke airguns

A more accurate form of pump-up pneumatic is the single-stroke pneumatic airgun. As the name implies, this just requires one pump from the cocking lever to compress enough air to propel the pellet. This type of airgun is so accuarate that it is used on many top-end 10 metre match airguns such as the Beeman/FWB 603.

Top shooters like the fact that these airguns lack recoil, and generate consistent shots. The down side is that they are relatively low powered. However, this does not matter for match shooting as power is irrelevant compared to shot consistency.

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Spring-piston airguns

Spring piston guns are probably the most popular type of airgun. Most of us start airgunning with a break-barrel, spring-piston airgun because they are simple to use, and cheap to buy. All you have to do to charge one of these is hold the stock in one hand and the barrel in the other and break the airgun open at the breech. This cocks the airgun by moving a piston back, which compresses a stout steel spring. The trigger sear clicks into a notch in the piston body and holds the piston in tension. When fired, the sear releases the piston and it moves forward, under the power of the spring, pushing a column of air forward, which propels the pellet down the barrel.

Some springers have a fixed barrel and are cocked with a side-lever, or under-lever. Having a fixed barrel means that barrel alignment is constant, which can improve accuracy. The main draw-back to shooting with a springer is the amount of recoil they produce, as this can affect accuracy. Recoil on a springer is different from that of any other type of rifle, including live-ammo rimfire.

With a rimfire, the recoil pushes the butt of the rifle back into the shoulder of the shooter, but with a spring powered air rifle, the rifle is pulled forward by the momentum of the piston and the spring, and then settles back into the shooters shoulder. To overcome the inaccuracy this can cause, the shooter must concentrate on his grip of the rifle and the finish of the shot. Using a springer can make you a very disciplined shooter.

But springers are popular amongst hunters because they are self-contained. There is no need for a pump or divers tank to re-charge the rifle and hunters who spend a long time in the field like the flexibility this gives them.

Another advantage of the humble springer is that they are relatively easy to service at home. Unlike PCPs that have complex valve systems, a spring-piston rifle can be stripped down by anyone who has some basic tools and repaired and serviced relatively easily.

This makes springers popular with experienced airgunners who like tweaking their rifle for b e t t e r performance.

CO2-powered airguns

This type of airgun uses CO2 (carbon dioxide) cartridges, as its power source. The CO2 cylinders are rather like those used to gas a soda siphon. All semi-automatic airguns are powered this way.

The big advantage these type of airguns offer is the ability to fire hots as fast as you can pull the trigger. Also there is no need for strenuous pumping with this type of airgun.

The disadvantage is that CO2 airguns are not usually as powerful as other types. The most powerful CO2 air rile on the market, the Umarex 850 Air Magnum pushes out its pellets at around 11.4 ft.lbs., whereas most full size CO2 rifles operate at around 10- 10.5 ft.lbs. mark. This slightly lower power is often ideal for close range vermin control.

Another draw back is that CO2 capsules do not operate well in cold conditions. CO2 airguns rely on the CO2 in the capsule expanding when the trigger of the gun is pulled. But in cold conditions, the expansion of gas is slower than at warmer temperatures, which affects the power and accuracy of this type of airgun. The most important fact abut airgun power systems, is that theres one out there thats perfect for your needs. All you need to do is research before you buy.