



High-Precision
Marksman's Rifle
PSG1



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PSG 1

High-Precision
Marksman's Rifle



Instruction Manual



Heckler & Koch, Inc.
U.S.A.

**WARNING: READ ALL INSTRUCTIONS BEFORE
HANDLING & USING THIS FIREARM.**

Safety Rules

PLEASE READ THIS BEFORE HANDLING YOUR FIREARM.

The following safety rules are placed in this manual by Heckler & Koch, Inc. as an important reminder that firearms safety is your responsibility. Firearms can be dangerous and can potentially cause serious injury, damage to property or death, if handled improperly

1. Never point a firearm at anyone, or in any direction other than a safe one, i.e., downrange
2. Always treat all firearms as if they were loaded.
3. Keep your finger off the trigger until your sights are on the target.
4. Keep your finger off the trigger while loading or unloading the pistol.
5. Keep your finger off the trigger while pulling pistol out of the holster or holstering.
6. Be sure of your target and the back stop beyond.
7. Never give to or take a firearm from anyone unless the action is open.
8. Be sure that the ammunition you are using is factory loaded and is not damaged in anyway.
9. Before firing, remove the magazine from the weapon, lock the bolt to the rear and check the barrel of your unloaded firearm for any possible obstructions.
10. Before firing any firearm unfamiliar to you, make sure that you understand how it functions. Unfamiliarity can cause serious accidents. Attend a certified training course on any firearm which you intend to use or with which you are not sufficiently familiar.
11. Wear hearing protection and eye protection when shooting your firearm.
12. Keep your hands and fingers away from the muzzle to avoid injury or burns.
13. Firearms and ammunition should be stored separately beyond the reach of children and untrained or irresponsible adults.
14. Avoid the use of alcoholic beverages before and during any shooting.

REMEMBER: A FIREARM HAS THE CAPABILITY OF TAKING YOUR LIFE OR THE LIFE OF SOMEONE ELSE! BE CAREFUL WITH YOUR FIREARM – AN ACCIDENT IS ALMOST ALWAYS THE RESULTS OF NOT FOLLOWING BASIC SAFETY RULES.

Technical specifications

Dimensions

Caliber.....	7.62 mm x 51
Length of weapon.....	1208 mm
Width of weapon.....	59 mm
Height of weapon (w/ Telescopic sight).....	258 mm
Length of barrel.....	650 mm
Bore profile.....	Polygonal
Direction of rifling twist.....	Right-hand
Number of grooves.....	4
Trigger pull.....	Approx. 1.5kp

Weights

Weapon w/o magazine and tripod.....	8.1 kg
Weight of precision tripod.....	1.025 kg
Weight of 5-round magazine.....	0.19 kg
Weight of 20-round magazine.....	0.28 kg

Further specifications

Sighting system.....	Telescopic sight 6 x 42, rear sight No. 6 with reticule illumination 6 sight settings 100-600m (annotated 1-6)
Point-bank shot firing.....	6 settings 75-10m (yellow figures)
Type of fire.....	Single-shot

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Brief Description of the High-Precision Marksman's Rifle PSG 1

General information

The design, construction and operation of the PSG 1 marksman's rifle are basically the same as that of the other well-known HK firearms.

The exceptional demands made on precision marksmen necessitate a special weapon, above all with superb accuracy when used to engage individual or multiple targets. It also requires a virtually unlimited degree of adaptability to suit individual firers.

The principal features of the PSG 1 are:

- Semi-automatic rifle for single fire with recoil-operated delayed roller-locked bolt system.
- Exceptionally robust and durable construction
- Special device for positively and quietly closing the bolt
- Let-off point trigger with trigger pull of approx. 1.5 kp
- Variable trigger width provided by vertically adjustable trigger shoe
- Adjustable length of butt stock, vertically adjustable cheekpiece as well as angular adjustment facility for the butt plate
- Hand guard with T-way rail to mount precision tripod and a firing sling
- Magazine option for 5 or 20 rounds
- Optical sighting through 6 x 42 telescopic sight, reticule No. 6 with reticule illumination

Sighting adjustable by moving scope for elevation and windage

1 click = 1cm at 100m range

6 sight settings 100—600m with additional fine elevation compensation facility

1 fine increment = 1cm at 100m range

Telescopic sight mounting is an integral part of the weapon, with STANAG 2324 mounting dimensions for different sighting devices.

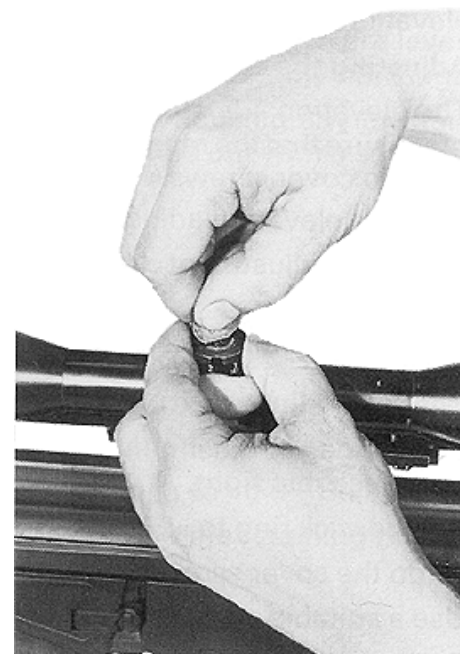


Fig. 38: Operating the elevation adjuster.

Each click adjustment changes the point of impact for 1cm at a distance of 100m.

When the adjustment is complete retighten the cover screws.

Windage adjustment:

The windage adjustment facility is mounted on the right-hand side of the telescopic sight.

Set the click ring to "0"

Undo the cover screws.

Use a suitable coin to turn the windage adjuster.

Each click adjustment changes the point of impact for 1cm at a distance of 100m.

Retighten the cover screws.

Stripping the pistol grip with trigger assembly

Use the Allen key to undo the trigger shoe. Set the selective fire lever vertical, and then draw it out. Take out the trigger assembly housing.

It is not permitted to strip the trigger assembly housing any further. If it is particularly dirty, the housing can be washed out with a suitable cleaning fluid.

Re-assembling the weapon

Push the hand guard onto the barrel from the muzzle end, press in the bolt with a screwdriver, and turn it through 90 degrees.

Push the assembled bolt unit into the receiver (when doing so, the locking rollers must lie inside the bolt head).

Refit the grip assembly (selective fire/safety lever to "0" – Safe).

Push butt stock onto the receiver and press in the retaining pins.

Harmonizing the telescopic sight

If zeroing show that a correction is needed this is done by re-adjusting the height or lateral alignment of the telescopic sight (i.e., elevation and windage).

Adjusting the elevation:

The elevation adjuster is mounted on top of the telescopic sight. First make sure that the range is properly set, and then use a screwdriver to undo the two cover screws.

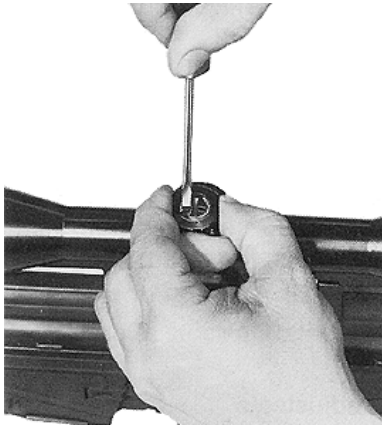


Fig. 37: Undoing the cover screws.

Turn the elevation adjuster by means of a suitable coin.



Fig.1: PSG 1 High-Precision Marksman's Rifle

Assembly groups

1. Receiver with barrel, cocking device and telescopic sight
2. Bolt group
3. Pistol grip with trigger assembly
4. Back plate with butt stock
5. Hand guard
6. Magazine

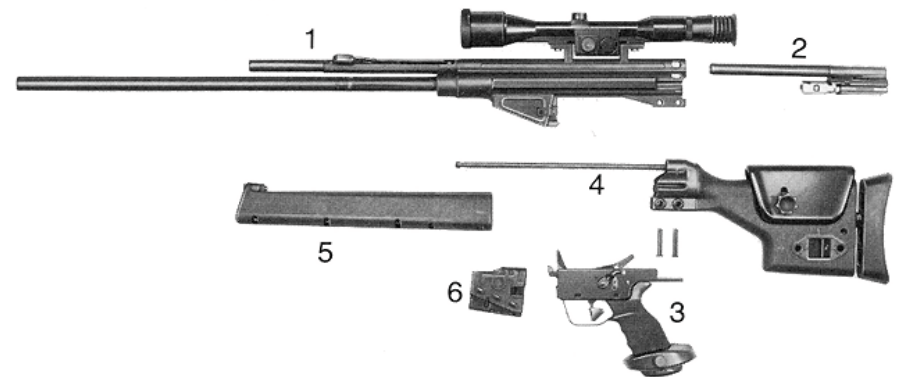


Fig. 2: Exploded view of assemblies

Description of the assembly groups:

Group 1: Receiver with barrel, cocking device, and telescopic sight.

The receiver connects the barrel, cocking device and the telescopic sight, and also serves as a mounting for all other assembly groups.

The barrel is press-fitted into the barrel extension and secured by pinning.

The cocking device is mounted above the barrel. It serves to load the weapon and to retain the bolt in the rearmost position.

The magazine catch is located on the left-hand side of the magazine well. The low noise bolt-closing device is fitted behind the ejection port, and serves to close the bolt quietly. On the top of the receiver is the integral mounting for the sighting device with dimensions complying with STANAG 2324. Fitted onto this mounting is the 6 x 42 telescopic sight with reticule lighting.

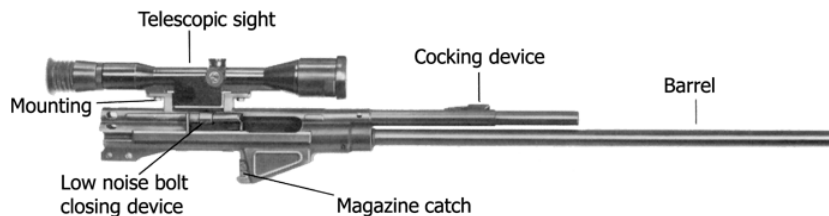


Fig. 3: Receiver with barrel, viewed from right-hand side

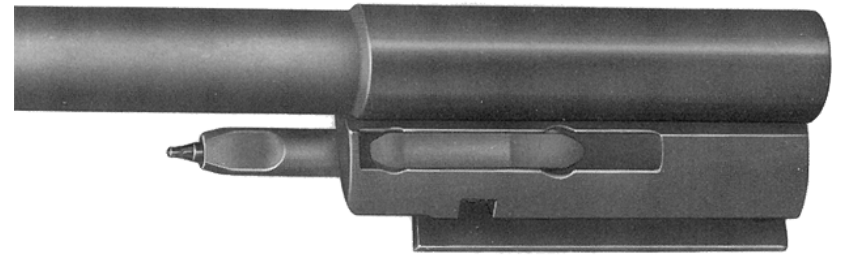


Fig. 35: Inserted locking piece

Mount the bolt head on the locking piece such that the sloping face is in front of the bolt head locking lever

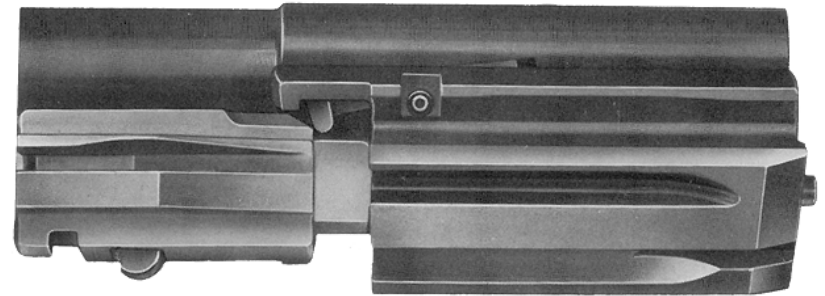


Fig. 36: Mounted bolt head

Press the bolt head against the bolt head locking lever up to the bolt head carrier. Rotate the bolt head clockwise (to the right) until resistance can be felt and the bolt head locking lever rests against the next surface. Pull the bolt head forwards as far as it will go until both locking rollers can fully engage in the recesses.

Turn the bolt head clockwise until the sliding surfaces of the bolt head and the bolt head carrier are flush.

Stripping the bolt

Rotate the bolt head 90 degrees left and take it off.



Fig. 33: Turning the bolt head

Remove locking piece, firing pin and firing pin spring.

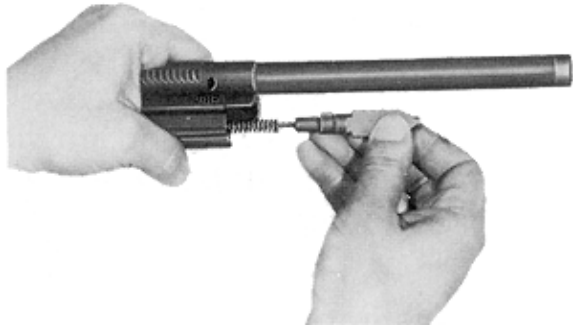


Fig. 34: Removing the bolt components

The bolt must be re-assembled in the reverse order of operations.

Insert the firing pin with its spring and the locking piece into the hole in the bolt head carrier so that the lug on the locking piece goes into the recess in the hole.

Press the locking piece all the way in, and turn it until the narrow side is under the bolt head locking lever

Group 2: Bolt System

The bolt is introduced into the receiver and together with the cartridge case, seals the chamber to the rear. It also serves to feed and detonate the cartridge, and then to extract and eject the spent case and cock the hammer.

The bolt assembly comprises:

1. Bolt head carrier with locking lever.
2. Bolt head with locking rollers, extractor and extractor spring
3. Locking piece
4. Firing pin spring
5. Firing pin



Fig. 4: Bolt system

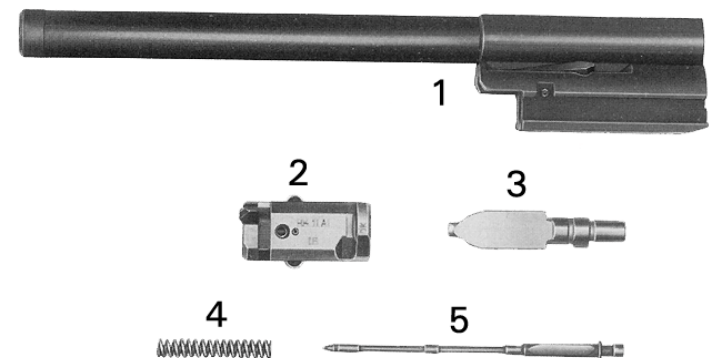


Fig. 5: Bolt – individual components

Group 3: Pistol grip and trigger assembly

The pistol grip is mounted on the receiver, and is removable. It takes the trigger assembly housing with the trigger and safety components. The safety device joins the pistol grip and the trigger assembly housing.

The pistol grip with trigger assembly comprises:

1. Pistol grip
2. Trigger housing, complete.
3. Selective fire/safety lever
4. Trigger shoe
5. Hand rest, right-hand shell
6. Hand rest, left-hand shell
7. Clamping screw



Fig. 6: Pistol grip with trigger assembly

Draw back the bolt by means of the cocking lever, and take it out of the receiver.



Fig. 31: Removing the bolt

To take off the hand guard use a screwdriver and press the bolt back as far as it will go, and then turn the bolt by 90 degrees.

Finally draw the hand guard off the barrel over the muzzle.



Fig. 32: Turning the bolt.

At the same time the recoil spring is tensioned and returns the bolt to the front again. This action feeds a fresh round from the magazine into the chamber. The extractor grips the extraction groove at the base of the cartridge. The sloping faces of the locking piece press the locking rollers onto the surfaces of the barrel extension. The weapon is again ready to fire.

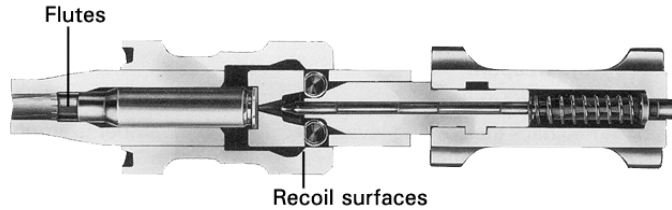


Fig. 29: Opened bolt

Stripping the weapon for cleaning

First safe the weapon!

Take out the magazine.

Unload: Pull back the cocking lever, check that the chamber is empty, and then allow the bolt to snap forwards again.

Remove both retaining pins, and insert them into the hollow rivets in the butt stock.

Pull off the butt stock and remove the pistol grip with trigger assembly.



Fig. 30: Removing the butt stock

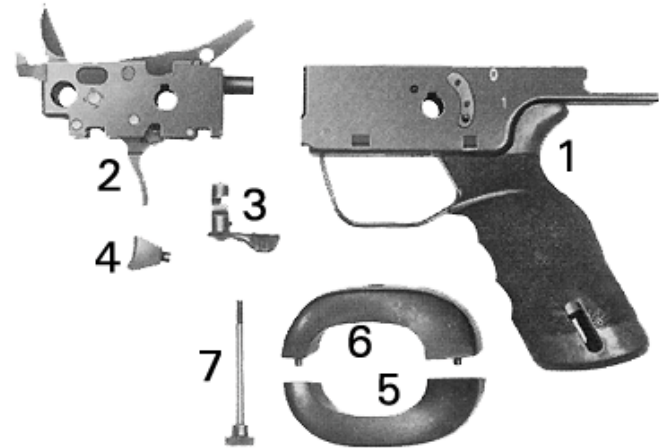


Fig. 7: Pistol grip with trigger assembly, dismantled

Group 4: Butt stock

The butt stock with back plate encloses the receiver at the rear end. It is joined to the receiver by two locking pins. The back plate carries the recoil spring guide rod with the recoil spring, the buffer device and the butt stock.

Mounted on the comb of the butt stock is the cheekpiece, which can be adjusted for elevation. The butt plate is connected to the stock by a spindle. The special adjusting key is used to lock the cheekpiece and the butt plate.

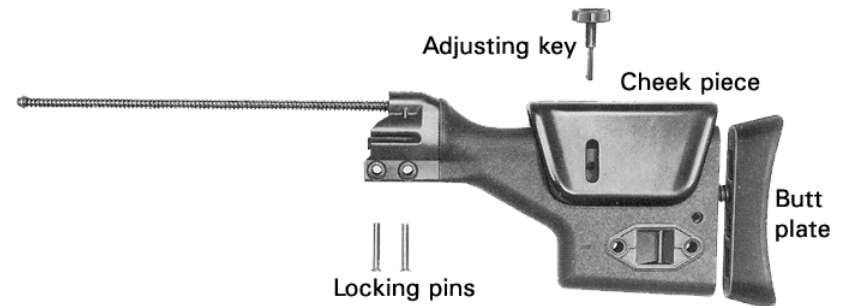


Fig. 8: Butt stock

Group 5: Hand guard

The removable hand guard encloses the barrel from below. It is secured to the receiver by rotating the bolt through 90 degrees.



Fig. 9: Hand guard

Group 6: Magazine

Steel magazines for 5 rounds are available. Optionally, magazines for 20 rounds can be used.

The magazine comprises:

1. Magazine housing
2. Follower with follower spring
3. Magazine floor plate

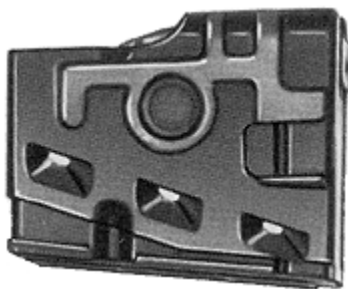


Fig. 10: Magazine for 5 rounds

To remove the magazine, the magazine catch must be actuated.

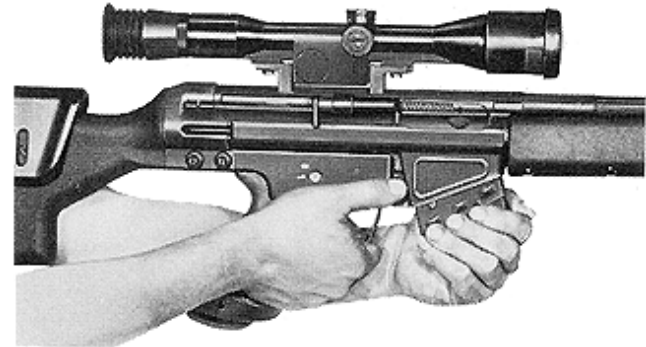


Fig. 27: Removing the magazine

Interoperation of the components

The weapon is loaded and placed on safe.

Squeezing back the trigger releases the hammer so that it strikes against the firing pin. The cartridge is detonated. The expanding gases drive the bullet forwards. At the same time the gases press back against the cartridge. The forces, which consequently act against the recoil face of the bolt head, are transmitted partially via the locking roller to the receiver, and partially via the locking piece to the bolt head carrier. In so doing the carefully matched angular relationship between the barrel extension and the bolt head delays the recoil motion of the bolt head.

This arrangement ensures that the bolt seals the barrel until the projectile has cleared the muzzle.

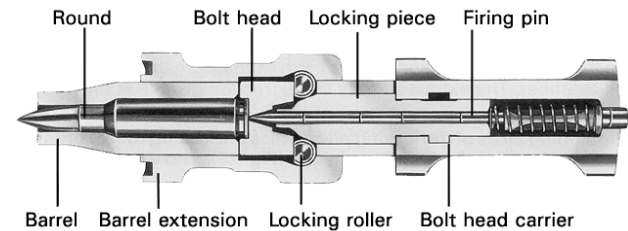


Fig. 28: Closed bolt

When the locking rollers have fully entered the bolt head the bolt is able to slide further to the rear. The spent cartridge is thereby ejected and the hammer is cocked again.

In order to allow the condition of the weapon to be recognized from both sides, the figures are duplicated on the right-hand side of the pistol grip



Fig. 25: Selective fire/safety lever seen from the right

Safe the weapon!

Set the selective fire/safety lever to "0". The trigger can no longer be operated. The weapon can be loaded in the safe condition.

Inserting and removing the magazine

Engage the safety!

Insert magazine into the magazine well until you hear the magazine catch engage

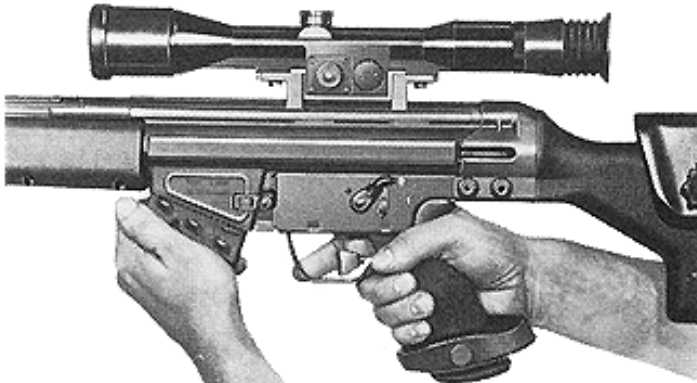


Fig. 26: Inserting the magazine

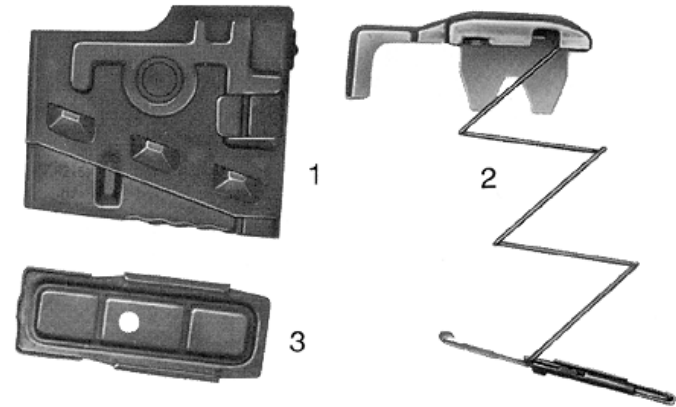


Fig. 11: Magazine for 5 rounds, dismantled

Accessories

Carrying case:

The carrying case is made of aluminum, and is fitted with a molded liner of neoprene foam. The molded liner is designed to provide space for the PSG 1 and the most important accessories



Fig. 12: Carrying case

Other accessories

The following additional accessories can be supplied: 20-round magazines, magazine loading device and magazine unloading device, cleaning rod, carrying sling and a precision tripod made by the Garbini company, Roggwil, Switzerland.

Handling and operation

Adjusting the butt stock

In order to perfectly fit the weapon to the firer, the length and height of the butt stock can be adapted to his physical measurements.

To adjust the length of the butt stock, use special key undo the clamping device, and rotate the butt plate until it reaches a suitable length. Subsequently retighten the butt plate with the special key.



Fig. 13: Adjusting the length of the butt stock

To adjust the height of the butt stock comb or cheekpiece, use the special key to undo the clamping device. Spring pressure will now force the cheekpiece into the highest position. Push it back down to the required height, and use the special key to lock it into place.

Operation of the reticule lighting

The reticule lighting system is switched on by pressing the switch on the left-hand side of the telescopic sight. A timer automatically switches the lighting off again after two minutes.

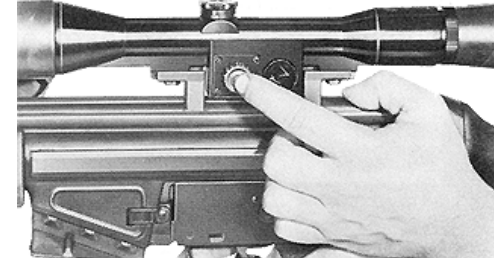


Fig. 22: Switching on the reticule lighting

Rotating the switching device can vary the lighting intensity

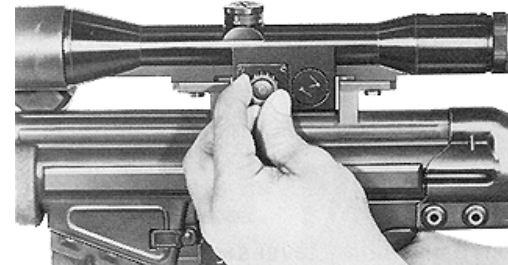


Fig. 23: Regulating the lighting intensity

Safety device features

The selective fire lever is mounted on the left-hand side of the pistol grip.

It can be turned into either of 2 positions:

“O” = Safe, “1” = Single fire.



Fig. 24: Selective fire/safety lever seen from the left

Push the filled magazine into the magazine well until the magazine catch is clearly heard to engage.

Allow the cocking lever to snap forward from the rear position.



Fig. 20: Releasing the cocking lever to snap forward

The weapon is now loaded and on safe.

Quietly loading the weapon

To quietly cock the weapon, do not allow the cocking lever to snap forwards, but slowly ease it forwards instead. To completely close the bolt press the low noise bolt closing device forwards.

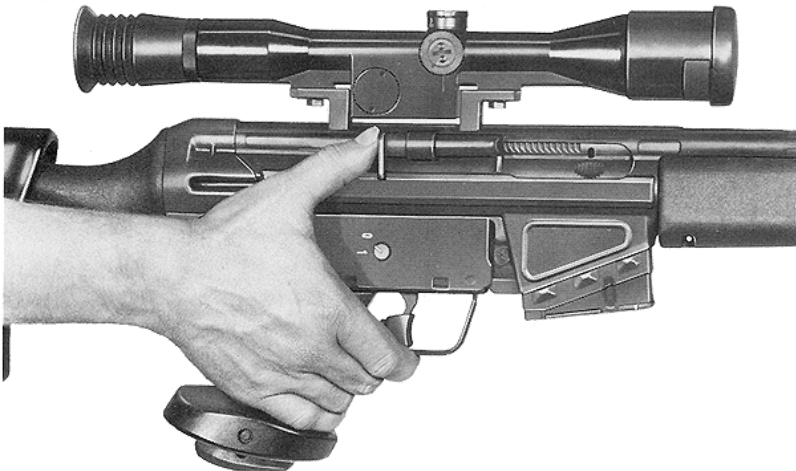


Fig. 21: Operating the low noise closing assistant

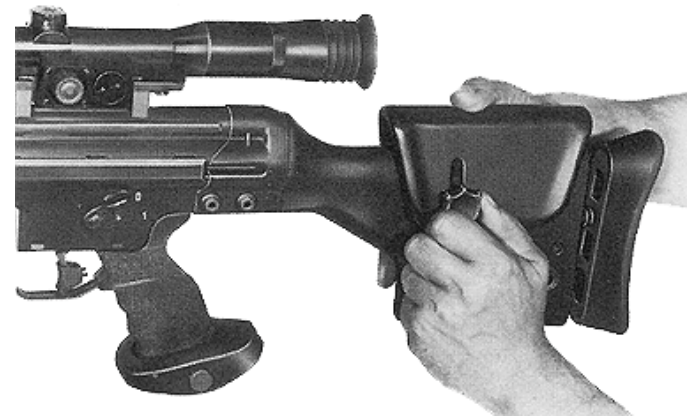


Fig. 14: Adjusting the height of the cheekpiece

Adjusting the hand rest



Fig. 15: Adjusting the hand rest

Undo the clamping screws and hold the pistol grip. Move the hand rest into the required position, and lock it again with the clamping screws.



Fig. 16: Adjusting the trigger shoe

Use a hexagonal Allen key to undo the trigger shoe. Move the shoe into the required position and lock it there by means of the Allen key

Loading the magazine

Holding the magazine with one hand use the other to feed the rounds into the opening. At the same time, with the thumb press the top round down below the lip of the magazine.



Fig. 17: Filling the magazine

Emptying the magazine

Hold the magazine with one hand, as shown, with the points of the bullets facing forwards. With a chip of wood or another round, press down on the lower of the two visible rounds; the top round will then fall out on its own.

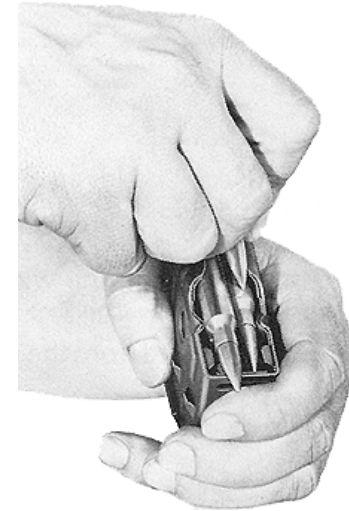


Fig. 18: Emptying the magazine

Loading the weapon

Safe the weapon!

With the left hand pull back the cocking lever, and engage it in the recess in the cocking lever housing.



Fig. 19: Pulling back the cocking lever