HOW THE PAT-TRAP® AUTOMATIC DOUBLES MACHINE WORKS

Turn the switch marked “Pump Motor” to the On Position, and let the pump warm up.

Turn the switch marked “On/Off/Release” to the On Position to energize the PAT-TRAP®. The elevator rises to receive a target while the throw arm and turret advance. When a target is loaded, the elevator goes down and the throw arm advances the target until the Activator comes to the #2 and #3 switch bracket (See Diagram 9). The throw arm is now at the brake (in the cocked position - Diagram 8) and the target is set.

Diagram 8

Throw Arm on Throw Arm Brake

Diagram 9

Pat-Trap® #2 & #3 Switch Bracket in “Cocked Position”
When the trap release switch is activated, Switch #1 overrides Switch #2 which then advances the throw arm off the throw arm brake causing the machine to fire. (See Diagram 11)

When the activator leaves Switches #2 and #3, the #2 switch closes and begins a new cycle of loading a target. The #3 switch also closes, which starts the oscillation interrupter for a predetermined length of time. (Diagram 10)

** The machine oscillates to the left until Switch #12 (Left Angle Limit Reed Switch - N.O.) comes to the magnet, activating Relay #2, causing the machine to change direction to the right (Diagram 10).

Switch #11 holds the Relay engaged until Switch #11 (Right Angle Limit Reed Switch - N.O.) comes to the magnet, breaking the circuit which then disengages Relay #2 causing the machine to oscillate back to the left. (Diagram 79)

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**Pat-Trap® #12 & #11 Limit Reed Switches on Oscillation Cylinder**

The switching sequence is the same for the wobble machine.
PAT-TRAP® SWITCH IDENTIFICATION.

Switch #A  PAT-TRAP® Pump Motor Switch (See Diagram 6)
Switch #B  PAT-TRAP® On/Off/Release Switch (See Diagram 6)
Switch #1  PAT-TRAP® Trap Release Switch (See Diagram 11)
Switch #2  Throw Arm Limit Switch. (See Diagram 9)
Switch #3  Oscillation/Wobble Interrupter Activator Switch. (See Diagram 9)
Switch #6  Interrupter Sequence Switch. (See Diagram 13)
Switch #7  Interrupter Sequence Switch. (See Diagram 13)
Switch #11  N/C Right-angle Limit Reed Switch. (See Diagram 10)
Switch #12  N/O Left-angle Limit Reed Switch. (See Diagram 10)
Switch #11A  High-angle “UP” N/C Limit Reed Switch (Wobble). (See Diagram 12)
Switch #12A  Low-angle “DOWN” N/O Limit Reed Switch (Wobble). (See Diagram 12)
TURNING THE PAT-TRAP® MACHINE “ON”

1. Push the Pump Motor toggle switch UP to the “ON” position. (Diagram 6)

2. IMPORTANT: Turn the pump motor switch on first so that the hydraulic system is pressurized to prevent any air from entering the system. Allow the pump to warm up the hydraulic oil before operating the machine. In warm weather this will not matter. Cold temperatures may cause the throw arm to cycle repeatedly if the hydraulic oil is not warm. Please refer to the section: Cold Weather Adjustment Temperature/Release Time and stopping the Throw Arm on the brake.

3. Push the On/Off/Release toggle switch UP to the “ON” position. (Diagram 6)

TURNING THE PAT-TRAP® MACHINE OFF

1. Standing outside, and to the side of the trap house, push the On/Off/Release toggle switch all the way DOWN to release and let go. The trap will throw the target and not cock the spring.

2. Push the Pump Motor toggle switch DOWN to the Off position.

LOADING THE PAT-TRAP® MACHINE

The Pat-Trap® machine holds four (4) full cases of clay targets. (540 Targets)

NEVER attempt to load the clay targets without first releasing the trap machine.

NEVER STAND IN FRONT OF A TRAP MACHINE. THE TRAP MACHINE MUST BE TURNED OFF AND THE SPRING RELEASED BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHILE THE THROW ARM IS COCKED.
Stuart W. Patenaude, the Inventor of the Pat-Trap®, loading an early Pat-Trap® Machine.
AUTOMATIC PAT-TRAP® SINGLES

NEVER STAND IN FRONT OF A TRAP MACHINE. THE TRAP MACHINE MUST BE TURNED OFF AND THE SPRING RELEASED BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHILE THE THROW ARM IS COCKED.

1. Standing clear of the trap machine, release the target. Push the On/Off/Release toggle switch all the way down to the release position and then let go of it.

2. Pull back on the roller plate and move the set pin to the lower notch. (See Diagram 15)

3. Set the Elevator Cog to the appropriate notch for singles. (Diagram 19)

4. The main spring tension can be adjusted by rotating the main spring crank clockwise to increase tension and counter-clockwise to reduce the tension. When changing from Doubles to Singles, rotate the main spring crank counter-clockwise the same number of turns that were used to increase the tension for Doubles --- approximately 10 rotations. (Diagram 16)
5. On the trap machine electrical box, the toggle switch must be pushed down to the Auto position. This will return the machine to automatic horizontal oscillation. (See Diagram 17)

6. Before exiting the trap house, staying clear of the trap, reach over to the power control box and release the target to prevent target releasing. (Diagram 6)

7. Standing outside of the trap house and to the side, push the On/Off/Release toggle switch up to the ON position. (Diagram 6)
AUTOMATIC PAT-TRAP® DOUBLES

NEVER STAND IN FRONT OF A TRAP MACHINE. THE TRAP MACHINE MUST BE TURNED OFF AND THE SPRING RELEASED BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHILE THE THROW ARM IS COCKED.

1. Standing clear of the trap machine, release the target. Push the On/Off/Release toggle switch all the way down to the release position and then let go of it.

2. Pull back on the Roller Plate and move the set pin to the upper notch. (Diagram 18)

3. Raise the elevation of the trap by placing the bottom portion of the trap machine into the elevation cog approximately 3-4 notches above the notch used to establish the Singles height. For example if the 10th notch was used in Singles then the Doubles setting should be approximately the 13th or 14th notch on the Elevation Cog nearest the frame. (Diagram 19)
4. The spring tension must be increased to throw Doubles. Rotate the spring crank clockwise approximately 10 rotations from the Singles setting. (Diagram 16).

5. On the trap machine electrical box, the toggle switch must be pushed up to the Manual position (Diagram 17). This will stop the automatic horizontal oscillation and will activate the Right and Left pushbuttons. The trap machine must be ON to operate the Right and Left pushbuttons. When the trap is ON the throw arm is ready to fire. The throw arm can be fired by pushing the pullcord button. It can also be fired by hand: by pushing the arm forward off the brake when the machine is either On or Off. Staying clear of the trap machine, reach over to the power control box and turn the On/Off/Release switch to the ON position.

6. Use the Right or Left button to move the trap machine to the center of the trap field.

7. Before exiting the trap house, staying clear of the trap, reach over to the power control box and release the target.

8. Standing outside of the trap house and to the side, push the On/Off/Release toggle switch up to the ON position.

**ADJUSTMENT FOR PAT-TRAP® DOUBLES**

The adjustment for Doubles should only need to be done the very first time the machine is used. Using a 7/16” wrench, loosen the bolt, move the Double Finger in 1/8” increments. Pull the Doubles Finger back towards self to lower the height of the right target. Push it forward to raise the height of the right target. Tighten the bolt. See Diagram 20. Refer to the section for correct positioning of the Doubles Finger (Page 37). (Although the bolt is snug, it is possible to move the Doubles Finger without loosening the bolt.)
AUTOMATIC PAT-TRAP® WOBBLE SETTINGS

The PAT-TRAP® with Wobble can be used in any of the following modes:

<table>
<thead>
<tr>
<th>STATIONARY</th>
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</tr>
</thead>
<tbody>
<tr>
<td>X Singles</td>
<td>X Singles</td>
</tr>
<tr>
<td>X Doubles</td>
<td>X Doubles</td>
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<table>
<thead>
<tr>
<th>OSCILLATING VERTICAL</th>
<th>OSCILLATING HORIZONTAL/VERTICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Singles</td>
<td>X Singles</td>
</tr>
<tr>
<td>X Doubles</td>
<td>X Doubles</td>
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The PAT-TRAP® with Wobble has an interrupter for the horizontal and vertical modes.

NOTE: If the machine is located inside a trap house, oscillating doubles targets may hit the trap house walls.

WOBBLE ANGLES

Left/Right Angle = 8” => 50°
Down Angle = 7° Min

Left/Right Angle = 10” = 60°
Up Angle = 25 ½ ° Max
CHANGE OVER TO WOBBLE

Standing clear of the trap machine, release the target. Use all safety procedures as stated in the previous Singles and Doubles section of this Manual.

The Oscillation Switch and the Wobbles Switch must be pushed down to the AUTO position on the trap machine electrical enclosure. This engages the machine to the automatic horizontal/vertical oscillation mode.

HEIGHT ADJUSTMENT FOR SINGLES/DOUBLES ON A WOBBLE MACHINE

On the trap machine electrical box, the horizontal switch must be moved to the MANUAL position. For desired height, push UP switch to go up; push DOWN switch to go down.
INCREASING/DECREASING TARGET DISTANCE/SPEED

Clockwise rotation of the main spring crank handle increases the spring tension thus increasing the speed of the target and the distance it travels.

Counter clockwise rotation of the main spring crank handle decreases the spring tension. Continued counter-clockwise rotation will remove the tension from the crank and the spring tension lock-nut will hold. The elastic lock-nut holds the spring at the set minimum tension.
SETTING MINIMUM TARGET DISTANCE

The procedure to establish the minimum distance for a “Singles” target is as follows: (the standard trap speed is 67 to 70 FPS to throw a target 49 to 51 yards with the machine angled at 20 degrees (9 ft high and 30 ft out) (For a 45 yard Doubles target set a Single target at 76 FPS). (Call Pat-Trap, Inc. about the Target Speed Chronograph system for measuring speed.)

1. Remove the main spring crank handle by rotating it counter-clockwise (Diagram 25).

2. Remove the nylon washer that is sandwiched between the crank handle and the stand-off collar sleeve (Diagram 25).

Back ing off the tension on PAT-TRAP® Main Spring Crank Handle

3. Remove the two (2) ¼” bolts from the stand-off collar sleeve (Diagram 26).

Removing Main Spring Standoff Collar Sleeve

4. Remove the stand-off collar sleeve (Diagram 26).
5. Locate the elastic lock-nut. Use a ¾” wrench on this nut to adjust the distance/speed (Diagram 27)

![Diagram 27]

Adjusting Elastic Lock Nut with ¾” Wrench

6. At this point one can throw a target or two to establish how far the PAT-TRAP® is currently throwing a straight away “Singles” target. Please observe the proper safety precautions.

7. When proper/desired distance/speed is achieved, back off the elastic lock-nut three (3) turns.

8. Re-assemble the parts.

9. When the main spring crank handle becomes snug, continue to turn three (3) more times for the proper setting.

10. Note: Whenever a “Singles” distance is to be set, back off the crank to neutral, crank back to snug; then give another three (3) turns for proper setting.

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NOTE: “SINGLES” are always set first, and then follow the procedures for “Doubles” as outlined.
ADJUSTMENT HEIGHT OF TARGETS

NEVER STAND IN FRONT OF A TRAP MACHINE. THE TRAP MACHINE MUST BE TURNED OFF AND THE SPRING RELEASED BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHILE THE THROW ARM IS COCKED.

Tilt the table by pushing up on the front of the machine. The elevation cog can be positioned up or down.
ANGLE ANDJUSTMENTS

STRAIGHT-AWAY TARGETS

Set the toggle switch to the manual position, Use the right and left buttons to achieve Straight-Away Targets.

Diagram 29

Toggle Switch

2 – HOLE TARGETS

The 4 ¼” spacer bar between the Left and Right Angel Reed Switches allows for a 5 7/8” of total cylinder rod travel, which equals a Two-Hole (34°) Target.

A 5 ¼” spread between the switches allows for a 6 7/8” of total cylinder rod travel, which equals a Three-Hole (40°) Target.

Diagram 30

#12 Left Angle Limit Switch (N.O.)
PT-9222

#11 Right Angle Limit Switch (N.C.)
PT-9223
SHIFTING THE TARGET FIELD

The 9/64” hex head set screws on the limit switches are already pre-set.

DO NOT OVERTIGHTEN AS THE PLASTIC BRACKET WILL BREAK!

An aluminum spacer bar that is 4 ¼” long is provided for setting a “2-Hole” target field width (See Diagram 30). The field can be adjusted by sliding the limit switches together with the spacer bar in the direction you want to move the field; TO MOVE THE ENTIRE FIELD TO THE RIGHT, SLIDE THE SWITCHES TO THE RIGHT AS YOUR ARE FACING THE MACHINE. Keep the switches against the spacer bar to maintain the proper field width. The set screws are lightly set so that you can slide the limit switches without adjusting the set screws.

To be able to go back to the original setting use a magic marker to draw a line on the cylinder beside the switch to mark where the switches should go back to.