

3-Trap Sporting Claymate.

“Super Sporting” Handset shown.



Version 1.0 software. Some features still to be added.

The 3-Trap Sporting Claymate Controller offers complete control over three traps.

Two handset connectors.

Powered from the 2 core trap release cable.

Trap Detection allows trouble free trap removal without any set-up.

Single and double targets are thrown simply by pressing the desired target buttons.

Traps can be set to be single or double count; or spared out completely.

The following target features allows the release of a report style target from any of the three traps.

The Solo Shooter feature, common to all Clay Counting Claymate Systems is included as standard.

The “Super Sporting” Handset (pictured) allows for the simultaneous release of 2 traps, B & C to conform to the rules of Super Sporting as laid down by the disciplines creator, John Bidwell.

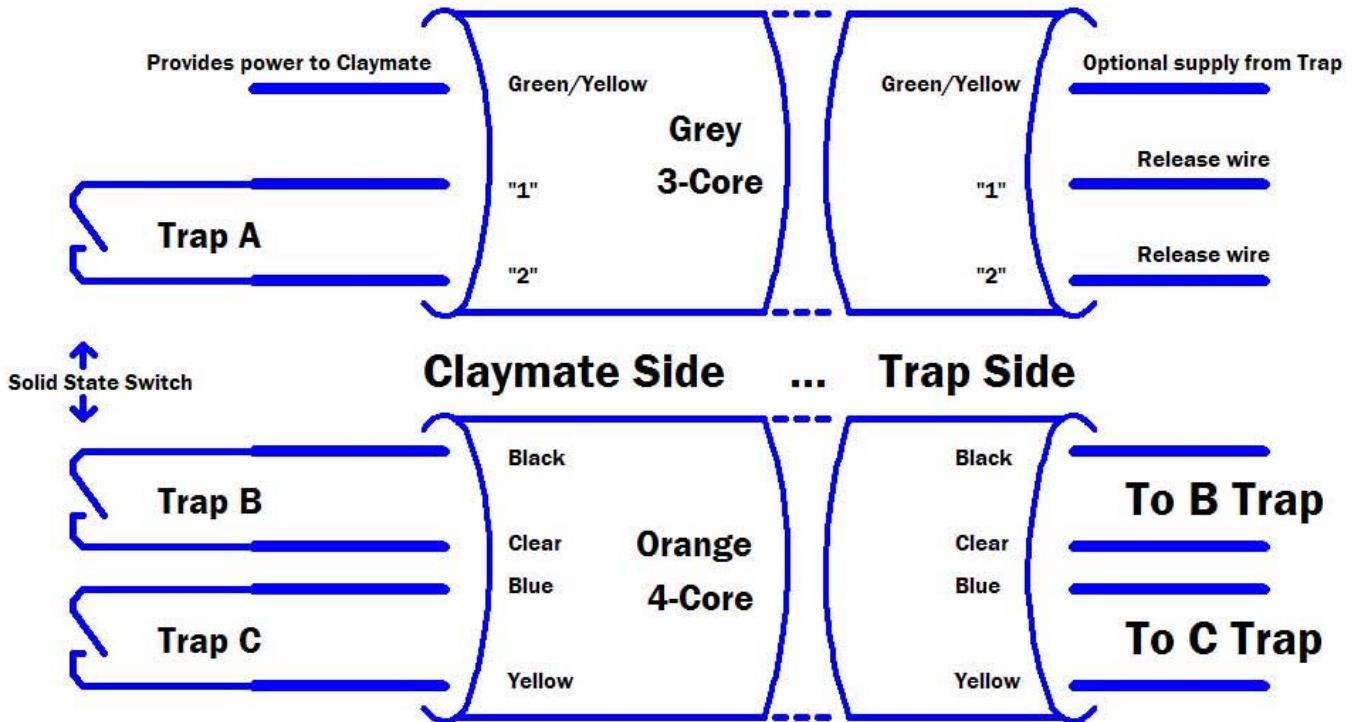
A 3 button handset is available as an option where the single button, simultaneous release feature is not required.

Installation.

Caution

Do not connect the release wiring directly to a vehicle battery. This could damage the unit, and WILL invalidate the warranty. When first connecting traps to the System, the launcher may throw a clay. Always point traps in a safe direction away from people.

Powering from the 'A' Trap. Do not connect a counter during this procedure.



Later models use a 'Y' lead to convert the 4 core to two, 2 core cables

There are two cables, Grey and Orange, exiting the Claymate. These connect to the clay launchers.

The GREY cable should be connected to the release wiring of the A side trap using the colours described in the above illustration.

Claymate will power up as soon as power is detected on the A side trap wiring.

Due to the nature of the release wiring, mis-connection is unlikely to damage anything.

Connecting the B and C Traps

The ORANGE cable is 4 core. The Clear and Black cores should be suitably terminated and connected to the 'B' Trap, likewise the 'C' Trap should be connected to the Blue and Yellow cores.

We can provide a suitable waterproof break out box if required, however, a specially made 'Y' lead is fitted to later models to permit easier connection to two connectors.

The black lead with the marker sleeve is the 'B' trap.

If you want to use a 'skeet' type connection with a common wire and two trap release cables, you can either replace the entire 'Y' lead with a separate lead we can provide, or simply cut the lead and make the terminations as required.

Claymate is ready to launch as soon as traps are connected and a valid counter is plugged in.

If you do not wish to connect all three traps, or want to hold a connected trap back for later use in a competition say, you can disable or 'Spare Out' any of the traps.

See the bottom of this page for Configuration settings to allow you to spare traps out.

If you wish to connect one or more double throwing traps (double arm traps) then you should attend to making the Claymate count 2 targets for these traps.

See the bottom of this page for Configuration settings to allow you to set the target count.

Internal Battery Pack.

The Super Sporting Claymate uses an internal battery supply, as does the 2 trap Sporting Claymate in the form of three AA cells in a battery box.

The batteries should last in excess of 2 years and are only used for the time that a Counter is connected. The battery provides power for the handset buttons and the trap detection circuitry.

If you feel the need to test the batteries, call Claymate for what to do.

As long as the handset operates and the traps are detected correctly, the batteries are fine.

Factory Default State.

The factory default is with all traps set to single count and Trap cycle times set to 2.5 seconds. These timings are stored in memory and will be remembered even without power.

See page 4 for details on how to select different timings. Not available in V1.0

Any new settings will be stored to be used as the default unless changed.

System Configuration.

Use Configuration to tell the System...

- **How many clays to count for each trap.**
- **The actual cycle times of each of the connected traps. Not available in V1.0**
- **Change the following pair delay times. Not available in V1.0**
- **Spare out unconnected traps.**
- **To RESET the processor, and restore Factory settings.**
- **To output the total Clay Count (Audit) of clays launched.**

To enter Configuration mode.

The Claymate must be connected to the 'A' trap or to a power supply.

The configuration key is inserted into the keyhole underneath the unit.

Turn the key clockwise. Claymate will respond with a chirpy warble, and the key will lock in place.

A Counter is necessary to correctly set up trap cycle times and following pair delay times as Claymate needs to launch targets. Adjustable cycle timers Not available in V1.0

Changing trap clay counts and Sparing Out traps.

One you have entered Configuration, you can use the handset buttons A, B & C to make changes to the trap count and enable or disable the trap to prevent a disconnected, say, from launching. As you press a trap button repeatedly, you will hear a series of beeps as below.

- **ONE** beep indicates a single clay count for single throw traps, and a 2½ second cycle time. (Factory default)
- **TWO** beeps indicate a double thrower trap and a count of 2 clays per release.
- **A chirp** indicates that the trap is deselected and will not launch even if a trap is connected. You **CAN** spare out all three traps.

Note that an attempt to launch a disconnected trap will cause Claymate to output an 'SOS' in Morse Code. A 'Chirp' from Claymate implies that the trap is not connected or there is no Counter.

Changing the cycle times of a trap (and following delay from same trap).

Not available in V1.0

Changing the Following Pair delay for alternate traps.

Not available in V1.0

Reading the Internal Audit Counter.

Pressing **Following PAIRS** whilst in Configuration mode will read the clay audit. The System's capacity is a **MAXIMUM** of, 9,999,999 clays. In other words, 1 short of 10 Million.

The method used to show you the clay count is quite unique and very easy to use. You will need a pen and paper to write down the numbers down as they appear...

You need a valid counter. The **ONLY** condition is that the very **LAST** digit **MUST READ '0', ZERO**. For the purposes of this explanation, a small clay count of 678 will be described.

- **Plug in the Counter**, noting the **LAST** digit is **ZERO**.
- Press **Following PAIRS** on the main controller.
- The counter will increment, beeping as it goes, and **STOP** with a '6' in the **LAST DIGIT**.
- The display will remain static for 2 seconds... Write the number 6 down.
- The counter will then increment and beep to display '7' in this case,.
- The display will remain static for 2 seconds... Write the number 7 down.
- The counter will then increment and beep to display '8' in this case, in the **LAST DIGIT**.
- The display will remain static for 2 seconds... Write the number 8 down.
- The counter will then increment silently to zero the **LAST DIGIT**

In the above example you would have written down 6,7,8 which is 678 targets launched.

As long as the count is accompanied by a beeping sounder, you should be ready to write down the number displayed in the **LAST DIGIT** when the count stops.

Claymate issues a short chirp to separate individually recorded A, B and C target counts.

The process is designed to reset the **LAST DIGIT** of the counter to zero so you can either read the clay count again, or move to another Claymate to repeat the process.

Once you have done the process a few times, it will become second nature. You can audit the entire ground in slightly more than the time taken to visit each stand.

The Counter will appear to clock up large clay counts as it is always incremented in order to allow the LAST DIGIT to display the number you need to write down.

The actual number the Counter achieves is MEANINGLESS.

The Audit process can only use the last digit of the counter box as the Counter Display is only 4 digits long and could never read directly millions of clays.

The internal Audit Counter CANNOT BE RESET other than to launch more than 9,999,999 clays.

When you have finished reading the Audit, remove the Configuration Key.

If you remove the key during an audit, the process will continue to a satisfactory conclusion.

If you remove the counter during an audit, the last Counter digit might not be reset to zero.

Restoring Factory settings.

Not available until factory settings can be changed.

Leaving Configuration Mode.

When adjustments are complete, remove the key. The System will respond with a chirp.

Cycle timers and the audit count will be retained in memory allegedly for 100 years!

The Internal Audit Counter cannot be reset other than to return the Claymate to the factory.

Operation.

The following pages cover operation in some detail.

In order to launch clays, plug a 'legal' counter box into the right hand side of the unit.

When a shooter is finished and removes the Counter Box, the System detects the removal of the Counter and resets itself to INSTANT and cancels any following targets.

The Claymate is always in 'INSTANT' mode when a new shooter connects a Counter Box.

INSTANT Mode.

This mode is commonly used by groups of shooters and Competitions.

The selected targets are launched immediately the trap buttons are pressed.

Delayed Mode.

This is a SOLO SHOOTER mode giving a Lone Shooter an audible countdown delay before the selected targets are launched.

Clays are only counted if they are launched. Suppression of a launch by the System, for any reason does NOT increment either the Shooters counter, or the internal Audit Counter.

'No Birds' are deemed LAUNCHED. The System cannot detect broken targets off the trap arm.

Following Mode.

Following Targets can be launched in either INSTANT or DELAYED modes.

Pressing the Following button causes Claymate to respond with 1, 2 or 3 beeps indicating which 'report' target will be launched.

Pressing INSTANT will cancel the following target as well as cancelling any Solo Delay.

When a simultaneous pair is launched, any following target is cancelled so a shooter will never be presented with more than 2 targets in the air.

The following MODE is not cancelled however, and so if a single target is then selected, the following target previously selected will be sent after the preset 2 ½ seconds.

The feature to withhold a following target after a simultaneous pair was requested by John Bidwell as there is no provision for such a target presentation in the Super Sporting Discipline

If traps have been 'spared Out' as explained on page 4, Claymate will bypass that trap in the reporting process.

If Trap B is disabled for instance, pressing Following Pairs will cycle through 1 and 3 beeps. The 2 beeps being suppressed by the system as Trap B, in this example, is not available.

Stuck Button Detection.

Handset buttons are only scanned with a counter connected.

If any button is held for more than 8 seconds, Claymate will respond with a series of equally spaced beeps to flag that one or more buttons have become stuck.

This design feature is included to reduce the current requirement from the 'A' trap as the controller would normally take more current than a typical trap could supply without releasing targets.

A 2 trap Sporting Claymate requires 800uA with 1.3 mA peaks.

The Super Sporting design, with its larger processor and the design changes, needs 600uA.

Audit & Security Features.

The Internal Audit Counter.

When a trap is released, the Audit Counter is incremented with the appropriate target count. The Audit Counter remains intact even when no power is supplied.

See page 4 for details on how to read the Audit Counter.

Using the totalled clay sales figures from the sales office and the targets logged by the counter boxes, it is possible to detect clay 'shrinkage' and locate where any loss occurs.

Assuming that the traps are filled to the same degree at audit time, should the sales office log of clays sold not tally reasonably closely with the total audit counter figures then it is possible that clays are being launched but neither logged or paid for.

Further, the total of audit figures and actual stock of clays should agree with initial clay stock. Any discrepancy would be the result of clays not reaching the traps!

Claymate Systems will not release targets unless a valid Counter Box is connected.

The Counter Box that accompanies the shooter or group around the ground is coded to match the code in all the release controllers on the ground.

The initial coding of these units is done at the factory, with a code that will be different to any other ground code.

The code is set using two switch banks. One is an eight way switch the other is a four way.

An identical set of switches will be found in the hand counter boxes, and the RESET BOX.

Any additional Counter Boxes you purchase will be supplied with your original ground code unless you request otherwise. If you change your code, ask us for a new code rather than make one up.

Because of the losses that could be realised if a craftily retained box goes undetected, it is recommend that a check be made of which individual is issued with which box in order that lost boxes are avoided.

Retaining a shotgun certificate is a good way to ensure compliance with the law and the return of the counter (and payment).

It is also recommend that counter boxes be reset to zero before they are issued rather than upon their return.

How you manage these security features is of course your own affair.

You have been given the option of being as security minded as you like, or not as you please.

Counter Reset Box.

Purchased additionally with your Claymate Trap Release System will be a Counter Reset Box.

The **BLACK** button will **INCREMENT** the counter whatever the security code... useful to check the box actually counts.

The **RED** button will reset the Counter Box **ONLY** if the internal security code of the Reset Box matches the code in the Counter to be reset.

Reset boxes are **ONLY** supplied with complete Trap Release Systems.

They will **NOT** be sold separately unless the purchaser has a legitimate need to own one.

Hints and Tips.

Here are some tips to help you determine the status of Claymate at any time.

Unable to Launch Targets.

Claymate requires a valid counter in order to release targets.

An easy and quick method to get Claymate to tell you if the counter is valid or not is to press the **FOLLOWING PAIRS** button several times.

A valid counter allows you to cycle the trap order, indicated by 1, 2 & 3 beeps accordingly.

If you don't get different beeps, Claymate is not happy with the counter.

Another indication that Claymate is not happy with the counter is to try to launch a target.

If the Claymate chirps, then the counter or Controller is suspect.

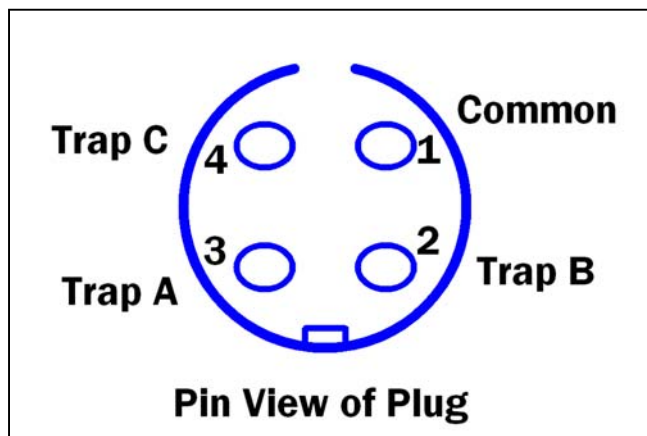
If Claymate seems happy, suspect an empty trap or a poor electrical connection to the trap.

Suspect Buttons on the Handset.

The easiest way to test the handset is to try it in another 3-Trap Sporting Claymate as they use the same 4 pin plug.

The 2 trap Sporting Claymate handsets are not compatible.

You can test for continuity with a resistance meter using the following diagram.



Looking in to the plug with the gap in the shroud at the top as in the diagram.

The trap button pins connect to the common pin as the buttons are pressed.

Any reading over 10 Ω should be regarded as suspect.

Test the meter by shorting the probes before doing the test as a flat meter battery will give misleading results.

Stuck Buttons

If any of the 6 (7) operation buttons are held or become stuck, Claymate will take all of 8 seconds to detect this and respond with a series of equally spaced beeps from the sounder.

Optional Accessories.

Floor Stand.

The floor stand is supplied with all Sporting Claymate Systems. (UK only)
It supports the Claymate and provides a resting place for the handset.
The tripod style allows for a stable stance on uneven surfaces and can be held down with strategically placed sandbags or can be cemented into the ground or simply partially buried.

Wall Bracket.

The wall bracket is standard for Skeet Claymates and can be supplied as an either / or option with the floor stand.

Shipments to the USA are accompanied by wall brackets.

Providing a resting place for the Handset, the bracket is designed to be wall mounted with up to four securing points.

The wall bracket is also designed to be a good fit on a 4 by 4 inch wooden fence post.

Waterproof Connectors.

Manufactured by Elkay and submersible to 60 feet of water, these connectors are exceptional.

Available from BLN in either cable ended or bulkhead mounting, these connectors offer excellent mechanical properties being impossible to pull apart by tugging on the cables alone.

Cheap connectors are the weak link in the electrical chain to the trap and some of these cheap fittings require an annual replacement costing, in labour, more than the cost of the Elkay offering.

BLN is an appointed distributor for the Elkay connector. Call for prices.

GUARANTEE & POLICY STATEMENT

Claymate Trap Control Systems is wholly owned and operated by BLN Technical Services Limited.

BLN Technical Services guarantees the Claymate product described to be free of manufacturing defects for the purpose of clay trap launcher control for a period of one year from date of purchase.

This guarantee specifically does not cover wear and tear or faults caused by wear and tear, misuse, abuse or application of excessive or inappropriate voltages, including lightning strikes.

The owner shall at all times be responsible for the care of the product and shall take steps to ensure that the product is protected from the damaging effects of wind, rain or snow.

BLN Technical Services reserve the right to change or amend the specification or software without notice. Software changes as requested by customers become the copyright of BLN technical Services and such changes may be included in future software releases, or may be offered to existing customers as an option or an upgrade.

The software supplied at any time has been thoroughly tested and is believed to be free of errors.

Software upgrades may or not be chargeable at the discretion of BLN.

Neither Claymate Trap Control Systems, BLN Technical Services or agents of BLN will be responsible for accidents or injury or loss caused by operation of traps or associated equipment under the control of any Claymate System whether the operation of such equipment is desirable or not; is caused by operation of any equipment when it is unsafe to do so, or under any fault condition of any equipment howsoever caused.

Repair policy, and care of the Equipment

Do not return units to BLN or agents without a covering letter explaining any fault condition in detail. In most cases, it is possible to replace whichever element has failed without returning the entire System.

If any part of the System is returned for warranty work, a copy of the invoice will be required. It is up to YOU to validate warranty claims, NOT BLN.

The Release Handsets are fitted with a connector. If a handset is suspected, verify by substitution.

Counter Boxes can be checked on the Reset Box and other Claymate Systems.

The batteries inside the Counter should last around 2 years.

The Reset Box contains a 9 volt battery which will last at least one year.

The most current is consumed during a 'reset'.

If the Reset Box is suspect, verify on more than one counter.

Check the battery reads more than 8 volts or has not become dislodged in the holder.

All connections to the PCB are by multi pin connectors.

Should it be necessary to remove the Circuit Board proceed with care.

Do not turn a warranty replacement into a chargeable repair!

use a small hook to ease the board away from the mounting locks. DO NOT PULL ON THE COMPONENTS.

In all cases, BLN reserves the right to repair or replace boards at the discretion of BLN.

Replacement parts may be new or 'reworked' at the discretion of BLN.

The design of mechanical or electronic components may change without notice.

3-Trap Sporting Claymate Technical Specification.

Trap release voltage range.

AC/DC - 10 to 120 volts.

External Supply voltage range. Green/yellow to supply. Black wire marked '2' to ground

DC - 12 to 24 volts.

AC - 10 to 24 volts.

Current requirements.

Less than 2mA + 35mA per activated relay for 1/2 second.

Trap Release Specification.

Isolated Volt free contacts for Traps B & C

Trap A. One contact shares the ground connection to the supply.

The other trap A contact connects to ground at activation.

Built in Trap Cycle Timers.

2.5 seconds standard.

Controlling elements.

Arizona Microchip PIC.

12 bit CODEC chip for security.

Build options

Call with requirements.

Security.

Owner selectable code offering 4096 combinations.

Auditing.

Internal non volatile memory with a maximum count of 9,999,999 clays per three counters.

Printed Circuit Boards.

Conformal coating to high specifications.

High quality board connections for easy board removal and replacement.

Release circuitry mounted on plug in 'piggy back' boards for easy replacement.

All Claymate products have been tested and certified to exceed European EMC regulations and specifications including conducted and radiated emissions and susceptibility.

BLN Technical Services reserve the right to change specifications in the pursuance of product improvement without notice.

Such changes are, however, usually announced on the web site.

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