

# USER'S HANDBOOK

20

Part No Al-15653 Issue 1

### INTRODUCTION



Accuracy International was formed in 1978 to design and build tactical rifles.

The original design ethos combined two factors into a unique package, namely the incorporation of performance enhancing features learned in Olympic and international target shooting onto a platform exhibiting full military ruggedness.

The current designs faithfully follow this original concept, but also benefit from over twenty years of continuous improvement. These improvements are not cosmetic, instead they are driven solely by the needs of the users, highly trained military and police units in over 60 countries worldwide. Such units are exposed to 'live' tactical situations on a daily basis and in the most demanding environments where first shot accuracy is critical.

All components are manufactured to Accuracy International's designs to ensure that they are optimized for the function they must perform, something that cannot be achieved with a re-purposed sporting weapon.

The AXSR multi-caliber rifle is an evolution, which builds on Accuracy Internationals established family of highly successful AW and AX rifles. Being a bolt action rifle with free floating match grade barrel and a magazine capacity of ten rounds, it fulfills the need for a highly accurate long range sniper rifle.

Like the AX series, the AXSR rifle utilizes an aluminum chassis system, which ensures insensitivity to temperature and humidity, thus ensuring a constant zero.

The fore-end tube design provides multiple mounting points using Keyslot<sup>™</sup> technology for accessory rails, sling attachments and bipod mounts.

The AXSR rifle also incorporates integral RRS compatible dovetail rails for use with a wide range of bipod, tripod and accessory mounts.

The AXSR is easily upgradeable with a number of accessories and upgrades which can be purchased from Accuracy International distributors.

### CUSTOMER COMMUNICATION



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### TECHNICAL SPECIFICATION



Caliber	Multi-caliber:	Safety	2-Position, ambidextrous.
	.300 Norma Magnum. .300 Winchester Magnum. .338 Lapua Magnum.		Safety lever draws back and blocks the firing pin allowing the bolt to be cycled in a safe condition.
Action	.338 Norma Magnum. .308 Winchester. 6.5 Creedmore. .300 PRC. Front locking, 6 lugs.	Stock	Folding stock. Cheekpiece provides height, lateral, forward and rearward adjustment. Butt is adjustable for length of pull, height and rotation.
Bolt	60 degrees opening, 6mm striker fall.		Rear Grip, adjustable for position.
Trigger	Two stage trigger, 2.5 lb pull weight	Optic rail	20MOA STANAG.
	with adjustable reach trigger blade. (See separate documentation).	Magazine	10 shot, double stack, detachable, box type magazine.
Barrel	Stainless Steel Match-Grade to the following specifications:	Accessory rails	1 x 80mm rail, 1 x 80mm flush cup rail, 1 x 96mm flush cup rail, 1 x 140mm rail.
	.300 Norma Magnum 27" long,1-9.5" twist. .300 PRC, 27" long,1-8.5" twist. .338 Norma Magnum, 27" long, 1-9.5" twist. .338 Lapua Magnum 27" long 1-9.5" twist. .308 Winchester, 24" long 1-10" twist.	Rail Interface	One 12" RRS <sup>™</sup> compatible 1.5" Dovetail interface. One 4" RRS <sup>™</sup> compatible 1.5" Dovetail interface.
	.300 Win Mag, 26" long 1-10" twist. 6.5 Creedmore 24" long 1-8" twist.	Sling points	Flush cup sling points fitted.
	Easily removable using the QuickLoc barrel clamp system.		

### PARTS IDENTIFICATION



**AXSR USER MANUAL** 

### CONTENTS

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CUS	TOMER COMMUNICATION	$\sim$	
TEC	HNICAL SPECIFICATION	$\checkmark$	
PAR	TS IDENTIFICATION	∕vi	
15A	=ETY	1	
1.1	SAFETY FEATURES	2	
1.2	FIRING PIN COCKING INDICATOR	2	
1.3	SAFETY FUNCTION	3	
1.4	SAFETY PRECAUTIONS	4	
1.5	WARNINGS	5	
1.6	FIELD SAFETY CHECK	6	
1.7	CARTRIDGE HEADSPACE	7	
2 SE	TTING UP THE RIFLE	9	
2.1	TOOLS AND TORQUE SETTINGS	10	
2.2	HEX WRENCH STORAGE	11	
2.3	CALIBER CONVERSION	12	
2.4	CHANGING THE BARREL	13	
2.5	RRS™ DOVETAIL INTERFACES	15	
2.6	SLING POINTS	16	
2.7	CHEEKPIECE ADJUSTMENTS	17	
2.8	REAR GRIP	18	
2.9	LENGTH OF PULL ADJUSTMENT	19	
2.10	BUTT PAD ADJUSTMENTS	20	
2.11	BUTT SPACERS	21	
2.12	TRIGGER REACH ADJUSTMENT	22	
2.13	THROW LEVER REPOSITIONING	23	
2.14	ACCESSORY RAILS	25	

### CONTENTS

3 FIE	ELD STRIPPING THE RIFLE	27
3.1	FOLDING THE STOCK	28
3.2	FIELD STRIPPING	29
3.3	STRIPPING THE BOLT ASSEMBLY	30
3.4	STRIPPING THE MAGAZINE'S	31
3.5	REMOVING THE FORE-END	33
4 PB	EPARING AND FIRING THE RIFLE	35
4.1	MAGAZINE LOADING	36
4.2	LOADING THE RIFLE	37
4.3	FIRING AND OPERATING THE RIFLE	38
4.4	UNLOADING	39
4.5	STOPPAGES	40
5 US	ER MAINTENANCE	43
5.1	USER MAINTENANCE	44
5.2	CLEANING AND LUBRICATING	45
5.3	CLEANING THE BARREL AND CHAMBER	46
5.4	CLEANING THE BARREL	47
5.5	REMOVING HEAVY FOULING	48
5.6	ACTION SCREW CHECK	49
5.7	AMENDMENT RECORD	50



Before attempting to use or handle the rifle, this manual must be read and understood fully. This manual assumes a basic level of user familiarity with firearms and is not a replacement for user training.

> DAMAGE TO PROPERTY, INJURY OR DEATH MAY RESULT IF SAFETY WARNINGS AND INSTRUCTIONS ARE NOT FOLLOWED.

- Always keep the weapon pointed in a safe direction during handling.
- Never leave a weapon unattended.
- Always wear suitable eye and hearing protection when firing the weapon.
- Always check that the barrel and muzzle brake are clear of debris and obstructions before firing.
- Never attempt to clear an obstruction by firing.
- Always use quality factory ammunition of the correct caliber for the weapon.
- Clearly identify your target and what is beyond it.
- When the rifle is loaded, always keep fingers outside of the trigger guard until a shot is to be fired.
- Always show that the weapon is clear before handing it to another user.



#### AXSR USER MANUAL

### 11 SAFETY FEATURES

- The AXSR rifle bolt utilizes six forward locking lugs.
- When the bolt is in the closed position the bolt head is enclosed and supported within the lock ring and action body.
- The firing pin cannot protrude from the front of the bolt face unless the bolt lugs are engaged within the lock ring.
- Dangerous gas leakage from the rear of the action body is minimized by a tight fitting bolt and shroud assembly that assists the deflection of hot gasses away from the operator.
- Two gas pressure relief ports are located in the action to deflect gas leakage from the front of the action body.
- The AXSR action incorporates an ambidextrous 2-position safety lever.

### 1.2 FIRING PIN COCKING INDICATOR





### **1.3 SAFETY FUNCTION**

The AXSR rifle is fitted with a ambidextrous 2-position safety mechanism.



### The 'SAFE' position

- When the safety lever is moved to the 'SAFE' position, the firing pin is drawn rearwards, away from the trigger mechanism and is physically blocked. This rotational movement also resets the trigger mechanism to ensure it is ready to engage with the firing pin once the lever is moved to the 'FIRE' position.
- Whilst the safety lever is in the 'SAFE' position, the bolt may be operated and removed, providing a safe method of ejecting live rounds.



### The 'FIRE' position

When the safety lever is moved to the 'FIRE' position the firing pin re-engages with the trigger mechanism and is ready to fire.



### 1.4 SAFETY PRECAUTIONS

WARNING - Users and personnel responsible for the weapon must comply with the following safety precautions. For the purposes of health and safety, all warnings and cautions must be adhered to.

Safety precautions should be carried out:

- On initial receipt of the weapon.
- Before use.
- After use.
- Before maintenance or cleaning procedures.
- Before any inspection procedure.
- Before any non tactical movements.
- Prior to the weapon being placed in a transit case or drag bag.
- When the documentation recommends it.

#### SAFETY PRECAUTIONS

- Hold the weapon securely, do not place your finger inside trigger guard.
- Point the weapon in a safe direction.
- Remove the magazine (if fitted).
- Check that the safety is in the 'SAFE' position.
- Orientate the ejection port downwards, open the bolt and slide to rear.
- Inspect the chamber and bolt face: for a live cartridge or empty case. Visual Check - Look through the ejection port.

Physical Check - Use a finger to check the chamber.

- Remove any cartridge or case from the weapon.
- With the bolt left 'open', the rifle is now safe to handle and visibly safe to others.

However, should the bolt be required in the 'closed' position:

- Pull and hold the trigger while closing the bolt.
- Fit an empty magazine, if required.
- The rifle is now safe to handle.

WARNING - DANGER TO LIFE AND LIMB: IF THE BOLT IS NOT FULLY CLOSED WHEN THE RIFLE IS FIRED, THE COCKING PIECE COULD STRIKE THE BOLT CAUSING POSSIBLE MISFIRES.

- The extractor does not engage the cartridge rim unless the bolt is fully closed.
- Failure to fully close the bolt every time it is manipulated may result in a live round being left in the chamber.
- Attempting to load a second round will result in a stoppage. This is known as "double feeding".





THE CORRECT FUNCTIONING OF THE TRIGGER, SAFETY MECHANISM, AND THE RIFLE HEAD-SPACE ARE CRITICAL TO THE SAFE OPERATION OF THE RIFLE AND SHOULD BE REGULARLY CHECKED. SEE SECTIONS 1.6 AND 1.7 FOR DETAILS.

#### WEAPON STATUS.

When users are not aware of the weapon status, i.e. loaded, unloaded, cocked or fired, the user must assume the weapon is LOADED and carry out the SAFETY PRECAUTIONS set out in section 1.4.

#### HANDING OVER WEAPONS.

A weapon which is to be handed over to another individual must be unloaded and presented with the bolt in the 'open' or rearwards position.

#### TACTICAL MOVEMENTS.

Tactical movements with a loaded weapon must be performed with the safety lever in the 'safe' position.



WARNING - DANGER TO LIFE AND LIMB: THE TRIGGER UNITS FITTED INTO THE AXSR RIFLES ARE SET FOR TWO STAGE OPERATION AT A TOTAL PULL WEIGHT OF 2.5 LBS. RETURN THE RIFLE TO AINA FOR SETTING TO SINGLE STAGE OPERATION.

FAILURE TO COMPLY WITH THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.

### 1.6 FIELD SAFETY CHECK

The following procedure should be carried out before each time the rifle is used to ensure the safety lever is functioning correctly. This does not replace the need to have the safety mechanism routinely tested in accordance with the Accuracy International Maintenance Manual.

- Ensure the weapon is unloaded and safe to handle.
- With the bolt assembly fitted into the action body, open then close the bolt, leaving it in the cocked position.
- Move the safety lever into the 'SAFE' position. See section 1.3.
- Pull and release the trigger six times, remove your finger from the trigger.
- Push the safety lever forward into the 'FIRE' position.
- The firing pin should be retained by the trigger and not be released.
- Pull the trigger to release the firing pin.
- Repeat this process two or three times to confirm that the system is safe.
- If the firing pin is released when the safety lever is moved to the 'FIRE' position, the rifle is deemed unsafe and <u>must</u> be returned to AINA for service.

### 1.7 CARTRIDGE HEADSPACE

Cartridge head space defines the distance between the bolt face and the rear face of the cartridge, it is measured using a gauge between the bolt face and the cartridge datum reference within the chamber when the bolt is closed, as shown in the image below. This is a critical safety feature on all rifles, regardless of manufacturer.



For the user's safety and to maximize cartridge compatibility, the head space measurement on every AXSR rifle is inspected before leaving the factory.

However, during the working life of the rifle, wear to key components and new barrel fitting may increase the cartridge head space. If this becomes excessive, it can lead to misfires, a loss of accuracy, and possible damage to the rifle due to a ruptured case.

It is therefore essential to check the cartridge head space using A.I. approved gauges throughout the life of the rifle, particularly after a new barrel is fitted.



### EXCESSIVE HEADSPACE CAN BE HAZARDOUS AND MAY LEAD TO MISFIRES AND CARTRIDGE CASE RUPTURES

Instructions for checking the head space dimension: Head space gauges are used to specify a maximum head space for safety purposes using 'GO' and 'NO GO' gauges.

- Ensure the chamber is clean before inserting the gauge into the chamber through the ejection port. Note: - To prevent damaging the chamber, ensure the gauge is fully inserted into the chamber before attempting to close the bolt.
- 2. Gently close the bolt handle down to a stop, without using excessive force.
- 3. If the bolt closes fully on the 'GO' gauge the head space is acceptable.
- If the bolt closes fully on the 'NO GO' gauge using a minimum amount of force, the head space is out of tolerance and indicates that the rifle's accuracy and safety is compromised – the rifle must be inspected by a suitably qualified armorer before further use.

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### **2** SETTING UP THE RIFLE



Before handling the rifle or attempting any procedure described in this manual, the user must ensure their own safety and that of others by: Standing behind the weapon. Ensuring that it is pointing in a safe direction. Checking it is unloaded and safe to handle.

The AXSR rifle has been designed to be user configurable and adjustable for:

- Caliber conversion
- Cheekpiece
- Length of pull
- Butt pad height and angle
- Butt spacers
- Rear grip position
- Accessory rails
- Sling loops
- Trigger blade position



### 21 TOOLS AND TORQUE SETTINGS

The table below lists the typical tools and torque settings required for user maintenance of the AXSR rifle. Where possible a suitable torque driver or torque limiter should be used.

Tool Description	Purpose	Recommended Torque
5/32" Hex wrench/bit	Butt pad and spacer retaining screws	25 in-lbs
5/32" Hex wrench/bit	Action rail screws	35 in-lbs
5/32" Hex wrench/bit	Action screws and quickLoc barrel clamp	49 in-lbs
2.5mm hex drive wrench/bit	Trigger blade clamp	7 in-lbs
1/8" L-type hex drive wrench/bit	Keyslot rail screws	35 in-lbs
5/32" hex drive wrench/bit	Fore-end retaining screws	45 in-lbs
5/32" Extended Ball-end hex drive wrench/bit	Rear action screw	49 in-lbs
1/8" L-type Hex Wrench (Stored under the cheekpiece)	Cheekpiece and throw lever retaining screw	

### 2.2 HEX WRENCH STORAGE

A number of adjustments on the rifle are carried out using a hex wrench. For the convenience of the user, a 1/8'' hex wrench is stored within the checkpiece of the rifle.

#### To remove the hex wrench:

Use a bullet tip to push and/or a finger to pull the hex wrench out of the cheekpiece.

#### To replace the hex wrench:

Offer the hex wrench up to the slot and push into the recess until the detent engages.

#### Using the hex wrench:

Avoid over tightening the screws as this may damage the rifle or accessories. It is often possible to achieve an acceptable level of torque using the long end of the wrench in the screw and using the short end as the lever.





# 2.3 CALIBER CONVERSION

The AXSR rifle has been designed to allow the user to easily change the caliber of the weapon. The bolt, magazine and barrel must be replaced according to the table below.

In addition to conventional alpha-numeric engraving on barrels and magazines, bolts are identified by tactile markers to aid identification.

The bolt body is marked by small round colored indents close to the bolt head retaining pin, visible through the ejection port when the bolt is closed and in the locked position (see fig 7) The caliber is also engraved on the bolt body, above the bolt handle.



Caliber	Bolt	Magazine
.338 Lapua Magnum	.338 (Red)	338
.338 Norma Magnum	.338 (Red)	.300/.338 Norma
.300 Norma Magnum	.338 (Red)	.300/.338 Norma
.300 Win Magnum	.300 (Yellow)	.300 Win Mag
.300 PRC	.300 (Yellow)	.300 Win Mag
6.5 CM	.308 (White) ○	.308 Win
.308 Winchester	.308 (White) O	.308 Win

### 2.4 CHANGING THE BARREL

#### **Preparation:**

The rifle and magazine (if fitted) must be unloaded and safe to use with the chassis unfolded. The procedure may be completed without removing the scope, however it is strongly recommended that scope covers are used to protect the lenses.

### Removal:

Use a 5/32" hex wrench to loosen the barrel clamping screw on the action.



## 2.4 CHANGING THE BARREL (2)

#### **Refitting:**

- Ensure the barrel, action body and their respective threads are not damaged, obstructed or fouled.
- Ensure the mating surfaces of the barrel and action are clean and free from damage.
- Carefully locate the barrel into the action. Screw the barrel into the action body, taking care not to damage the threads.
- Firmly hand tighten the barrel.
- Ensure that the flange on the barrel is touching the front of the action body and that no gap remains. This
  can be viewed through the inspection slot (see Fig 9).
- Use a 5/32" hex bit and tighten the barrel clamping screw to 49 in-lbs.
- Test the barrel clamp by attempting to loosen the barrel by hand, do not use a spanner. The barrel should not rotate.
- Check the cartridge head space, refer to section 1.7 for details.
- Insert the correct bolt (see section 2.3).
- Insert the correct magazine (see section 2.3).



WARNING - IF, AFTER TIGHTENING THE CLAMPING SCREW THE BARREL ROTATES, RE-TIGHTEN THE BARREL AND BARREL CLAMPING SCREW AS DESCRIBED ABOVE. IF THIS DOES NOT PROPERLY SECURE THE BARREL, THE RIFLE SHOULD BE RETURNED TO AINA FOR SERVICE.



ENSURE THE LOCK RING IS IN PLACE AND IS SECURE. THIS CAN BE INSPECTED THROUGH THE EJECTION PORT.

Barrel flange inspection slot



Lock ring-

YY ZZZ XXXXXX

Quickloc

barrel release

screw 49 in-lbs

### 2.5 RRS™ DOVETAIL INTERFACES

The AXSR rifle incorporates two RRS™ compatible 1.5" wide dovetail interfaces. One extends full length along the underside of the fore-end tube; the second shorter interface is located forward of the magazine opening. These interfaces provide an easy to use and durable mounting system for a range of bipods, tripods and other shooting rests.

Fig 10

Fig 11





### 2.6 SLING POINTS

#### Sling point type and location:

Two flush cup sling points are located in the fore-end accessory rails, one on the 80mm rail and one on the 96mm rail. The rails can be re-positioned on the fore-end as required.

Fig 12

- One flush cup point is located above the pistol grip on the left side of the rifle.
- One flush cup point is located underneath the angled section of the rear frame.
- Two non-rotational points are located on either side of the butt assembly.



### AXSR USER MANUAL

### 2.7 CHEEKPIECE ADJUSTMENTS

### Adjusting the cheekpiece height:

- Slide the throw lever lock away from the pivot to release the lock. If the lock does not move, apply light pressure inward to the throw lever and attempt to slide the lock again.
- With the throw lever lock disengaged, rotate the throw lever through a minimum of 150 degrees to release the clamp. If the cheekpiece cannot be adjusted, apply pressure inward on the throw lever to disengage the clamp. Note: The assembly is spring loaded and will extend to its

note: The assembly is spring loaded and will extend to its maximum height unless restricted.

- Place your cheek lightly on the cheekpiece and adjust the height until the desired alignment with the optic is achieved.
- Rotate the throw lever to the fully engaged position or until the lever lock engages the pivot.

### Adjusting the cheekpiece position:

The cheekpiece position can be adjusted side-to-side as well as forwards and backwards to help achieve a comfortable shooting position

- Using the supplied 1/8" hex wrench (stored under the cheekpiece, see 2.1,) loosen the two retention screws that are exposed on the top surface of the cheekpiece.
- Adjust the cheekpiece to the desired position and lightly tighten the button head cap screws.
- Check the operation of the bolt and the butt plate assembly to ensure that the cheekpiece does not impede operation. Re-adjust if necessary.
- Tighten the two cheekpiece retention screws.







### 2.8 REAR GRIP

The AXSR rifle is supplied with an optional rail-mounted rear grip. This can be fitted to the accessory rail located on the underside of the rear chassis. or directly to the butt assembly. The rear grip can be removed completely if it is not required or if a suitable spike or monopod is to be fitted.

Note: The same fixing screw is used to attach the rear grip to the rail or the butt.

#### **Rear grip-rail fitting**

- Use a 5/32" hex wrench to loosen and remove the rear grip screw.
- Slide the rear grip along the rail until the desired position is reached.
- Ensure that the screw hole is in line with a rail slot and refit the rear grip screw.
- Tighten the screw to secure the grip.

### **Rear grip-butt fitting**

- Use a 5/32" hex wrench to loosen and remove the rear grip screw.
- Slide the rear grip rearwards until it contacts the butt assembly.
- Refit the screw through the front of the grip and engage with the threaded hole in the butt assembly.
- Tighten the screw to secure the grip.





### 2.9 LENGTH OF PULL ADJUSTMENT

#### To adjust the length of pull:

- Slide the throw lever lock away from the pivot to release the lock. If the lock does not move, apply light pressure inward to the throw lever and attempt to slide the lock again.
- With throw lever lock disengaged, rotate the throw lever through a minimum of 150 degrees to release the clamp. If the buttstock cannot be adjusted, apply pressure inward on the throw lever to disengage the clamp.
- Slide the buttstock assembly to the desired position.
- Rotate the throw lever to the fully engaged position or until the lever lock engages the pivot.



### 210 BUTT PAD ADJUSTMENTS



### To adjust the butt pad height and angle:

- Loosen the butt pad adjustment thumb wheel.
- The butt pad can be raised, lowered or rotated.
- Once the desired position has been achieved, re-tighten the adjustment thumb wheel.





Fig 18

### 211 BUTT SPACERS

The AXSR length of pull can be extended further by fitting butt spacers from the supplied kit. One 10mm and 20mm spacer is supplied with the rifle along with appropriate length screws to suit the desired combination.

#### Fitting the spacers:

- Using a 5/32" hex wrench, loosen and remove the two butt pad screws.
- Select the correct length screws to suit the number of spacers being used (see guide below).
- Fit the butt and spacers as shown in Fig 20.
- Tighten the two butt screws to 25 in-lbs.





### 212 TRIGGER REACH ADJUSTMENT

Trigger shoe

Trigger blade

To adjust the trigger blade position:

- Loosen the trigger blade clamping screw using a 2.5mm hex wrench.
- Slide the trigger blade to the desired position.
- Tighten the screw.
- Note: the trigger blade design provides approximately 0.33" of adjustment. The trigger blade clamp must remain in full contact with the trigger shoe (see fig 22).





Maximum trigger blade forward position

AXSR USER MANUAL

### 213 THROW LEVER REPOSITIONING

The throw lever assemblies can be switched to the right or left side of the buttstock assembly based upon user preference.

#### Throw lever removal:

- Slide the throw lever lock away from the pivot to release the lock. If the lock does not move, apply light pressure inward to the throw lever and attempt to slide the lock again.
- With throw lever lock disengaged, rotate the throw lever through a minimum of 150 degrees to release the clamp.
- Using the supplied 1/8" hex wrench, loosen the retaining screw opposite of the throw lever until it separates from assembly. Note that the assembly is spring loaded so take care to contain the separation of the plates and throw lever.



Throw lever retaining screw -

Raise the lever

Fig 23

A

through a Min of 150°

### 24

## 213 THROW LEVER REPOSITIONING (2)

#### Throw lever refitting:

- Position the clamp plate (cheekpiece or LOP depending upon the desired lever) to the required side of the buttstock assembly. Ensure that it is positioned such that the threaded portion engages the threaded portion of the adjustment rods.
- Place the retaining screw through the clamp plate.
   Note: A medium grade thread locker, such as Loctite 243, can be applied to the flat head cap screw to minimize adjustment loss.
- Position the spring on the shaft of the retaining screw.
- With the beveled surface facing outwards from the buttstock, position the cover plate on the opposite side of the buttstock assembly to the clamp plate.
- Push inward on the throw lever assembly and clamp plate and retaining screw on the opposite side of the buttstock, draw the assemblies together into a clamped position.
- With assembly held in place, use the supplied 1/8" hex wrench to start the flat head cap screw into the throw lever pivot, securing the assembly together.
- To set clamping strength, toggle the throw lever to the fully engaged position.
- Use the supplied 1/8" hex wrench to lightly tighten the retaining screw. Check the desired assembly for any play. If play exists, further tighten the screw.
- Check the throw lever operation to ensure proper performance without over-stressing the assembly. Make any final adjustments to the retaining screw to achieve the desire clamping feel.





Fig 24



### 214 ACCESSORY RAILS

Accessory rails can be fitted into any available  $\mathsf{Keyslot}^{\mathsf{TM}}$  on the fore-end.

#### Removing an accessory rail:

- Using the supplied 1/8'' hex wrench, loosen the retaining screws  $1^{1}/_{2}$  turns.
- Slide the rail toward the big end of the Keyslots<sup>™</sup> and lift the rail clear of the chassis.

#### Refitting the accessory rails:

- Adjust the screw positions in the rail to extend 3/16" as shown on the right.
- Insert the screw heads through the big ends of the Keyslot<sup>TM</sup> apertures and slide the rail forwards until it comes to a stop.
- Pull the rail upwards and tighten the retaining screws, this will draw the rail to the surface of the chassis.
- If a torque wrench is available, tighten to 35.5 in-lbs.





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### **FIELD STRIPPING THE RIFLE**



- Folding the stock
- Field stripping
- Stripping the bolt assembly
- Stripping the magazine
- Removing the fore-end



### 31 FOLDING THE STOCK

The AXSR rifle is fitted with a folding stock. The stock folds to the same side as the bolt. Once the stock is folded it is not possible to open the bolt, as is it protected by the rear frame.

#### To fold the stock:

- Ensure that the rifle is safe to handle.
- Ensure that the bolt is fully closed.
- Press the hinge release catch and fold the rear frame.
- When fully folded, push the rear frame firmly against the pistol grip ensuring that the male catch has engaged with the female retaining catch.

#### To unfold the stock:

 Pull the rear frame away from the chassis and rotate it to a positive stop, ensure that the hinge release catch has fully engaged.





Fig 27



### 3.2 FIELD STRIPPING

Before stripping the rifle carry out the safety precautions as described in section 1.4

#### To field strip the rifle:

- Depress the magazine catch and remove the magazine (if fitted).
- Cover the lenses of the telescopic sight.
- Remove the sling (if fitted).
- Partly fold the rear frame as shown in Fig 28.
- Open the bolt.
- Press and hold the bolt release catch, rotate the bolt handle to the position shown and slide the bolt rearwards to remove.
- Remove the bipod if required.

#### To reassemble after stripping:

- Partly fold the rear frame as shown in Fig 28.
- Press and hold the bolt release catch and insert the bolt into the action body.
- Rotate the bolt handle to the position shown and push forward, align the bolt handle with the action body and release the bolt release catch.
- Cycle the bolt fully several times to ensure correct fitting and operation.
- Unfold the rear fame fully until it locks.
- Refit the sling.
- Refit an empty magazine.



Fig 28

### 3.3 STRIPPING THE BOLT ASSEMBLY

#### To strip the bolt assembly:

- To remove the firing pin/shroud assembly from the bolt, grasp the bolt firmly in the right hand and the shroud in the left.
- Depress the bolt location pin with the right thumb and turn the shroud as shown in Fig 29 until the firing pin/shroud assembly can be withdrawn.
- Remove the firing pin/shroud assembly from the bolt.

#### To reassemble the bolt assembly

- To reassemble the bolt, insert the firing pin/shroud assembly into the bolt body, aligning the shroud retaining lug with the corresponding opening in the bolt body (see Fig 30).
- Holding the shroud assembly in the left hand and the bolt body in the right, push the shroud assembly against the bolt body to compress the firing pin spring.
- When the firing pin spring is compressed, rotate the shroud as shown in Fig 31 until the location pin locks into the bolt body just before the fire position.



### 3.4 STRIPPING THE MAGAZINE'S

#### Stripping the .300NM AND .338 magazine's:

- Press down and push forward on the rear of the magazine platform. The front lugs on the platform should clear the body.
- Hold the front of the magazine platform/spring assembly with the other hand and twist the platform clockwise through approximately 45 degrees as shown in Fig 33 below.
- Keeping the magazine platform/spring assembly twisted, pull the platform forward until it clears the magazine lips, and remove from the body.
- The magazine spring is riveted to the platform and must not be separated for any maintenance activities.

**Re-assembly:** 

- Hold the front of the platform and insert the assembly into the magazine body ensuring that the bottom fold of the spring lays flat on the bottom of the magazine.
- Twist the platform clockwise by approximately 45 degrees and slide the platform rearwards into the magazine body.
- Press the platform fully into the magazine body and release several times to ensure that the platform spring/assembly moves correctly and freely.



Fig 33





### 3.4 STRIPPING THE MAGAZINE'S (2)

### Stripping the .308 and .300 Win Mag magazine's:

- Press and hold down the two retaining buttons and slide off the base, at the same time retain the magazine spring assembly.
- Remove the spring assembly from the body.
- The magazine spring is riveted to the platform, and must not be separated for any maintenance activities.

#### **Re-assembly:**

- Refit the magazine spring assembly into the magazine body.
- Hold down the spring assembly and slide on the base.
- Ensure that the base is securely retained and the two retaining buttons are properly located in the base.



### 3.5 REMOVING THE FORE-END

The fore-end of the AXSR system may be removed when required. This may be beneficial when cleaning or transporting the rifle.

Caution - Where possible, remove any bulky or heavy accessories mounted to the fore-end before carrying out this procedure.

#### Removing the fore-end:

- Support the rifle securely.
- Use a 5/32" hex wrench to loosen the two captive retaining screws.
- It is not necessary to remove the muzzle brake.

### Refitting the fore-end.

- Ensure that the mating surfaces are clean.
- Slide the fore-end into position, locate and tighten the retaining screws to 53 in-lbs.





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### 4 PREPARING AND FIRING THE RIFLE



- Magazine loading
- Loading the rifle
- Firing and operating
- Unloading
- Stoppages and troubleshooting



### 41 MAGAZINE LOADING

The AXSR rifle is supplied with a 10 round, double stack magazine.

#### To load a magazine:

- Place a round on top of the magazine follower and push down until the round snaps under the feed lip opposite the raised side of the follower.
- Push the round fully rearwards.
- Repeat for the next round, again pushing it fully rearwards.
- Load a total of 10 rounds.





### 4.2 LOADING THE RIFLE

### To load the rifle:

- Point the rifle in a safe direction.
- Where possible, open the bolt by raising the bolt lever and pulling the bolt fully rearwards.
- Insert the front of the loaded magazine up to the front angled face of the magazine housing and ensure that the front magazine retaining tab has engaged in the corresponding feature within the magazine housing.
- Lift the magazine upwards at the rear until the magazine catch engages on the back of the magazine.
- Pull firmly downwards on the magazine to ensure it is securely retained.
- Unless already open, raise the bolt lever and open the bolt by pulling fully rearwards.
- Feed a round from the magazine into the chamber, by sliding the bolt fully forward and by closing the bolt lever fully.
- The cocking indicator will protrude prominently from the rear of the shroud (see section 1.2).





WARNING: ALWAYS CLOSE THE BOLT FULLY. FAILURE TO FULLY CLOSE THE BOLT EACH TIME IT IS MANIPULATED COULD RESULT IN A LIVE ROUND BEING LEFT IN THE CHAMBER.

#### Notes:

- The extractor does not engage on the cartridge rim unless the bolt is fully closed.
- When the magazine is full, the magazine catch is more difficult to engage with the bolt closed. The first round will also be more difficult to feed into the chamber than subsequent rounds.

### 4.3 FIRING AND OPERATING THE RIFLE

The following sequence will be of assistance when firing and operating the rifle:

- Get into a comfortable and stable fire position.
- Set the safety lever to the 'FIRE' position.
- Ensure correct aim, take up first stage and pull the trigger.
- Follow through and observe the target.
- Remain "on aim" during recycling of bolt.

NOTE: The following procedure minimizes rifle and body movement during the firing sequence (right handed operators only).

- Open the bolt.
- Pull the bolt FULLY rearwards to allow ejection of the fired case and pickup of the next round.
- Push the bolt firmly forward to feed next round into the chamber. Close the bolt handle fully.
- Repeat the sequence for each round as required.

#### To reload the rifle:

- Press the magazine catch and remove the magazine.
- Install a loaded magazine (See 4.2).
- Pull the bolt FULLY rearwards before re-closing the bolt fully to chamber a new cartridge.
- Apply the safety lever when necessary.
- The rifle is now reloaded and ready to continue firing.

### 4.4 UNLOADING



Note the position of the Firing Pin Cocking Indicator (see section 1.2). If fired, use drill 1, If cocked, use drill 2.

# Drill 1: Unloading the rifle after firing (Firing Pin Cocking Indicator shows 'fired').

- Point the weapon in a safe direction.
- Hold the weapon securely, do not place finger inside trigger guard.
- Remove the magazine (if fitted).
- Open the bolt and fully slide to rear, ejecting the fired case.
- Inspect the chamber to ensure it is empty.
  - Visual Check Look through the ejection port.
  - Physical Check Use a finger to check the chamber and bolt face.
- Remove any cartridge or case from the weapon.
- With the bolt left 'open', the rifle is now safe to handle.
- Where possible, the bolt should be left 'open' to identify to others that it is safe. However, should the bolt be required in the 'closed' position:

Push the safety lever into the 'Fire' position.

Pull and hold the trigger while closing the bolt.

Fit an EMPTY magazine if required - the rifle is now safe to handle.

# Drill 2: Unloading a live cartridge (firing pin cocking indicator shows 'cocked').

- Point the weapon in a safe direction.
- Hold the weapon securely, do not place finger inside the trigger guard.
- Set the safety lever to 'SAFE' position (see section 1.3).
- Remove the magazine.
- Slowly cycle the bolt to unload the live cartridge from the chamber.
- Carefully remove the live round by hand.
- Inspect the chamber to ensure it is empty:
  - Visual Check Look through the ejection port. Physical Check - Use a finger to check the chamber and bolt face.
- Remove any remaining cartridges from the weapon.
- With the bolt left 'open', the rifle is now safe to handle.
- Where possible, the bolt should be left 'open' to identify to others that it is safe. However, should the bolt be required in the 'closed' position:

Push the safety lever into the 'Fire' position. Pull and hold the trigger while closing the bolt. Fit an EMPTY magazine, if required. The rifle is now safe to handle.

### 4.5 STOPPAGES



If the rifle, magazines and ammunition are kept clean and maintained correctly, few stoppages should occur. However, if the rifle does fail to fire or operate as expected, the following drills must be carried out.



**FAILURE TO FIRE**: IF THE RIFLE FAILS TO FIRE, MAINTAIN AIM IN A SAFE DIRECTION FOR AT LEAST 30 SECONDS BEFORE ATTEMPTING TO OPEN THE BOLT. THE CARTRIDGE'S PRIMER MAY BE BURNING SLOWLY AND MAY CAUSE THE WEAPON TO FIRE UNEXPECTEDLY. FAILURE TO FIRE CAN BE CAUSED BY A SLOW BURNING PRIMER, A LIGHT STRIKE FROM THE FIRING PIN OR A ROUND NOT BEING LOADED INTO THE CHAMBER. IN ANY CIRCUMSTANCES, CARE MUST BE TAKEN WHEN THE BOLT IS OPENED - A FAULTY ROUND MAY STILL FIRE.

A Master Stoppage drill should be carried out to determine the nature of the stoppage.

- Follow the 30 second rule above.
- Open the bolt and slowly pull it to the rear; a live round may be ejected.
- Inspect inside the action body and chamber as the next step will depend on what has been seen inside the action body.

### **Rounds in the Magazine**

If there are rounds in the magazine but no round in the chamber, the magazine could be incorrectly fitted or the bolt may not have been cycled correctly.

- Check that the magazine is correctly fitted, if necessary remove and refit.
- Pull the bolt fully rearwards, then push forwards and close.
- Continue firing.

#### No rounds in the magazine

- Remove the empty magazine.
- Fit a loaded magazine onto the rifle.
- Pull the bolt fully rearwards then push forwards and close.
- Continue firing.

#### Obstruction in the action body-failure to eject

If there is a live round or empty case present, this must be removed.

- Remove the magazine.
- Carefully remove the obstruction.
- Check the chamber is clear.
- Refit the magazine.
- Pull the bolt fully rearwards then push forwards and close.
- Continue firing.

The operator should check for component damage or obstructions that may impede the ejection of the weapon. If persistent failures to eject are experienced, return the rifle to Accuracy International for investigation.

# 4.5 STOPPAGES (2)



#### Obstruction in the chamber-failure to extract:

If a live round or empty case is present in the chamber, this must be removed.

- Remove the magazine.
- Set the safety to the 'safe' position.
- Close the bolt fully.
- Open the bolt to clear the obstruction.
- Check the chamber is clear.
- Refit the magazine.
- Pull the bolt fully rearwards, then push forwards and close.
- Set the safety to the 'Fire' position.
- Continue firing.

Should the above drill not clear the obstruction, check the bolt and extractor for damage. Persistent failures to extract should be investigated by an Accuracy International trained armorer or gunsmith. A cleaning rod may be used to remove an EMPTY case only by carefully inserting it into the bore from the muzzle end of the barrel.



### Slow burning primer/hang fire:

If the round does not fire after 30 seconds, eject the round and inspect it. If the primer strike looks positive, the round must not be used and be disposed of safely. Persistent problems must be investigated and the ammunition batch should not be used until examined further.

#### **Light Strike:**

This can indicate that the bolt was not fully closed. Ensure that the bolt is closed fully each time a cartridge is chambered. The bolt may also require cleaning and light lubrication. If the problem continues, stop using the rifle and have it examined by Accuracy International.

#### 'Pierced' or 'Blanked' Primer:

Should the ejected empty case have a 'pierced' or 'blanked' primer, the user should inspect the firing pin tip for damage. If the firing pin is damaged or if the problem persists, have the rifle examined by Accuracy International.

#### Hard Extraction:

Hard extractions can be caused by a several factors. A heavily 'fouled' barrel and chamber is a common cause. The rifle should be cleaned regularly, as set out in the Maintenance section of this manual. The user should also inspect the bolt head and extractor for cleanliness and or damage. Prolonged 'rapid' firing may also cause hard extractions. If this is the case, allowing the rifle to cool more frequently, if practical, may ease the problem.

Any other problems must be investigated by Accuracy International.

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### **SUSER MAINTENANCE**



- Cleaning and lubrication before firing
- Cleaning and lubrication after firing
- Cleaning the barrel and chamber
- Removing carbon and copper fouling
- General rifle cleaning
- Action screw check





### 51 USER MAINTENANCE

The AXSR rifle has been designed to withstand active service conditions. However, it is necessary to carry out regular maintenance and servicing to ensure the weapon is kept in good condition. This section covers the recommended basic cleaning and lubrication procedures that the user should perform to maintain the weapon system's safe and accurate functioning.

#### Safety precautions:

- Before handling or attempting any cleaning or maintenance operations with the rifle, ensure that the rifle is unloaded and safe by carrying out the safety precautions detailed earlier in this manual.
- To ensure the rifle is not damaged while being cleaned and lubricated, tools, cleaning materials and lubricants should be used in accordance with these instructions.
- No abrasive material should be used on any part of the rifle.

#### **Recommended lubricants**

Lubricant	Description	Uses
Break free CLP 16 OX24	Lubricant and preservative	General lubrication of the action and rifle exterior
WD40 GT85	Light penetrating oil	Lubrication of the trigger
Grease XG 279	General purpose lubricating grease	Hinge, adjustable butt mechanism

### **Recommended bore cleaners**

Cleaner	Uses
Shooters choice bore cleaner	Copper solvent
Forest bore cleaning foam	Copper solvent
KG1	Bore carbon remover
KG12	Bore copper remover
KG SF112	Combined carbon and copper remover

### 5.2 CLEANING AND LUBRICATING



#### Cleaning and lubricating before firing:

Before firing the rifle, it must be cleaned and lubricated as detailed in the table on the right.

#### Cleaning and lubricating after firing:

It is recommended that the barrel be cleaned upon completion of shooting, using the "Cleaning The Barrel and Chamber" procedure described in the next section.

We recommend, as a minimum, that the barrel should be cleaned at the intervals shown.

It is also recommend that the bolt body is cleaned and lubricated on a regular basis, i.e. daily when operational or when 100 rounds have been fired.

#### General rifle cleaning:

- The action body should be brushed clean to remove any brass particles or dirt.
- The exterior of the rifle should be wiped or brushed down until clean.
- Ancillary items such as magazines and bipods should be brushed clean and lightly oiled if required (do not use oil inside the magazines).
- If working in a wet environment or the weapon is to be put into storage, parts should be lightly oiled using CLP or similar.

Part	Lubrication status
Barrel - Exterior	N/A - leave dry
Barrel - Interior (bore and chamber)	Clean and leave dry, see section on "cleaning the barrel and chamber"
Bolt - Front face	Clean and leave dry
Bolt - remaining surfaces	Clean and lightly lubricate with CLP oil or similar
Stock/Chassis	N/A - leave dry
Action Body	Clean and lightly lubricate the inside surfaces with CLP oil or similar

#### Cleaning intervals .300 and .338 Caliber

Military Ball Ammunition	Clean after every 60 rounds	
Armour Piercing Ammunition	Clean after every 40 rounds	
Cleaning intervals .308Win		
Military Ball Ammunition	Clean after every 100 rounds	
Armour Piercing Ammunition	Clean after every 50 rounds	

Note:

In very dusty or harsh environments more frequent cleaning is recommended.

### 5.3 CLEANING THE BARREL AND CHAMBER

Note: The bore and chamber are easier to clean after firing, while the barrel is still warm.

Where possible, it is recommended that a cleaning rod and a rod guide should always be used when cleaning the barrel. Using the supplied rod guide ensures that the cleaning rod is held in the centre of the bore, which reduces the possibility of damage being caused to the chamber and bore during cleaning. However, care must still be exercised when using the cleaning rod.

The use of a Pull-Through or Bore Snake is not recommended for thorough routine cleaning. If a pull-through is to be used, it must be pulled from the chamber to the muzzle and care must be taken to ensure that the cord is pulled centrally out of the front of the barrel to avoid damaging the crown. The pull-through or bore snake MUST be cleaned regularly to remove grit and debris that could damage the bore of the barrel.

If a Pull-Through or Bore Snake has been used, the barrel should be cleaned using the method defined in this manual, when possible.



To avoid damaging the muzzle, the cleaning rod or pull-through must always be inserted from the chamber and.



When cleaning the bore with patches, always work in one direction, chamber to muzzle. DO NOT pull used patches back through the bore.



Refer to the Bore Solvent Manufacturer's instructions for relevant Health and Safety precautions. Solvents must be used sparingly; any excess spillage outside of the barrel must be removed immediately.



Only use the correct size Jag and Phosphor Bronze Brush for the barrel.



Never use a bore brush in a dry barrel. Always wet the bore with a patch moistened with bore solvent before using a brush.

### 5.4 CLEANING THE BARREL

#### Barrel cleaning procedure

- Unload the rifle and carry out safety precautions.
- Remove the magazine, if fitted.
- Securely hold the rifle horizontally by a suitable means, ideally between the protected jaws of a bench vice, where available.
- Fold the stock.
- Remove the Bolt.
- Insert a suitable rod guide into the action body ensuring it has engaged with the bolt catch.
- Ensure the cleaning rod is clean before affixing a clean patch to the correct size jag.
- Moisten the patch with Bore Solvent and push it once through the bore (via the rod guide) and the muzzle to wet the bore.
- Remove the soiled patch from the cleaning rod. DO NOT attempt to pull the patch back through the bore.
- Remove the jag from the cleaning rod and refit with a correct sized phosphor bronze brush.
- Whilst the bore is still wet, moisten the brush with solvent and

pass it completely through the bore in each direction several times. Repeat with fresh solvent if necessary. Resistance should be felt when pushing the brush through the barrel. If little resistance is felt the brush may need to be replaced.

Note: A conservative recommendation for the necessary number of passes is one pass for every three to four rounds shot.

- Refit the jag to the cleaning rod and pass through a clean patch to dry the bore and chamber.
- Remove the patch at the muzzle: DO NOT pull it back through the bore.
- Repeat this operation until a new dry patch can be passed through the barrel clean (a light grey smudge is acceptable).

Note: Where the rifle is to be stored for a lengthy period or when in a corrosive atmosphere, a thin smear of oil should be left in the bore.

Moisten a patch with CLP oil and pass it once through the bore. this oil must be removed before shooting.

The chamber can be cleaned using a suitable chamber cleaning brush. Always pass a dry patch through the bore after cleaning the chamber to remove any debris or cleaning product residue.

Wipe away all surplus solvents from inside the action body and from the muzzle brake.

### 5.5 REMOVING HEAVY FOULING

#### Removing heavy carbon and copper fouling

- Whilst it is not necessary to carry out the following procedure each time the barrel is cleaned, it should be followed when a high number of rounds has been shot.
- Heavy copper fouling may be seen from the muzzle as a copper colored residue, carbon fouling will be seen as a black residue between the lands. The heaviest fouling tends to occur within 12" (300mm) of the chamber.
- It is important to remove fouling deposits as it increases the pressure within the barrel resulting in hard extractions, loss of accuracy and potentially making the rifle unsafe to use.
- For optimal results, it is recommended that a copper solvent and a carbon remover be used alternately to clean a heavily fouled barrel.
- Refer to the Copper/Carbon Solvent Manufacturer's instructions to determine how the solvent should be applied to the bore and how long it should be left to penetrate the fouling.
- After the Copper/Carbon Solvent has been left to penetrate the fouling for the recommended time, insert the rod guide into the action body ensuring it has engaged with the bolt catch.

- Fit the correct sized phosphor bronze brush to the rod and pass through the barrel several times in each direction. Resistance should be felt when pushing the brush through the barrel. If little resistance is felt the brush may need to be replaced.
- Fit the jag to the cleaning rod and pass through a clean patch to dry the bore and chamber.
- Remove the patch at the muzzle: DO NOT pull it back through the bore.
- If alternating between carbon and copper solvents, repeat the cleaning procedure again with the alternative product, leaving it to penetrate the fouling for the recommended time.
- Repeat this operation until a new solvent-moistened patch can be passed through the barrel clean (a light grey smudge is acceptable). Once this is achieved, remove any solvent residue with a clean, dry, patch.
- Wipe away all surplus solvents from inside the action body and from the muzzle brake.

- Note: The presence of carbon and copper fouling in the barrel often shows as a colored residue on cleaning patches. This color varies from one cleaning product to the next e.g. heavy copper fouling may show as blue on the patch, heavy carbon fouling may show as grey on the patch. Check your specific cleaning product for guidance and repeat the cleaning procedure above, as necessary, until the patches come out clean.
- Note: It may be necessary to reapply the solvent and repeat this process to completely remove stubborn deposits.

### 5.6 ACTION SCREW CHECK

The AXSR Rifle Action is fastened to the chassis using five cap head screws. It is important to periodically check the tightness of each screw to ensure the action and chassis remain securely fastened.

- Ensure the rifle is unloaded and safe to handle.
- Remove the magazine, if fitted.
- Using a 5/32" hex wrench or 5/32" extended ball-end hex wrench, tighten each action screw in the sequence shown in Fig 40 to 53 in-lbs.
- To check screw no. 2 using the extended ball-end hex wrench, push the magazine catch forwards to gain access to the screw socket.





### 5.7 AMENDMENT RECORD

AMENDMENT RECORD			
ISSUE	AFFECTED PAGES	DATE	NOTES
А	ALL	16/03/20	PRELIMINARY NOT RELEASED
В	ALL	27/04/20	PRELIMINARY NOT RELEASED
1	ALL	29/04/20	RELEASED

### ACCURACY INTERNATIONAL