

S400 Biathlon



USERS HANDBOOK

This handbook refers to S400 Biathlon model

PLEASE READ THIS MANUAL BEFORE USING YOUR NEW RIFLE, IT CONTAINS IMPORTANT SAFETY INFORMATION AND INSTRUCTION ON ADJUSTMENT AND MAINTENANCE.



***** SAFETY CODE *****

- 1 - TREAT THIS AIR RIFLE AS IF LOADED.
- 2 - NEVER POINT IT AT ANYONE, EVEN IF UNLOADED.
- 3 - NEVER LEAVE THIS RIFLE UNATTENDED WHEN COCKED OR LOADED.
- 4 - ALWAYS BE SURE OF WHAT LIES BEYOND YOUR TARGET.
- 5 - ALWAYS CONDUCT YOURSELF IN A SPORTSMAN-LIKE MANNER.

ALWAYS BE AWARE THAT YOUR ACTIONS WILL BE UNDER THE SCRUTINY OF OTHER MEMBERS OF THE PUBLIC WHO MAY NOT SHARE YOUR ENTHUSIASM FOR AIR WEAPONS. BAD PRACTICES PROMOTE BAD PUBLICITY. DO NOT JEOPARDISE YOUR FUTURE ENJOYMENT BY MISUSING THIS WEAPON.

WARNING ! - UNAUTHORIZED DISASSEMBLY OF THIS RIFLE WILL INVALIDATE THE MANUFACTURERS WARRANTY

MPR Biathlon-US-Iss2

Gun security

It is important to make sure that your gun is always kept in a safe and secure fashion when not in use.

For rifles purchased in the UK and that are NOT FAC rated (high power) a free gun lock and mounting eyes are supplied. Please follow the simple fixing instructions and keep our sport safe.

Note: If there is no gun lock in the box please contact the dealer you purchased the rifle from.



PLEASE READ THIS MANUAL BEFORE USING YOUR NEW RIFLE, IT
CONTAINS IMPORTANT SAFETY INFORMATION AND INSTRUCTION ON
ADJUSTMENT AND MAINTENANCE.

WARNING ! - UNAUTHORISED DISASSEMBLY OF THIS RIFLE WILL INVALIDATE THE MANUFACTURERS WARRANTY

Important information

Warning. Only use clean, filtered and dry compressed air. Never use any other gas, particularly industrial or welding gases such as oxygen, carbon dioxide, acetylene, hydrogen, argon, etc.

Before leaving the factory this rifle was Q.A. inspected and test fired using Air Arms pellets to check operation and final adjustment.

It was dispatched in a sealed purpose designed box with a contents label on the lid. Air Arms may not be responsible for any damage to the contents or missing items if the box is not original, if it is damaged or the seals are not intact.

Air Arms cannot be held responsible for damage or missing items due to transit damage, mishandling or being tampered with after leaving the factory.

If this rifle is not received in the original box with the seals intact, please examine carefully for any damage, missing tools or documentation.

In the first instance any problems or complaints regarding this product should be referred to the supplier.

The air cylinder is a highly pressurised unit that must not be modified in any way. Serious personal injury may result if this, and the advice below is not followed.

Do not pressurize the cylinder if there are any surface abrasions or dents. Contact Air Arms for advice.

Do not store the rifle in places with, or near sources of high temperature such as fires or boilers.

Do not attempt to dismantle when pressurised.

Do not pressurize beyond the stated filling pressure (see filling instruction section). Damage caused by such action is not covered by the manufacturers warranty.

If compressed air is being used other than from a diving shop, the inside of the cylinder should be inspected for corrosion at least annually. If in doubt contact Air Arms for advice.

In any event the cylinder should be inspected every two to three years depending upon usage.

Air Arms can provide this service at a reasonable cost.

To maintain this rifle in good working order it should be serviced annually by a competent gunsmith, your supplier may be able to provide this service or contact air arms.

A reasonable amount of advice will be provided to enable the end user to service their own rifle, however this is at the discretion of Air Arms and may not be given in all cases.

The velocity of this rifle has been set using Air Arms field pellets. If any other make or type of pellet is to be used the rifle must be re-tested with the pellet that is to be used, to ensure the muzzle energy is within the limits determined by current legislation.

Due to the nature of hand pumps and their relative inefficiency in removing moisture from the compressed air, the chances of corrosion damage to the cylinder and other internal components are increased.

Therefore the rifle should be regularly serviced and/or checked for any signs of damage by a competent gunsmith.

Air Arms recommend using a dry pack filter kit on any hand pumps used to fill our air rifles.

If accessories not manufactured by Air Arms are used on this rifle, Air Arms can not be held responsible for any loss of performance. Contact your supplier or Air Arms for any advice on this matter.

Do not store this rifle in a damp place such as garden shed or garage.

Do not store this rifle in a plastic or PVC gun bag without first applying a surface corrosion inhibitor.

Always ensure the loading bolt is fully closed before firing.

IMPORTANT INFORMATION - Continued

CHECKING VELOCITY

- 1> Use a reliable chronograph to check velocity, (the formula below requires the reading to be in feet per second - FPS)
- 2> Use fine measurement scales to weigh the pellet, If scales are unavailable the pellet weight may be stated on the pellet container lid or contact the supplier. (The formula requires the weight to be in grains). To convert from grams to grains multiply by 15.432, i.e. $0.69 \text{ grams} \times 15.432 = 10.65 \text{ grains}$.
- 3> To find the muzzle energy in ft/lbs use the formula $(\text{FPS} \times \text{FPS} \times \text{Grains}) / 450240$, i.e. $(700 \times 700 \times 10.65) = 5218500$ divide by 450240 = 11.59.

CURRENT LEGISLATION LIMITS NON-FAC HOLDERS TO AIR RIFLES WITH A MAXIMUM OF 12ft/lbs MUZZLE ENERGY.

WARNING! IT IS A VERY SERIOUS OFFENCE TO BE IN POSSESSION OF AN AIR RIFLE THAT YOU ARE NOT CERTIFICATED FOR. CONVICTION CAN RESULT IN CONFISCATION OF YOUR RIFLE, A HEAVY FINE OR IMPRISONMENT, EVEN A COMBINATION OF ALL THREE.

***** LIMITED LIABILITY WARRANTY *****

This product is warranted to the retail customer for 12 months from date of purchase against defects in materials and workmanship and is transferable to any subsequent owner.

Proof of purchase is required to receive warranty repairs, retain your purchase invoice and return the warranty registration card as soon as possible after purchase. The warranty card must show the dealer/supplier name and address and date of purchase.

What is covered

Replacement parts & labour on a 'back to base' basis, return transportation to the consumer (mainland UK only).

What is not covered

Transportation from the consumer to Air Arms.

Damage caused by misuse, abuse, lack of routine maintenance, transit damage between the dealer/supplier and the consumer or unauthorized disassembly.

Parts subject to normal wear and tear.

Any other consequential cost incurred by the consumer.

Return transportation to consumers outside mainland U.K..

No warranty is implied as to the fitness for any particular purpose.

AIR ARMS RESERVE THE RIGHT TO ALTER THE CONSTRUCTION, APPEARANCE OR PERFORMANCE OF ANY PRODUCT WITHOUT PRIOR NOTIFICATION. ALL ILLUSTRATIONS ARE FOR INFORMATION PURPOSES ONLY AND DO NOT NECESSARILY SHOW THE EXACT MODEL THAT WAS PURCHASED.

SIGHT ASSEMBLY

If you wish to use the sights supplied with your Biathlon Rifle they first have to be fitted to the gun.

The set of sights supplied comes in 2 pieces, Fig 5, the front sight and rear sight, and both fit onto dovetail mountings on the rifle.

Firstly making sure that the thumb screw is loose, slide the rear sight onto the dovetails and into position Fig 6. Once the sight is in position, the thumb screw can be tightened, being careful not to over-tighten the screw Fig 7. When the sight is on the dovetail it can be moved forwards and backwards to establish the proper eye relief for each position.

If not already fitted, fit the riser block to the bottom of the front sight Fig 8. Note: If the riser block is not fitted on the barrel the rifle cannot be properly sighted in. The sight can now be fitted into the dovetails on the muzzle Fig 9.

The sight tunnel should be fitted with the screw on the left side facing the rear of the gun. When in place the screw can be tightened Fig 10, care must be taken as the screw and nut are mounted into the plastic moulding and over tightening will damage the sight.

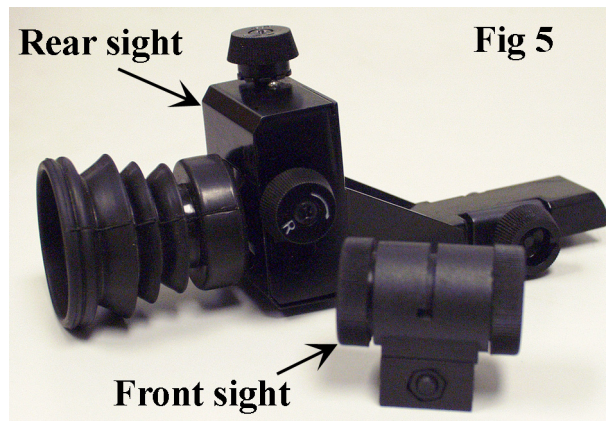


Fig 5



Fig 7

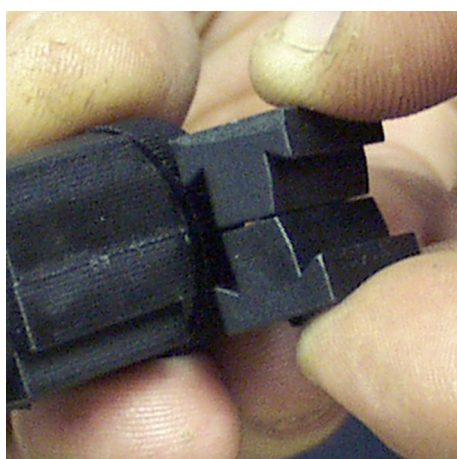


Fig 9



Fig 10

REMOVING THE CYLINDER FROM THE RIFLE

To fill the cylinder it must first be removed from the main body of the rifle. This is achieved by unscrewing the cylinder in a anti-clockwise direction. Fig 11. The cylinder should only be hand tight, if this is not the case use the spanner provided to loosen the cylinder, then continue without the spanner Fig 12.

Note. When removing the cylinder from the rifle there may be a sound of air escaping, this is normal. Unscrew the cylinder enough to allow the air seal to break, wait for the release of air to stop then unscrew the cylinder the rest of the way. Once the cylinder has been completely unscrewed remove it from the rifle.



FILLING ADAPTOR

Fit the filling adaptor supplied to your chosen filling kit i.e. scuba bottle or pump. This simply screws in and seals down on the O ring in the adaptor.

With the adaptor, Fig 13, attached to your filling kit, screw the end of the cylinder into the adaptor. Close the bleed valve on the adaptor. Fig 14, and slowly open the main valve on the filling bottle or start pumping. When the air in the hose equalizes with the air in the cylinder, the cylinder will start to fill. Continue to slowly fill the cylinder until the required pressure of 2900psi (20MPa) is reached.

The filling pressure of the MPR Biathlon is 2900psi (20Mpa, 200bar). This is the maximum filling pressure of the cylinder. Filling to a higher pressure will not increase either power or number of shots. Over filling will lower the power and may cause irreparable damage to the cylinder.

Note. Always use the gauge on the filling equipment and not on the rifle.



Fig 14



Once the desired pressure is reached close the main valve on the filling bottle or stop pumping. Open the bleed valve on the adaptor, this will vent the trapped air in the hose and allow the cylinder to be unscrewed from the adaptor. If you don't vent the adaptor, air trapped in the hoses makes removing the cylinder from the filling kit very difficult and may cause damage to the adaptor seals.

With the vent screw open unscrew the cylinder from the filling adaptor.

Cock the action (this is to make sure the firing valve is closed to stop air venting down the barrel) and screw the cylinder back onto the rifle. The cylinder should be hand tight.

DO NOT USE THE SPANNER TO TIGHTEN THE CYLINDER ONTO THE RIFLE. REMEMBER THE RIFLE

IS NOW IN A COCKED STATE AND READY TO FIRE, IT SHOULD NOW BE DE-COCKED OR FIRED OFF.

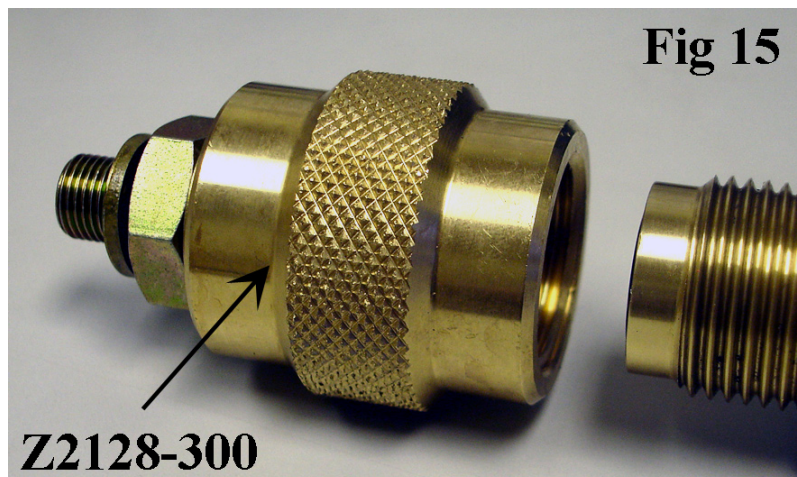
Note. The threads of the cylinder and cylinder extension, (where the cylinder screws into the rifle) must be protected and kept free of grit or dust. A thin coating of grease, such as Napier VP90 gun grease, may be applied to reduce friction on the threads. It is also recommend that the cylinder pressure be allowed to fall to 1450 - 1595psi (10MPa - 11MPa) before removing to fill. Although this is not critical it will make the removal of the cylinder to refill easier.

NOTE ON PUMPS

If you are going to use a pump as your filling kit you will also need the pump adaptor, Fig 15, available from Air Arms. Order reference. Z2128-300.

Air Arms recommend that pump usage instructions are closely followed so as not to damage the cylinder of the rifle.

Also available for the HILLS pump is a dry-pac filter kit which will remove most of the moisture in the atmosphere.



THE IN STOCK MAGAZINE CLIPS

On the right hand side of the stock are the magazine clips. The magazines simply push into the clips as in the picture below.



COCKING AND LOADING THE RIFLE

To cock the S400 Biathlon rifle hold the gun firmly in one hand and with the other hook the index and middle finger around the handle and pull the lever all the way to the back as far as it can travel. See below.



MOUNTING/DEMOUNTING THE MAGAZINE & PELLETS

DEMOUNTING

Fully cock the rifle, grip the magazine as shown below and slide out of the bolt housing without lifting.

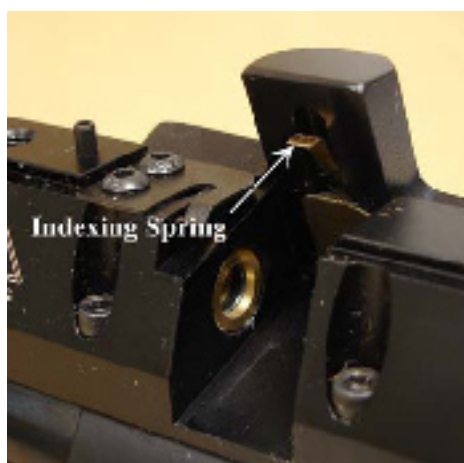
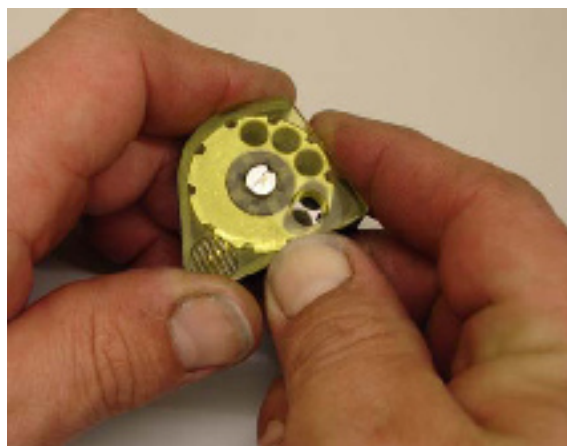
Do not attempt to lift vertically as damage to the indexing spring will result.

To refit the magazine, fully cock the rifle, grip the magazine in the same fashion and reverse the process sliding the magazine into the bolt housing applying downward pressure with the fore finger to keep the base of the magazine against the bottom of the slot in the bolt housing. Take care not to damage the indexing spring.



LOADING PELLETS

Hold the magazine and drop a pellet into the chamber. Manually index to the next empty chamber and repeat until the magazine is full.



Be very careful not to damage the indexing spring when demounting or mounting the magazine. Follow the instructions carefully.

WARNING. The rifle should only be fired when the magazine is fitted in the breech or damage to the seal carrier may occur.

TRIGGER ADJUSTMENT

The Biathlon Rifle has a two stage trigger. This means that as the trigger is pulled the bottom sear gradually disengages with the top sear until the two disengage completely and the rifle fires. If the pressure on the trigger is released before firing, the sears return to their first fully engaged position. This type of trigger allows a very fine but safe operation because it is the release of the second stage that actually fires the gun. This arrangement is vastly superior to single stage trigger, however it must be stated that adjustment of a two stage unit is more difficult than the adjustment of a single stage trigger.

TRIGGER POSITIONING

The trigger on the Biathlon Rifle can be adjusted in a variety of ways to make the trigger as efficient as possible. First, the trigger blade can be rotated around the trigger pillar, this allows the finger to sit perfectly on the trigger.

The blade can be raised or lower on the pillar to make sure that it is in line with the shooters finger.

The whole trigger blade and pillar assembly can also slide forwards and backwards along the trigger bar to increase or decrease the length of pull.

These adjustments will allow the gun to be tailored the individual shooter.

Fig 20.

- A - Pillar screw.*
- B - Blade screw.*
- C - Second stage adjuster.*
- D - First stage adjuster.*
- E - Weight of pull adjuster.*
- F - Trigger bar.*
- G - Trigger blade.*
- H - Trigger pillar.*

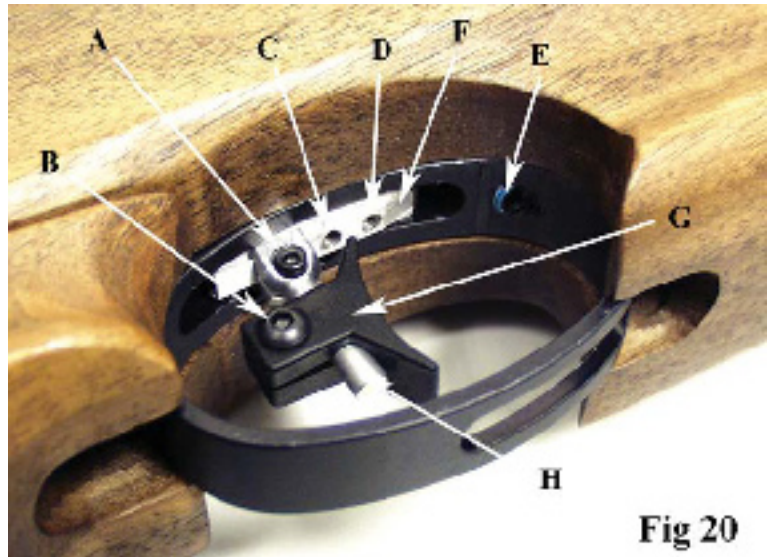


Fig 20

ROTATING, RAISING AND LOWERING THE BLADE

The trigger blade can be rotated and moved up and down on the trigger pillar by loosening the screw in the blade 'B' (use the 2mm Allen key supplied.) Fig 21. Once in position the screw can be retightened.

WARNING. Over tightening screws or bolts mounted into plastic may cause damage.

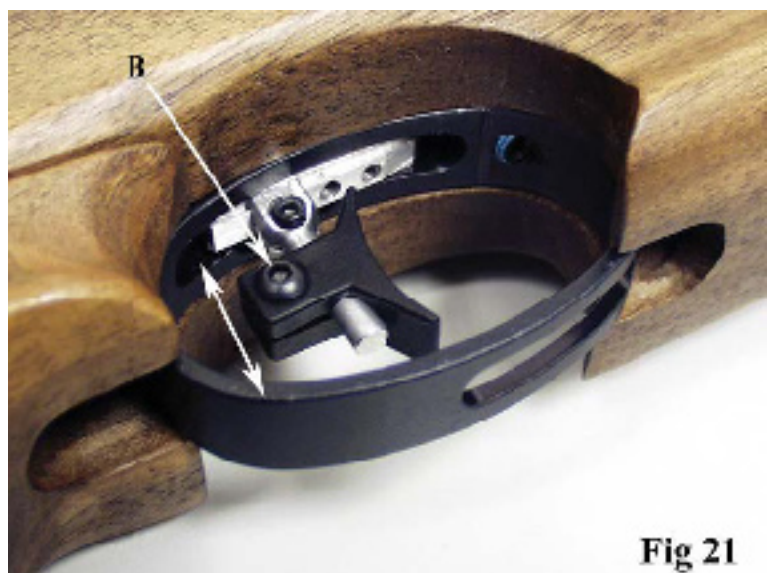


Fig 21

MOVING THE PILLAR ON THE TRIGGER BAR

Loosening screw 'A' with the 1.5mm Allen key (supplied) will allow the trigger pillar to be moved forwards and backwards along the trigger bar. (Fig 22).

TRIGGER ADJUSTMENT

The operation of the trigger is controlled by 3 screws C, D & E (fig 23).

The weight of pull adjustment is controlled by screw 'E', and is located in front of the trigger, housed in the trigger guard (fig 20).

Clockwise rotation will increase the pull weight and counter-clockwise will decrease the weight. If the screw is over adjusted in the clockwise direction the spring will become coil-bound and may prevent operation of the trigger.

The first stage adjuster 'D' is the first screw in the trigger bar looking from the front of the gun (fig 23). This screw determines the length of first stage travel before the second stage engages. Clockwise adjustment reduces the first stage travel.

The second stage adjuster 'C' is located next to the first stage screw (fig 23). This screw determines the exact pull-off point of the trigger.



Fig 22

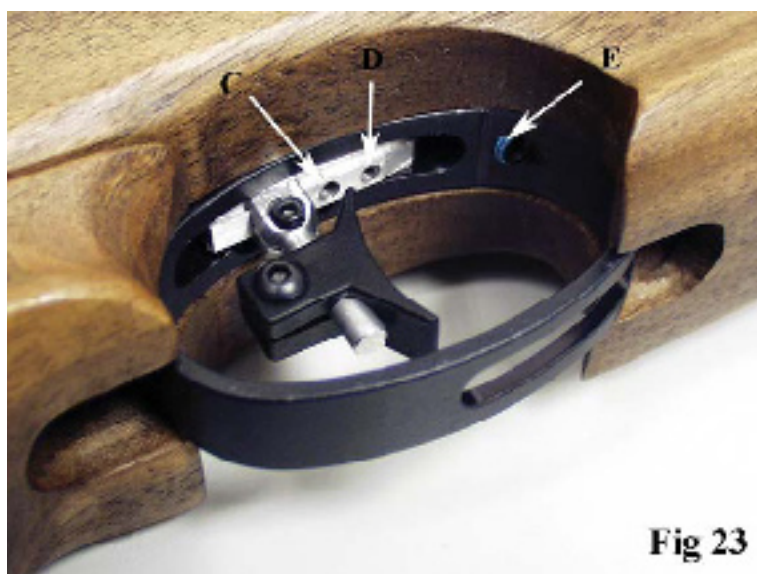


Fig 23

WARNING. Adjustment of a two-stage trigger can be difficult and should be left to experienced and trained technicians. Adjustment to any one of the screws will have a direct effect on the other two screws and could make the gun unsafe.

If you have no experience of adjusting a two-stage trigger it is highly recommended that you seek guidance or leave the trigger on the factory settings.

TIP

When adjusting the trigger write down on a piece of paper the number of turns and direction of each adjuster screw. This will make it easier to recover the original settings if required.

ADJUSTING THE CHEEK PIECE AND BUTT PAD

The cheek piece can be adjusted in two planes first it can be raised and lowered by loosening screw 'J' (fig 25). The cheek piece can also be adjusted a small amount from side to side as in (fig 25), by loosening screws 'I'.



Fig 24

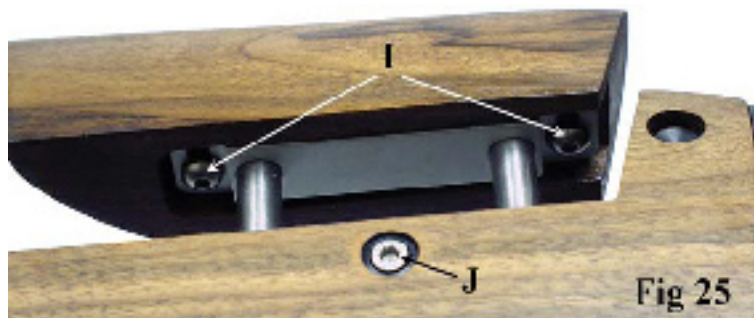


Fig 25



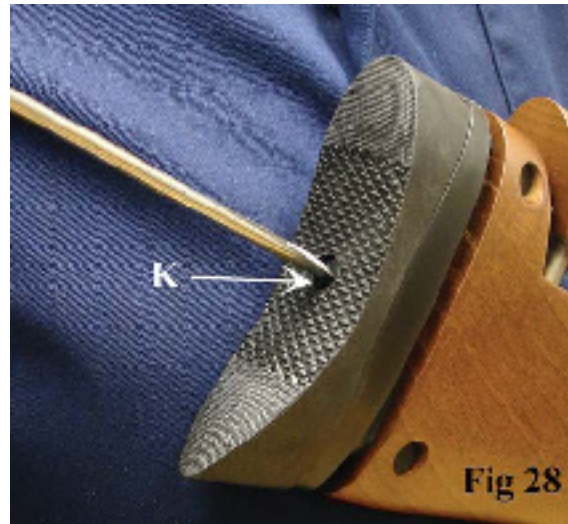
Fig 26



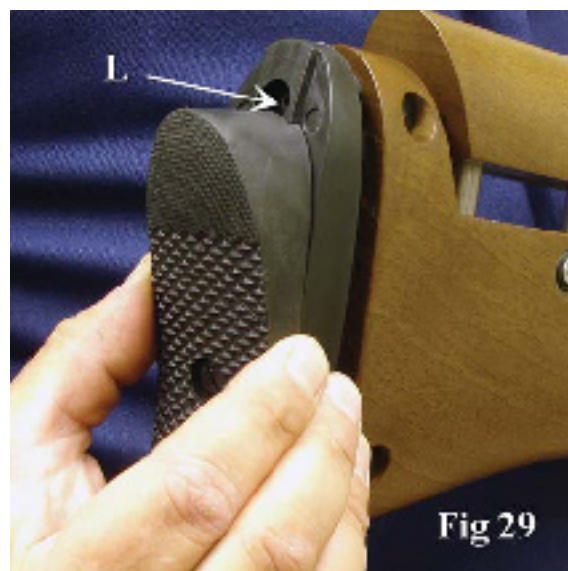
Fig 27

ADJUSTING BUTT PAD

The butt pad on the rifle can be adjusting in the vertical plane by loosening screw 'K', and sliding the pad into position then re-tightening screw 'K'. Fig 28.



Spacers can be added in between the butt pad assembly and the butt stock to lengthen the stock. This can be achieved by moving the rubber pad up or down to expose screw 'L', Fig 29 at the top and bottom of the butt pad assembly. Loosening these screw will allow a spacer (available from Air Arms) to be place into the assembly.



MAINTENANCE

FIXINGS

Regularly check the tightness of all fixings. However do not be tempted to over tighten as some parts are made from aluminium and stripped threads may result. Stripped threads are not covered by the manufacturers warranty.

BARREL

For ultimate accuracy, clean and re-lube the barrel frequently. It is difficult to advise how often is best for every circumstance, but every 250 shots is not too often if the desire is to keep the barrel in the best possible condition.

The correct materials are very important. Air arms only uses products made by napier. Listed below is the napier product and a more generally available alternative. If possible use napier for the best results.

<i>CLEANER :</i>	<i>NAPIER GUN CLEANER, ALTERNATIVELY WHITE SPIRIT.</i>
<i>OIL :</i>	<i>NAPIER GUN OIL, ALTERNATIVELY '3 IN 1' OIL.</i>
<i>PULL-THROUGH PAD:</i>	<i>NAPIER RIFLE CLEAN, ALTERNATIVELY SOFT COTTON CLOTH.</i>
<i>PULL-THROUGH LINE:</i>	<i>NAPIER PULL THROUGH KIT, ALTERNATIVELY 20lb FISHING LINE.</i>

As a rule cleaners and oils intended for shotguns and small/fullbore weapons are not suitable.

- 1> Cut a piece of line three times the length of your barrel, fold in half and tie ends together. Remove silencer if fitted. Open loading bolt.
- 2> Feed un-knotted end down barrel from the muzzle end until folded end protrudes about 50mm.
- 3> Cut a 100mm length of 'rifle clean' or 100x50mm piece of cloth and pass it between the protruding loop. Spray the pad with 'gun cleaner' or white spirit, turn the rifle upside down and pull the line back through the barrel slowly.
- 4> Repeat steps 2&3 until the pad is clean.
- 5> Repeat steps 2&3 once more without any cleaner on the pad to dry the barrel.
- 6> Repeat steps 2&3 once more with the pad sprayed with 'gun oil' or 3 in 1 oil.

IMPORTANT: THE REASON FOR TURNING THE RIFLE UPSIDE DOWN IS TO PREVENT EXCESS CLEANER/OIL FROM PASSING DOWN THE TRANSFER PORT INTO THE FIRING VALVE CHAMBER.

LUBRICATION

Lubrication of the internal mechanism is not covered in this handbook. This is best performed by a competent gunsmith or the factory and in any case should not be required until the annual service. On return from every shooting session, wipe all over the exterior with an oily rag to preserve the surface finish during storage.

