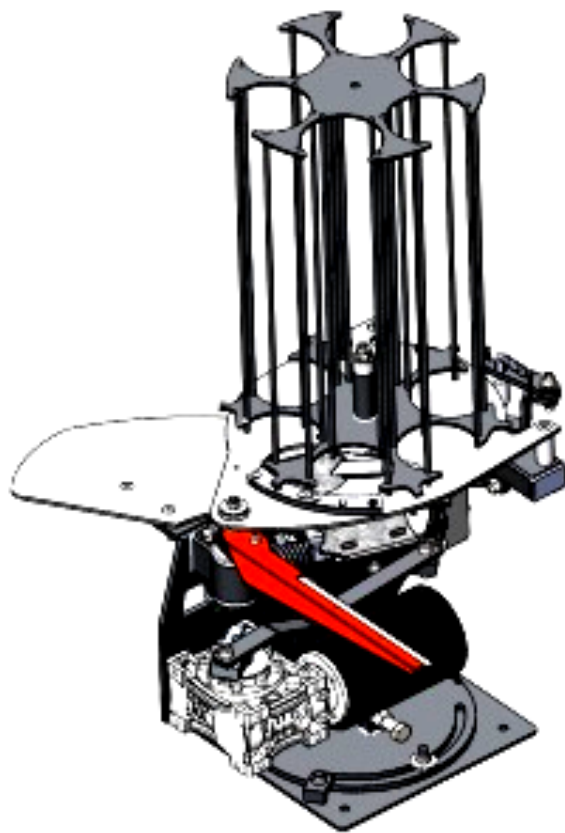
 **Lekker - sporting.ru**

**OPERATION MANUAL FALCON THROWING  
MACHINE FOR BENCH SHOOTING.**



**Ceramic plate launching machines are complex and dangerous equipment; They must be handled with extreme care to avoid accidents.**

**Care must be taken not to get in the path of the machine's mechanical parts while the machine is in motion or may be in motion.**

**A skeet launcher requires as much care as a loaded gun.**

**At all times, treat the cymbal launcher as if its mechanism is cocked and the cymbal cartridge is loaded.**



**This document must be read in its entirety before operating the machine.**

# **1. INTRODUCTION**

## **1.1 Purpose and composition of the operating instructions**

1.1.1 This Throwing Machine Operator's Manual is a document that contains all the information about the design features, components, methods of operation, possible malfunctions and methods of their elimination, as well as safety requirements when using the product.

Every effort has been made to ensure that the information presented here is complete and accurate and up-to-date.

state of affairs. The Company is not responsible for errors outside of its control.

**NOTE!** Due to the fact that the company is constantly working on improving the design of throwing machines, minor design changes not reflected in this document are possible.

1.1.2 The Throwing Machine Operator's Manual includes the following sections:

- description and operation;
- intended use;
- maintenance;
- routine maintenance;
- storage;
- transportation.

## **1.2 Required level of specialized training of operating personnel**

1.2.1 A throwing machine is a complex and dangerous piece of equipment.

1.2.2 A skeet launching machine requires the same careful handling as a loaded gun.

1.2.3 Unauthorized persons and untrained personnel must not approach or touch the machine.

Before starting work, operating personnel must familiarize themselves with this manual, as well as be instructed and checked for knowledge of occupational safety rules when working with throwing machines by a qualified specialist of the manufacturer's organization.

1.2.4 The throwing machine may be operated and serviced by persons at least 18 years of age, who have fully understood this manual and have been trained by a specialist a qualified technician, as well as persons already experienced in working with similar throwing machines.

1.2.5 THE MANUFACTURER AND SELLER SHALL NOT BE LIABLE FOR ANY LIABILITY FOR DAMAGE AND (OR) INJURY RESULTING FROM THE CORRECT OR INCORRECT USE OF THIS PRODUCT BY PERSONS WHO HAVE NOT BEEN TRAINED BY A SPECIALIST OF THE MANUFACTURER'S ORGANIZATION.



**Caution: This section contains instructions which, if not followed or followed correctly, may result in personal injury to the operator of the machine.**



**Warning: This section contains instructions which, if ignored or not followed correctly, may result in malfunction or damage to the machine.**

## 2.1 Machine purpose

The Sokol throwing machine is designed for launching standard 110 mm Standard type skeet targets for bench shooting.

### 2.1.1 Machine designation

"WITH XXXX."

### 2.1.2 Machine appearance

The appearance of the throwing machine is shown in Figure 1.



Figure 1: Falcon throwing machine

### 2.1.3 Scope of application

The throwing machine is designed to equip professional sports stands.

The throwing machine can also be used in hunting farms, shooting clubs and by private persons who are qualified to handle similar products.

The product offered is designed for many years of trouble-free operation, provided that the requirements of this manual are followed.

## 2.2 Technical specifications

### 2.2.1 Technical data

The cassette type is a 6-stack cassette;

Number of targets - 300 pcs (160 pcs when using the reduced cassette); Type of targets - Standard 110 mm;

Power supply - 12 volts; Motor power - 350 watts;

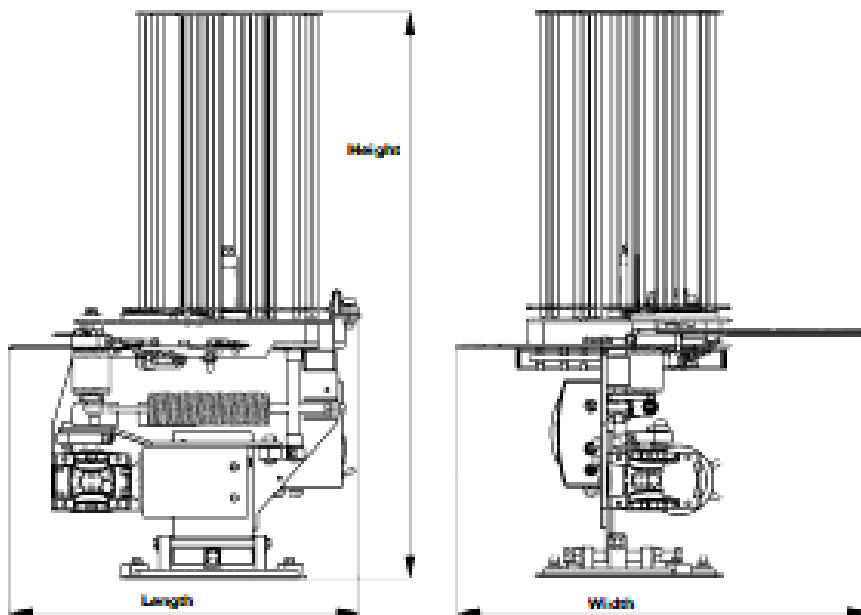
Adjustable angles of inclination of the machine vertically - from  $0^{\circ}$  to  $50^{\circ}$ ;

Adjustable angles of inclination of the machine horizontally - from  $-30^{\circ}$  to  $+30^{\circ}$

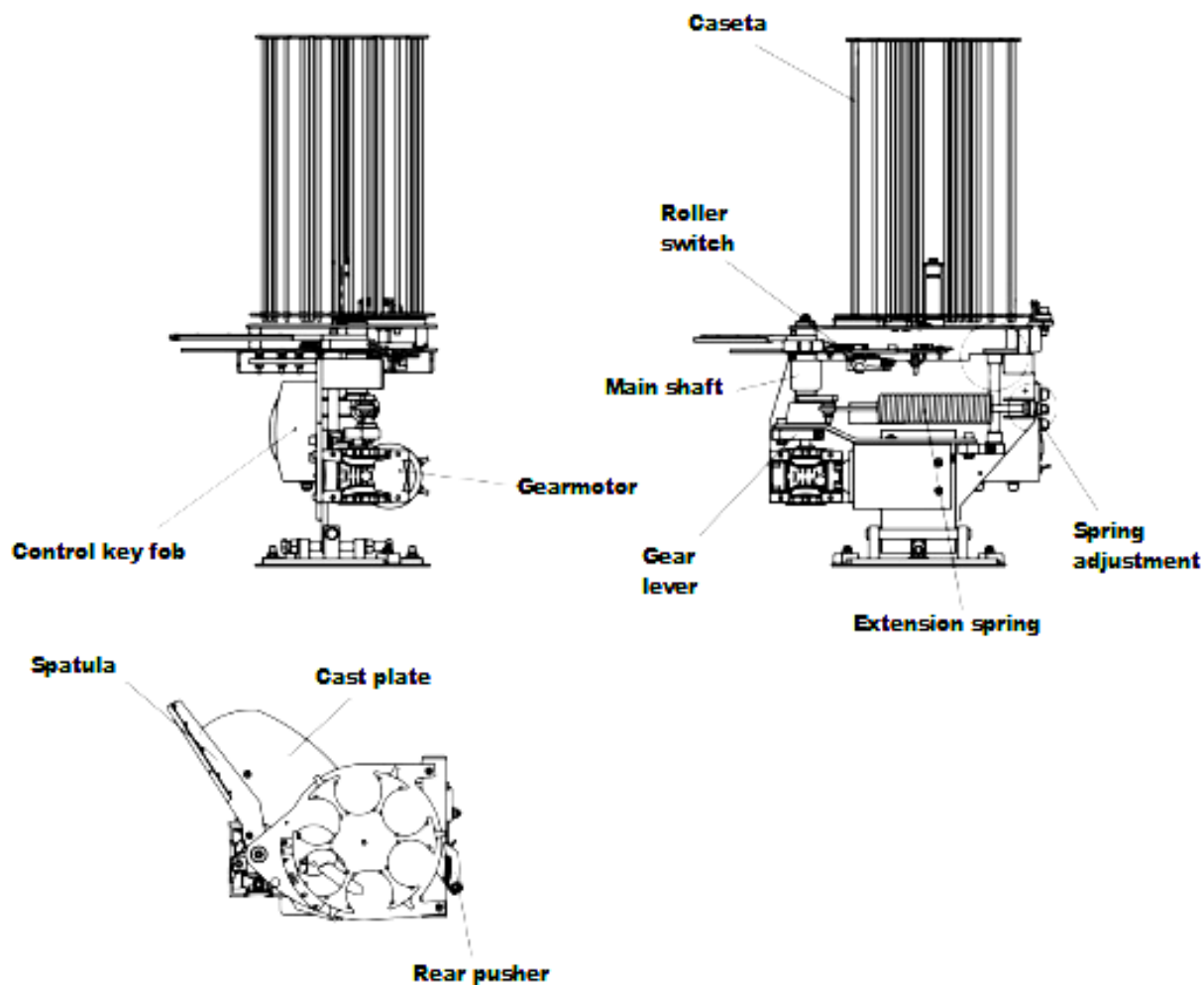
Weight - 70 kg;

Length - 640mm (940mm including blade area); Width - 510mm (800mm including blade area) ;

Height - 1130 mm (790 mm when using the reduced cassette); Warranty - 1 year.



## 2.2.2 Location of components of the SOKOL throwing machine



## 2.2.3 Product composition


Throwing machine, pcs. - 1; Control

cable, m - 3;

Operation manual, pcs. - 1.


### 3. INTENDED USE

#### 3.1 Operational limitations



**12 VDC power supply:**  
This product is designed to operate from a 12 VDC power supply.  
**IT IS STRICTLY PROHIBITED TO CONNECT IT DIRECTLY TO AC POWER.**

**Battery:** In the event that power is supplied to the unit from another suitable source, such as a transformer, it is still necessary to follow the requirements of the relevant sections of the "Instructions", such as "Disconnect the battery", only referring to the power source used.



3.2.1 The ceramic plate launcher is installed on firm, level ground in such a way that there is no restricted access to the rear of the machine.




**MAKE SURE THAT THE TARGET IS THROWN INTO A SAFE AREA.**


3.2.2 Make sure that nothing obstructs quick access to the battery terminals and that power to the machine can be supplied easily terminated.

3.2.3 Secure the machine on a solid base (pallet, wooden or concrete base, special cart). Before operating the machine, make sure that the machine is stable on firm, level ground.

#### 3.3 Preparing for operation



**PERSONAL EYE PROTECTION MUST BE WORN AT ALL TIMES WHEN WORKING WITH OR NEAR THE CERAMIC PLATE LAUNCHER, BECAUSE EVEN DURING NORMAL OPERATION SMALL PIECES OF CERAMIC CAN ALWAYS BREAK OFF AND BOUNCE AROUND.**



3.3.1 This operating manual must be read before starting work.

3.3.2 Inspect the machine, make sure that it is free of mechanical damage.

3.3.3 Before connecting the battery to the machine, check the operation of the ON/OFF/RESET toggle switch to make sure the switch is in the middle "OFF" position.(see Figure 2).

3.3.4 Uncoil the power cable and control cable located at the rear of the machine and place them on the ground. The control cable should not be connected to the plug connection at this stage.

3.3.5 Connect the battery (we recommend using AGM or traction boat batteries for stable operation of the machine) so that the red connector is connected to the positive battery terminal (+) and the blue connector was connected to the negative battery terminal (-).

3.3.6 Open the control box cover (see Figure 2). Turn the fuse circuit breaker to the UP ("ON") position.

3.3.7 The machine must be operated from the rear of the machine.



**Do not approach the machine from the front or side. The machine is never completely safe, even if it is de-energized, because its mechanism may be triggered.**

3.3.8 From the rear of the machine, move the toggle switch "Turn the "ON/OFF/RESET" switch to the lower "ON" position for about half a second and release it. The motor should turn a few degrees.

3.3.9 Set the toggle switch to the upper "ON" position.

The machine performs a cycle and stops in the charged position.

**EXTREME CAUTION MUST BE EXERCISED WHEN THE MACHINE IS IN THE CHARGED POSITION!**

See Figure 3.

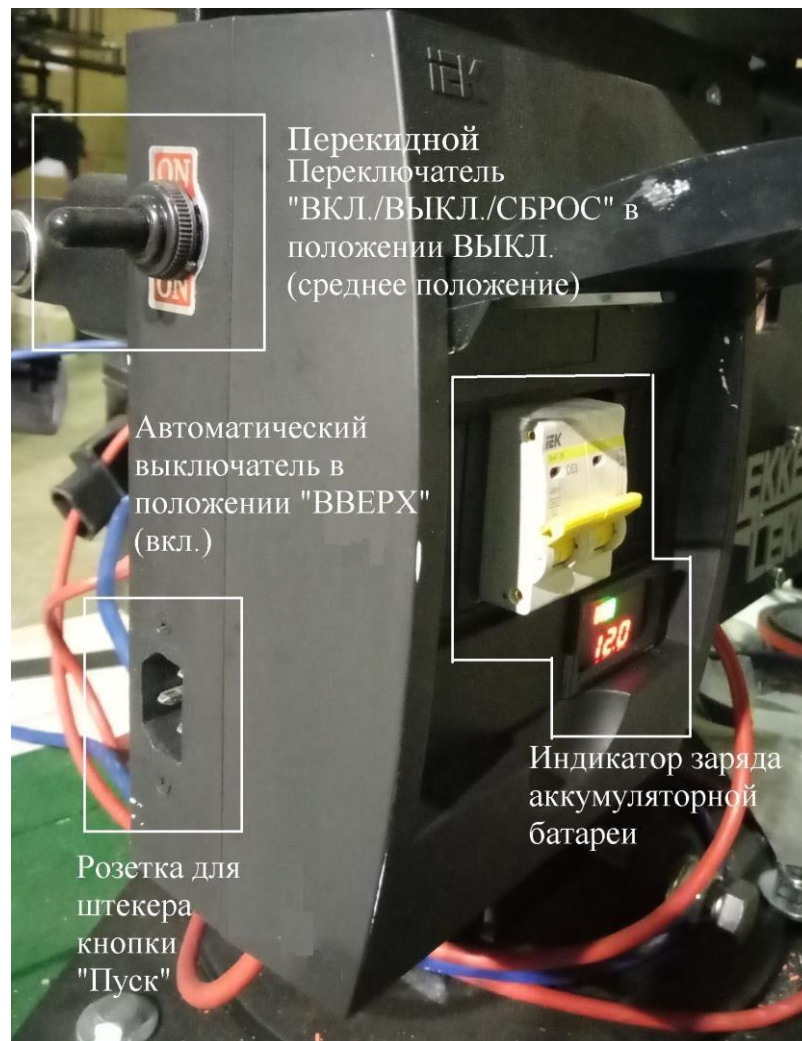


Figure 2: Location of switches

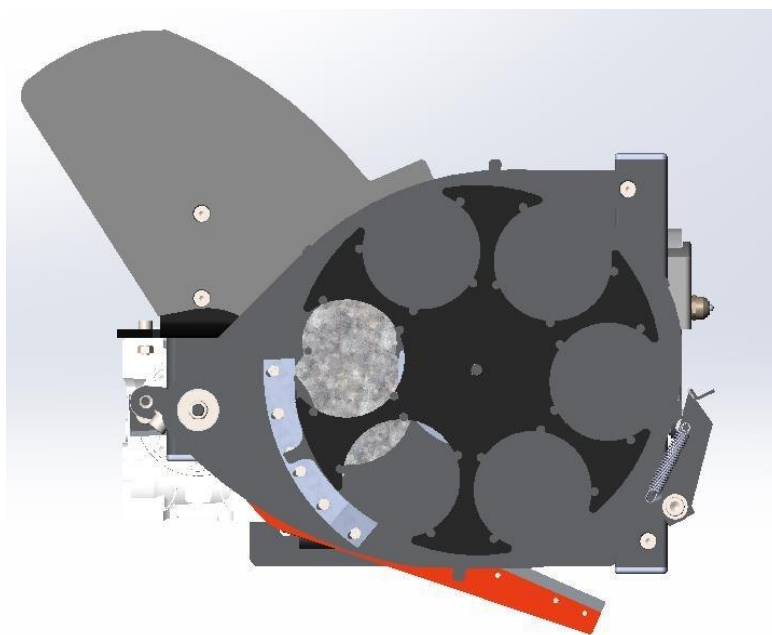


Figure 3: Charged position



3.3.10 Set the ON/OFF/RESET toggle switch to the lower "ON" position for about half a second and then release it so that it can return to the middle "OFF" position. The pusher will fire, but will not re-cock.

The machine is now in the discharged or SAFE state. See figure 4.

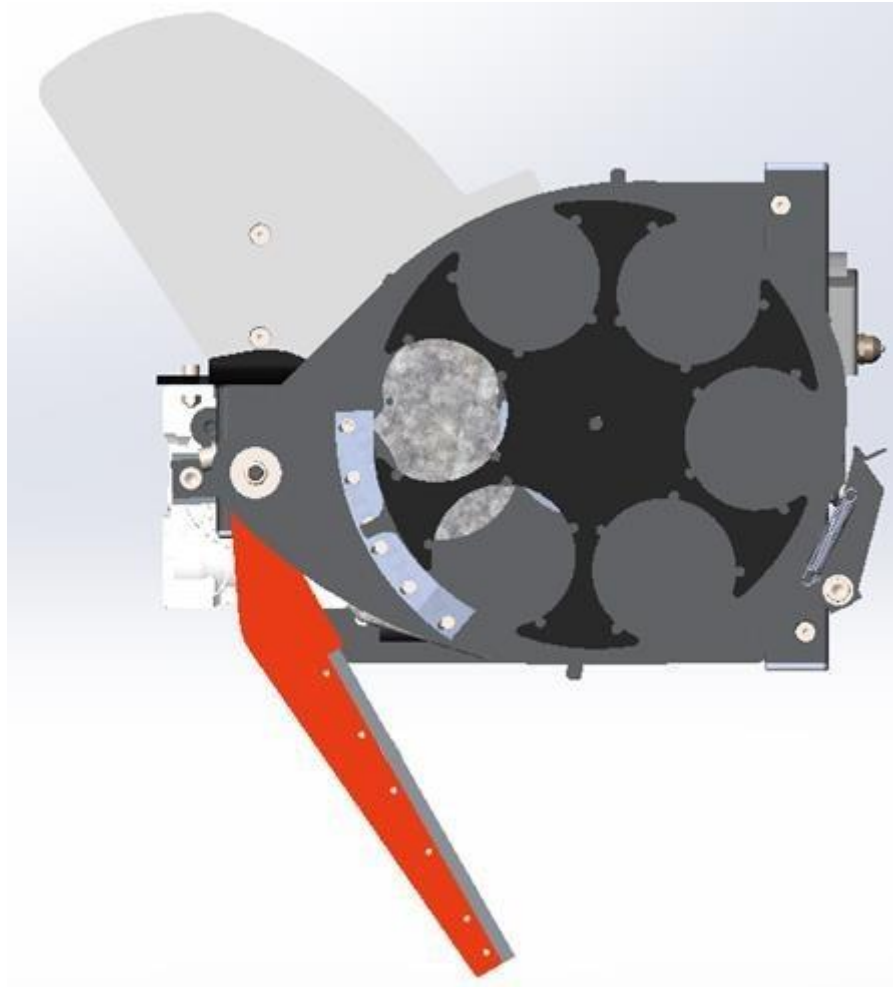


Figure 4: Discharged (safe) state

3.3.12 To eliminate the risk of accidental re-arming, it is recommended to disconnect the machine from the power supply.

#### 4. MACHINE UTILIZATION

4.1 Fill the cassette. Loading is performed with Standard type targets. It is recommended to initially load several (3-4) targets into each column. The targets are placed with the colored side up.



**Don't forget to reconnect the power supply after loading targets! This is often forgotten in a hurry when recharging the machine during shooting.**

4.2 Set the toggle switch to the upper "ON" position. The machine loads the target, is placed in the cocked state and is now ready to fire.

4.3 To check the direction of flight of the target, fire a shot by turning the "ON/OFF/RESET" toggle switch to the lower "ON" position, the machine will fire ONE shot, the machine is now in a safe (discharged) condition.

4.4 Fill the cassette completely with targets by repeating step 4.1.

4.5 Insert the plug of the start button cable into the control unit of the throwing machine. (see figure 2)

4.6 You can connect the control cable or a radio trigger control device to the control cable on the dispatcher's console.

4.7 The machine fires and then re-arms whenever the firing button on the control cable or remote control device (remote control, foot pedal) is pressed.

## 5. SHUTDOWN SEQUENCE

5.1 After use, the machine must be left in a discharged/safe condition (see point 6.1), the electrical supply must be disconnected.

## 6. CHARACTERIZATION OF OPERATING MODES AND PROCEDURE FOR TRANSFERRING THE MACHINE FROM ONE OPERATING MODE TO ANOTHER

6.1

### **SAFEGUARDING WARNING: ALWAYS STAY BEHIND THE UNIT.**

➤ Switch mechanism B un unloaded in the unloaded state, by moving flip the "ON/OFF/RESET" switch to the lower "ON" position (not cocked) and immediately release it so that the toggle switch moves to the center position.

"OFF";

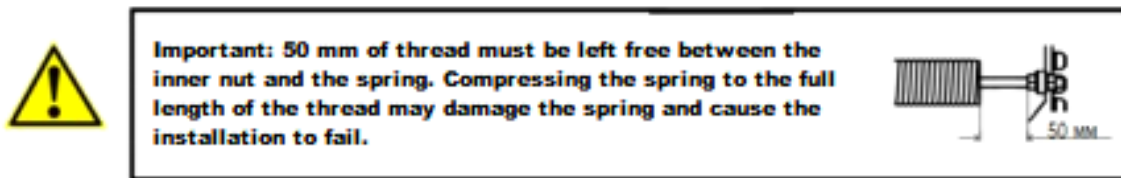
- Turn the circuit breaker to the "OFF" position on the throwing machine control unit;
- Disconnect the machine from the power source by removing the battery terminals.

6.2 **Loading or adjusting the machine may only be carried out if the machine is in a discharged/safe condition.**(see paragraph 6.1).

6.3 Increasing or decreasing the range of the target is achieved by increasing or decreasing the spring tension. For the location of the spring adjustment, see par. 2.2.2.

**Reducing the spring tension:** loosen the spring to the required degree using the outer nut. Screw the inner nut to the rear of the frame and tighten both nuts.

**Increase spring tension:** loosen by turning the outer nut once; adjust the inner nut so that the spring chamber moves backwards. Use the outer nut to tighten the spring to the required degree. Screw the inner nut to the rear of the frame and tighten both nuts.



6.4 If you want the target to be deflected to the left or right side relative to the center line, this can be done by tilting the entire machine sideways.

### **Adjusting the angle of machine deflection**

The machine can be tilted either to the right or to the left. Loosen the tilt angle adjustment bolts and nuts as shown in Figure 5. Next hold the machine in place, tighten / loosen the bolts on the right/left side, tilting the machine to the desired angle. After setting the desired angle, tighten the bolts and adjustment nuts.

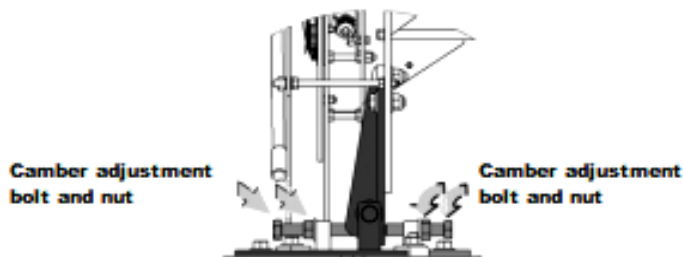


Figure 5. Adjusting the deflection angle

Figure 5. Adjusting the deflection angle

6.5 If you want to increase/decrease the angle of departure of the target, change the angle of the machine.

### Adjusting the machine tilt angle

To adjust, loosen the bolt (see figure 6). Hold the machine and set the machine to the desired tilt angle (0 to 50 degrees). Tighten the adjustment bolt.

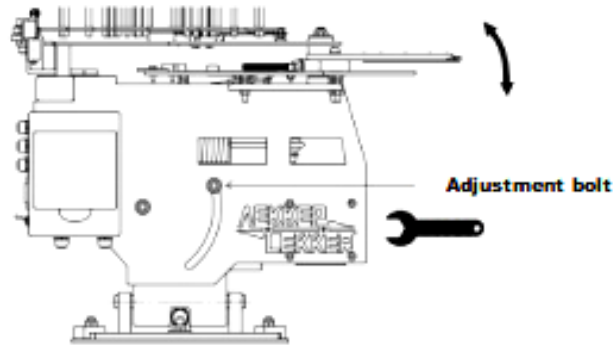


Figure 6. Adjusting the tilt angle

Figure 6. Adjusting the tilt angle

## 7. LIST OF POSSIBLE MALFUNCTIONS AND RECOMMENDATIONS FOR THEIR ELIMINATION

**All repair and maintenance work shall be carried out when the machine is in the safe (discharged) condition. (see point 6.1)**



**CAUTION: USE EXTREME CAUTION AND MAKE SURE THAT NO PARTS OF THE BODY COME INTO CONTACT WITH THE MOVING AREA OF THE MECHANICAL PARTS OF THE MACHINE.**

### 7.1 Troubleshooting:

#### 7.2

**7.1.1. Failure to restart the unit:** the pusher does not return to its original position. The following steps should be performed:

- translate toggle toggle switch B middle middle position "OFF";
- disconnect the power cable from the battery;
- make sure that there are no foreign objects (fragments of the target plate) in the path of the pusher movement;
- replace the battery pack with a fully charged one;

- move the switch to the upper "ON" position;

- the rig is going to go off;
- if the fault is not eliminated, carry out the first two steps in section 7.1.1 and contact a specialist.

### **7.1.2 Spontaneous gunfire:**

- set the circuit breaker to the DOWN (OFF) position;
  - disconnect the cable of the "Start" button from the control unit of the throwing machine;
  - switch the unit back on by turning the toggle switch to the upper "ON" position;
  - If the unit cranks normally, the control cable is defective - replace it.
  - If the unit continues to fire spontaneous shots, turn it off, to do so:
    - translate circuit breaker circuit breaker B middle middle position
- "OFF";
- disconnect the power cable from the battery;
  - contact a service technician.

### **7.1.3 Firing shots without stopping is automatic firing:**

- set the circuit breaker to the DOWN (OFF) position;
  - disconnect the cable of the "Start" button from the control unit of the throwing machine;
  - check the position of the roller switch, if it has moved - return it to the previous position and lock it;
  - switch the unit back on by turning the toggle switch to the upper "ON" position;
  - If the unit continues to fire spontaneous shots, turn it off, to do so:
    - translate circuit breaker circuit breaker B middle middle position
- "OFF";
- disconnect the power cable from the battery;
  - If the machine is under warranty - contact a service technician, if the warranty has expired - open the control unit (unscrew 2-4 screws);

- replace the five-pin 70A relay, put the control box cover back on and start the machine.

#### 7.1.4 The pusher is jammed:



Handle the machine with care as the pusher can move at any time. When performing any work on the machine, stay in a safe area at the rear of the machine and make sure that no part of the body is in the path of the pusher.

move the switch to the middle "OFF" position;

- disconnect the power cable from the battery;
- loosen the spring (see point 6.3).
- remove any foreign objects obstructing the movement of the trap.

#### 7.1.5 The car is smashing the targets

• Check that the targets in the cassette are intact, free of cracks and chips. If the target is defective, it must be removed and replaced with a whole one.

If no target defects are detected, perform the following steps:

- With the machine in the "OFF" state, manually rotate the cassette and inspect each target that falls into the throwing chute. Make sure there are no cracks or chips in the target.
  - If the target is cracked or chipped, perform the following steps:
    - remove the targets from the cassette;
    - check on several targets that the target can pass freely under the inner and outer cutting edges of the knife (see figure 7) and is not destroyed by the carousel plate.

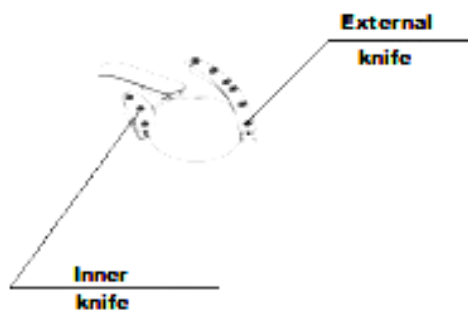


Figure 7. Diagram of knives

-make sure that the knife cutting edges are not too high, otherwise they will cut the bottom of the next target. If the cutting edges of the knives are destroying the bottom of the next target - adjust both knife cutting edges accordingly by following the steps below:

**Place one ceramic target plate on the top plate of the machine and slide it halfway under the blades of the two knives.**

**Use a 10mm wrench to adjust the height of the inner and outer blades of each blade. It is necessary that the gap between the lower surfaces of the blades and the horizontal surface of the plate is at least 0.5 mm.**

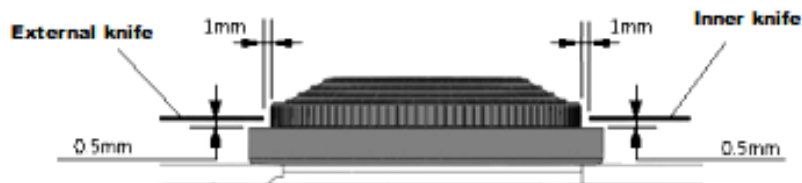
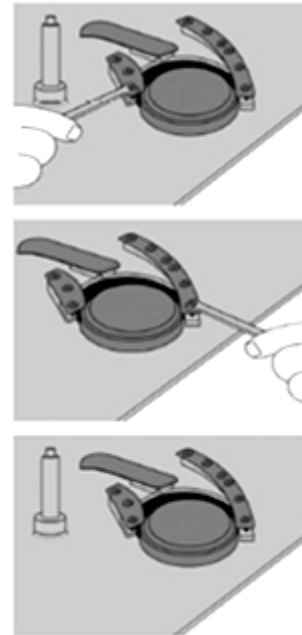


Figure 8. Plate and blade clearance



**When using targets from different manufacturers, it becomes necessary to adjust the knives. We recommend using targets from the same manufacturer.**

Figure 8. Plate and blade clearance

- Replace the cassette and place one target in each column of the cassette. Rotate the cassette by hand so that each target passes through the target feed opening on the ejection plate. When passing targets over the blade edges, make sure that nothing obstructs the targets from passing over the blade edges



knives. If the targets do not pass evenly through the knives or get stuck, the cassette may be damaged. To test this, take several targets and pass them up and down through each of the eight pockets of the cassette.

- If the malfunction persists, contact a service technician.

#### **7.1.6 Unusual noise**

- Check that all bolts are well tightened. In case of:
  - spring is not sufficiently tensioned and its coils are touching each other - tension the spring (see point 6.3).
  - the tappet is not attached to the lever - tighten the nut securing the tappet to the motor shaft.
  - the shaft bearing is damaged or has failed - have the bearing replaced by a specialist.

#### **7.1.7 The plates won't come out of the cassette.**

- The cassette rods are damaged or bent and prevent the plates from moving vertically - contact a service technician.
- The cassette base is damaged - contact a service technician.

## **8. MAINTENANCE SERVICE**

### 8.1 General Guidelines.

#### 8.1.1 Types, scope and frequency of maintenance

The main purpose of maintenance is to detect and prevent malfunctions by performing timely work to ensure product operability.

Maintenance of the machine during the warranty and post-warranty period is a prerequisite for its safe operation and efficient use for its intended purpose.

The list and frequency of scheduled maintenance, equipment and materials required for this purpose are shown in Table 1.

In case of violation of the requirements for scheduled maintenance or lack thereof, the manufacturer declines the warranty obligations

### 8.1.2 Requirements for the composition and qualifications of service personnel

The machine may only be operated by persons who have fully understood this manual and have been trained by a qualified specialist from the manufacturer's organization or by specialists from the manufacturer's organization.

## 8.2 Safety measures

Before carrying out maintenance work, the throwing machine must be set in the unarmed/safe state (see point 6.1) and disconnected from the power supply.

## 8.3 Product maintenance procedure

Table 1. Scheduled maintenance procedure

<b>Content</b>	<b>works</b>	<b>Periodicity</b>	<b>Performer</b>
<b>work</b>	<b>maintenance</b>		
Replacing the power supply		As required	Consumer specialists
Check of the main elements	tightening bolts moving	Once a week	Consumer specialists
Checking the battery connection terminals		Once a month	Consumer Specialists
Checking/replacing	lubricants	Once a month	Consumer Specialists
Replacement of the tappet rubber lining	replacement of the	As it wears out	Consumer Specialists

## **9. STORAGE**

The product should be stored in the warehouses of the supplier and the customer in the absence of acid, alkaline and other aggressive impurities in the air at ambient air temperature from - 30°C to + 50°C at the limit value of relative humidity up to 95%.

In case of long-term storage, it is advisable to remove the spring tension to prevent the spring from being pulled out prematurely. For more details see paragraph 6.3.

## **10. TRANSPORTATION**

During transportation the throwing machine must be in unloaded condition. For more details see point 6.3.

The throwing machine can be transported in closed vehicles (in covered wagons, closed cars, containers) at ambient temperature from - 30°C to +50°C and upper relative humidity up to 95% at temperature +25°C.