

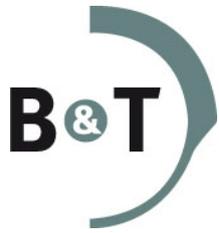
B&T APR308

manufactured by B&T, Switzerland

OPERATOR MANUAL



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Operator Manual

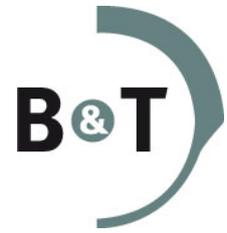


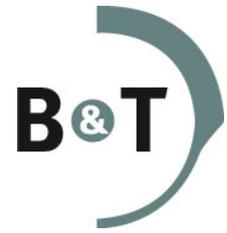


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Operator Manual





General Instructions

This manual is designed to assist in the proper usage of the B&T APR308 sniper rifle system. It has to be distributed and used together with the related Illustrated Parts Catalogue.

Read the instructions and warnings in this manual carefully before using the weapon.

Do not handle any firearms without having a complete understanding of its peculiar characteristics.

Due to continuous efforts spent in upgrading the weapon design, it's possible that certain descriptions contained in this manual may vary from the actual weapon.

B&T does not assume any liability for events due to disregarding of this manual, wrong handling, negligence, improper treatment, unauthorized parts exchange and other manipulations of the weapon.

It is mandatory to install new roll pins, circlips and o-rings once they are disassembled.

Abbreviations

MOA	Minute of Angle (small angle, 1/60 of 1°)
MPI	Mean Point of Impact (statistical centre of a group)
POA	Point of Aim
POI	Point of Impact

Safety Precautions

Warning messages are used throughout the manual to highlight possible situations that might lead to injuries of operating personnel and damage of equipment.

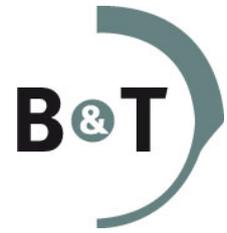
Cautions and warnings are used and applied as set forth below:

CAUTION: An operating procedure, practice, etc., which if not strictly observed, could result in damage to, or destruction of equipment.

WARNING: An operating procedure, practice, etc., which if not correctly followed, could result in personal injury, or loss of life.



Operator Manual





1. Introduction

1.1 Safety Precautions

1.1.1 Safety Measures

1. Every weapon must be considered loaded until verified individually.
2. Always keep the finger off the trigger and outside the trigger guard until the sights are on target.
3. Always point the weapon in a safe direction.
4. Be sure of your target and the weapon danger area.
5. Before firing always verify the serviceability and condition of both the weapon and ammunition (the relative procedures are subject of this manual). Be especially careful that the barrel is free from all obstructions.
6. Always carry hearing protection when firing indoor, when firing without suppressor, while training or testing.
7. Never use unknown cartridges, dirty cartridges or reuse cartridges which failed at first try.
8. If a cartridge fails to ignite, keep aiming in safe direction and open bolt only after 30 seconds.
9. Operate, strip, clean and assemble your weapon decidedly but without excessive force.
10. Disassemble the weapon only as far as described in the manual.
11. Protect your weapon and especially the rifle scope to hostile environment.
12. Shooting trainings should be carried out in open or well-ventilated areas to prevent excessive exposure to toxic exhaust gases.

1.1.2 Weapon Danger Area

Weapon danger areas are to understand as follows (proper use of weapon implied):

Area I: Area I is the zone of life danger by flying bullets - the zone of trajectories in absence of crosswind.

Area Ia: Considering crosswind, danger area Ia must be applied, basing on maximum permissible crosswind assumption.

Area II: Area II is the range of the hot gases expanding after muzzle departure. In this area, eyes might be hurt. This area can be virtually reduced to zero when using suppressor.

Area III: In this area, cases drop after ejection, according to the force the bolt is operated. The danger is to capture a hot case with the clothes, resulting in minor burn (mostly concerned are forearms, neck and chest).

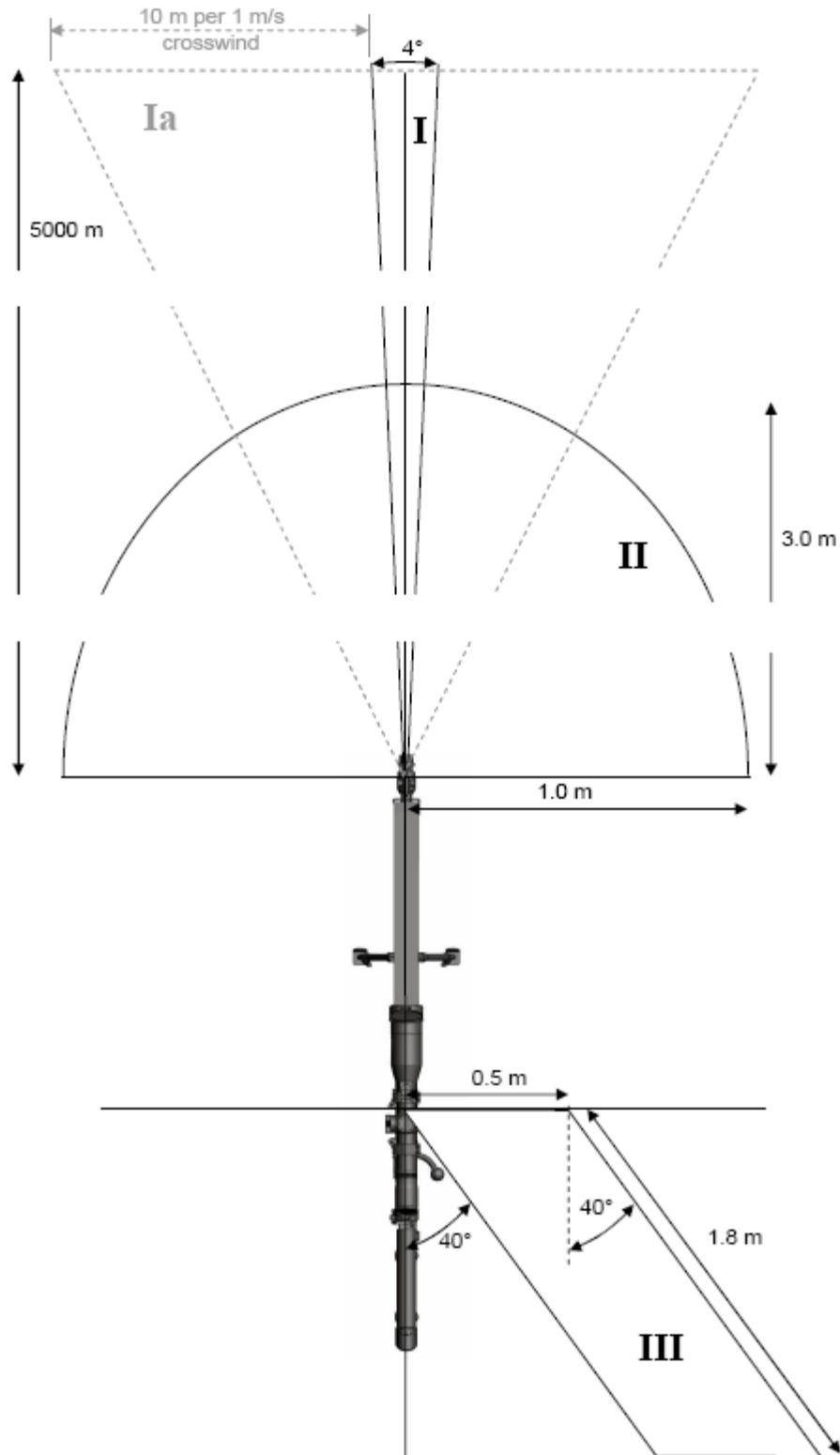
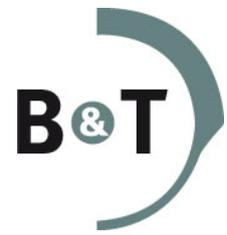


Fig. 1.1: Safety Template



1.2 General Description

The weapon system is basically consisting of a bolt action rifle cal. .308 Win with suppressor, a rifle scope and a specific cartridge. The system is intended to be a soldier's primary weapon and serve him as anti-personnel rifle. The system is able to hit a head-sized target up to 400 m distance or a torso-sized target over 800 m and more with a first round hit probability of over 99%. Although being a precision-instrument, the system must resist the harsh military use and remain functional in typical operational environments.

1.3 Nomenclature and Technical Data of Rifle

1.3.1 Nomenclature of Rifle

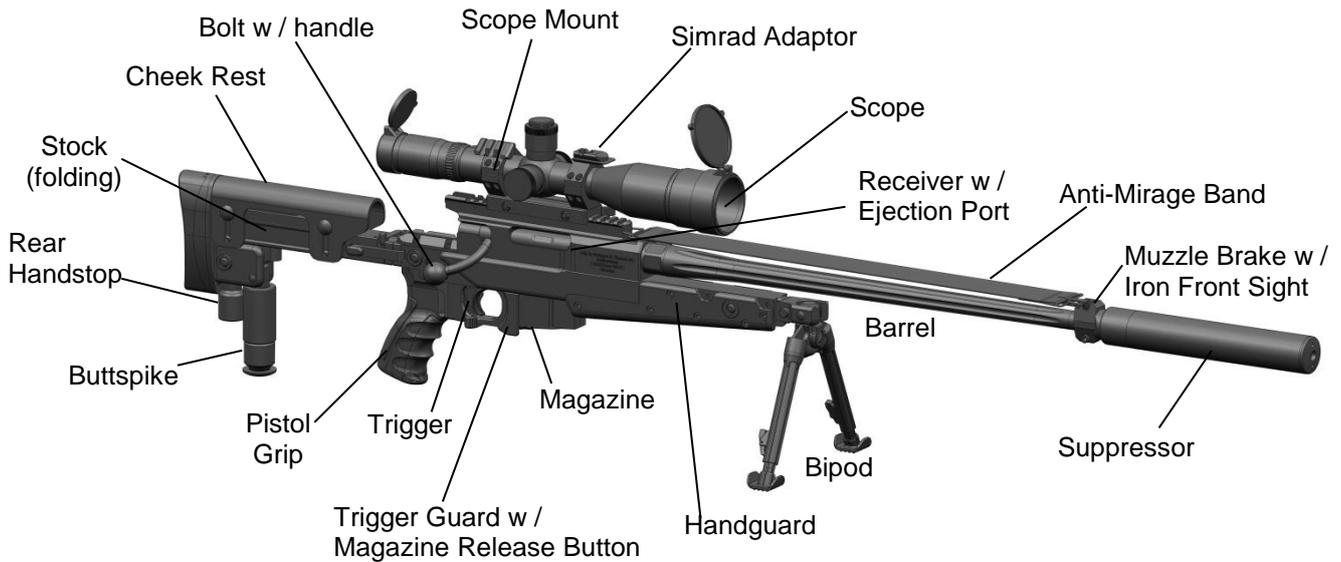


Fig. 1.2

1.3.2 Technical Data of Rifle

Manufacturer:	B&T AG, Switzerland	
Designation:	APR308 Sniper System	
Mfr reference:	BT-APR308	
System:	Bolt action rifle, manually operated	
Caliber:	.308 Win (7.62x51 NATO)	
Rifling:	4 grooves, right hand twist 1:11"	
Barrel Length:	610 mm	
Effective Range:	800 m	
Overall Length:	Butt stock folded	906 mm
	Butt stock open	1125 mm (+ 75 mm butt stock extended)
Width (w/o bolt)	Butt stock folded	86 mm
	Butt stock open	50 mm
Sight radius:	727 mm	
Weight (weapon only):	6.1 kg	
Magazine Capacity:	10 rds, detachable	
Trigger Pull:	1.5 kg - 2.5 kg (fully adjustable w/o disassembly)	
Bolt configuration:	3 locking lugs, 60° opening angle	



1.3.3 Operational Condition Data of Rifle

Shock resistance:	500 shocks of 15 g / 6 ms
Vibration resistance:	10 Hz to 500 Hz at 1.04 g for 2 h, at 4.8 g for 30 min
Drop resistance:	1.5 m without accidental discharge
Operational temperature:	- 30°C / +65°C
Storage temperature:	- 30°C / +65°C (and 95% rel. humidity) for 72 h
Barrel lifetime:	10'000 rounds
Permissible Maximum Pressure	4773 bar

1.4 Nomenclature and Technical Data of Suppressor

1.4.1 Nomenclature of Suppressor

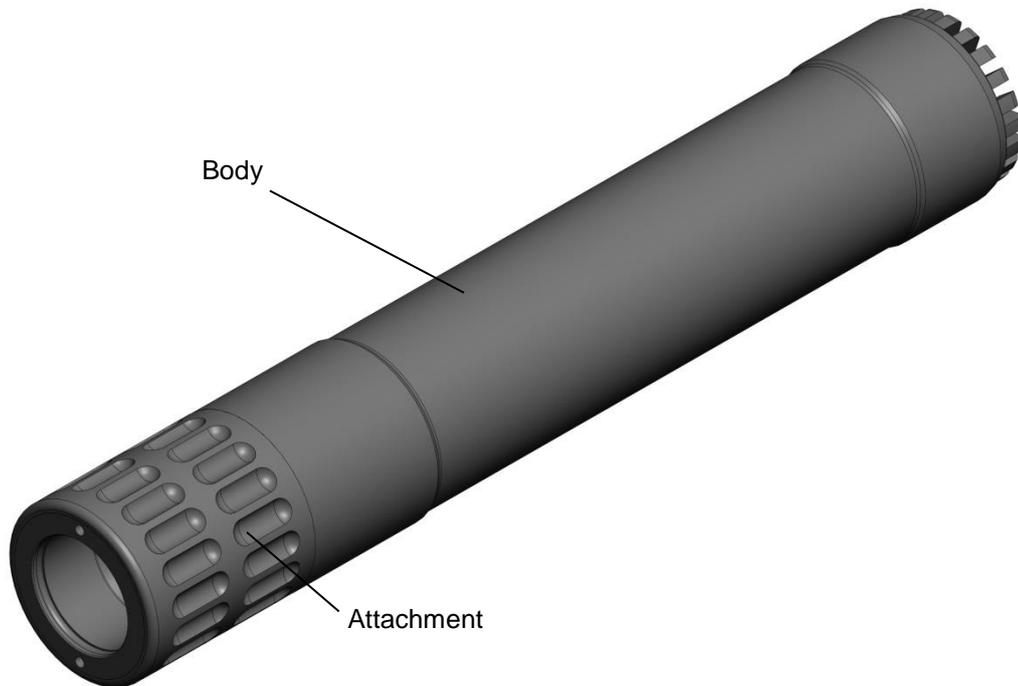


Fig. 1.3

1.4.2 Technical Data of Suppressor

Manufacturer:	B&T AG, Switzerland
Designation:	GRS
Mfr reference:	SD-12809
Caliber:	.308 Win (7.62x51 NATO)
Overall length:	297 mm
Diameter:	50 mm
Weight:	730 g
Attachment:	Thread M20x1
Suppression:	30 dB A

2. Handling & Operating Procedures

2.1 Operating Safety

2.1.1 Engage Safety

- Push safety lever upwards until it audibly clicks in "S" position ("S" appears in white color, fig. 2.1).
- Operate safety with thumb of shooting hand, use left or right side lever as most convenient.
- Weapon is in SAFE mode.



Fig. 2.1



Fig. 2.2

NOTE: Safety can only be engaged when firing pin is armed.

2.1.2 Disengage Safety

- Push safety lever downwards until audibly clicks in "F" position ("F" appears in red color, fig. 2.2).
- Operate safety with thumb of shooting hand, use left or right side lever as most convenient.
- Weapon is in FIRE mode.

WARNING: Ensure the weapon is in SAFE mode before performing any tasks e.g. loading & unloading, stock adjustments and disassembly of weapon.

2.2 Charging & Discharging Magazine

2.2.1 Charging Magazine

- Prepare 10 cartridges.
- Orientate one cartridge in the direction of the raised portion of the spring-loaded follower (fig. 2.3).
- Press cartridge down until firmly held by magazine lips.
- Push it backwards to its rearmost position.
- Repeat with remaining 9 cartridges.

WARNING: Identify cartridges to be of right caliber, type, brand, bullet weight and lot number before charging. Inspect cartridges to be clean and not damaged before charging.

CAUTION: Do not try to charge more than 10 rounds, magazine may become damaged. Always charge the ammunition pointing in the same direction as the follower, a raised portion that resembles the outline of a cartridge.



Fig. 2.3



Fig. 2.4

2.2.2 Discharging Magazine

- a. Slip upmost cartridge out of magazine pushing on its butt (fig. 2.4).
- b. Put cartridge back in its ammo box.
- c. Repeat until magazine is empty.

WARNING: Do not drop removed cartridges.

2.3 Loading & Unloading the Weapon

2.3.1 Loading Weapon in Magazine fed Mode

- a. Prepare one charged magazine.
- b. Open bolt by raising the bolt handle to its upmost position and pulling back to bolts rearmost position.
- c. Engage safety.
- d. Pull magazine retainer button rearwards with middle finger of shooting hand.
- e. Insert magazine with one straight movement (fig. 2.5).
- f. Release magazine retainer button.
- g. Check magazine for proper seat trying to push it downwards.
- h. Close bolt sliding it forwards by the bolt handle.
- i. Lock bolt rotating bolt handle fully downwards.
- j. Weapon is now loaded with safety engaged.

CAUTION: Not pulling back magazine retainer button and use of excessive force while inserting magazine may damage the magazine lips.
A fully inserted but empty magazine will lock the bolt in open position. Trying to close the bolt with excessive force may damage the follower.



Fig. 2.5



Fig. 2.6

2.3.2 Loading Weapon in Hand fed Mode

- a. Prepare one cartridge.
- b. Open bolt by raising the bolt handle to its upmost position and pulling back to bolts rearmost position.
- c. Engage safety.
- d. Pull magazine retainer button rearwards with middle finger of shooting hand.
- e. Insert empty magazine halfway and release magazine retainer button.
- f. Slide magazine into weapon until magazine retainer audibly clicks.
- g. Check magazine for proper seat trying to push it downwards.
- h. Insert single cartridge through ejection port and guide it into chamber (fig. 2.6).
- i. Close bolt sliding it forwards by the bolt handle.
- j. Lock bolt rotating bolt handle fully downwards.
- k. Weapon is now loaded with safety engaged.

WARNING: Ensure the weapon is put to **SAFE** mode before inserting or removing the loaded magazine. Ensure weapon is pointing in a safe direction. Keep finger off the trigger.
Do not apply excessive force if bolt fails to lock smoothly. Remove magazine and remove fed cartridge. Inspect fed cartridge, chamber and bolt head visually and with little finger through ejection port to be clean before trying again to load.

2.3.3 Unloading and Clearing of Weapon

- a. Engage safety.
- b. Pull magazine retainer button rearwards with middle finger of shooting hand.
- c. Fully remove magazine with one straight movement.
- d. Open bolt by raising the bolt handle to its upmost position and pulling back to bolts rearmost position.
- e. Allow weapon to eject chambered cartridge in your hand (fig. 2.7).
- f. Inspect ejected cartridge to be clean and free of damages and put it back in ammo box.
- g. Discharge all magazines and put cartridges back in ammo box.
- h. Weapon is now unloaded with safety engaged.
- i. Keep bolt open to present weapon as clear.



Fig. 2.7

CAUTION: If weapon fails to eject cartridge, inspect ejector and extractor.

WARNING: Do not apply excessive force if bolt fails to open. Dirt or excessive form fit of cartridge case after overpressure shot may lock bolt in closed position. Try to open bolt carefully by slightly tapping bolt handle first upwards until bolt unlocked and then rearwards. Keep weapon pointing in safe direction.

2.4 Trigger Adjustments

2.4.1 Adjusting Trigger Force

- Unload weapon.
- Turn screw #1 in trigger housing with Allen key 2.5 mm (operator's tool kit) to adjust trigger force.
- Turn clockwise to increase trigger force.

2.4.2 Adjusting Trigger Path

- Unload weapon.
- Turn screw #2 in trigger lever with Allen key 2.5 mm (operator's tool kit) to modify trigger path.
- Turning it clockwise will more accent the point of shot release.

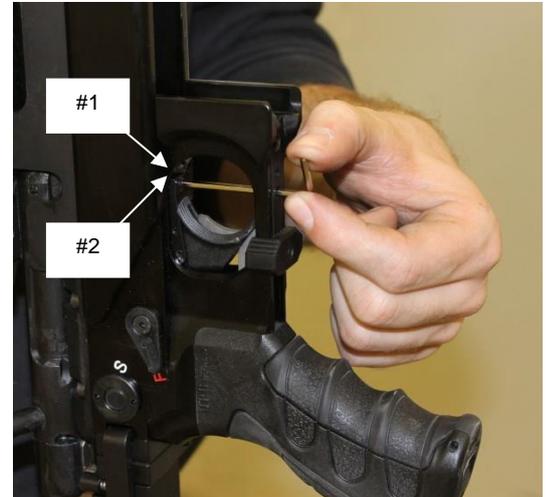


Fig. 3.8

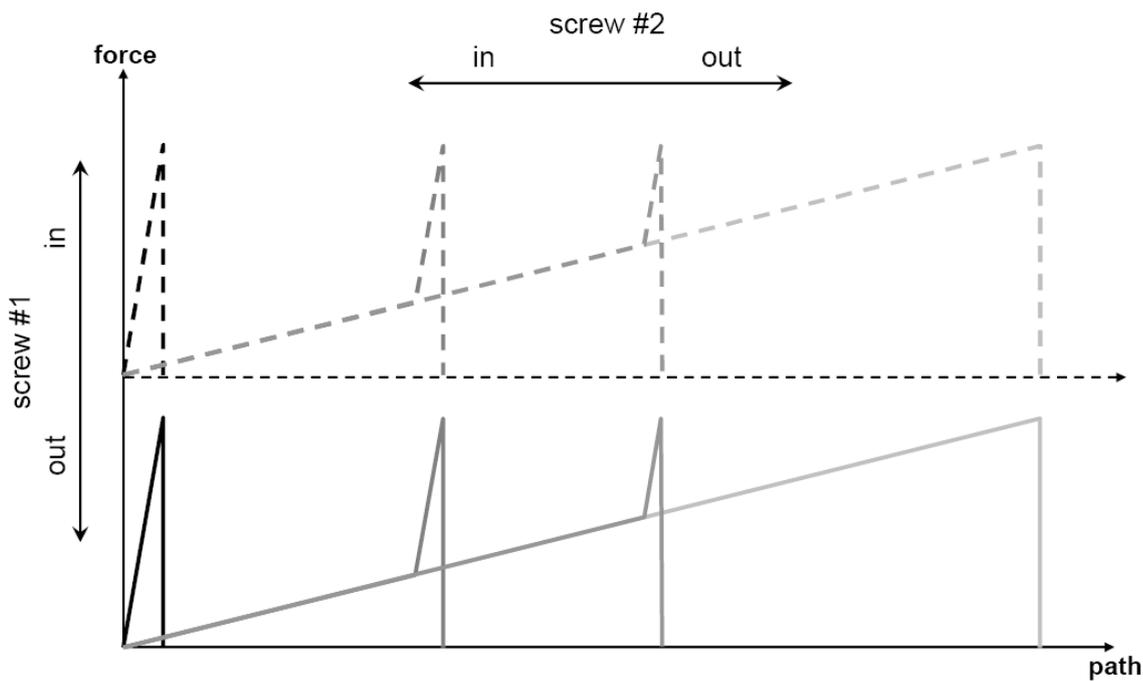


Fig. 2.9

CAUTION: Execute trigger adjustments only with engaged safety. Only apply minimal force to turn the screws. Use of excessive force will damage trigger parts. Execute functional check according to section 3.3 after finishing procedures.

WARNING: After execution of trigger adjustment, present weapon to technician with trigger gauge for inspection. Non-conform trigger settings may result in hazardous condition.

2.5 Operating Folding Stock

2.5.1 Closing Folding Stock

- Push on folding stock retainer open until stock released (fig. 2.10).
- Rotate stock to left weapon side until held by folding stock retainer folded.
- Check proper retention of folding stock in folded position.
- Now the stock is folded for transport.



Fig. 2.10



Fig. 2.11

2.5.2 Opening Folding Stock

- Push on folding stock retainer folded until stock released (fig. 2.11).
- Rotate stock into unfolded position until held by folding stock retainer open.
- Check proper retention of folding stock in unfolded position.
- Now the stock is open for use of weapon.

CAUTION: Rotate folding stock only if bolt is closed or just halfway open. If bolt is fully open, retainer open may interfere with firing pin retainer.

2.6 Stock Adjustments

2.6.1 Adjusting Stock Length

- Open folding stock.
- Loosen two stock clamping screws underside the stock using Allen key 5 mm (operator's tool kit, fig. 2.12).
- Set stock to proper length.
- Tighten screws firmly but without excessive force.
- Push on butt plate to check firm seat of stock.



Fig. 2.12

NOTE: If the extension does not slide, untight cheek rest clamping screws - if they are too tight, the cheek rest locks the extension.

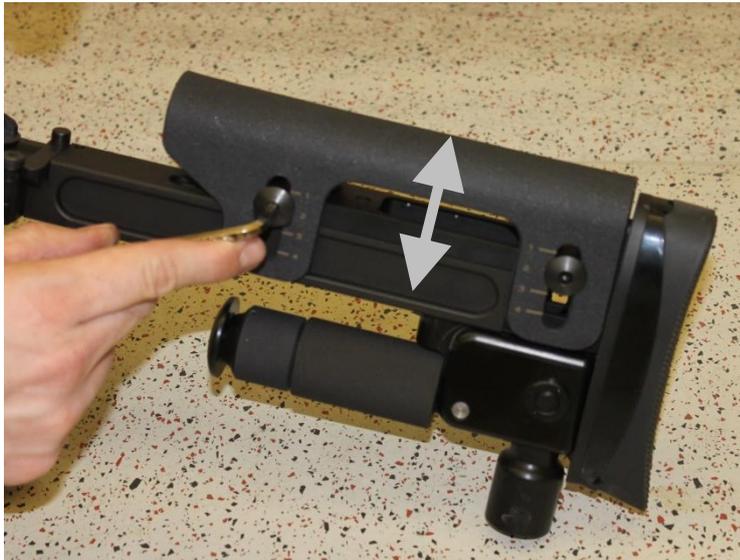


Fig. 2.13



Fig. 2.14

2.6.2 Adjusting Cheek Rest

- Open folding stock.
- Loosen cheek rest clamping screws using Allen key 5 mm (operator's tool kit, fig. 2.13).
- Set height of cheek rest to proper height, placing the operator's eye aligned with aiming device.
- Tighten screws firmly but without excessive force.
- Memorize position mark on cheek rest according to individual setting.

NOTE: Overtightening clamping screws will accelerate wear out of cheek rest and lock the stock extension.

2.6.3 Adjusting Butt Plate

- Open folding stock.
- Loosen butt plate clamping screw using Allen key 4 mm (operator's tool kit, fig. 2.14).
- Set height of butt plate for a most straight positioning of the operator's shoulder behind the weapon.
- Tighten screw firmly but without excessive force.

NOTE: Only a properly adjusted stock provides best accuracy and operator safety. Stock must be adjusted to operator's body and eye relief to rifle scope.

2.7 Operating Butt Spike

2.7.1 Unfolding Butt Spike

- Pull butt spike on its sleeve against pistol grip (fig. 2.15).
- Rotate butt spike downwards for 45° or 90°, according to intended firing position.
- Allow butt spike to slide into position under the force of its retaining spring.
- Check firm position of unfolded butt spike.

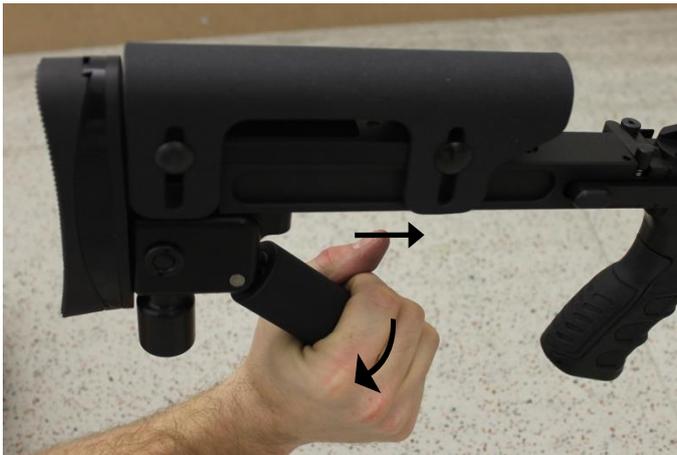


Fig. 2.15



Fig. 2.16

2.7.2 Folding Butt Spike

- Pull butt spike on its sleeve downwards.
- Rotate butt spike into its folded position.
- Allow butt spike to slide into folded position under the force of its retaining spring.
- Check firm position of unfolded butt spike.
- Use rear hand stop when firing with folded butt spike.

2.7.3 Adjusting Butt Spike

- Rotate butt spike to 90° open position.
- Use supporting hand to operate main screw (fig. 2.16).
- Rotate mains crew clockwise to extend butt spike.
- Rotate main screw counterclockwise to retract butt spike.

2.8 Operating Bipod

2.8.1 Opening and Adjusting Bipod

- Rotate bipod downwards until it snaps open (fig. 3.17).
- Put rifle on bipod in firing position.
- Hold bipods left pod on it's bed-plate firmly on ground.
- Lift rifle until it points on target (fig. 3.18).
- Check retainer to securely lock pod.
- Repeat with right pod.



Fig. 3.17



Fig. 3.18

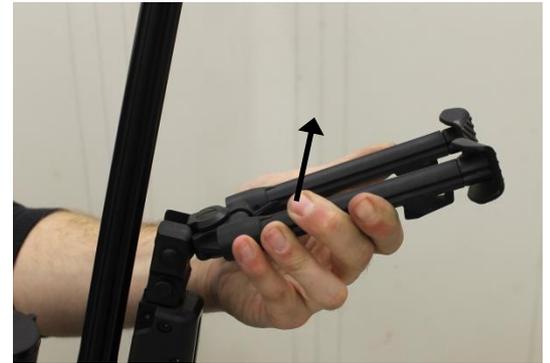


Fig. 3.19

WARNING: Keep finger off the trigger while setting the bipod.

NOTE: Place bipod on soft ground - hard ground will make the rifle jump when firing.

2.8.2 Closing Bipod

- Grasp both pods with one hand.
- Rotate bipod upwards until it snaps into closed position (fig. 3.19).
- Push on retaining levers and collapse pods into shortest position.

2.8.3 Detaching and Attaching Bipod

- To detach bipod pull out locking pin against bedstop.
- Pull bipod away from fork axle.
- To attach bipod operate in reverse order.



Fig. 3.19a



Fig. 3.19b

2.9 Use of Emergency Sights

2.9.1 Opening Emergency Sight and Aiming with

- Rotate rear sight upwards until it snaps into position (fig. 2.20).
- Rotate front sight upwards until it snaps into position (fig. 2.21).
- For aiming, place front sight in center of rear sights peep hole (fig. 2.22).
- Aim point blank.



Fig. 2.20



Fig. 2.21

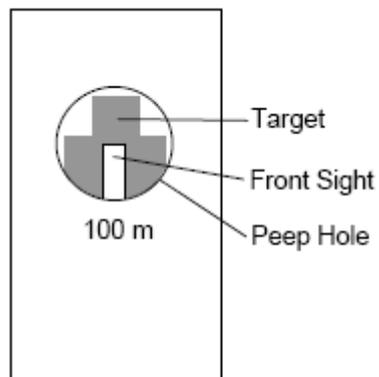


Fig. 2.22

NOTE: The emergency sights are factory zeroed at 100 m.

2.9.2 Closing Emergency Sights

- Rotate rear sight downwards into closed position.
- Rotate front sight downwards into closed position.

2.10 Attaching & Removing Suppressor

2.10.1 Attaching Suppressor

- Remove thread protector (right-handed thread) and store it (fig. 2.23).
- Before attaching the suppressor, shake it and listen to loosened parts.
- Screw suppressor on muzzle brake and tighten with firm grip.

WARNING: A misaligned suppressor will get damaged with one round fired and deflect the projectile into any direction. Carefully follow instructions of section 2.15 "Preparation for Firing".

2.10.2 Removing Suppressor

- Remove suppressor and store it.
- Screw protector ring on and tighten.

CAUTION: Allow suppressor to cool down before removing it with bare hands.



Fig. 2.23



Fig. 2.24

2.11 Attaching & Removing Anti-Mirage Band

2.11.1 Attaching Anti-Mirage Band

- Allow one hook to snap into the dedicated holes on the rifles Picatinny rail.
- Snap the other hook into the dedicated holes on the front sight housing (fig. 2.24).
- Check anti-mirage band to be placed properly over barrel.

NOTE: When firing longer series while training or zeroing without using anti-mirage band, hot air convection will degrade the perception of the target and therefore the accuracy.

2.11.2 Removing Anti-Mirage Band

- a. Unhook anti-mirage band.
- b. Roll it for storage.

2.12 Use of Rifle Sling

2.12.1 Attaching & Removing Rifle Sling

- a. Place swivel on one of the five sling attachment points.
- b. Press on button of swivel to push it into the flush cup.
- c. Pull on sling to check proper seat of swivel.
- d. Press on button and pull on sling to remove (fig. 2.25).



Fig. 2.25



Fig. 2.26

2.12.2 Length Adjustment

- a. Unstrap sling from buckle.
- b. Allow sling to slide through buckle until proper length is reached (fig. 2.26).
- c. Strap sling to buckle.

2.13 Attaching & Removing Rifle Scope with Mount

2.13.1 Attaching Rifle Scope with Mount

- Place scope with mount on right side of Picatinny rail.
- Allow stopper to drop into a groove of the Picatinny rail (fig. 2.27).
- Check proper placement with respect to engraved position marks.
- Tilt scope in upright position.
- Rotate clamping levers into closed position (fig. 2.28).
- Check proper seat of mounted scope.



Fig. 2.27



Fig. 2.28

2.13.2 Removing Rifle Scope with Mount

- Rotate clamping levers into open position.
- Tilt scope off to right side and remove.

2.13.3 Placement of Rifle Scope

- Take proper firing position, aiming in safe direction.
- Close eyes and search most comfortable position with rifle.
- Open eyes and check for correct image (fig. 2.29).
- Adjust scope mount position and stock adjustments until complied.

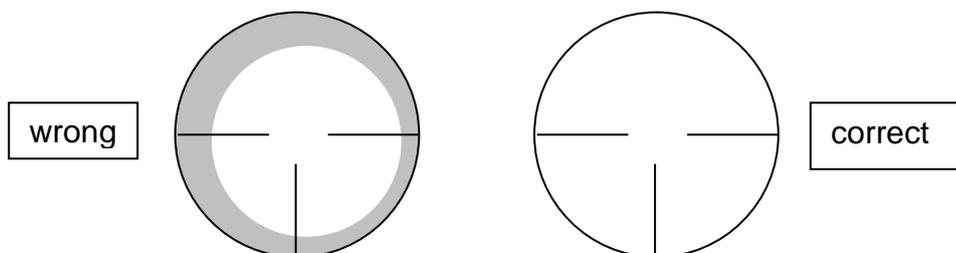
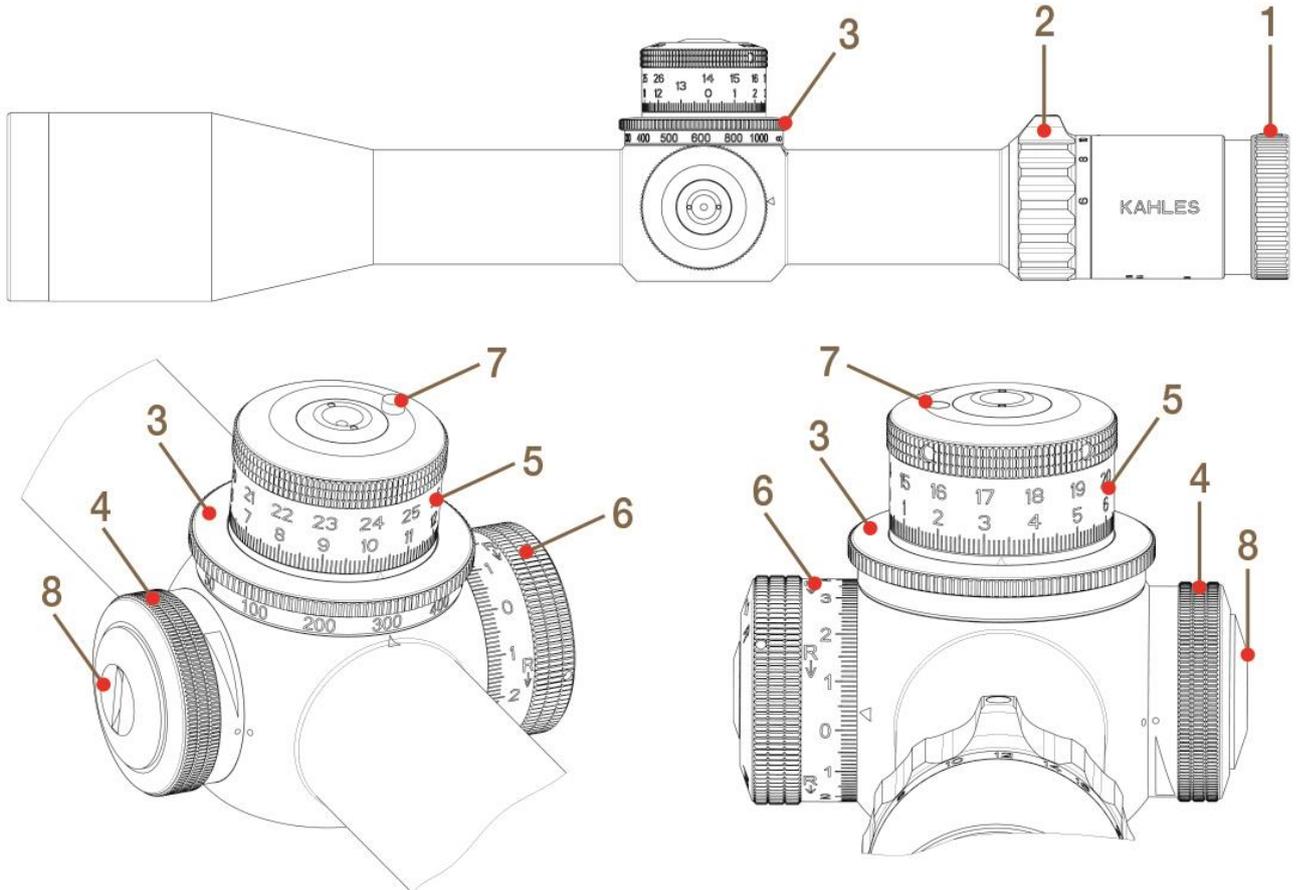


Fig. 2.29

CAUTION: Improper placement of the rifle scope obviates proper aiming and may hurt the operator's eye when firing the weapon.

2.14 Use of Rifle Scope

2.14.1 Operating Adjustments



Depending on model/type (picture shown left K624i and right K312i)

- 1 - Diopter compensation ring
- 2 - Magnification ring
- 3 - Parallax adjustment wheel
- 4 - Illumination control

- 5 - Elevation adjustment turret
- 6 - Windage adjustment turret
- 7 - Rotation Indicator Pin
- 8 - Battery cover

2.14.2 Use and Mounting

KAHLES rifle scopes are waterproof and extremely durable. Nevertheless, careful handling is advised, especially around the turrets. Please protect your rifle scope against excessive impact and abuse. To ensure proper function and performance use a professional gunsmith to mount your KAHLES rifle scope. Ensure maximum eye relief is achieved. Please read all safety instructions before use.

2.14.3 Safety instructions

- Never look directly into the sun or any other intense light through your rifle scope
- Please protect your rifle scope from excessive solar radiation and heat

- Please note the eye relief distance specified for properly mounting the rifle scope
- All repairs must be performed by KAHLES
- The rifle scope must be mounted by professional gunsmith
- Attention - the screws of mounts shall in no case be tightened stronger than max. 240 Ncm
- Always check carefully and be certain that your firearm is unloaded before undertaking any work upon it

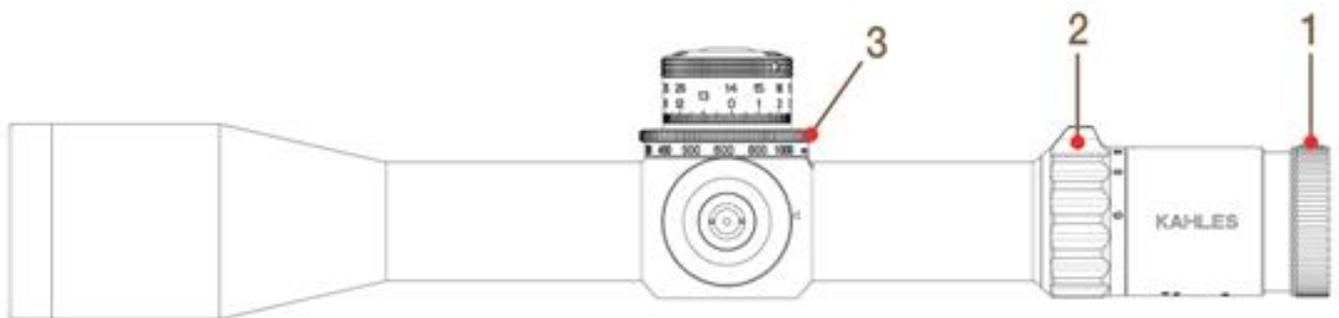
2.14.4 Mechanical center

The reticle has been factory-set to mechanical center. If you need to reset, follow these steps:

1. Turn the elevation or windage adjustment until it stops (do not force).
2. Now turn the adjustment in the opposite direction while counting the total number of clicks until it stops.
3. Half of this total number of clicks is the mechanical center.
4. Repeat this procedure for the second adjustment turret.

2.14.5 Diopter and Parallax adjustment

- Turn the diopter compensation ring (1) until you get a sharp reticle image
- Turn the parallax adjustment wheel (3) until you achieve a sharp image and the reticle does not move on the target due to head placement
- Magnification ring (2) turn to increase or decrease magnification



2.14.6 Sighting in the rifle scope

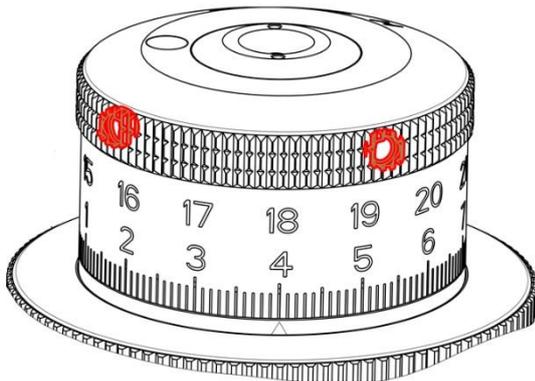
After the rifle scope has been properly mounted and bore sighted by a professional gunsmith you will need to sight in your rifle and rifle scope. Attention - the screws of mounts shall in no case be tightened stronger than max. 240 Ncm!

Sight in the rifle scope (on the shooting range) to your specific distance and desired point of impact by turning the elevation and windage adjustments to move the bullet impact to your desired point of impact. The direction of bullet impact is engraved on each adjustment.

Once you have established the preferred point of impact on the target you will need to zero the elevation and windage adjustments.

Expert mounting is required to ensure optimum performance.

2.14.7 Zeroing elevation and windage



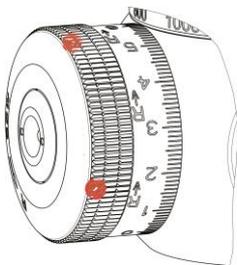
Using the supplied allen key, loosen the **two** set screws on the turret 1-3 turns (do not remove the set screws completely) until you have a free moving turret without clicks. With the set screws loosened turn the elevation turret in the down direction (the direction of bullet impact is engraved on the adjustment) until it stops. This will be 3 or 4 marks below the zero mark on the dial. Turn the turret so that the zero on the dial lines up with the indicator mark on the body tube. Align the marks and using the short end of the supplied

allen key tighten again the two set screws to approximately 1Nm or 8 inch pounds (do not exceed 1Nm or 8 inch pounds).

Your elevation is now zeroed.

The mechanical (physical) stop will be about 3 or 4 clicks below zero. This allows adjustments slightly below zero for special conditions as increased temperature or closer targets.

Pay attention, never use any strong force when you do any adjustments on the turrets.



With the rifle and scope sighted in to the desired point of impact loosen the **two** set screws on the windage adjustment dial 1-3 turns (do not remove the set screws completely) and move the dial to align the zero mark to the indicator mark on the body tube. Using the short end of the supplied allen key, tight the two set screws to approximately 1Nm or 8 inch pounds (do not exceed 1Nm or 8 inch pounds). Your windage is now zeroed.

Pay attention, never use any strong force when you do any adjustments on the turrets.

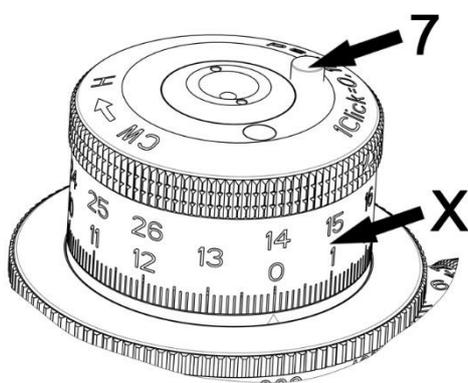
2.14.8 Reset to factory conditions (full elevation)

1. Turn the elevation turret (6) in the up direction until you reach the mechanical stop.
2. Use the supplied allen key to loosen the two set screws 1-3 turns (do not remove the set screws completely) until you have a free moving turret without clicks.
3. Now turn the elevation turret in the up direction until you reach the mechanical stop.
4. Use the short end of the supplied allen key to tighten the two set screws to approximately 1Nm or 8 inch pounds (do not exceed 1Nm or 8 inch pounds).
5. Turn the elevation turret in the down direction until you reach the mechanical stop.
6. Use the supplied allen key to loosen the two set screws 1-3 turns (do not remove the set screws completely) until you have a free moving turret without clicks.

7. Now turn the elevation turret in the down direction until you reach the mechanical stop.
8. Use the short end of the supplied allen key to tighten the two set screws to approximately 1Nm or 8 inch pounds (do not exceed 1Nm or 8 inch pounds).
9. You have now deactivated the zero stop feature. Your rifle scope will now have full elevation travel.

Note: The mechanical (physical) stop will be about 3 or 4 clicks below zero. This allows adjustments slightly below zero for special conditions as increased temperature or closer targets.

Pay attention, never use any strong force when you do any adjustments on the turrets.

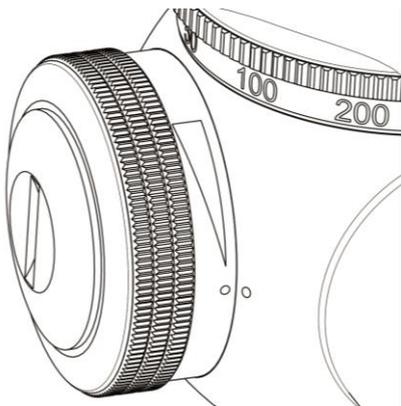


2.14.9 Rotation Indicator Pin Double turn turret

There are **two** rows of numbers (x) on the elevation adjustment. If the indicator pin (7) is flush to the top of the adjustment you are using the bottom row of numbers (first rotation). If the indicator pin is raised up, you are using the upper row of numbers (second rotation).

2.14.10 Illumination

Most KAHLES rifle scopes are equipped with illuminated reticles. To switch on the reticle illumination turn the illumination switch towards clockwise direction. The illumination intensity will get brighter or lower by turning the adjustment switch greater or lesser. The adjustment can be turned in direction to the off point or to the desired intensity setting. The illumination is switched off when the indicator on the illumination adjustments allied with the off marking on the tube. All of our K-models have the automatic-off function of the reticle illumination integrated. If there will be no brightness adjustment over a period of about 2 hours, the reticle illumination automatically switches off. To restart the reticle illumination after the automatic-off is activated, you have to switch it completely off and on again. In any case to prevent depletion of the battery, turn off the reticle illumination when not in use.



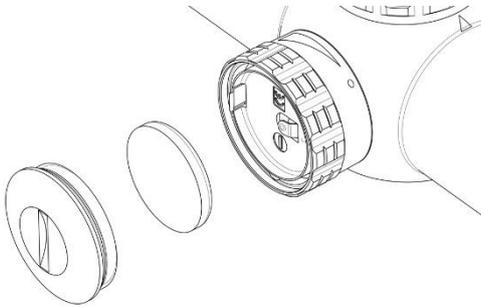
2.14.11 Replacing the Battery

The battery is stored in the illumination adjustment.

To change the battery:

1. Turn off the reticle illumination
2. Hold the illumination adjustment from turning

3. Use a coin that fits the slot and turn counter clockwise until the cover is unscrewed
4. Change the battery (CR2032) positive + side facing out
5. Reinstall the battery cover securely



Attention! Use only type CR 2032 batteries. Some KAHLES K models contain inside the windage turret cap one spare battery.

Batteries Directive

Batteries must not be disposed of as household waste and you are legally obliged to return used batteries. Local facilities exist for returning used batteries free of charge (e.g. in retail outlets or at communal collection points). Batteries are labelled with a

crossed-out wheeled bin and the chemical symbol of the harmful substance they contain: "Cd" for cadmium, "Hg" for mercury and "Pb" for lead. Please help us to protect the environment.

2.14.12 Cleaning

We have designed all elements and surfaces to require very little care.

KAHLES OILPHOBIC™ lens coatings makes cleaning objective lenses and eyepiece lenses easy, especially when cleaning dried-on mineral deposits (e.g. water marks from condensation). To ensure the long-lasting optical quality of your rifle scope, you should keep the glass surfaces free from dirt, oil and grease.

When cleaning the lenses, first remove larger particles with an optical lens brush. For subsequent thorough cleaning, breathe lightly on the lens and clean with the cleaning cloth. The metal parts are best cleaned with a soft, lens-cleaning cloth.

Standard Accessory

The special KAHLES Lens-Cleaning cloth can be used to clean even the most sensitive glass surfaces. It is suitable for the objective and eyepiece lens. Please keep the microfiber cloth clean as dirt particles can damage the lens surface. If the cloth is dirty, it may be washed in lukewarm soapy water and allowed to dry naturally. Please use it exclusively for cleaning lens surfaces.

2.14.13 Storage

We recommend to store the rifle scope in a dry place without excessive solar radiation and heat. If the rifle scope is wet it must be dried prior to storage.

2.15 Preparation for Firing and Live Firing

2.15.1 Before loading

- a. Execute the following procedure in the last cover before reaching actual firing position.
- b. Inspect weapon to be in safe mode.
- c. Close folding stock halfway in a 90° position.
- d. Remove bolt according to section 3.1.
- e. Inspect barrel visually to be clear and clean (fig. 2.41); otherwise use fix rod with copper brush to remove foreign particles and flex rod with cotton wicks to remove residuals of oil or water (all in cleaning kit).
- f. If suppressor is mounted, inspect visually proper alignment (concentricity of bores); in case of misalignment, remove and reinstall suppressor and inspect again.
- g. Fully open folding stock.
- h. Inspect firm mount of scope.
- i. Inspect scope lenses to be clean; otherwise use Lens Pen to clean (cleaning kit).
- j. Inspect stock to be properly adjusted and locked in open position.

WARNING: Firing a weapon with any obstruction or residuals of water or oil in the chamber or bore of the barrel will result in severe damage to the weapon and personal injury. A misaligned suppressor will get damaged with one round and deflect the projectile into any direction.

NOTE: The required first round performance is only accomplished if the barrel is dry when firing. Any residual of oil in the barrel will affect the trajectory.



Fig. 2.41



Fig. 2.42



2.15.2 Before firing

- Ensure bipod to stand stable on soft ground.
- Unfold butt spike and adjust height until weapon is stabilized on target.
- Inspect scope adjustments according to actual firing distance, especially parallax adjustment and elevation.
- Inspect weapon danger area to be clear.
- Load weapon in safe mode.
- Disengage safety to put weapon into fire mode.

WARNING: Keep finger off the trigger until you are willing to fire. Hold weapon stable on target.

2.15.3 Firing

- Check weapon to be in fire mode (safety disengaged, levers point to "F").
- Keep on aiming while putting finger on trigger.
- Slightly increase pull on trigger until shot breaks (fig. 2.42).
- Unlock and fully open bolt; observe the ejection of a cartridge case.
- Close bolt and lock.
- Weapon is now ready for second shot, loaded, armed and in fire mode.

WARNING: Weapon can be used by right hand shooters as well as by left hand shooters. While right hand shooters automatically remove finger from trigger to operate the bolt, left hand shooters must be conscious to take the finger off the trigger while reloading.

WARNING: If heavy black smoke appears after a shot released and no impact can be detected, probably the barrel was obstructed. Stop firing and return the weapon to an armorer for inspection.

2.15.4 Firing Positions

- Sitting on bench, using butt spike and bipod or bag (most suitable for zeroing).
- Prone, using butt spike and bipod or bag (tactical, fig. 2.43).
- Prone, using rear hand stop and bipod or bag (tactical).
- Lying on back, using leg as rest and sling for stabilization (tactical, suitable for downrange shooting, fig. 2.44).
- Sitting, using sling and hand stop (tactical, fig. 2.45).
- Standing, using improvised rest (tactical, fig. 2.46).
- Downrange, using bipod butt spike at 45° position (tactical, 2.47).



Fig. 2.43



Fig. 2.44



Fig. 2.45



Fig. 2.46



Fig. 2.47

NOTE: In firing position, no part of the rifle shall touch hard ground - otherwise, it will jump and the shot will miss.

2.16 Zeroing Rifle Scope

2.16.1 Firing Reference Groups

- Zeroing of the rifle scope should be done at 100 m.
- Choose indoor range or outdoor range which is free of crosswind.
- Choose maximally stable firing position; best is firing from a bench in sitting position, second best is prone.
- Place fore end on sandbag or rifle rest; if not available, use bipod. Use butt spike for maximum stability.
- Choose target that meets reticle pattern, e. g. black circle on white ground.
- Aim point blank to center of target.
- Fire three rounds.

2.16.2 Evaluating Sight Corrections

- Determine MPI of group and deviations according to figure below.

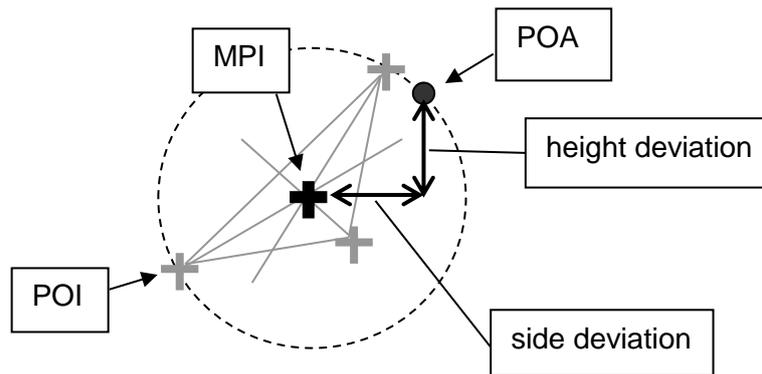


Fig. 2.48

- Measure height and side deviation in Millimeter and determine sight correction according to table 2.1.
- If deviation is smaller than 1 click ($0.1 \text{ mrad} = 10 \text{ mm}$ at 100 m), no correction is required.

2.16.3 Setting Zero

Refer to section 2.14.

2.17 Immediate Action and Stoppages

WARNING: Any failure to fire can be caused by a foul cartridge with retarded ignition. Opening the bolt before 30 seconds may cause case explosion with shrapnels.

WARNING: Always keep the finger off the trigger and the weapon pointing in a safe direction during immediate actions or investigation of stoppages.

2.17.1 Immediate Action

- a. Immediate action is the unhesitating application of a probable remedy to overcome a stoppage without investigating its cause.
- b. If weapon fails to fire when pulling the trigger, unlock and fully open bolt; observe the ejection of a cartridge or cartridge case.
- c. If ejection takes place, close bolt and lock; resume firing.
- d. If there is no ejection, a failure to extract or feed has occurred.
 - Engage safety.
 - Remove magazine, open bolt and inspect chamber to be empty.
 - If chamber is empty, reload magazine and resume firing.
 - If the chamber has a round, follow procedure below.

2.17.2 Cartridge jammed in Chamber

- a. To proceed if a cartridge or case is stuck in the chamber and the extractor fails to remove or is missing.
- b. Procedure to be executed in cover, weapon in safe mode, magazine removed; apply safety rules.
- c. If available, try to remove cartridge/case using the bolt of another rifle.
- d. Otherwise remove bolt and hit the rifle with its butt plate on the ground, in order to force the cartridge to drop out. Barrel must be maintained in a safe direction.
- e. If in worst case a live cartridge remains stuck in the chamber, remove bolt and keep it apart until service on weapon is possible. Remain responsible of weapon until handed out to technician.

WARNING: Do not remove a cartridge stuck in the chamber by using a fix rod from the muzzle end of the barrel.

WARNING: If due to a failure to extract or to eject a second cartridge was fed onto the chambered cartridge/case, do not reuse this cartridge. Bullet might slip into the case and will cause overpressure when firing.

2.17.3 Stoppages

- a. A stoppage is any unintentional interruption in the cycle of function. If the weapon fails to fire, immediate action should be taken as the first step.
- b. Stoppages of the weapon normally fall into one of the following categories:
 - Excessive fouling of weapon due to negligence, incorrect or poor maintenance.
 - Failure of cartridge.
 - Mechanical failure of the weapon.

2.17.4 Common Stoppages & their Causes

SN	Problem	Probable Cause
1.	Failure to extract	<ul style="list-style-type: none"> - Broken, stuck or lost extractor - Broken or weak extractor spring - fouling of chamber - torn cartridge's rim
2.	Failure to eject	<ul style="list-style-type: none"> - Stuck ejector - Broken or weak ejector spring
3.	Failure to ignite despite striking firing pin	<ul style="list-style-type: none"> - non-conform primer - broken or short firing pin - weak firing pin spring - large headspace
4.	Failure to ignite despite pulling trigger (firing pin not striking)	<ul style="list-style-type: none"> - no cartridge chambered (failure to feed) - safety engaged - trigger group failed to cock firing pin (worn out firing pin retainer, disconnect or sear) - trigger stuck in rear position (due to foreign particles or weak trigger springs)
5.	Failure to feed	<ul style="list-style-type: none"> - magazine improperly inserted (maybe in manual feed position) - deformed magazine lips
6.	Impossible to close and lock bolt	<ul style="list-style-type: none"> - cartridge/case stuck in chamber (failure to extract) - cartridge/case jammed in mechanism (failure to eject, improper feeding) - foreign particles in chamber

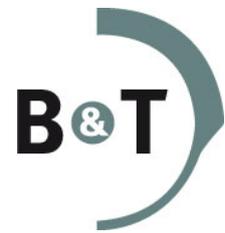
2.18 Operating Procedures in Adverse Conditions

NOTE: The following are additional procedures to take note when operating in adverse conditions. Normal maintenance and operating procedures are still applicable to ensure that the weapon will function properly.

2.18.1 Sand / Dust Condition

- a. Clean the weapon as often as possible.
- b. Use less oil than normally.
- c. Use hand fed mode to load rifle.
- d. Inspect cartridges to be clean before loading.
- e. Operate bolt more carefully than usual.

WARNING: Besides stoppages, grains of sand may even provoke hazardous situations. Keep them off the weapon and do not operate the bolt with excessive force when sand is present.



2.18.2 Wet / Rainy Condition

- a. Use hand fed mode to load rifle.
- b. Wipe of water drops from bullets before loading.
- c. When opening bolt, slightly incline ejection port to the ground, preventing rain to drop into open mechanic.

NOTE: A sniper rifle is a precision tool. Not only functionality has to be maintained in adverse conditions, but also first round hit capacity.

3. Field Assembly / Disassembly

WARNING: Unload and clear weapon before proceeding with disassembly.

3.1 Field Stripping

3.1.1 Removing Bolt

- a. Close folding stock halfway in a 90° position.
- b. Push down bolt stop and remove bolt rearwards (fig. 3.1).
- c. Open folding stock.

3.1.2 Removing Firing Pin

- a. Use bolt tool (operator's tool kit) to remove firing pin.
- b. Hold bolt in one hand and put bolt tool over firing pin housing.
- c. Rotate bolt tool (with firing pin housing) clockwise until firing pin comes loose (fig. 3.2).

3.1.3 Field Stripping of Magazine

- a. Push down follower at its rear end, allowing it to incline itself.
- b. Guide follower to slide out of the magazine body by its front end (fig. 3.3).



Fig. 3.1



Fig. 3.2



Fig. 3.3

3.1.4 Removing Rifle Scope with Mount

- a. This procedure is optional in order to protect the scope.
- b. Ensure lens covers to be closed.
- c. Remove rifle scope.

NOTE: The rifle with bolt, magazine and scope with mount removed shall be called "main assembly".

3.2 Assembly

3.2.1 Installation of Firing Pin

- a. Hold firing pin with bolt tool.
- b. Slip firing pin into bolt body, firing pin retainer aligned with face on bolt body.
- c. Push firing pin completely into bolt body against force of firing pin spring and rotate it counterclockwise until it snaps audibly into cocked position.

Fig. 3.4: Proper alignment



Fig. 3.5: Correct installation



Fig. 3.6: Wrong installation



NOTE: Do not turn firing pin on uncocked position - bolt can not be inserted into rifle in this position.

WARNING: Inspect firing pin and its bore in the bolt body visually to be clean before assembly. Firing pin stuck by obstructions may cause hazardous situations.

3.2.2 Installation of Bolt

- a. Close folding stock halfway in a 90° position.
- b. Push on bolt stop.
- c. Slide bolt into receiver, with firing pin retainer running in bolt guide latch (fig. 3.7).
- d. Open folding stock (optional).

3.2.3 Installation of Magazine

- a. Slide follower into magazine box on its front end (fig. 3.8).
- b. Push follower down into magazine box until properly placed.



Fig. 3.7



Fig. 3.8

3.3 Functional Check

3.3.1 Application

- a. Execute the functional check procedure always after stripping and reassembling the weapon system.
- b. Execute the functional check procedure always before leaving for mission.
- c. Execute one stage after the other in the order they appear below.

3.3.2 Checking Trigger Action and Safeties

Step	Action to be carried out
a	Remove magazine and clear chamber to ensure that the rifle is not loaded. Safety on "S".
b	Open bolt, close and lock bolt. ⇒ Firing pin shall be armed, noticeable by firing pin retainer protruding firing pin housing.
c	Pull trigger. ⇒ You should hear nothing as the firing pin should not strike.
d	Rotate safety lever to "F". ⇒ Safety shall run smooth and audibly lock into position.
e	Pull trigger. ⇒ You should hear and observe the firing pin to strike.
f	Release trigger. ⇒ Trigger shall return to foremost position.
g	Open bolt, close and lock bolt. Pull on trigger at its outer edge. ⇒ Trigger safety shall lock trigger in foremost position, firing pin shall not strike.
h	Rotate safety lever to "S". ⇒ Safety shall run smooth and audibly lock into position.

3.3.3 Checking Magazine

Step	Action to be carried out
a	Take empty magazine, pull follower down and release slowly. ⇒ Follower shall rise smoothly into final position.
b	Open bolt and fully insert empty magazine. ⇒ Magazine shall be held by magazine retainer. ⇒ Bolt shall be held open by follower.
c	Pull magazine retainer back and magazine down into hand fed mode, close bolt. ⇒ Bolt shall travel smoothly over follower into locking position.
d	Remove magazine and repeat procedure with every magazine included to the weapon system.

3.3.4 Checking Folding Stock, Butt Spike and Bipod

Step	Action to be carried out
a	Get rifle with stock open and butt spike folded. ⇒ Stock shall be locked without any clearance.
b	Rotate butt spike into 45° position, into 90° position and back into folded position (0°). ⇒ Butt spike shall lock positively in all positions.
c	Close folding stock. ⇒ Shall be held firmly in closed position.
d	Open folding stock, rotate main screw of butt spike to extend and retract. ⇒ Shall run smoothly over its full range.
e	Put rifle on butt plate, barrel straight upwards. Extend bipods with one movement (per pod). ⇒ Pods shall run into fully extend position.
d	Pull on left pod retainer until left pod released. Relax retainer and retract pod position by position. ⇒ Pod shall lock firmly in every position.
e	Repeat step d with right pod.
f	Rotate bipod downwards until it snaps open. ⇒ Pods shall snap into approx. 50° spread position.
g	Rotate bipod in closed position. ⇒ Shall lock positively in closed position.

3.3.5 Checking Scope with Mount and Emergency Sights

Step	Action to be carried out
a	While scope removed, flip up rear and front emergency sights. ⇒ Shall lock firmly and straight upwards in open position
b	Close emergency sights, attach rifle scope with mount. ⇒ Check levers for tight, but comfortable operation. ⇒ Check attached scope with mount for tight seat without any clearance.
c	Rotate elevation adjustment turret to over 30 MOA and back to 0. ⇒ Shall click tangibly in every position. ⇒ Yellow bar shall appear on top of the turret when set on 30 MOA (and higher).
d	Rotate windage adjustment turret in direction of arrow "R", in counter-direction and back to 0. ⇒ Shall click tangibly in every position.
e	Rotate parallax adjusting knob over its full range and back to 100 m. ⇒ Shall run smoothly and stop accurately on extreme positions.
f	Rotate magnification adjustment over its full range. ⇒ Shall run smoothly and stop accurately on extreme positions.
g	Rotate reticle illumination knob from 0 to 11. ⇒ Shall run smoothly and stop accurately on extreme positions. ⇒ Center cross of reticle shall shine in red color.
h	Open and close flip up covers. ⇒ Shall flip up open at light push. ⇒ Shall snap positively into closed position.

4. Ammunition

4.1 Specifications of Cartridge

4.1.1 Technical Data of Cartridge (CIP standard)

Cartridge designation:	.308 Win
Cartridge overall length:	< 71.3 mm
Bullet weight (according to twist rate 1:11"):	< 200 grs / 13.0 g
Average maximum pressure at breech end:	≤ 4150 bar
Maximum maximum pressure at breech end	≤ 4773 bar

4.1.2 Compatible and Non-compatible Ammunitions

As the rifle was designed according to CIP-standards, every cartridge .308 Winchester and 7.62x51 (with exceptions as stated below) manufactured according to the same standards can be used with the rifle. CIP standard according cartridges normally carry a proof mark on the box (examples fig. 4.1).

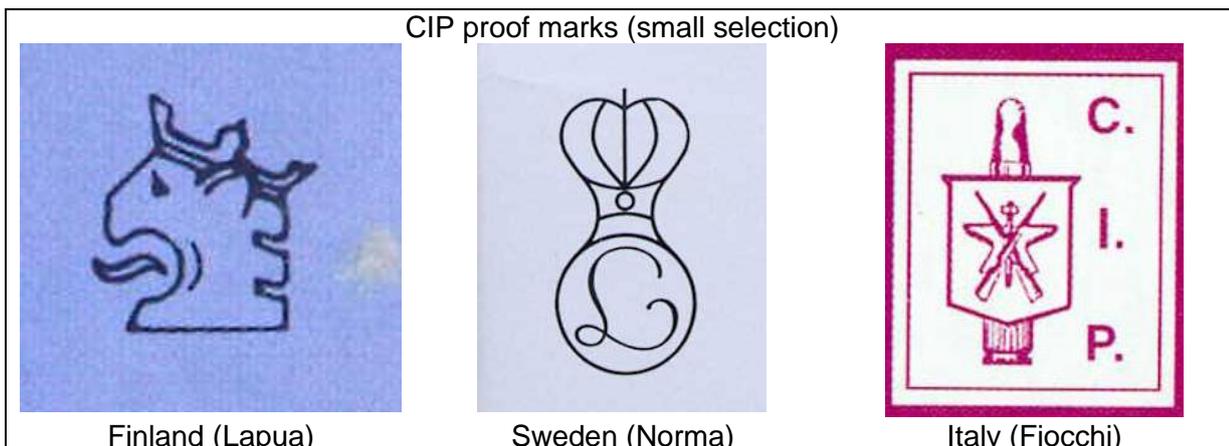


Fig. 4.1

Best results have been achieved with:

- RUAG Swiss P 168 grs (recommended for mid range applications up to 600 m);
- Norma Diamond Line 190 grs (recommended for long range applications up to 1000 m);
- Lapua D46 185 grs (suitable for military applications).
- Lapua Scenar 250 grs in .338 LM.

With respect to the muzzle brake and especially when using the rifle with mounted suppressor, the use of bullets which disintegrate at the muzzle departure is forbidden. The shrapnel is very likely to hurt people sideways to the weapon or can choke the suppressor.

This concerns namely sub-caliber bullets with sabot like e. g. Remington Accelerator bullets.

4.2 Ballistic Data

4.2.1 Trajectory Table

Weapon: B&T APR308 cal. 7.62x51 610 mm twist 1:11"
 Scope: Rifle Scope 68 mm over barrel
 Ammo: Norma Diamond Line 190 grs Sierra MatchKing HPBT
 Atmosphere: ICAO 500 m AMSL

distance [m]	y* [m]	t** [s]	velocity [m/s]	energy [J]	Wind 1m/s Drift in cm
0	-0.07	0.00	780	3742	
50	-0.01	0.07	755	3508	0.1
100	0.00	0.13	731	3286	0.4
150	-0.03	0.20	707	3075	1.0
200	-0.12	0.27	684	2874	1.8
250	-0.25	0.35	661	2685	2.8
300	-0.44	0.43	638	2505	4.1
350	-0.69	0.51	616	2335	5.6
400	-1.01	0.59	595	2174	7.5
450	-1.40	0.67	573	2022	9.7
500	-1.86	0.76	553	1878	12.1
550	-2.40	0.85	532	1741	14.9
600	-3.02	0.95	512	1612	18.1
650	-3.74	1.05	492	1489	21.7
700	-4.57	1.15	473	1374	25.6
750	-5.50	1.26	454	1268	30.0
800	-6.55	1.37	436	1170	34.8
850	-7.73	1.49	419	1082	40.1
900	-9.05	1.61	404	1002	45.9
950	-10.52	1.74	389	931	52.1
1000	-12.15	1.87	376	868	58.7

*y: MPI over POA in meters. Rifle zeroed at 100 m.

**t: Flight time at distance.

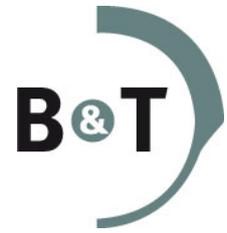
4.2.2 Sight Adjustment Chart

Weapon: B&T APR308 cal. 7.62x51 610 mm twist 1:11"					
Scope: Rifle Scope 68 mm over barrel					
Ammo: Norma Diamond Line 190 grs Sierra MatchKing HPBT					
NVD: Simrad KN252 140 mm over barrel					
Atmosphere: ICAO 500 m AMSL					
distance [m]	elevation		windage per 1 m/s wind	movement by 1 click in mm	1 mrad in m
	day	night*			
50	2	16	0		
100	0	7	0	10	0.10
150	2	7	1	15	0.15
200	6	10	1	20	0.20
250	10	13	1	25	0.25
300	15	17	1	30	0.30
350	20	22	2	35	0.35
400	26	28	2	40	0.40
450	32	34	2	45	0.45
500	38	39	2	50	0.50
550	44	45	3	55	0.55
600	51	52	3	60	0.60
650	59	60	3	65	0.65
700	67	68	4	70	0.70
750	75	76	4	75	0.75
800	83	84	4	80	0.80
850	93	94	5	85	0.85
900	102	103	5	90	0.90
950	113	114	5	95	0.95
1000	124	125	6	100	1.00

*To apply when Simrad NVD mounted.



Operator Manual



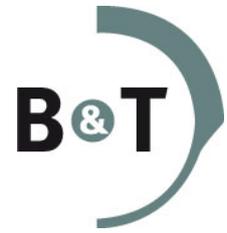
4.2.3 Table of Hit Probabilities

Weapon: B&T APR308 cal. 7.62x51 610 mm twist 1:11"
Scope: Rifle Scope 68 mm over barrel
Ammo: Norma Diamond Line 190 grs Sierra MatchKing HPBT
Atmosphere: ICAO 500 m AMSL

distance [m]	σ [mm]	dia _{0.99} [mm]
100	6.6	40
150	10.1	61
200	13.7	83
250	17.4	106
300	21.3	129
350	25.3	153
400	29.4	178
450	33.7	204
500	38.1	231
550	42.7	259
600	47.5	288
650	52.5	319
700	57.7	350
750	63.1	383
800	68.7	417
850	74.6	453
900	80.6	489
950	87.0	528
1000	93.5	567

* σ : Standard deviation.

**dia_{0.99}: Diameter of a target with first round hit probability of 99%.



4.3 Care and Handling of Ammunition

The sniper weapon system can perform the required first round hit probability only with selected ammunition. Therefore never mix cartridges of

- Different brands;
- Different specifications in bullet type and weight;
- Different lot numbers.

Thus in operation as well as for training and storage, cartridges must be always properly identified.

Since ammunition and explosives are adversely affected by moisture and high temperature, due consideration should be given to the following:

- Do not open boxes until ammunition is required for firing.
- Protect ammunition from high temperature and direct sunlight.
- Do not attempt to disassemble cartridges.
- Never use lubricants or grease on cartridges.

5. Accessories

5.1 Rifle Scopes

B&T provides suitable rifle scopes on request.

5.2 Cases

B&T provides suitable hard or soft cases on request.

5.3 Triple Rail Interface

- a. The triple rail interface fits to the weapon without any modification.
- b. It provides three NATO accessory rails as interface for accessories as
 - Night Vision Devices (as shown, others than Simrad)
 - Laser aiming/designation devices
 - Illumination tools
- c. Part number of triple rail interface: BT-AMH107



Fig. 5.1

6. Troubleshooting Index

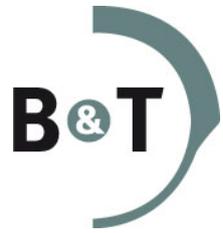
SN	Problem	Probable Cause	Immediate Action	Maintenance Action
1.	Failure to extract	<ul style="list-style-type: none"> - non-conform ammunition - case rupture - fouling of chamber - inoperative extractor 	<ul style="list-style-type: none"> - remove blocked case - clean chamber - return removed case and rifle to armorer 	<ul style="list-style-type: none"> - apply extractor and chamber inspection procedures - clean chamber - replace worn-out, lost or defective parts - if failure occurs with other rifles, check conformity of ammunition
2.	Failure to eject	<ul style="list-style-type: none"> - inoperative ejector 	<ul style="list-style-type: none"> - remove case (if necessary by removing bolt and magazine) - return rifle and case to armorer 	<ul style="list-style-type: none"> - check proper assembly of ejector - replace worn-out or defective parts
3.	Misfire despite striking firing pin	<ul style="list-style-type: none"> - non-conform ammunition - inoperative firing-pin - improper head-space 	<ul style="list-style-type: none"> - remove unfired cartridge - check firing pin impact on primer - remove and clean bolt - load new cartridge - if failure repeats, return removed cartridge and rifle to armorer 	<ul style="list-style-type: none"> - check firing pin impact on primer of cartridge - apply firing pin protrusion and headspace inspection procedures - replace defective or worn-out parts (namely firing pin and spring CS001) - if failure occurs with other rifles, check conformity of ammunition
4.	Misfire despite pulling trigger (firing pin not striking)	<ul style="list-style-type: none"> - malfunction of trigger group - firing pin retention loose 	<ul style="list-style-type: none"> - unload - check proper position of safety - return rifle to armorer 	<ul style="list-style-type: none"> - disassemble firing pin and check proper installation - disassemble trigger group and check proper installation - replace worn-out or defective parts
5.	Failure to feed	<ul style="list-style-type: none"> - incorrect position of magazine or cartridge - deformed magazine body or lips - worn-out magazine spring 	<ul style="list-style-type: none"> - check magazine is properly held in rifle and try again - if failure repeats, change magazine 	NONE
6.	Impossible to close bolt	<ul style="list-style-type: none"> - failure to extract - foreign particles in chamber 	<ul style="list-style-type: none"> - DO NOT APPLY FORCE TO CLOSE BOLT! - remove cartridge - check chamber visually and with little finger - clean chamber 	NONE



Operator Manual



SN	Problem	Probable Cause	Immediate Action	Maintenance Action
7.	Inconsistent firing results	<ul style="list-style-type: none"> - loosened sight mounting - defective sight - barrel fouling - barrel worn out - loosened bedding screws 	<ul style="list-style-type: none"> - check sight settings - check sight mountings, tighten if loose - in case of detachable sights: Replace and return suspected to armorer - return rifle/sight configuration to armorer 	<ul style="list-style-type: none"> - apply sight inspection procedures and actions - disassemble sight mount, check parts visually and replace defective parts - apply barrel and headspace inspection procedures - in case of barrel fouling, apply chemical agent - replace barrel if worn out - inspect momentum of bedding screws (NT038, NT063); tighten and secure if loose
8.	Low recoil, no impact detected	<ul style="list-style-type: none"> - underloaded cartridge 	<ul style="list-style-type: none"> - inspect barrel to be clear (bullet could be stuck!) 	<ul style="list-style-type: none"> - NONE
9.	Heavy recoil, black smoke, no impact detected	<ul style="list-style-type: none"> - Obstructed barrel shot 	STOP FIRING!	<ul style="list-style-type: none"> - barrel replacement
10.	Trigger fails to return after release	<ul style="list-style-type: none"> - lack of lubrication - damaged trigger spring 	<ul style="list-style-type: none"> - in combat situation, continue firing by pushing trigger manually forward while operating bolt - return rifle to armorer 	<ul style="list-style-type: none"> - disassemble trigger group - replace trigger springs (CS012, CS016) - lubricate and reinstall trigger group
11.	Folding stock retention fails when open	<ul style="list-style-type: none"> - accumulation of dirt - damaged retention 	<ul style="list-style-type: none"> - wipe of dirt - if failure repeats, return rifle to armorer 	<ul style="list-style-type: none"> - visual inspection - replace worn-out, lost or defective parts
12.	Failure of non-essential features	<ul style="list-style-type: none"> - improper installation - dirt - damaged or lost parts 	<ul style="list-style-type: none"> - visual inspection - wipe of dirt - if failure repeats, return rifle to armorer 	<ul style="list-style-type: none"> - visual inspection - replace worn-out, lost or defective parts



7. Warranty Statement

Warranty claims on behalf of the Client are to be explicitly declared as such. During the legal warranty period, B&T provides warranty cover solely for defects that arise as a result of faulty materials, construction errors or poor workmanship. If a warranty claim is justified, B&T will, at its own discretion, either repair or replace the defective good. Costs incurred in transporting the defective good to B&T are borne by the Client. Spare parts fitted and replaced become the property of B&T.

Inasmuch as is legally permitted, any other liability of B&T is excluded, in particular liability for damages arising either directly or indirectly from the delivered good itself, from its use or from its defects.

Merchandise is covered by the warranty provisions of the manufacturer. Parts that are naturally subject to wear and tear, damage arising from insufficient maintenance work, non-compliance with operating regulations and cases of force majeure are all excluded from warranty cover. Warranty claims lapse if the Client itself or third parties alter or repair the delivered good without the prior written consent of B&T.

All product specifications are subject to change without prior notice. Published data are mean values and therefore not suitable acceptance criteria.