



The LGU stock combines attractive lines with effective handling for offhand shooting.

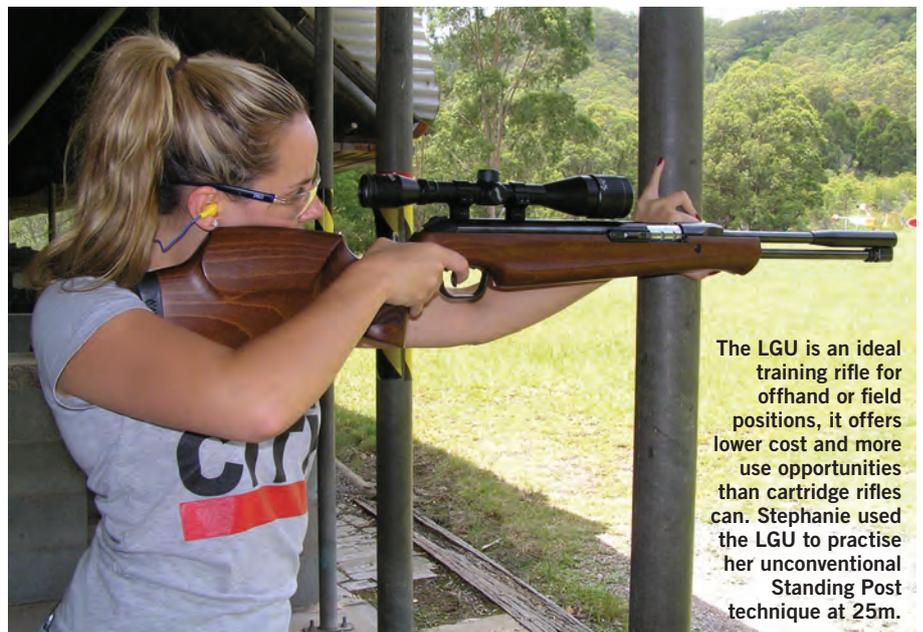
Walther's LGU Master

Highly Refined and Innovative Spring-Piston Power

Walther combines an old operating principle with new materials and comes up with a quieter, low-vibration air rifle with reliable simplicity and outstanding modern performance.

Walther's LG series air rifles were introduced in 1964 as LGV's to upgrade the accuracy of their break barrel rifles to that of a fixed barrel. The LG series have been and continue to be steel spring powered accuracy/target oriented rifles. The rifle on review is the latest model in the series, the LGU Master, provided to GUNS Australia by importer and distributor Frontier Arms. It is a full size, 106cm long and 4.3kg underlever operated spring-piston powered air rifle. The underlever cocking means fixed barrel, considered an accuracy advantage over conventional break barrel rifles. It also adds extra weight to the front of the rifle but this is not a negative on this well-balanced rifle designed for shooting from field positions. The LGU is an attractive rifle with its traditional styling, blued steel and walnut stained timber stock. It is suitable for Field Target competition, hunting, target or shooting practice and general recreational shooting for those who enjoy shooting a quality rifle.

Spring-piston guns remain the most popular for good reasons. They are simple to operate, have a low maintenance requirement and are always ready for use as the only external power requirement is user muscle. The drawback of this convenient and economical system is the recoil, vibration and mechanical noise created by the spring and piston operation during the firing of the pellet. Mechan-



The LGU is an ideal training rifle for offhand or field positions, it offers lower cost and more use opportunities than cartridge rifles can. Stephanie used the LGU to practise her unconventional Standing Post technique at 25m.

cal noise, vibration and recoil make the more powerful spring-piston rifles less pleasant to shoot and tend to limit their accuracy.

Walther engineers re-designed the power plant in their LG series in 2012 to minimise the negative effects of spring piston operation by reducing internal impact forces, mechanical vibration and recoil. As a result, the Walther LG power plants, including the LGU, are at the leading edge of spring-piston design. The severity of impact, recoil, vibration and noise is closely linked to mechanical clearances and metal to metal contact, and the Walther engineers tackled these at the source. They used a long spring guide to limit spring vibration and avoided clearances at the barrel lock and cocking rod by mounting the ends in a non-metal synthetic. New piston rings are made of a low-friction synthetic and an improved polyurethane piston seal reduces friction and noise. Redesigned air routing traps air at the end of the piston travel to progressively slow it and prevent a slam-

ming stop, the major cause of vibration, noise and scope damage in typical rifles. The elimination of clearances between metal components by the use of more flexible synthetics and the introduction of lower friction materials has resulted in noticeably less recoil and vibration. The shooter will also notice more user friendliness via easier cocking, smoother cycling and quieter operation. Coil springs inherently produce some rotation about their axes in the course of their operation, this creates extra friction in conventional spring-piston guns, Walther's new LG series uses a rotary piston to eliminate this friction and enhance spring piston efficiency in terms of power. Overall, the new Walther LG series has taken a significant step in modernising spring piston operation.

The power plant is housed in a substantial 35mm steel tube with 2.5mm wall thickness that covers and guides the internal moving parts. The front end of this tube is blocked by a fixed steel plug, which supports the barrel



1. The large proportions of the power plant and the length of the cocking lever are evident, both work very well.
2. The threaded cylinder that accepts the mount clamping screw is vertically reversible. If the cylinder is located with the spigot end down as shown, the spigot will engage in the recoil stop hole of a spring-piston air rifle dovetail.
3. The XM trigger is externally adjustable for first stage pull length and release weight.
4. The loading port is large enough but inserting the pellet without looking takes some practice.

SPECS

WALTHER LGU MASTER

Manufacturer:
Walther, Ulm Germany

Model:
LGU Master

Calibre:
.177 or .22

Length: 1060mm

Weight: 4.31kg

Power: Spring piston,

Operation: Underlever

Loading: Single pellet

Trigger: Two stage, adjustable

Sighting: 11mm dovetail

Barrel length: 300mm

Cocking effort: 16.8kg

Stock: Beech

Price: About \$750

assembly and the underlever pivot while the rear has a removable spring retaining plug. A loading port to expose the breech and an 11mm scope mount dovetail with three 5mm locking holes are milled into this outer tube. The spring, the heart of the power plant, is made of valve spring wire, a top-quality spring steel that can handle being cocked for extended lengths of time and still give a lifetime of service. This spring and the piston operate in a sliding compression chamber that creates the breech opening as it slides back in the cocking process. After cocking and loading the rifle, the breech closes as the return of the cocking lever brings the compression chamber forward. The breech safety release needs to be held down during the cocking lever closure to ensure that no fingers can be trapped in the loading breech as it closes. The underlever cocking mechanism, like the other components is very robust and is held firmly in place by a spring loaded detent ball attached to the barrel weight. Two 'O' rings prevent lever and barrel weight contact as the lever is closed. The cocking process has two intermediate non-return or rest stages where the breech safety automatically locks in. The LGU can be manually uncocked but the simultaneous operation of cocking lever, trigger and breech safety requires an extra hand for ease and safety.

The barrel, measured to the end of the 25mm diameter barrel weight is 390mm long and free of sights, a less than subtle hint that the accuracy of this rifle deserves a good scope. The barrel weight also serves to balance the looks and handling as well as ensuring that the cocking lever stays within the barrel length. The functional barrel is 300mm long with 16mm outer diameter and has the typical Walther microgroove rifling. The barrel, piston tube and cocking lever are highly polished and blued steel. Alloy parts such as the trigger guard have a black satin finish.

The LGU has a match grade two-stage XM

trigger, adjustable for first stage travel and final release weight. The first stage has negligible resistance and trying to minimise this travel appeared to introduce creep into the second stage. Because the trigger adjustments are not fully independent of each other, the desired ideal may take some trial and error work. After a short adjustment session, the author was happy to trade off a medium length first stage for a crisp 550 gram second stage release. Shooters, including target shooters should be happy with this very good and versatile trigger. The trigger safety is automatically set to safe as the rifle is cocked. It is conveniently located just above the thumb of the trigger hand for left or right-handers. Push forward to fire, pull back to reset safety.

The shapely walnut stained beech stock of the LGU is first to attract the eye, and offhand and field shooters will like what they see. The prominent ambidextrous cheek piece is quite high and will need high scope mounts and thus encourage the modern head up shooting style. The pistol grip is steep and offers a good hand position for trigger control for the average hand. Effective checking on both sides also help in this regard. A trigger pull of 368mm should suit most shooters if not, the removable 19mm ventilated rubber recoil pad will make adjustment easier. The fore end has good depth in front of the trigger guard and gently tapers toward a schnabel at the front. It has a hand filling rounded bottom and relies on full-length finger grooves for grip. The clear satin finish is smooth and uniform and enhances the appearance of the grain.

Often the first question about an air rifle will be, 'how fast will it shoot' followed by 'is it accurate?' Such questions are typical because power and accuracy in airguns are the most important considerations for most shooters. As to how much power it should have, is a complex question in spring-powered air rifles because increase in power is usually associated with de-

creasing accuracy. Good rifles strike a balanced compromise between these vital characteristics. The Walther LGU achieves high levels of both, power and accuracy because its technical improvements diminish the accuracy disturbing features of the spring-piston action. Another consideration in the power-accuracy balance is to keep pellet velocities below the sound barrier region, where noise increases significantly and accuracy suffers. Hunting and Field Target competition are the major specific uses for this rifle. Both require a good power/accuracy combination and the LGU has very good credentials. It shoots the ever reliable 10.6gn Kodiak Match pellets at 790fps and the more typical weight 7.56gn Gamo Pro Magnum pellets at 955fps. The average three shot group size at 25m was 9.5mm with Kodiak Match and a little over 10mm with the Pro Magnums. There are pellets likely to produce better accuracy, it's a matter of finding them.

Power of an air gun, for common use and in legal terms is the equivalent of the pellet energy it can produce. There are bullet energy calculators on the net, which only need the muzzle velocity and bullet weight entered for an instant answer. For the inquisitive shooters who, like most of us are not Physics graduates but want to do and understand their own calculations, getting the units right is the tricky part. If using international units, (I/U/SI) we need to convert what we call bullet 'weight' in grams (g) to kilograms (kg) and use meters per second (m/s) for velocity. The $KE = \frac{1}{2}mv^2$ formula will then give us the kinetic energy in joules (J). (Using kg units for the mass component works because it is indeed the standard unit of mass, not weight, as we non-scientists incorrectly use it as.)

In the Imperial or American system, pellet weight is given in 'grains' and velocity in 'feet per second'. To use the above KE formula we have to do two conversions. Divide the grains by 7000 to convert them to pounds, the

standard unit of weight then convert the weight to mass by dividing the number of pounds by the acceleration due to gravity to convert them to slugs, the standard unit of mass. Our KE formula, will now work and give us KE in foot-pounds (ft-lb). In both systems, we have calculated the energy of the pellet, not the power of the gun, but for convenience, we (incorrectly) accept that pellet energy also represents the power of the gun.

In the Imperial/US system, standardised value for acceleration due to gravity is 32.16ft/sec/sec, however very slight variations are used to represent its practical effect more closely in some applications. The most relevant value for our air rifle calculations should be the 'g' value used in England for legal air gun power determination and also by the SSAA when calculating air rifle power for Field Target rifle classification, which is, $g = 32.16ft/sec/sec$.

Impressions after shooting the rifle supported Walther's advertised claims, realistic and credible information is typical of most established European manufacturers. Mechanical noises were very low and the muzzle report was moderate. The vibration was also minimal, there were no 'zing' or 'twang' noises from the spring. Cocking action was smooth and uniform but loading the fixed barrel through the breech opening took a little getting used to as it is best done by feel which comes with practice. The fit and balance of the stock was very good. The comb height requires high scope mounts, to suit the 'head up' position popular with offhand target shooters. Custom fitting of the cheek piece and comb height is an option for an owner. All recognised field positions, and some others, were tried and were handled easily by the versatile stock shape. The LGU was a pleasure to shoot even on extended sessions and its high level of accuracy induced the shooter to shoot well, knowing that bad shots were invariably 'pilot error'. The rifle is effectively ambidextrous, only the loading port po-

sition favours right-handers, both left and right-handers who are not used to side loading, will need some time to master no-look loading.

Walther's LGU is a thoroughly modern and refined example of the ever-popular spring-piston powered air rifle. The LGU has a smooth loading and shooting cycle and is relatively quiet. It also has good dimensions and handling to make it a very user-friendly rifle and a real pleasure to use. It has the power and accuracy needed for humane hunting or competing in the sport of Air Rifle Field Target. Keen shooters of offhand shooting disciplines would also recognise the advantages of lower cost and increased opportunities offered by practising with a quality air rifle like the LGU. The ability to combine good power and very good accuracy puts the Walther LGU into a small exclusive group on the 'top shelf' of spring-piston powered air rifles.

Scope Package

The LGU rifle arrived fitted with a 6x42mm Walther scope. This scope and mounts package is an optional extra offered by Frontier Arms. Optically, the scope is very clear and the adjustable objective can focus parallax down to 10m, indicating a purpose built air rifle scope. The heavy side bars and thick cross-hairs of the reticle as well as the coin slot adjustable, 1/4" per click turret adjustment will suit the hunter and casual shooter well. Target shooters should enquire about alternate scope options from Frontier. The supplied two-piece alloy mounts are sturdy with four screws per cap and the bases have a vertical centre pin that can be inverted to function as a locking pin needed for spring-powered air rifles. Note that the high comb of the LVG will require the use of high mounts or risers for most shooters. The scope and mounts package is well priced at about \$175. For more information, contact Frontier Arms Company - www.frontierarms.com.au.



LEFT: Accuracy and velocity of various pellets are useful information for the precision air gunner. Shooting spring and piston air rifles off a rest requires special handling.

ABOVE: Outdoor accuracy of three shot groups at 25m were easily kept around 10mm.