

# The Wireless Autopuller®

By CLAY DELAY

## Owner's Manual

Model APA



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## Features of the Autopuller Advanced

- The voice feature has an adjustable delay that allows you to fine tune your pull delay
- The manual release is instant, regardless of the voice delay time

## Components of the Autopuller Package

- Autopuller Controller
- Autopuller Receiver
- (2) 9-volt Alkaline batteries
- (2) Spare Fuses
- Microphone
- (2) Adapter Cords and Identifier tags
- Small Screwdriver
- Instruction manual (this document)



**You are responsible for obtaining and attaching your course connector to the Autopuller Adapter Cord. Wiring information regarding attaching connector can be found starting on page 13.**

The Autopuller controller and receiver are preset to work in most environments. You simply connect the appropriate machine connector to the adapter cord, install the batteries, plug in and shoot.

If you find that a particular function is not performing the way you like, please check the manual for that function and make the necessary adjustments. If you are still having difficulties, refer to the troubleshooting section. Of course, if you have any questions or need more direction, don't hesitate to contact us.

## Manual Contents:

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# The Autopuller Advanced Controller

has 5 controls and 4 indicators

The large top buttons are for arming the target machine  
As seen when looking down on belt —  
Right = Low Left = High

The small top button is for releasing the target manually

Indicator lights

- #1 Status
- #2 High Target
- #3 Low Target
- #4 Voice

Rotary switch is voice sensitivity and ON/OFF



Inside the battery compartment are the switches for:

- Microphone see page 8
- Transmitter Signal see page 9

**MICROPHONE** The microphone used for the Autopuller is a standard microphone used for a computer. Using this style helps in keeping the costs down and it is readily available if a problem occurs with the supplied unit.



# The Autopuller Receiver

has 5 controls and 4 indicators

Adapter Cord socket (either 1 or 2 outlets)

Fuses—one 4a 5x20 fuse for each machine. Protects both your machines and the receiver

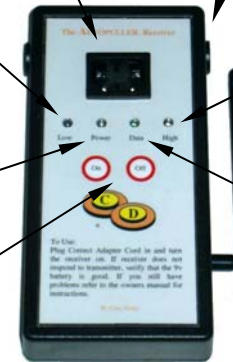
Low light—shows when the low machine is operating

Power light—will flash every 2 seconds to show power is on

ON—OFF Push Buttons

High light—shows when the high machine is operating

Data light—indicates when a signal is being received from the control box



Inside the battery compartment are the switches for:

- Machine pulse see page 10
- Auto-off see page 11
- Controller synchronization see page 12

**ADAPTER CORD** The adapter cord is the interface between the Autopuller receiver and the target machine. The wiring of the adapter cord determines how the target machine will operate.

*Using an incorrectly wired cord or using the cord from a different location may damage either the receiver or the target machine!*



## Normal Operation

1. Turn the receiver on, by pressing the ON symbol on the front panel. The power light will stay on for 2 seconds, then start to blink. This is now the standby state.
2. Plug the adapter cord into the pull cord socket and into the receiver and raise the antenna.
3. Turn the controller on, by rotating the side adjuster from the off position. The voice delay light will be blinking. This is now the standby state. A target will not be released until a target machine is armed.
4. Use the side adjuster to set the sensitivity of the microphone. With the microphone plugged in and clipped to your collar, use the voice light on the front panel to adjust for your call. (Refer to page 8 for more information on the microphone adjustment.)
5. Pressing an arming button will hold the voice delay light on, and set the controller in an active state. (For the skeet model, press either large button for a single target or both buttons for doubles). A target will now release in response to your call. The target lights on both the controller and receiver are visual indicators that “show” which target is launched. After each target is launched, the controller will go back into the standby state, thus preventing false targets.
6. If you are shooting with a companion, arm the target(s) as usual. When your companion calls for their target, press the small button on the top panel. This will launch a target the same as when you call using the microphone, but since “you” are now the delay, any voice delay will be set to 0.

## Voice Delay Adjustment

When using the voice command, the Autopuller is very fast at releasing a target. To come closer to a normal pull time, your APA comes with the voice delay time preset at approximately .5 seconds. If the time does not match your normal pull delay, continue reading to adjust.

The voice delay is adjustable to allow you to fine tune the amount of time between your call and target launch. To adjust, press and hold the manual button (for approximately 4 seconds) until both the voice delay light is on steady and the target lights start to blink. Release the manual button. Count the blinks between pauses to establish the present time. Each blink is equal to approximately 1/10 of a second. Press and hold the high house button to increase the count or the low house button to decrease the count. The range is from 1 to 9. Once you have the count you like, turn the APA off, wait 3 seconds, and turn back on. The new delay will now be stored for future use.

4. Press and HOLD the low (decrease) or high (increase) button until the new time is reached
2. Press and HOLD manual button until the voice delay light is flashing and the target lights stay lit
3. Count the flashes to establish the delay for the routine
1. Turn On
5. Turn off, wait 3 seconds, turn back on



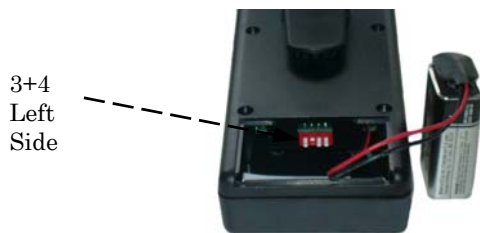
## Microphone Setup

The microphone is preset to work in most situations. If you find that the external adjuster does not allow you to comfortably call for your target, you may adjust the sensitivity further by accessing the internal set of 4 switches.

**The internal switch is located in the battery compartment. Open the battery door and remove the battery. The switch is now visible in the center of the unit. As seen through the opening, down is off and up is on. Please reference the picture below and note switches 4, 2 and 1 are off and switch 3 is on. The numbers go from left to right, 4 to 1.**

The 4 position switch has two functions. Switches 1 and 2 are for transmitter signal and switches 3 and 4 are for microphone setup.

Switches 3 and 4 are used for microphone sensitivity. The normal settings are for switch 3 to be on and switch 4 to be off. Turning switches 3+4 off will decrease the sensitivity of the microphone. You will now need a louder and longer call before the unit will respond. Turning switches 3+4 on will increase the sensitivity of the microphone. Keep in mind that the increased sensitivity will now release a target very easily; possibly even with the closing of your gun.



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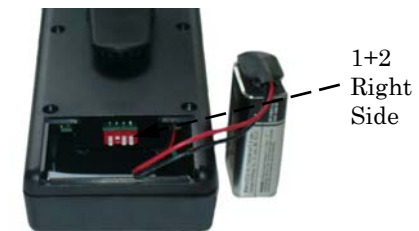
## Transmitter Signal Setup (in Controller)

The transmitter signal is set to work in most environments. If you are having difficulties in releasing a target, adjust the signal length using the internal switch.

**The internal switch is located in the battery compartment. Open the battery door and remove the battery. The switch is now visible on the left of the unit. As seen through the opening, down is off and up is on. Please reference the picture below and note switches 4, 2 and 1 are off and switch 3 is on. The numbers go from left to right, 4 to 1.**

The 4 position switch has two functions. Switches 1 and 2 are for the transmitter signal and switches 3 and 4 are for microphone setup.

Switches 1 and 2 are used to increase the length of the signal needed for the receiver to launch a target. Some environments may need a longer signal. With both switches 1 and 2 off, the pulse to the signal will be .5 seconds. Placing switch 1 on, adds .5 seconds, for a total of 1 second pulse. Placing switch 2 on will add 1 second, for a total of 1.5 seconds. Placing both switches 1 and 2 on will give a signal of 2 seconds.



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## Machine Pulse Setup (in Receiver)

The machine pulse is set to work on most machines. If you are having difficulties in releasing a target, adjust the pulse length using the internal switch.

**The internal switch is located in the battery compartment. Open the battery door and remove the battery. The switch is now visible on the right of the unit. As seen through the opening, down is off and up is on. Please reference the picture below and note switches 4, 2 and 1 are off and switch 3 is on. The numbers go from left to right, 4 to 1.**

The 4 position switch has two functions. Switches 1 and 2 are for machine pulse and switches 3 and 4 are for auto-off state.

Switches 1 and 2 are used to increase the length of the pulse needed for the target machine to launch a target. A foot-operated machine or older machine may need a longer pulse. With both switches 1 and 2 off, the pulse to the machine will be .5 seconds. Placing switch 1 on, adds .5 seconds, for a total of 1 second pulse. Placing switch 2 on will add 1 second, for a total of 1.5 seconds. Placing both switches 1 and 2 on will give a pulse of 2 seconds.

**NOTE:** If after making an adjustment the pulse is too long, a second target may be released. To correct this, place switch 1 back in the off position.

As seen thru opening, Left 2 switches set auto-off



As seen thru opening, Right 2 switches set machine signal

## Auto-Off Setup (in Receiver)

The receiver can be set to stay on until turned off, or turn off after a preset time.

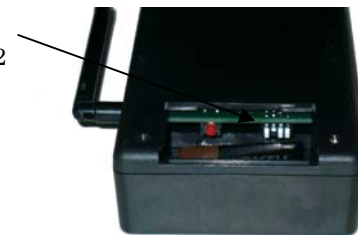
**The internal switch is located in the receiver battery compartment. Open the battery door and remove the battery. The switch is now visible on the right of the unit. As seen through the opening, down is off and up is on. Please reference the picture below and note switches 4, 2 and 1 are off and switch 3 is on. The numbers go from left to right, 4 to 1.**

The 4 position switch has two functions. Switches 3 and 4 are for auto-off and switches 1 and 2 are for machine pulse.

Switches 3 and 4 are used to set the power off state. With both switches off, the receiver will stay on until manually turned off by pressing the OFF indication on the front panel. Turning switch 4 on will set the off time to 30 minutes after the last target is released. Turning switch 3 on will set the time to 60 minutes. Turning both 3 and 4 on will now set the turn off time to 1.5 hours. Each time you launch a target, the time is reset to 0.

**NOTE:** Photo shows auto-off set to 60 minutes.

As seen thru opening, Left 2 switches set auto-off



As seen thru opening, Right 2 switches set machine signal

## Synchronizing the Controller to the Receiver

Located inside the receiver battery compartment is the red pushbutton used to place the receiver in a learn mode. This may be necessary if you want to use more than 1 controller with the receiver.

To add a new unit, turn the receiver on, and wait until the power light starts to flash. Try the new controller. If the controller does not connect with the receiver, press and release the pushbutton inside the battery compartment. The data light will now start to flash. Turn the Autopuller on, and press the low house button, then the manual button. Now press the high house button, then the manual button again. Turn off the receiver, wait 2 seconds, and turn the receiver back on.

Press the low house button and then the manual button. The receiver should indicate that a low target has been launched. Do the same for the high house. The 2 units are now communicating with each other. Repeat the process for as many units as you have.

If you decide to remove a transmitter, due to interference from adjoining field usage, press and hold the button until the data light goes off (approx 10 sec.). After you release the button the light will come on again for 2 seconds, then go off. This has cleared ALL transmitters. You will have to press the button again and follow the procedure to add a controller to reinitialize your unit.

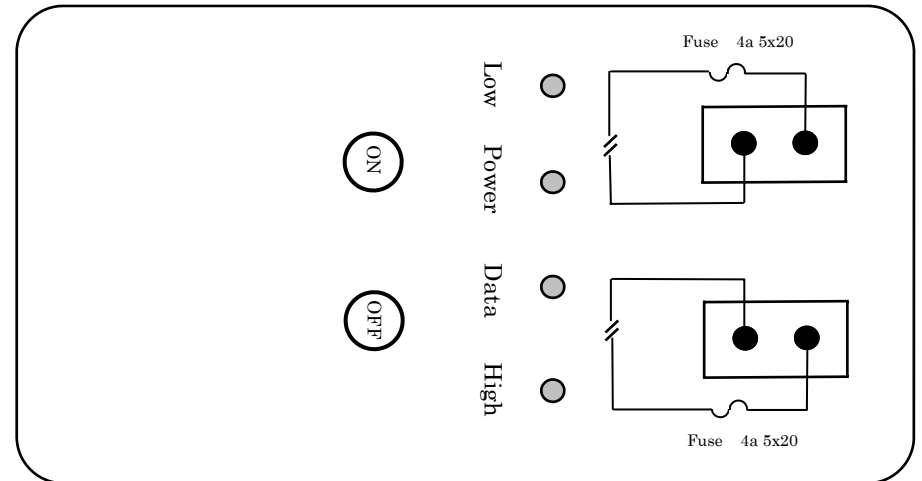


RED Push button for synchronizing both units

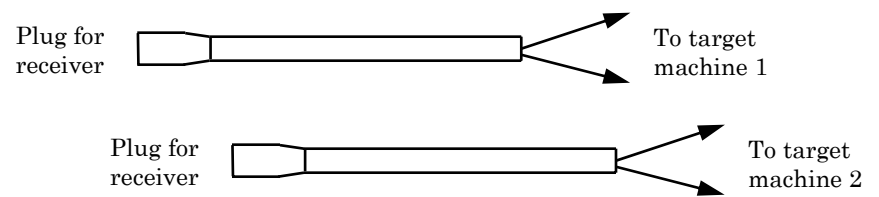
## Wiring the Adapter Cord Dual outlets (Refer to page 14 for single outlet receiver)

The wiring for the receiver with two outlets is very easy. You will be using a separate adapter cord for each machine, so it does not matter which wire goes to which terminal. For each machine, you simply connect the two wires of the adapter cord in place of the pull cord.

Receiver



Adapter Cords with no connectors



## Wiring Setup for receiver with 1 outlet (Refer to page 13 for 2 outlet receiver)

The Autopuller receiver is connected to your course in place of the original pull cord. Since the adapter cord has three wires, the wires have to be connected in a specific order. Please read the following pages to assist you.

Your system comes with two adapter cords, allowing you to wire one for skeet and one for trap.

### Installation:

**Trap cord:** Most shooters connect both the high (black) and the low (white) wires to the same terminal, with the green connected to 2nd terminal. This allows you to press either button if you are using a Skeet controller.

**Skeet cord:** The three wires have to be connected in a specific way. To operate two target machines, one wire has to be common to both (green), one wire is for high (black) and one wire is for low (white). You will need to determine the matching wires for your particular cord. If you connect the wiring incorrectly, the Autopuller will not release the correct target with the appropriate button. If this occurs, simply rearrange the wires as per the information below.

### Machines work properly but the wrong machine triggers:

black and white wires reversed in connector

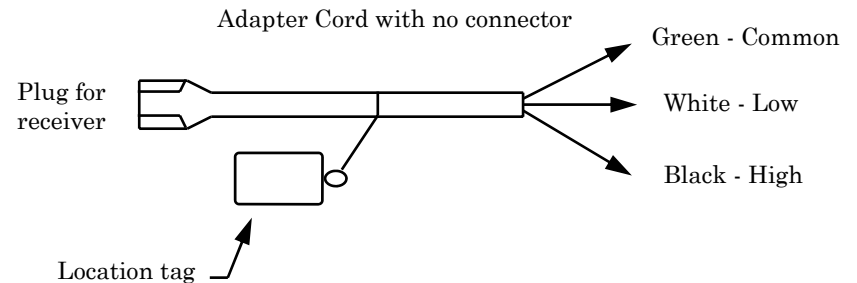
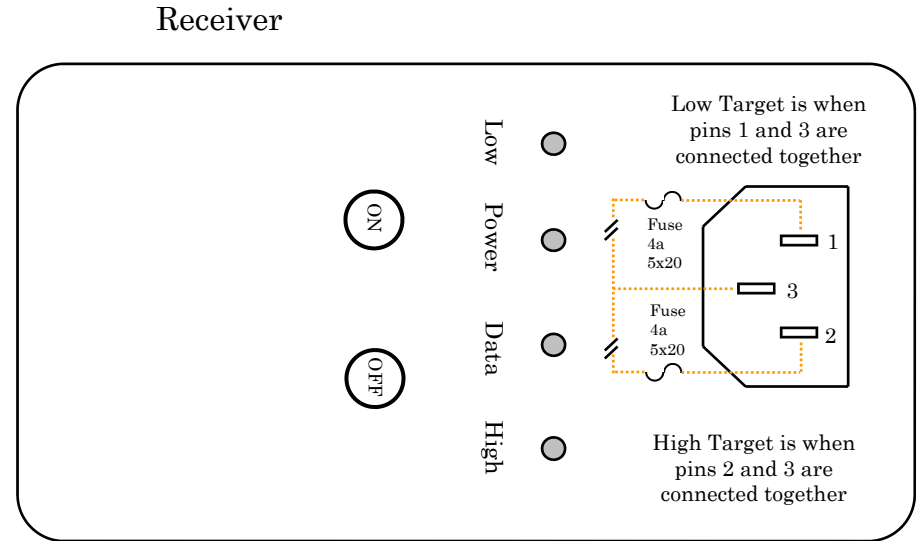
### High and Both work but no Low:

black and green wires reversed in connector

### Low and Both work but no High:

white and green wires reversed in connector

## Wiring the Adapter Cord Single outlet



When wiring for a Trap machine, connect both the high and low wires to one terminal and the common wire to the other.

Use the location tag to note the machine and at which club or location the cord is wired for. This will prevent any confusion in the future if multiple cords are carried in your case.

## Wiring information

The normal electrical color code does not apply to the Autopuller hookup. Due to the limitations on types of wire available, the colors are only references as to how you need to attach the connector.

- Green:** is common to both the high and low machines
- White:** is to be connected to the low machine
- Black:** is to be connected to the high machine

For your reference, 3 of the common size connectors are shown below. (The standard 110v is shown to assist you in establishing sizes.)

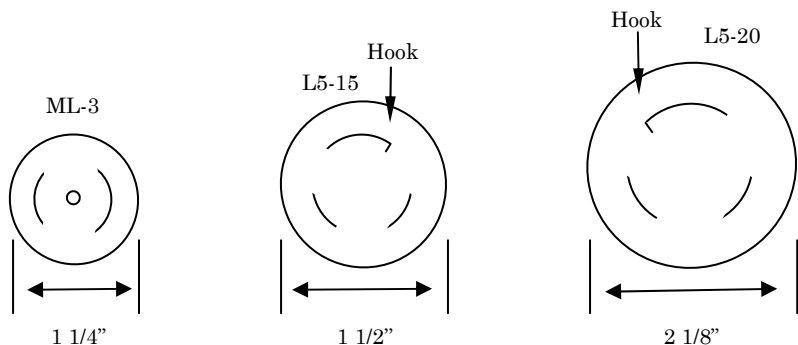


Standard 110v Plug

ML-3

L5-15

L5-20



As seen when looking at the outside terminals  
Dimensions are approximate and may vary based on manufacturer

## Using your Single Outlet Receiver on a Trap field

If you plan on using your Autopuller on a **TRAP** field, please read the following:

Before plugging your Autopuller into the trap connector, verify that the wiring is compatible. There are several ways to trigger a target launch. The most common is to apply power to the hand-held button. Pressing the button will supply the launch relay with power.

**If you connect your Autopuller to a 3-wire trap cord, and 1 of the wires is connected to ground, you will damage either the Autopuller circuit board or the machine circuit board.**

To prevent a circuit board failure, verify how your trap machine is wired. If the existing trap connector has only 2 wires, check to see if they line up with the green and black wires on the Autopuller. If the trap connector has 3 wires, use a meter to establish if 1 is ground, which 1 is power (12v, 24v or 110v) and which 1 will launch a target.

**If the trap connector has a ground wire or the wiring does not line up properly, do not plug the Autopuller in! There is a possibility that when you press 1 of the arming buttons, you may damage either the Autopuller circuit board or the machine circuit board. Resolve the wiring conflict by rewiring the trap connector.**

*The receiver has two 4a fuses located on the sides of the box. If you have the wiring incorrect, 1 or both of the fuses may blow, protecting your equipment. If this happens, correct the problem before replacing the fuses.*

## Troubleshooting Procedure

If you understand what works, it should be very easy to find your problem. Please do a quick evaluation of what you have, before spending a lot of time changing things.

Identify the first step that does not work and proceed to that step on the following pages.

### **GO TO: IF:**

Step A	Controller does not turn on?
Step B	Receiver does not turn on?
Step C	Controller does not operate properly?
Step D	Receiver does not respond to controller?

If you have completed the above 4 steps and all appears to be working properly, continue to the step that corresponds to the area you are having the problem in.

### **GO TO: IF:**

Step E	APD seems to work ok but no target launch
Step F	Erratic operation, false target launch
Step G	Erratic operation, missing targets
Step H	Wrong target launched
Step I	No target launch at a different machine or club
Step J	Foot-operated released machines
Step K	Manual button operation

## **Step A: Can't Turn Controller On**

**(On state is the Voice Delay light blinking)**

- Be sure side rotary switch is on.
- Check for dead 9-volt battery.

## **Step B: Can't Turn Receiver On**

**(On state is the power indicator light blinking)**

- Press firmly on the ON/RESET circle on front panel. Power light should illuminate, then start to blink.
- Check for dead 9-volt battery.

## **Step C: Controller Operation**

- Press one of the arming buttons. The voice delay light will stop blinking.
- Press the manual button. The corresponding target light turns on.
- Voice delay light goes back to the blinking state.
- Plug the microphone into the side jack. The voice indicator turns on when you talk into the microphone. If not, refer to page 8, microphone setup.
- Press 1 of the arming buttons again.
- Call for a target.
- The voice indicator will illuminate and the corresponding target light will indicate a target launch.
- If the controller does not follow the correct sequence, there could be a power problem. Install a new 9-volt Alkaline battery and using the side switch, turn the Controller on and off several times. If this does not correct the problem, contact Clay Delay for assistance. There could be a switch or circuit board problem.

## Step D: Receiver Operation

- Turn the receiver on by pressing the ON circle on the front panel. The power light will illuminate for 2 seconds then start to blink.
- With the controller on and armed, press the manual button.
- The data light will illuminate for the length of time the controller light is on. The corresponding target light will blink on then off.
- If the receiver does not respond to the controller refer to page 12.
- If the receiver responds properly, your system is operating the way it was designed to. Continue to the step that best matches your problem.
- If the receiver does not respond to the controller, or is not consistently indicating a signal, try a fresh 9-volt Alkaline battery. If this does not correct the problem, contact Clay Delay for assistance. There could be a switch or circuit board problem.

## Step E: System seems to work ok but no target launch

- Be sure target machine and receiver are on. If the receiver has prematurely turned itself off, refer to page 11.
- Check that the adapter cord is connected properly and securely to the machine connector and receiver.
- Verify the data and target lights on receiver are operating properly.
- Check that the both 4-amp 5x20 fuses are good.
- If there is still a problem, contact Clay Delay for assistance.

## Step F: Erratic operation, false targets

- Lower the sensitivity of the microphone using either the external adjuster or switches inside of battery compartment. See page 8 for setup.
- Turn both units off, count to 5, turn units back on. See if the problem is corrected.
- The next check is to unplug the microphone. Launch several targets using the manual button. If the problem is gone, plug the microphone back into the side jack. While watching the front voice indicator light, pull and twist the microphone cord and connector. If the voice indicator starts to blink or stays on, there is a problem in the microphone. If possible, try a different microphone and see if the problem is resolved. Contact Clay Delay for a replacement microphone.
- Possibly a bad battery, replace with a 9-volt Alkaline battery.
- If there is still a problem, contact Clay Delay for assistance.

## Step G: Erratic Operation, missed targets

- The first check is to verify you are not out of range. The normal maximum distance from controller to receiver is 175 feet.
- The placement of the controller on your person will have an impact on the range. Try moving your unit to a different orientation on your belt, shell pouch, jacket, etc.
- The receiver may be picking up interference from a surrounding structure or environment. Try moving the receiver to a different location and/or adjust the antenna orientation to the shooting field.

continue on page 22

- Increase the machine pulse length. Refer to page 10.
- Possibly a bad battery, replace with a 9-volt Alkaline battery.

### **Step H: Wrong House Triggers**

The most common problem is that the wiring in the machine connector is not properly configured. Identify the situation and change the wiring.

- **Machines work properly but the wrong machine triggers;**  
black and white wires reversed in connector
- **High and Both work but no Low:**  
black and green wires reversed in connector
- **Low and Both work but no High:**  
white and green wires reversed in connector

### **Step I: APA works ok at original club but not at a 2nd club or at a different machine**

- Verify that the connector wiring is the same on both machines.
- The second machine may need a longer signal. Refer to page 10 for adjusting the machine pulse.

### **Step J: Foot-operated release machines**

The signal to a foot-operated machine needs to be longer than a pushbutton controlled machine. If you experience a problem releasing targets, increase the machine pulse by opening the battery compartment in the receiver and turning switch 1 and/or switch 2 on. Refer to page 10, Machine Pulse Setup for further instructions.

### **Step K: Manual Button Operation**

The manual button allows you to pull a target for a companion shooter. Since you will be pressing the button, the voice delay function is disabled with the button. This allows for a normal response to the call

**Record of switch settings:**

Notes:

**Voice Delay Setting** \_(5)\_\_\_\_\_

**Voice Switches (3) and 4** \_\_\_\_\_

**Club** \_\_\_\_\_

**Connector** \_\_\_\_\_

**Receiver Switches 1 and 2** \_\_\_\_\_

**Club** \_\_\_\_\_

**Connector** \_\_\_\_\_

**Receiver Switches 1 and 2** \_\_\_\_\_

**Club** \_\_\_\_\_

**Connector** \_\_\_\_\_

**Receiver Switches 1 and 2** \_\_\_\_\_

Notes:

## **FEDERAL COMMUNICATIONS COMMISSION (FCC) REGULATORY INFORMATION**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

### **CAUTION**

The wireless radios are required to comply with FCC rules and regulations. Consequently, the radios have limited range because of the limited output power under these rules. Changes cannot be made to these devices because such changes may void compliance with U.S. rules and regulations.

# WARNING

**Many individuals have elected to connect a common household 110-volt style male connector to the cord on the Autopuller. If the Autopuller is inadvertently plugged into an outlet, turned on, and operated, major damage will occur.**

**DO NOT, UNDER ANY CIRCUMSTANCE, PLUG THE AUTOPULLER INTO ANY OTHER CONNECTION THAN THE TARGET MACHINE CONNECTOR!**

**If your Autopuller will be used by other individuals, Clay Delay advises that you spend a little more for a dedicated twist lock connector. This will insure that a possible problem with a wall outlet cannot occur.**

**If you decide to connect a household connector, the owner of the Autopuller, not the Clay Delay company, takes full responsibility for proper use of their unit.**

Thank you for ordering an Autopuller

Safety should always come first. The Autopuller was designed to give consistent pulls without the need for a trap boy. You should never be alone when practicing, but with Autopuller you do not have to rely on your companion to do the pulling.

CLAY DELAY takes no responsibility for damage caused by incorrectly wired trap machines, modified trap machines, modified units, incorrect data given to CLAY DELAY at time of order, or use of the Autopuller for purposes other than that for which it was designed.

This product is covered by a 1-year warranty against manufacturing defects.

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