

## How powerful is your pellet rifle?

### Why Use A Chronograph?

If you are planning on upgrading/tuning your pellet rifle, you will need the chronograph to compare the pellet velocities before and after the upgrade. You can also collect the data on how a certain part replacement affects the overall performance of your rifle.

Even if you do not plan on tweaking your pellet rifle, you can also benefit from using a Chronograph to better know it.

The muzzle velocity of pellets depends on the performance of various parts inside your pellet rifle and even the quality of the pellets you are using. With the Chronograph S-44/S-45 you can also measure consistency of your rifle in auto bursts (if your rifle supports automatic fire).

Chronograph can display the muzzle velocity of the pellets (the S-044 version displays results in m/s and the S-045 version displays them in FPS) so you can select the proper projectiles to achieve the desired speed. It can also be used to compare performance of different pellet rifles.

# CHRONOGRAPH S-044/S-045



Measures velocity of  
projectiles of AEGs,  
GBBs and NBBs.

## Functions

Chronograph measures the muzzle velocity of the pellet rifle projectiles and allows you to find out how powerful your pellet rifle is, select the pellets that work best with your rifle and compare performance data before and after the upgrade.

## New in this version

- New design with protected sensor
- Easier mounting
- Extended error reporting
- Memory for 80 consecutive shots
- Average velocity calculation for a series of shots
- Maximum deviation calculation for a series of shots
- Best and worst results display for a series of shots

## Technical specifications

- Measured velocity range - S-044: 6-999m/s, S-045: 6-999FPS
- Memory for 80 consecutive shots
- Average velocity calculation for a series of shots
- Maximum deviation calculation for a series of shots
- Best and worst results display for a series of shots
- 3 operational modes - S-044: **TTTTT, CO2, PCP**, S-045: **PS, AF, PCP**
- Extended error reporting
- Runs on 4 **AAA** batteries

## Warranty

The Chronograph S-044/S-045 models feature protected sensors, however depending on your rifle they can be ruined by a powerful impact. Please align the device with the barrel when in use. Avoid subjecting the device to extreme heat or humidity. **DO NOT USE** the device with firearms, this will destroy the device and can put you at risk. If the device displays inconsistent results (within 10m/s or approx 33FPS) that could mean that your rifle is inconsistent in performance in which case you may want to replace/check the parts which directly affect performance and/or try different projectiles.

The manufacturer/seller can guarantee the problem-free operation if you operate the device in compliance with the above. The device will be replaced during the warranty period only if it does not seem to have sustained any mechanical or thermal damage.

Warranty period is 12 months from the date your order has been received.

## Mounting

### Mounting:








In order to measure the projectile velocity of your pellet rifle, mount the Chronograph on the rifle barrel. If you cannot mount either side of the Chronograph on the rifle barrel, you have to fix/hold the chronograph closely to the barrel. Make sure that the Chronograph is aligned with the barrel.

### Recommendations:

The plastic tube on the left side of the Chronograph has an internal diameter of 13mm and is bored up to 15mm to the leftmost 25mm of length so you can easily mount it on the rifles with the barrel diameter of 13mm or 15mm. If your pellet rifle has a different barrel diameter you have to either hold the chronograph tightly adjusted/pressed against the barrel or use an adaptor for your barrel. If you mount the Chronograph on your rifle - make sure that the barrel doesn't cover either of the sensors inside.

## User Manual

### Operation:

The device can be operated with the single button located to the left of the display. The single push of the button turns the Chronograph on. When you turn the device on, it performs self-test for errors and indicates if any problems have been found and then briefly displays the current mode (S-044:   or ; S-045:   or ) and switches to the [Shot Waiting] mode which is indicated by the blinking  on the display.

### Menu:





The quick double-push of the button located to the left of the display switches the device in the menu, simply wait for the required menu item to be displayed then push the button again to select it.



-- Shots counter.



-- Statistics display mode. Chronograph displays the following (in sequence):

-  Average
-  Standard Deviation
-  Maximum velocity/speed
-  Minimum velocity/speed



-- Log display mode. Chronograph displays the last (up to 80) shots in the reverse sequence (the last shot will be displayed first and so on). When the shot velocity/speed is indicated you can erase it from memory by pressing the button twice. Pressing the button once can be used to exit the Log display and turn the device off.

## User Manual

**CL** -- Clears Chronograph memory

**SEL** -- Selects the Operational Mode of Chronograph.

### Operational Modes:

**000** or **PS** This mode is used to measure the velocity of a single shot. When in this mode the Chronograph waits for a shot for 1 minute and turns off if no shot was made. If the shot was made within 1 minute of switching the device in this mode, the speed is displayed for 5 seconds and then the device turns off (indicated by **OFF** before self-shutdown).

**002** or **AF** This mode is used to measure the velocity of each shot in the burst mode (if supported by your pellet rifle). The rate of fire supported should be between 30 to 800 rounds per minute. When in this mode the Chronograph waits for a burst for 1 minute and turns off if no shots were made. If the shot was made the device expects the next shot within 2 seconds and if no consecutive shots were made it switches itself into the results display mode.

**PCP** This mode is used when you need to measure the velocity/speed of a series of single shots. When put in this mode the Chronograph waits for a shot for 3 minutes and turns off if no shot was made. After the shot was made its sequence position and velocity are displayed for 5 seconds and then the Chronograph switches back to the shot waiting mode again.

## Error Messages/Maintenance

**bad** Erroneous calculation or speed exceeded the limit.

**--1** The pellet was detected by the first sensor only. You need to correct the alignment of the device.

**-** Left sensor is faulty or the battery is low.

**-** Right sensor is faulty or the battery is low.

**0** Left sensor is exposed to direct sunlight or broken.

**0** Right sensor is exposed to direct sunlight or broken.

**--** Both sensors are faulty or the battery is low.

**0 0** Both sensors are exposed to direct sunlight or broken.

The **-**, **-**, or **--**, can appear in the **002/AF** mode even if the other modes work fine because this mode requires more power than other modes.

The excess of cleaning oil can cause the sensors to become partially obstructed and cause some of the errors. If you need to clean the sensors please make sure to avoid scratching the surfaces and only safe cleaning solutions to avoid damage to the sensors.

Please use caution when replacing batteries. Try not to bent wires in order to avoid breakage.