

The Autopuller®

By CLAY DELAY

Owner's Manual

Models APC and APD



CLAY DELAY
115 Roycroft Dr. West Seneca NY 14224
Phone 716-674-4489 E-mail: claydelay@hotmail.com
www.claydelay.com

Features of the Autopuller Deluxe

- Voice control with instant response
- 2 customer ordered routines
- Auto-off after 30 minutes of non-use

Features of the Autopuller Custom

- 3 customer ordered routines
- Adjustable Auto-off after of non-use

Components of the Autopuller Package

- Autopuller
- Installed 9-volt Alkaline battery
- Microphone
- Belt strain relief
- Instruction manual (this document)

The Autopuller Deluxe and Custom Controller

has 7 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 Single/Doubles
- #2 Routine 1 / High Target
- #3 Routine 2 / Low Target
- #4 Voice

The upper button (PGM circle, front panel) is for selecting the routine

The lower button (ON/RESET circle, front panel) is for power ON after auto-off

Rotary switch is voice sensitivity and ON/OFF



Inside the battery compartment are the switches for:

- Microphone see page 15
- Machine signal see page 16

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.



Wiring and Installation

See page 17

Normal Operation

The Autopuller Deluxe has the ability to be programmed various ways. Refer to pages 4 and 5 for the specific routines in your unit.

1. To turn the unit on, rotate the side adjuster from the off position. If the unit does not respond, press the on/reset button. This is now the standby state. A target will not be released until a target machine is armed. (For the skeet/sporting clays models, press either large button for a single target or both buttons for doubles).
2. The unit starts in the either single or doubles mode. Pressing the PGM button will advance thru the rest of the routines available. See pages 5 through 11 for information.
3. 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 15 for more information on setting up the internal voice adjuster.)
4. Pressing an arming button will hold the Routine light on, and set the unit in an active state. A target will now release in response to your call. After each target is launched, the system will go back into the standby state, thus preventing false targets.
5. 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.
6. When you are done shooting, it is a good habit to remember to turn your unit off. If you forget, the APD turns itself off after 30 minutes in the standby mode.

Routines Available

Examine the front panel of your APD to determine which routines are loaded in your unit. Once you become familiar with your routines, continue on to page 12 for more information on using the various modes.

Instant (Trap/Skeet/Sporting Clays)

This function turns the voice feature and all delays off, and releases a target immediately at the press of the arming button. The manual button is used to release a True Pair/Double. This is the same as the existing hand held release presently connected to the machine.

International Delay (Trap/Skeet/Sporting Clays)

The International Delay routine will place a random delay between when you call for the target and when a target is released. The delay will be from 0 seconds to 3 seconds which is constantly changing and has no predetermined times.

Random Target (Skeet/Sporting Clays)

The random target routine constantly scrabbles the top arming buttons. Pressing one of the arming buttons will lock that particular house in for the next shot. This will be either a High/Left, Low/Right, or Double. Once in standby, the APS continues to scramble the buttons again for the next shot.

Continue on to page 6 for the next 5 routines

Voice Delay

Time Delay

Following Pair

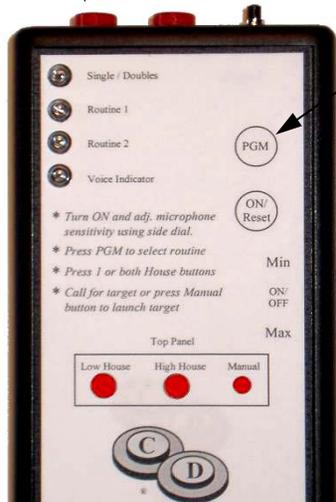
Report Pair

Continuous Rearm

The following 5 pages contain the information for **Voice Delay, Time Delay, Following Pair, Report Pair and Continuous Rearming**. These routines come preset with a standard value found to work in most cases. If you find that your unit does not perform the way you would like, read the information contained within the routine you want to modify.

When making the adjustments, you will be using the indicator lights to help you set the new values. The 4 program routines will use the blinking of the routine light to indicate the time set. To enter the programming routine, select the routine, (using the PGM button), and hold the manual release button until routine light starts flashing and the remaining 2 routine light stay lit. Please refer to the specific instructions for each routine.

2. Press and HOLD manual button until the routine light is flashing and the other 2 lights are on steady.
3. Count the flashes to establish the delay for the routine
- 4*. Press and HOLD the Low (decrease) or High (increase) button until the new time is reached
5. Turn off, wait 3 seconds, turn back on



*** Trap Models**
The High button is replaced by the Manual button

Voice Delay Routine (Trap/Skeet/Sporting Clays)

The Voice Delay routine will place a delay between when you call for the target and when a target is released. Since the APD is very fast on the release, this routine will approximate the same speed as a pullers response. To adjust the delay up or down from the preset 1/2 second delay, refer to Voice Delay Adjustment.

Voice Delay Adjustment

The Voice Delay is adjustable to allow you to fine tune the amount of time between your call and target launch. To adjust, use the PGM button to select the Voice Delay routine. Press and hold the manual button (for approximately 4 seconds) until the Voice Delay light starts to blink and the remaining 2 routine lights stay lit. 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 (manual button for Trap models) to increase the count or the Low house button (Arming button for Trap models) to decrease the count. The range is from 1 to 9. Once you have the count you like, turn the APD off, wait 3 seconds, and turn back on. The new delay will now be stored internally. (If you do not turn the APD off, the auto off function will turn the APD off after 10 cycles and store the value.)

Time Delay Routine (Trap/Skeet/Sporting Clays)

The Time Delay Routine will allow you to shoot in noisy environments, or if you just don't want to use the microphone. The time delay is from when you press the arming button to when a target is thrown. Keep in mind that if you want to throw doubles, you must press both arming buttons, with the time starting on the 1st button pressed. If the time interval is too short, you may have to increase the time to allow you to press both then prepare your stance.

Time Delay Adjustment

The Time Delay is adjustable to allow you to fine tune the amount of time between your pressing a arming button and target launch. To adjust, use the PGM button to select the Time Delay routine. Press and hold the manual button (for approximately 4 seconds) until the Time Delay light starts to blink and the remaining 2 routine lights stay lit. Release the manual button. Count the blinks between pauses to establish the present time. Each blink is equal to approximately 1/2 of a second. Press and hold the High house button (manual button for Trap models) to increase the count or the Low house button (Arming button for Trap models) to decrease the count. The range is from 1 to 9. Once you have the count you like, turn the APD off, wait 3 seconds, and turn back on. The new delay will now be stored internally. (If you do not turn the APD off, the auto off function will turn the APD off after 10 cycles and store the value.)

Following Pair Routine (Trap/Skeet/Sporting Clays)

The Following Pair routine will trigger a second target, from the same machine, after the first is launched. Since this target will be from the same machine, a delay has to be inserted between the 2 shots. A delay of 2 seconds is the preset time between shots. If you shot the 1st target in less than the 2 second rearm time, the APD will hold the 2nd shot for the duration of the 2 second interval. If your 1st shot is after the 2 second rearm time, the 2nd target is immediately released. Pressing both arming buttons will trigger a double and cancel the following pair sequence for that shot. To adjust the delay up or down from the preset 2 seconds, refer to Following Pair Adjustment.

Refer to Microphone Setup (page 14) if you are having difficulties with the 2nd target.

Following Pair Adjustment

The Following Pair is adjustable to allow you to fine tune the amount of time between your 1st target and 2nd target launch. To adjust, use the PGM button to select the Following Pair routine. Press and hold the manual button (for approximately 4 seconds) until the Following Pair light starts to blink and the remaining 2 routine lights stay lit. Count the blinks between pauses to establish the present time. Each blink is equal to approximately 1/2 of a second. Press and hold the High house button (manual button for Trap models) to increase the count or the Low house button (Arming button for Trap models) to decrease the count. The range is from 1 to 9. Once you have the count you like, turn the APD off, wait 3 seconds, and turn back on. The new delay will now be stored internally. (If you do not turn the APD off, the auto off function will turn the APD off after 10 cycles and store the value.)

Report Pair (Skeet/Sporting Clays)

The Report Pair routine will trigger a second target from the opposite machine that was selected. If you press the High/Left arming button, the 1st target will come from that machine, and at the sound of your gun, the 2nd target will be released from the right machine. The same is true in the reverse. Pressing both arming buttons will trigger a double and cancel the report pair sequence for that shot. A delay is inserted between the 1st shot and the 2nd launch. This is to give you time to set up for the shot. The preset hold time is 1/2 second. If you want more or less time, continue on with Report Pair Adjustment.

Refer to Microphone Setup (page 14) if you are having difficulties with the 2nd target.

Report Pair Adjustment

The Report Pair is adjustable to allow you to fine tune the amount of time between your shot and the 2nd target launch. To adjust, use the PGM button to select the Report Pair routine. Press and hold the manual button (for approximately 4 seconds) until the Following Pair light starts to blink and the remaining 2 routine lights stay lit. 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 (manual button for Trap models) to increase the count or the Low house button (Arming button for Trap models) to decrease the count. The range is from 1 to 9. Once you have the count you like, turn the APD off, wait 3 seconds, and turn back on. The new delay will now be stored internally. (If you do not turn the APD off, the auto off function will turn the APD off after 10 cycles and store the value.)

Continuous Rearming (Trap)

The Continuous Rearming routine will allow you to pull your targets without re-pressing the arming button for each call. The advantage is that you can continue to shoot without changing your stance. The disadvantage is that you may have false targets due to erroneous sounds releasing a target. Keep in mind that once rearmed, the voice circuit will be active and waiting for a command to launch a target. It may be necessary to adjust the sensitivity down to minimize the amount of false targets.

NOTE: When this routine is installed in a Skeet/Sporting Clays model, only the HIGH house will rearm. If your unit is to be connected to a Trap machine, connect the pull cord wires to the BLACK and GREEN wires.

Continuous Rearming Adjustment

The Continuous Rearming delay may be preset to a different time. The base delay is approximately 4 seconds. This allows you the time for your shot without a second target being launched by your gun. To change the delay, press the PGM button until the indicator is blinking next to the Continuous Rearming light. Press and hold the manual button (for approximately 4 seconds) until the Continuous Rearming light starts to blink and the remaining 2 routine lights stay lit. Count the blinks to establish the present delay. To increase the delay, press and hold the Manual button until the new time is reached. To decrease the delay, press and hold the Arming button until the new delay is reached. The range is from 1 to 9. Once you have the count you like, turn the APD off, wait 3 seconds, and turn back on. The new delay will now be stored internally. (If you do not turn the APD off, the auto off function will turn the APD off after 10 cycles and store the value.)

Using the Routines:

Not all routines are capable of functioning together. An example would be Following Pair and Report Pair. It is not possible to combine those together. If the two routines are compatible, a combination routine would be available to you. An example would be Voice Delay and Following Pair. As you press the PGM button, the sequence would be:

Single / Doubles (Start point)
Voice Delay
Following Pair
Following Pair with Voice Delay
OFF
Single / Doubles

Routine Light	Single	VD	FP	FP w VD	OFF
Single	Blinking				Blinking
Voice Delay		Blinking		Blinking	Blinking
Follow Pair			Blinking	Blinking	Blinking

After an arming button is pressed, the unit will go into an armed state. The indicator light goes from blinking to steady. A 30 second timer starts, and if no target is released within 30 seconds, the unit goes back into the standby mode. For the modes that involve a second target, the timer decreases to 4 seconds for the second target. When a target is released, 1 or both of the routine lights will turn on, for the length of the machine signal. This is a troubleshooting tool that “shows” that a target has been released.

Continue on page 13

Off Routine

The off routine will power the APD off after 6 seconds. During this time, all 3 routine lights will blink. If you do not press the PGM button and advance to the 1st routine within this time, it will be necessary to press the Reset/ON button to turn back on.

If you find that the side rotary switch is being turned on when stored, try using this routine along with turning the side switch off. You now have less of a chance of draining the battery by mistake.

Auto Off Function

To increase battery life, an auto off feature is included in your unit. If your unit stays in the standby mode for more than 30 minutes, the auto off function starts blinking all 3 routine lights and turns off all power 6 seconds later. To restore power, you must press the Reset/ON button on the front panel.

Indicator Lights

The indicator lights have 3 modes of operation. The fast flashing mode is standby. (This helps increase battery life.) The steady mode is the armed state. A target will be released on command. The slow flashing mode of 2 lights is the program mode. Refer to the particular routine for further information.

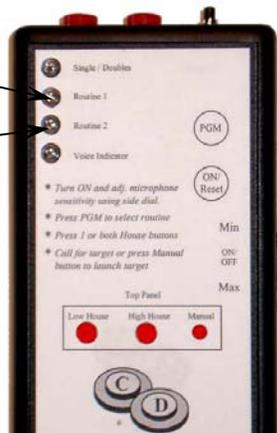
Indicator Lights as Target Lights

As a troubleshooting and setup aid, the 2 routine lights are also indicators for the target machine signal. It is best to be in the Single/Double routine when checking the machine signal. Pressing the High house button will cause the Single/Double light to stay on steady. The signal can be "viewed" by pressing the manual button and observing the length of time the upper routine 1 light stays on. The same is true for the Low target machine. Pressing the Low house button will also cause the Single/Double light to stay on steady. This time, pressing the manual button will cause the lower routine 2 light will come on for the duration of the low target machine signal.

Target machine lights

Upper routine 1 light is for High house

Lower routine 2 is for Low house



14

Microphone Setup

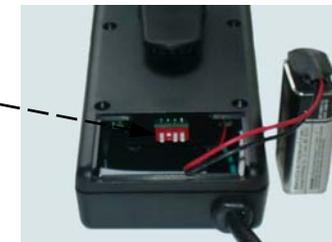
The microphone is preset to work in most situations. If you find that the external adjuster does not allow you to comfortably call for your target, you may adjust the sensitivity further by accessing the internal set of 4 switches.

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 thru the opening, down is off and up is on. Please reference the picture below and note switch 4 is 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 + 2 are for machine signal and positions 3 + 4 are for microphone setup.

Positions 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. If you have the report pair or following pair routines, you may have difficulty with the second target since the APD may not respond to your gun sound now. 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.

3+4
Left
Side



15

Machine Signal Setup

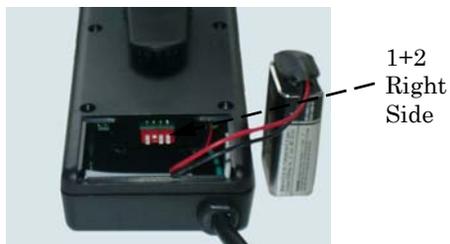
The machine signal is set to work on most machines. If you are having difficulties in releasing a target, adjust the signal length using the internal switch.

The internal switch is located in the battery compartment. Open the battery door and remove the battery. The switch is now visible in the center of the unit. As seen thru the opening, down is off and up is on. Please reference the picture below and note switch 4 is 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 + 2 are for machine signal and positions 3 + 4 are for microphone setup.

Positions 1 and 2 are used to increase the length of the signal needed for the target machine to launch a target. A foot operated machine or older machine will need a longer signal. 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 signal of 2 seconds.

NOTE: If after making an adjustment the signal is too long, a second target may be released. Just place switch 1 back in the off position.



Wiring Setup

The Autopuller was designed to be used with either your existing pull cord or an external grade extension cord. If you use the existing cord, remove the head from the cord and install a female connector in its place. A mating male connector is installed on the original head and on the Autopuller. This will allow you the choice of either control unit. If you decide to replace the pull cord with an exterior grade extension cord, install the necessary connectors on the cord and on the Autopuller. See installation for wiring instructions.



Connectors attached to Autopuller, original pull head and cord.

Installation:

Trap model: It is not important as to which way the 2 wires are connected to your cord. (see note below)

Skeet/Sporting Clays models: The 3 wires have to be connected in a specific way. To operate 2 target machines, 1 wire has to be common to both, (green), 1 wire is for High, (black), and 1 wire is for Low, (white). You will need to determine the matching wires 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 until the system works properly. (refer to page 19 for specific information)

NOTE: If a skeet or sporting clays model is to be connected to a single trap machine, connect both the white and black wires together on 1 terminal and the green wire to the 2nd terminal.

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.)

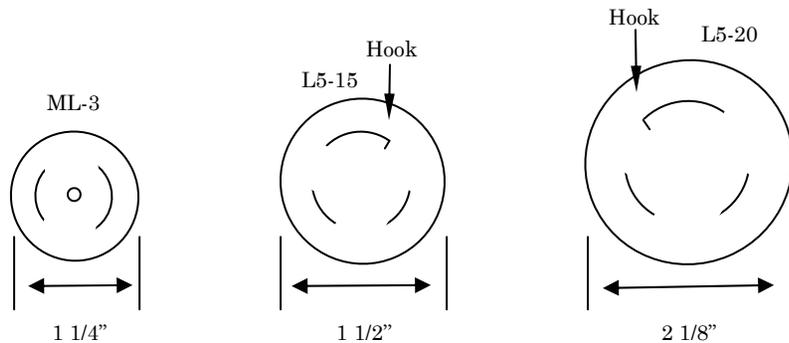


Standard 110v Plug

ML-3

L5-15

L5-20



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

Quick Answers to Common Problems

- **Can't Turn On** - Be sure side rotary switch is on then press ON/RESET on front panel
- **Erratic Operation** - Turn unit off, count to 5, turn unit back on
- **Erratic Operation** - Possible a bad battery, replace with a 9v alkaline
- **Wrong House Triggers** - See page 19 to correct wiring to plug
- **APD seems to work ok but no target launch**
Be sure target machine is on and the wiring connectors are connected properly and securely. Refer to page 20 for troubleshooting
- **APD does not respond to gun sound** - Increase sensitivity of microphone with external adjuster or switches in battery compartment. See page 15 for setup.
- **False triggering of targets** - Lower sensitivity of microphone using external adjuster and switches inside of battery compartment. See page 15 for setup.

Common Problems When Attaching Connectors:

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

Problems at setup:

First time the APD is being hooked up to a particular machine:

- Insure the target machine is turned ON and working properly by connecting the original release and launching targets.
- Turn the APD on by rotating the voice adjuster from the off position. The front panel Single/Doubles light should now be blinking. If the light has not illuminated, press the power/reset button on the front panel. Verify the light is now blinking. Press one of the arming buttons and verify that the light is now on. Press the small manual button. The light should go off, one of the routine lights should blink, and you should hear a “click” from inside the box. If the lights do not turn on properly, check for a bad or disconnected battery. If unit appears to be dead, contact Clay Delay for assistance.
- Since this is the 1st time you are using this unit on the field, check the wiring to the course connector and verify that the connection is correct. If all appears to be ok, the signal to the machine may be too short to trigger a target. Increase the machine signal length. Refer to page 15, Machine Signal Setup for further instructions.
- If the APD is functioning, but not correctly, refer to “Common Problems when attaching connectors” on page 19.

Foot-operated released 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 signal pulse by opening the battery compartment and turning switch 1 and/or switch 2 on Refer to page 16, Machine Signal Setup for further instructions.

Problems after APD has been working:

APD starts to operate erratically:

Examples are the APD not going into standby after a shot or the voice circuit not responding the same as before.

- If your unit starts to operate erratically, turn your unit off, wait 5 seconds, then turn back on.
- If you still have problems, replace the 9-volt battery with a new Alkaline battery. A lower grade or weak battery may not power your unit properly.
- If all appears to be ok, contact Clay Delay for assistance.

APD works on 1 machine but not on 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 16 for adjusting the machine signal.

APD was working on the connected machine, but now will not trigger targets:

- Insure the target machine is ON and working properly by connecting the original release and launching targets
- Check the connector at the target machine and the APD and insure they have not come loose.

Verify the APD is operating properly by watching the front panel lights when you turn the APD on. The voice light should blink on, go off, and stay off and the Single/Doubles light will be blinking. Press one of the arming buttons and verify the Single/Doubles light stops blinking and stays on. Press the small manual button. One of the routine lights should blink on, pause, then go off. Now press the other arming button, and press the manual button. The other routine light should turn on, pause and go off. If the above sequence is correct, and all appears to be fine, contact Clay Delay for assistance.

Following Pair does not work properly

- When using 1 machine, a pause has to be placed between the 2 shots. This will allow the machine to properly recycle. If the pause is too short, you may have a problem with consistent launches. Adjust the delay as per Following Pair Adjustment procedure on page 9. The 2nd problem may be the microphone sensitivity. Refer to page 15 for setup.

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 and Time delay functions are disabled with the button. This allows for a normal response to the call.

When in the Report Pair or Following Pair modes, the 2nd target will not release with the manual button since the APD is waiting for the sound of the 1st shot .

Future References:

Voice Delay Setting _(5)_____

Time Delay Setting _(5)_____

Following Pair Setting _(5)_____

Report Pair Setting _(5)_____

Continuous Rearming Setting _(4)_____

Voice Switches 3 and 4 _____

Club _____

Connector _____

Signal Switches 1 and 2 _____

Club _____

Connector _____

Signal Switches 1 and 2 _____

Club _____

Connector _____

Signal Switches 1 and 2 _____

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.

CLAY DELAY
115 Roycroft Dr. West Seneca NY 14224
Phone 716-674-4489 E-mail: claydelay@hotmail.com
www.claydelay.com