



# Brage 60 (SP60) Manual

Rel.1.2-ru-2004

## SAFETY INSTRUCTIONS for SP 60

Before connecting the machine to the battery read the operating instructions carefully.

Clay target launchers can be dangerous and must be treated with great care at all times to avoid accidents. You must treat a clay target launcher with the same respect as you would treat a loaded gun.

Never place any bodily part into the path of any mechanical piece whilst the machine is in motion or likely to be so.

**SAFETY FENCING AND GUARDS SHALL ALWAYS BE ERECTED AROUND THE MACHINE WHEN IN USE.**

Assume at all times that a clay target launcher is cocked and treat it accordingly.

Never approach the machine from the front or sides. Approach only from behind.

Always disconnect the power before carrying out adjustments.

Reloading with clays should be carried out from behind the machine.

Ensure that the machine is stable and cannot fall over.

Ensure that the machine is sited in a way that will prevent people from being struck by either the clay in flight, or broken bits of clay being ejected sideways from the machine.

Never allow members of public or unauthorized personnel to approach the machine.

Be aware of the fall zone of broken and unbroken clays and that changes in wind will affect this. This is particularly important with high elevations.

Never place yourself or any bodily parts into the path of the throwing arm or the clay when the machine is operating.

## HAZARDOUS CONDITIONS

In the rare event of the throwing arm is blocked or jammed by a piece of clay, or in the event of immovable blockage, switch over to 0-position and disconnect the power.

If the arm is *before* launching position it will slowly return to the front position.

If the arm is *at* launching position, rinse away the debris, then push it slightly counterclockwise and it will rapidly return to the front position. Keep away fingers when the arm is returning to the front.

When obstacles are removed and the problem is solved, connect the power again.

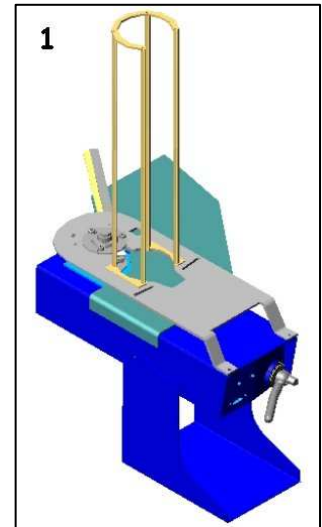
## INSTALLATION INSTRUCTIONS

1. Mount the machine on a wooden plate or similar and site it in a way that allows free and unimpeded access all around, paying particular attention to the ease of reloading.
2. Ensure that there are no obstructions to the path of the arm and that the machine cannot change its position due to vibration or reaction.
3. Ensure that the power supply can be easily disconnected.
4. Ensure that cables are laid in such way that they cannot become entangled with the mechanism.
5. Ensure that access is only available to the machine by authorized personnel.

Inside the chassis there is an in line fuse holder with a **15A** flat fuse. This fuse may blow either due to overload of the main motor or too low voltage in the battery. Check the reason for the overload and/or battery condition. Replace fuse after taking action.

## ASSEMBLING MAGAZINE

Assemble the magazine stands with the pegs downwards in the slots on the top plate with two M6 wing nuts. Complete them with the horseshoe like plate



underneath the top of the stands by fastening it with two M6 bolts (if applicable). The opening in the plate has to be towards the rear side (picture).

## BEFORE SHOOTING

- 1 Turn the throwing arm counterclockwise to a position somewhat like on pic 1. Check that the yellow rubber bushing is in its position on the screw on the rear of the machine. Put on the washer and screw on the handle.
- 2 Coarsely adjust the spring by turning the handle until the throwing arm turns to its forward position. Now the handle turns a little heavier so you turn one or two additional times for proper tension.

*In this basic adjustment the clays will be thrown for about 40 to 50 meters. The distance can be increased to a maximum of 80 meters by tensioning the spring. **But not more than additional 30 mm, otherwise the spring will exceed its maximum tension.***

*Further fine adjustments have to be made by measuring the throwing distance.*

- 3 Mount and fully load the magazine.
- 4 Connect the cable for the release mechanism.
- 5 Check that the battery is fully charged and connect it.
- 6 Check that the area in front of the machine is clear and switch on the power.
- 5 The machine is now ready for use.

## WHEN SHOOTING IS COMPLETED

- 1 Release the last pigeon by tilting the switch upwards. This way the pigeon is released and the throwing arm stays in the forward position.
- 2 **Disconnect the battery.**
- 3 Since the arm has stopped in the forward position it is sensible for damage.

## BEFORE TRANSPORT

- 1 Release the tension of the spring completely by turning the handle.
- 2 Turn the throwing arm into the transport position inside the machine.
- 3 Dismantle the magazine to avoid damage.
- 4 Recharge battery if necessary.

## CLAYS INCONSISTENT IN DIRECTION

If the clays are inconsistent in their direction due to wind or other conditions it could be appropriate to tilt the machine some few degrees to either side.

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## CONTROL OF THROWING ARM

The throwing arm is factory adjusted for satisfying operation. Due to foreign influence the arm could come out of position. Problems will occur if the arm is bent and it should be replaced.

### Replacing the throwing arm.

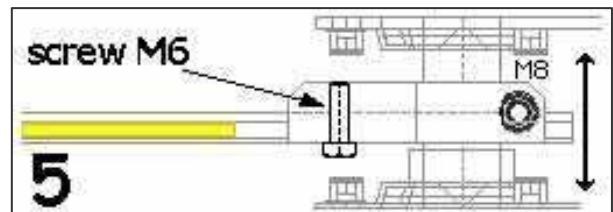
Release the last pigeon by tilting the switch up to 'Mom' position. The arm stays in its forward position.

### Disconnect the battery.

The throwing arm is mounted to the holder with one M6 bolt. Release the spring tension completely to turn the arm to a suitable position.

Release the bolt, change the arm and tighten the bolt again (pic 5).

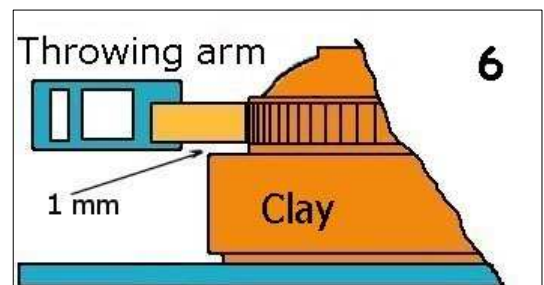
Normally the arm can be changed without adjusting the holder.



### Checking the correct height of the arm.

The distance between arm rubber and the first rim of the clay should be about 1 mm (pic 6).

To adjust the height of the arm, slacken the Allen screw (M8 pic 5) with a 6 mm Allen key (½ - 1 turn). Use a big screwdriver or a crowbar to pry the holder up or down (pic 5). Lock the screw properly for safe function.



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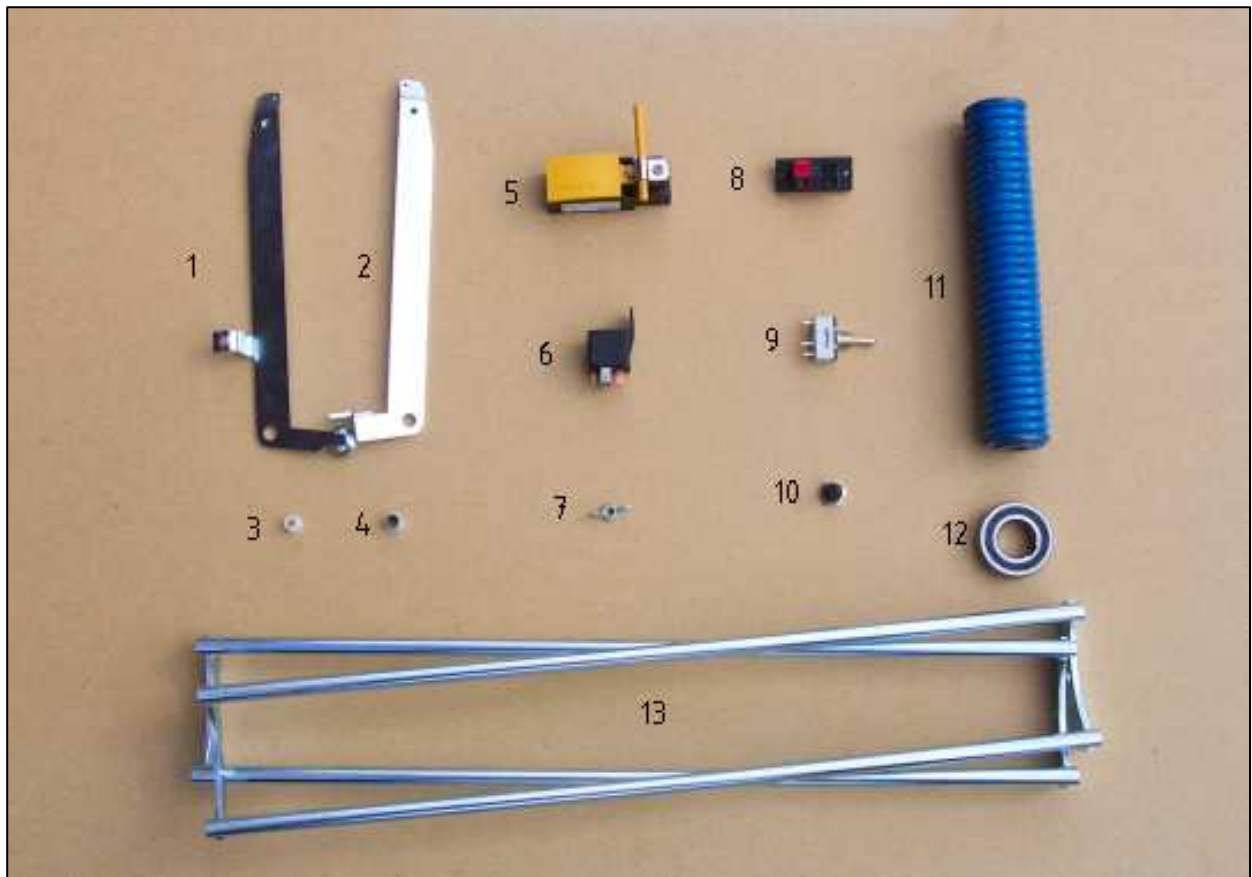
## MAINTANANCE.

Oil the chain with chain lubricating oil when needed, at least once a year.

Keep the machine clean from fragments and dust of the clays.

If the presentation of the targets are not satisfactory, check that the rubber on the throwing arm is not damaged or worn out. (see above regarding Control of throwing arm)

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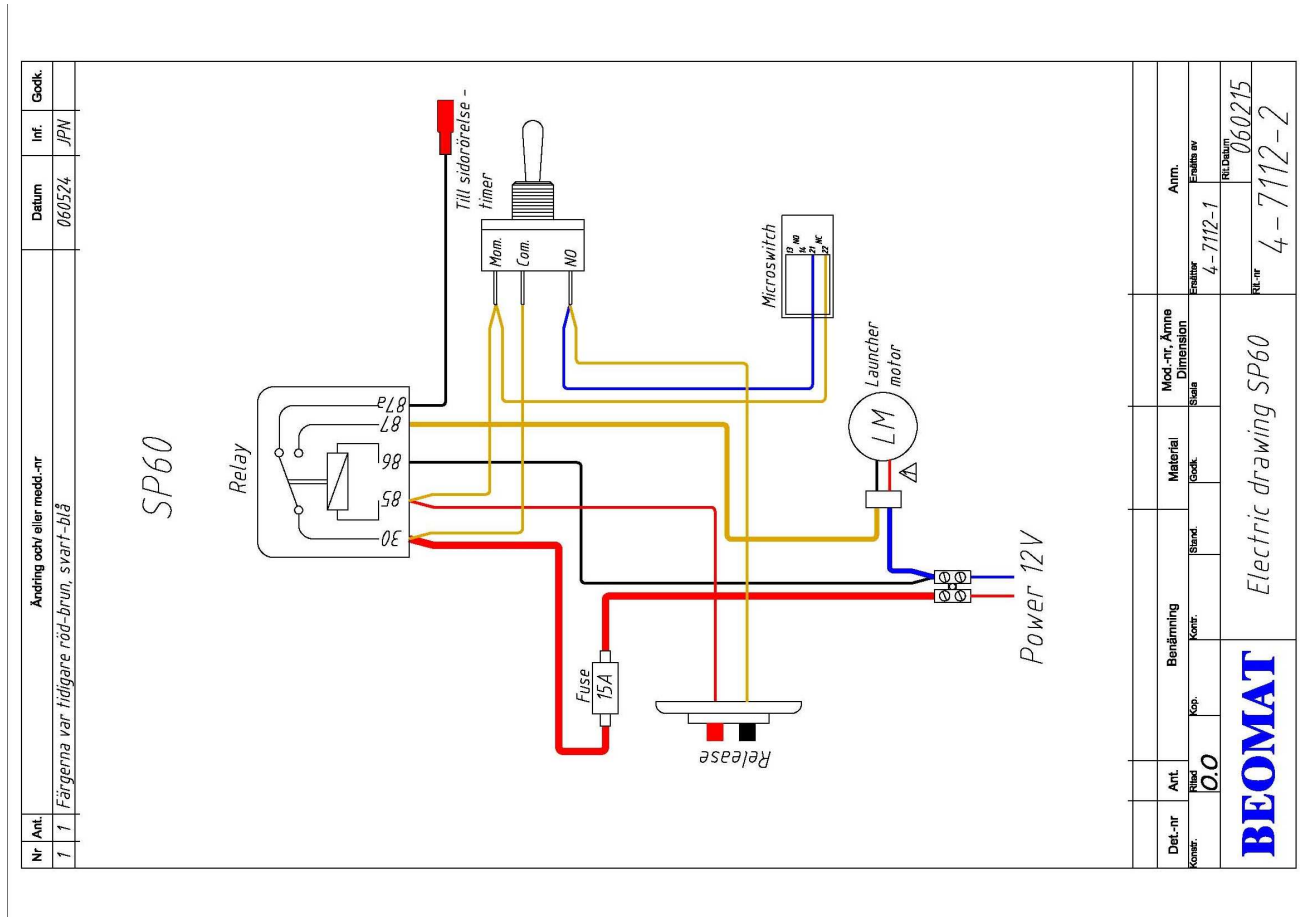


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Item no	Part no	Description
1	80 090	Scissors, right
2	80 080	Scissors, left
3	80 400	Distance, nylon
4	23 931	Washer, glycodur
5	03 010	Micro switch
6	36 404	Relay
7	10 113	Wing nut
8	38 241	Release cable connector
9	80 440	Switch
10	80 441	Rubber cap
11	01 033 B	Main spring - blue
12	21 982	One way bearing
13	80 050	Magazine stand

Item no	Part no	Description
14	80 310	Drive motor
15	95 461	Locking handle
16	11 523	Washer, friction
17	11 525	Washer, frictionplate
18	96 312	Handle
19	80 140	Chain
20	80 130	Chain lock
21	01 039 D	Throwing arm
22	25 931	Bearing with flange
23	46 286	Spring
24	46 285	Spring, scissors
25	45 713	Spring, chain tension
26	80 390	Rubber buffer
27	65 721	Washer nylon
28	80 430	Rubber buffer
29	80 410	Nylon rivet
30	80 210	Throwing arm holder
31	80 270	Bearing
32	80 420	Guiding bolt

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