



Advanced Training Systems

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ST-71 TARGET SYSTEM OPERATIONS MANUAL

Long-Distance Sniper Target with Auto Reset



Read and fully understand this manual before using the target. The included Quick Start Guide is not a substitute for this manual.

WARNING

- **Failure to follow the instructions in this manual may result in bodily harm to yourself or others.**
- **Turn the power OFF when not in use.**
- **Keep all personnel and obstructions clear of the target.**
- **The ST-71 is not 100% waterproof or weatherproof.** Prolonged exposure to the elements may result in damage to the unit, and any needed repairs may not be covered under warranty.

Assembly and Installation

The ST-71 is shipped in three separate boxes:

- 6" x 6" x 26" box w/ ST-71 lifter, hardware, and fragment catcher;
- 1" x 12" x 24" box w/ white AR-500 target plate;
- 1" x 7" x 14" box with black AR-500 barrier.

TIP: Save all original packaging, in the event your unit needs to be shipped back to ATS for servicing or warranty repairs.

Assembly of the ST-71 requires two 9/16" box-end wrenches.

Follow the pictures on the next pages as you proceed through assembly.

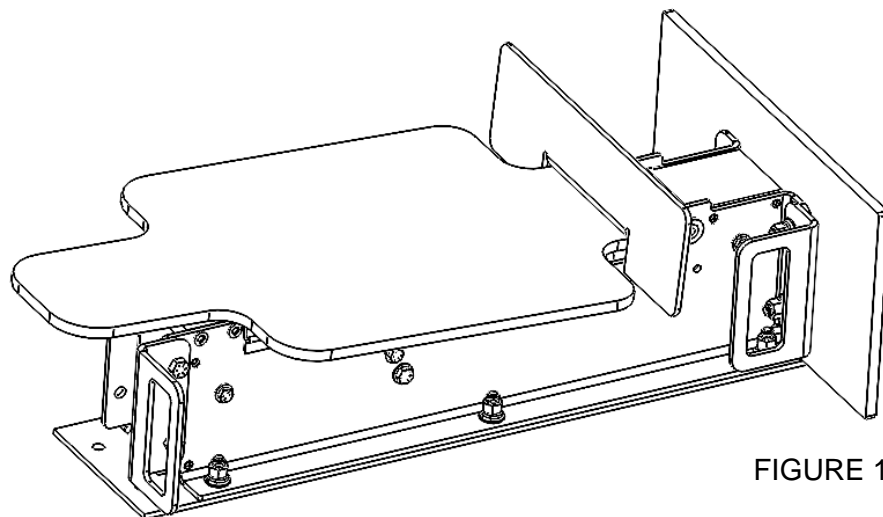


FIGURE 1

1. Install the ballistic plate as shown on page 3 Figure 1.

- Use four $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " bolts, lock washers, and hex nuts.
- Insert the bolts from the front, and place the nuts and washers at the back of the unit to secure.
- Attach the handle to one side of the plate, and the locking pin to the other side.

2. Assemble the target plate and fragment catcher.

- Slide the target plate, then the fragment catcher, over the studs with both hands.
- Secure both the plate and fragment catcher with $\frac{3}{8}$ " Nyloc nuts. No washers are needed.

TIP: Ensure the Nyloc nuts are as tight as possible. Bullet impacts to the target will loosen the nuts over time.

WARNING: *Do not use the ST-71 without a fragment catcher.* Uncontrolled spray from bullet fragments will cut metal, plastic, and any other objects near the target plate.

- 3. Test the pivot mechanism.** Lift the plate from the down position to the up position. The plate should pivot without binding.

Installation and Testing

Install the target at a site free of debris, and which cannot be damaged by shrapnel or bullet fragments.

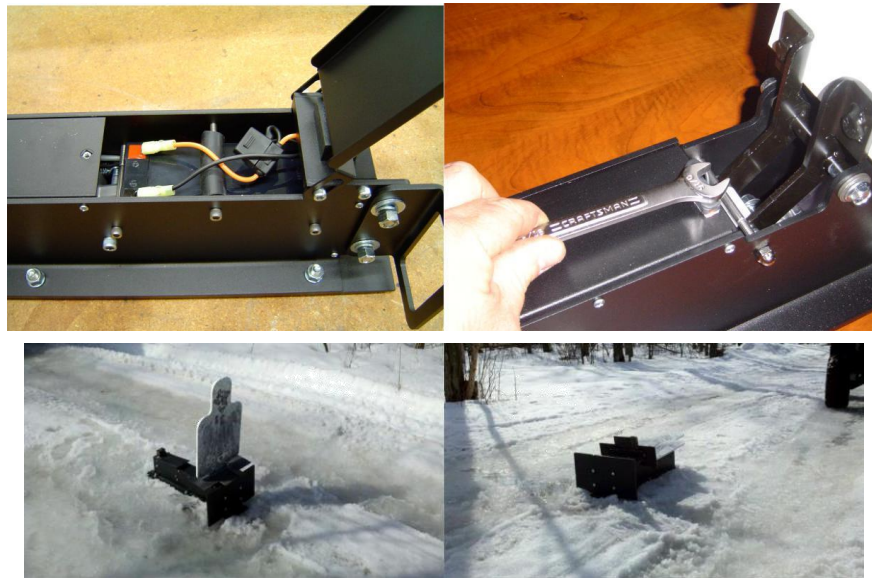
WARNING: *If you are installing multiple ST-71 units, do not place them close together.* The fragment spray from the ST-71 may damage other adjacent targets. If you need targets side-by-side, place a barrier between them or stagger them front-to-back.

Raise the target plate to the upright position. The plate will lean forward slightly; this is normal and helps to keep the unit upright.

Connect and charge the battery. Unscrew the captive knob to open the battery cover. Connect the orange wire to the positive (red) terminal, and the black wire to the negative (black) terminal. Close the battery cover and secure. Do not allow the cover to pinch the wires.

Flip the power switch to the ON position, then **test the auto-reset mechanism using the “wrench test.”** With the target plate upright, place a metal object near the proximity sensor. A light will turn on and the auto-reset cycle will begin. Withdraw the object and watch the reset mechanism extend, retract, and bump outward.

If the wrench test is successful, **perform the “knock test.”** Knock over the target plate and watch the auto reset cycle lift the plate. *If the unit passes the knock test, it is ready for normal use.*



Operating the ST-71

Before proceeding to use the ST-71, perform the following pre-checks.

- Ensure the target batteries are fully charged.
- Ensure that there are no visual signs of damage to the target’s base and reset mechanism.
- Ensure the two Nyloc nuts securing the target plate are as tight as they can be.
- Instruct shooters not to engage the target while the plate is knocked down, *as well as* for two seconds after the reset cycle finishes.

WARNING: Ensure all personnel and obstructions are clear of the unit at all times!

Preparing the Target for Training

Flip the power switch to the ON position and raise the target plate to its upright position. The plate will lean forward slightly; this is normal and helps keep the unit upright.

WARNING: *Before using the target, instruct shooters that they are not to shoot at the ST-71 from the time the plate is knocked down to two seconds after it is raised. Failing to allow the auto-reset mechanism to disengage will cause mechanical failure, which is not covered under warranty.*

During Training

Once the target plate is raised and the power is on, the target is ready for use. The auto-reset mechanism will continue to lift the target plate each time after it is knocked down by fire.

After Training

Once your session is finished and fire has ceased, perform the following post-checks:

- Turn the power switch OFF.
- Ensure that there are no visual signs of damage to the target base and auto-reset mechanism.
- Disconnect the batteries and check their voltage with a voltmeter. They should read between 11 V and 13.5 V. If the voltage is low, recharge the batteries.
- Remove debris from the pivot opening by tipping the target on its side and forward.

Maintenance

Storing and Transporting the ST-71

If you are storing the ST-71 for an extended period of time, disconnect the battery. With target power off, open the cover and disconnect the orange and black wires from the battery. Do not use the power switch. Charge the batteries using a compatible charger/maintainer.

When not in use, keep the ST-71 indoors in a clean, dry space. The ST-71 was not designed to be left outdoors on a continual basis. Although all target components are resistant to most environmental conditions while in use, any damage from prolonged exposure to the elements is not covered under warranty.

The target may be stored completely assembled or by removing any plates needed. Be sure, however, that the fragment catcher, ballistic plate, and target plate, are installed and secured before next using the target.

When carrying the ST-71, prevent the plate from flopping open. We recommend using the included locking pin for this purpose. Do not turn the unit on with the pin inserted; resulting damage to the reset mechanism and/or control module are not covered under warranty.

If you are transporting the ST-71 long-distance or by vehicle, disconnect the battery and remove the target plate to avoid damaging the pivot mechanism (not covered under warranty.)

Charging and Replacing the Batteries

Before charging the ST-71, ensure the battery is disconnected.

The unit is powered with a 12 VDC 7.5AH lead-acid battery. Replacements can be found at most major battery suppliers. So long as the battery has ¼” terminals, it should work fine with the target.

Use a 12 VDC battery charger with a current rating of 2A or less. You may use your own charger, but it must have circular pin on the end to connect to the charge jack. As is standard for DC power jacks, the center pin is positive and outside contact is ground. If using your own DC charger, you will not need to open the battery cover.

To maximize battery life, store the unit with a fully charged battery. “Top off” the battery before using the target. If you are using a maintainer, it is acceptable to leave it connected until the target is ready for use. Overcharging the battery will shorten its life.

To replace the battery, remove all three bolts holding the battery in place. Remove the old battery by tipping the terminal end up at an angle while pulling forward. When installing a new battery, take care not to pinch any wires underneath.

Innards of the ST-71

The ST-71 was designed to be service-free. There are no scheduled service items or serviceable points within the auto-reset mechanism. You may apply a small amount of lubricant to the shaft area on either side of the unit, where the bushings are located. Wipe the mechanism clean of any excess oil and grease to prevent dust and dirt buildup.

Periodic Maintenance

Bullets will fragment on impact with the target plate. Keep the inside of the ST-71 free from fragment debris, and guide debris out from the pivot opening by tipping the unit on its side and forward.

The Nyloc nuts securing the ballistic plate will require tightening from time to time. How often you will have to tighten the nuts depends on the number and type of rounds used with the target. Check the nuts before and after each use.

If the Lift Cycle Stops

Situations where the lift cycle stops are usually caused by a jam. To reset the unit manually, lift the plate into the upward position, then use a metal object near the sensor to reactivate and reset the lift cycle.

If the Actuator Does Not Cycle

The reset mechanism not activating at all may be caused by any number of problems.

Check the battery voltage. The battery should read between 11 V and 13.5 V. If the battery is low, recharge and then test again.

If the battery voltage is fine, perform a “wrench test.” Place a metal object near the sensor to see if it triggers the reset mechanism. It should take about three seconds for the mechanism to work.

If the wrench test fails, verify that both springs inside the unit are intact. The leaf spring, which forces the actuator upward as it extends, should also be intact.

If the springs are intact, replace the battery. While the batteries are mounted on foam strips and secured with rubber sleeves, they can still be damaged.

If the Sensor Does Not Respond or the Auto-Reset Mechanism Keeps Cycling

If the sensor light does not turn on, the battery may be low. Charge the battery, then perform a “wrench test.” If the problem persists, it is likely caused by a bad sensor.

Repeated cycling is usually caused by a bad sensor. Should you need to replace the sensor, we will provide instructions in the repair kit.

Remove the sensor by cutting the wires in the middle of the cable; do not cut too close to the module. Use a set of butt splices to connect a replacement sensor.

ST-71 Specifications

Base unit

Weight (with battery)	40 lbs.
Footprint (L x W x H)	26" x 6" x 6"
Battery	Internal 7.5Ah SLA, rechargeable
Control electronics	Auto-reset standard
Reset delay	Fixed, 5 seconds
Standby time (on full charge)	750 hours
Actuations per battery cycle	800
Cycle life test	10,500 cycles
Motor	12V actuator, IP65 rated
Speed	3-second lift time
Max plate weight	25 lbs. at 10" c.o.m.
Color	Matte black
Construction	All-steel chassis
Waterproof/weatherproof?	No/no (not rated for year-round exposure)
Ballistic protection	Front barrier/fragment catcher
Radio control	Optional ETX (upgradeable)
Max radio range	Up to 500 m line of sight

Barrier

Material	AR500 abrasion-resistant steel
Size (L x W x H)	7" x 14" x 3/8"
Weight	12 lbs.
Round protection	Up to .300 Winchester Magnum

Target plate

Material	AR500 abrasion-resistant steel
Size (L x W x H)	12" x 22" x 3/8"
Weight	21 lbs.
Round protection	Up to .300 Winchester Magnum