

# Turning Target System

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## User Manual

V1.3

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**Turning Target System (TTS)** designed to assist with bullseye and some ISSF disciplines practice. The system is powered by 4-AA batteries or by an external 5V USB power source.

### **Available modes:**

- Bullseye: Timed (10 min), Slow (20 sec) and Rapid (10 sec).
- Bullseye: First shot training (2 sec turns 5 cycles)
- ISSF: Rapid (8 sec, 6 sec, 4 sec). Women Rapid (3/7 sec )

### **System consist of:**

- Turning servo box
- Box holder
- Rod
- Rod support bracket
- Target holders
- Compression springs
- Remotes

### **Mounting System.**

The system designed to be mounted upright or upside down depending on the mounting support. 8mm fiberglass rod connecting main unit with the target holder is 12 inches long. The longer rods can also be used to increase the distance between the turning unit and the target. When using a longer rod utilize rod support bracket mounting it closer to the target. Home improvement stores sell long fiberglass 8mm rods, usually called driveway marker.

### **Power supply options.**

System is powered by the internal 4-AA batteries or by 5V USB. When USB cable is plugged in the internal batteries are disconnected. Only use 5V USB power supplies or portable USB power banks. System will go into standby mode after 30min of inactivity. To replace the batteries remove four screws, remove the lid and replace batteries.

## **Initial remote pairing.**

Remotes come already paired with the unit and have identification marks 1 and 2. If in any case the remotes need to be paired with the system again please follow the procedure below.

- Turn system off by pushing and holding the power button until you hear the buzzer sounds.
- Wait 3 seconds.
- Push and hold the power button, continue to hold the button. The system will produce intermediate beeps. Keep holding the button until you hear a continues tone.
- Take the remote #1 and push the buttons in the following sequence A, B, C and D. You should hear buzzer sound after each push. Do the same with the remote #2.
- Turn the system off by holding the power button until you hear the buzzer sounds.

## **Standard operation.**

Push the power button to turn the system on. Use the remote #1 for Bullseye practice. Button A starts the 10min sequence, B – 20sec, C – 10sec and D – manual target rotation.

Example of the sequence:

With the command 'Is the line ready' shooter pushes button A, B or C. The target rotates away.

After 4 seconds the system LED blinks marking the command: 'The line is ready'

After 4 seconds the system LED blinks marking the command: 'Ready on the Left'

After 4 seconds the system LED blinks marking the command: 'Ready on the Right'

After 4 seconds the system LED blinks marking the command: 'Ready on the Firing line'

After 4 seconds the system LED blinks and target turns towards for preset amount of time.

At any point the sequence could be cancelled by pushing any of the remote buttons.

### **Normal Mode (first remote)**

<b>Button</b>	<b>Function</b>
<b>A</b>	<b>Bullseye Slow 10 Minutes</b>
<b>B</b>	<b>Bullseye Timed 20 Seconds</b>
<b>C</b>	<b>Bullseye Rapid 10 Seconds</b>
<b>D</b>	<b>Target rotation</b>

To execute ISSF sequence use the remote #2. After push of the button the target rotates away and holds for 7 seconds before rotating.

### Normal Mode (secon remote)

Button	Function
A	ISSF 8 sec Rapid Fire
B	ISSF 6 sec Rapid Fire
C	ISSF 4 sec Rapid Fire
D	ISSF Rapid Fire 3/7

### Alternative operation.

System can be put into an Alternative training mode by using remote #1. In Alternative mode buttons A will perform ISSF 3/7 rapid wire and button B sequence can be used to practice Bullseye first shot for Timed/Rapid fire. To put the system into the Alternative mode push and hold button A (for about 5 seconds) on the remote #1 until the LED lights up solid

### Alternative mode (first remote)

Button	Function
A	ISSF Rapid Fire 3/7
B	Bullseye Practice 2.5 sec ON 2.5 Sec OFF
C	Bullseye Rapid 10 Seconds
D	Target rotation

### Configuration.

Depends on mounting position the user might want to change the target rotation direction. To change target rotation direction perform the following:

- Turn the system on.
- Then push and hold the power button to turn the system off, keep holding until you hear three beeps and then continues tone sound. Release the power button.
- Push the remote #1 button C to reverse the target rotation direction.
- Push the power button to turn the system off.

In some cases the angle of the servo rotation would need to be adjusted. Follow the sequence below to adjust it:

- Turn the system on.
- Then push and hold the power button to turn the system off, keep holding until you hear three beeps and then continues tone sound. Release the power button.
- Push the remote #1 button A to reduce the rotation angle, and B to increase it. Test the rotation by pushing button D. Repeat if pushing button A or B if needed.

- Push the power button to turn the system off.

### Power DOWN Mode

Button	Function
A	Adjusting rotation Minus
B	Adjusting rotation Plus
C	Revers Target Rotation
D	Target rotation test

### Connecting multiple targets into a chain.

Multiple Turning Target Systems can be connected together and operated by one remote. Use provided cable to connect the systems, plug the 2.5mm plug cable into system #1 and into system #2, then use another cable to connect system #2 to system #3 and so on. Now use the remote #1 to operate all the targets at once. The main unit will control the rest of the connected turning systems.

YouTube operation video: <https://youtu.be/rVZKMeBcVXk>

**Warning:** Plastic components are printed in PLA material on 3D printer. The plastic is very temperature sensitive. The system is designed for indoor usage but can be used outside if not exposed to high temperatures. Do not leave to be exposed to direct sun. The plastic will heat up and possibly deform.