

4.1.2. If your unit never was in operation before, make at least ten shots with unit on your weapon prior you start adjustment procedure. This is necessary to shock adjustment mechanism for its stabilization.

4.1.3. On weapon adjustment

Unit's on weapon adjustment shall be carried out on weapon which has been checked and driven to normal operation.

a) Mount the unit on the weapon.

b) Place and fix the weapon in an aiming stand and take an aiming point via standard sight the same way as done by normal check of sight adjustment accuracy.

c) Switch on unit's emitter.

d) Move the laser spot so that it's center overlaps the aiming point by:

□ loosen stop screw 7 by 2–3 revolutions with 1,5 mm wrench;

□ place laser spot over aiming point by rotating adjusting screws «R», «UP» with a wrench;

□ tighten stop screw.

e) Check accuracy of alignment by shooting as done by normal check of sight adjustment accuracy.

Eliminate mean hit point deviation from check point by counting the deviation in steps of unit's adjustment mechanism: one click corresponds to 5 cm of spot displacement at 100 m range.

Repeat shooting check after introducing corrections.

4.1.4. Unit shall be readjusted every time after it's mount was reinstalled.

4.1.5. The readjustment is not required after putting emitter on and taking off the slide guide.

## 4.2. OPERATION

4.2.1. Take emitter with attached contact device from the carrying case and, while making sure that pressure lever is released, slide emitter over guide mounted on the weapon and tighten pressure lever. Fasten contact device on the weapon.

4.2.2. Taking aim is done by placing the emitted spot over the target. Corrections are introduced by rotating stepped adjustment screws with stop screw preliminarily released. Tighten stop screw when corrections are introduced.

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## 5. SAFETY MEASURES

Avoid even the slightest exposure of your retina to direct or reflected laser beam closer than 40 meters from the unit. Naked skin exposure to laser beam is not recommended.

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## 6. TECHNICAL SERVICING

Do not disassemble the unit.

To clear the exit aperture turn off the cap, remove dirt by soft cotton cloth, wipe optical surface with cotton wool tampon moistened in alcohol or alcohol/ether mixture, replace the cap. Use only soft and clean cloth to avoid scratching the optical surface.

If LED indicator does not light when switch is ON, change the battery by turning off battery compartment cover, removing weak battery and placing in new one observing polarity as shown on battery compartment surface.

If after putting in fresh battery the LED does not light, the unit shall be subject to repair.

Mind the status of seal ring in the thread groove when replacing batteries. Change it with new one from the unit's accessories if damaged.

Remove battery from the unit before long storage.

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## 7. TRANSPORTATION AND STORAGE

There are no particular limitations as for means and distances of transportation.

The unit can be transported either in carrying case or mounted on weapon.

The unit shall be stored in carrying case in dry heated and ventilated premise at 5–40 degr. C and relative humidity not exceeding 80%. Avoid storage of the unit in the vicinity of acids and alkalis.

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## 8. ACCEPTANCE CERTIFICATE

Target Pointer TSL-10, manufacture No. \_\_\_\_\_, is found to comply with the technical documentation and accepted for operation.

D o M \_\_\_\_\_  
Quality Inspector \_\_\_\_\_



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## TARGET POINTER TSL-10

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### Operating Instructions

These Instructions contain general description of design operation principles of Target Pointer TSL-10 (herein «unit»).

The unit is an optical-mechanical device projecting beam into a spot on the target and intended for operation in night darkness in combination with night vision goggles. The unit can be operated within ambient temperature range from -40 to +40 degr. C.

The source of lased light beam is a laser diode producing 1,0 mW 850 nm emission, which is potentially dangerous to human eyesight. The danger level of the unit is Class II according to IEC 825 Standards, 1st Edition of 1984 Amendment 1 of 1990 (exposure time < 0,25 sec).

**DANGER!** INVISIBLE LASER EMISSION!  
DO NOT LOOK INTO LASER BEAM!

In order to keep unit functional at all times abide by the following principles:

- Do not disassemble the unit.
- Always check that the unit's parts are reliably fixed on the weapon.
- Do not rotate adjusting screws when stop screw is blocked.
- Do not leave the unit in ON mode when this is not necessary.
- Use only cotton wool tampon or clean cotton cloth for removing dust and dirt from the exit aperture of emitter.
- Protect contact cable from damage.
- When replacing battery make sure that battery compartment seal ring is not damaged.
- Remove battery from the unit before long storage.

## 1. TECHNICAL DATA

Emitted wavelength .....	850 nm
Output power .....	0.6-0.9 mW
Range of operation .....	Max 400 m
Beam divergence .....	0.4 mrad
Spot size /distance .....	25 mm /50 m; 50 mm /100 m
Span of elevation and horizon adjustment ..	30 arc min
Step of adjustment .....	50 mm /100 m
Adjustment accuracy during 100 shots .....	0.1 mrad
Adjustment accuracy after 100 dismounts / installations on mount guide .....	0.25 mrad
Battery .....	1x3V type CR 123A
Continuous operation without battery change .....	Min 10 hours
Weapon matching diameter .....	Ø 15 mm
Dimensions .....	128x43,5x48 mm
Weight .....	0,3 kg

## 2. SCOPE OF DELIVERY

1. Target pointer ... 1 pc	5. Wrench (3 mm) ..... 1 pc
2. Battery ..... 1 pc	6. Wrench (1,5 mm) .... 1 pc
3. Seal ring ..... 2 pcs	7. Operating Instructions 1 pc
4. Clasp-band ..... 1 pc	8. Case ..... 1 pc

## 3. DESIGN AND OPERATION

The unit consist of emitter, contact device and mount.

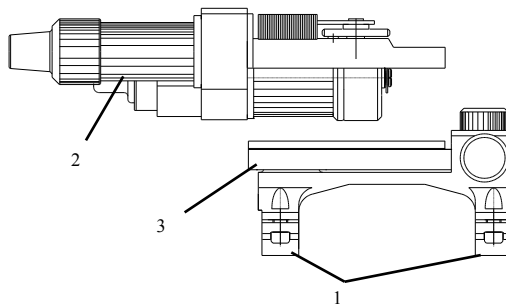
Mount 3 (Fig. 1) which is intended for mounting the unit on weapon barrel, has a dovetail guide for mounting emitter 2, adjusting mechanism and collapsible clamps 1 for fixing the mount on the mounting profile of weapon.

Stop screw 7 (Fig. 2) stops adjusting mechanism in chosen position. Stop screw shall be released before adjustment is made and tightened after its completion.

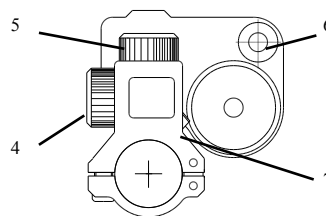
Elevation and horizon adjustment mechanisms are covered by protective caps.

Elevation adjustment is made by screw 5 marked «UP», and side adjustments are made by screw 4 marked «R». By turning the screws in the arrow-mark direction the spot is moved respectively upward and to the right; by turning the screws against arrow-mark – respectively downward and to the left.

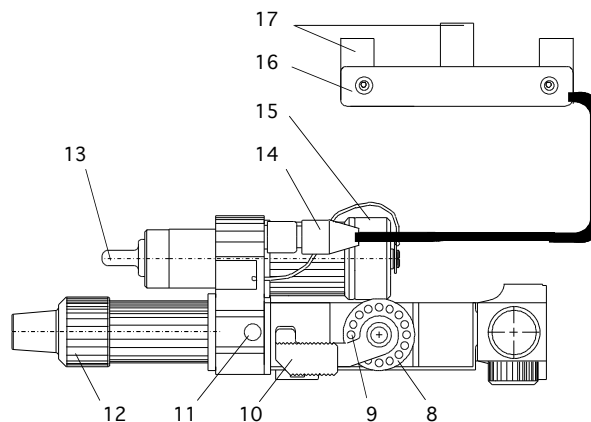
The source of lased light – a semi-conductor laser diode – is arranged in the emitter's body. Emission goes out through exit aperture of cap 12 (Fig. 3) which covers adjustment screws for adjustment at manufacturer's.



**Fig. 1.** Unit (contact device is not shown):  
1 – clamps; 2 – emitter; 3 – mount



**Fig. 2.** Unit (without contact device, view from behind):  
4, 5 – adjustment mechanisms; 6 – jack; 7 – screw



**Fig. 3.** Unit (view from above):  
8 – sleeve; 9 – lock; 10 – lever; 11 – LED; 12 – cap;  
13 – switch; 14 – union nut; 15 – battery compartment cover;  
16 – contact device; 17 – hooks  
Tightening lever 10 is intended for securing emitter on the mount's guide. When tightened the lever is fixed on emitter

body, when released it is turned counterclockwise against stop.

Lever 10 pressure is adjustable by way rotating sleeve 8 setting it into fixed positions, when the lever is released lock 9 is sunk. Pressure grows when the sleeve is rotated counterclockwise. Lock 9 holds sleeve in chosen position. Contact device 16 consists of a key, hooks 17 for fixing key to weapon's foregrip, connectorized cable and union nut 14 for connecting contact device to emitter.

Laser emitter is activated by setting switch 13 in position «ON» (red LED 11 is on when emitter is in operation), depressing contact device key (switch 13 is in position «OFF», LED is off).

Battery is inserted into battery compartment closed by cover 15.

Sealing rings seal battery compartment.

3 mm wrench is for fixing mount to weapon barrel.

1,5 mm wrench is for stop screw loosening /tightening adjustment is made.

Clasp-band is intended for fastening contact device to weapon.

## 4. OPERATION

### 4.1. PREPARATION TO WORK

#### 4.1.1. Mounting on weapon

a) Attach mount to weapon barrel and secure it by tightening screws with 3 mm wrench so that mount guide take horizontal position.

b) Connect contact device to jack 6 on emitter (Fig. 2) tighten union nut.

c) In order to install emitter on mount guide carry out following sequence:

- loosen (turn counterclockwise to extreme) pressure lever 10;
- slide emitter completely on mount guide;
- fasten emitter securely to mount guide by turning pressure lever clockwise until it is fixed on jut of emitter body.

If clamping pressure is not strong enough to hold emitter securely on the mount, adjust the pressure by way of:

- releasing pressure lever;
- sink lock and move sleeve 8 in such fixing position which provides secure emitter mounting on mount guide;
- tighten pressure lever.

d) Attach contact device to rifle foregrip using hooks in the place where pressing the key is convenient.

e) Fasten connecting cable to weapon, if necessary, with use of clasp-band included in unit's accessories.