



Manual/Parts Lists
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Beomat, Due Matic, Lincoln Traps,
Pat Trap, Winchester

INSTALLATION - SAFETY - MAINTENANCE

Manual

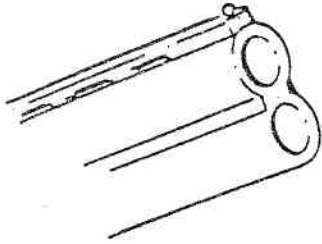


Singles To Doubles In Seconds!

Serial #: _____

Date: _____

SERIES "G"



WARNING

This Manual discloses details of a patented apparatus or device for throwing clay targets. The apparatus is clearly disclosed and claimed in our U.S. Patent No. 5249563 and 6176229. It is unlawful under United States Patent Law to practice; i.e. to make, use or sell a patented invention without the express permission of the owner/inventor thereof. Permission is expressly granted, only to the purchaser, or their designees and members of the household of the purchaser, only to use, the patented apparatus. The unauthorized making, using or selling of the patented apparatus constitutes patent infringement. It is the intent of the owner/inventor to prosecute infringers of the Patent to the full extent of all applicable laws.

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The PAT-TRAP®

NEVER STAND IN FRONT OF A TRAP MACHINE. THE TRAP MACHINE MUST BE TURNED OFF AND THE SPRING RELEASED BEFORE ENTERING THE TRAP HOUSE. IF YOU ARE UNFAMILIAR WITH THE TRAP MACHINE:

DO NOT TOUCH - GET HELP

NEVER ATTEMPT TO LOAD THE TRAP WHEN IT IS COCKED. ALWAYS RELEASE THE TARGET FROM THE TRAP MACHINE.

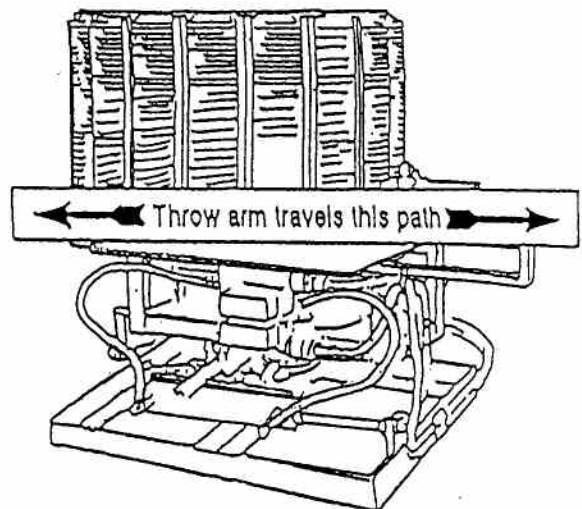
NEVER ADVANCE THE THROW ARM BY HAND WHEN THE ON/OFF/RELEASE SWITCH IS IN THE ON POSITION. THIS MAY DAMAGE THE MACHINE.

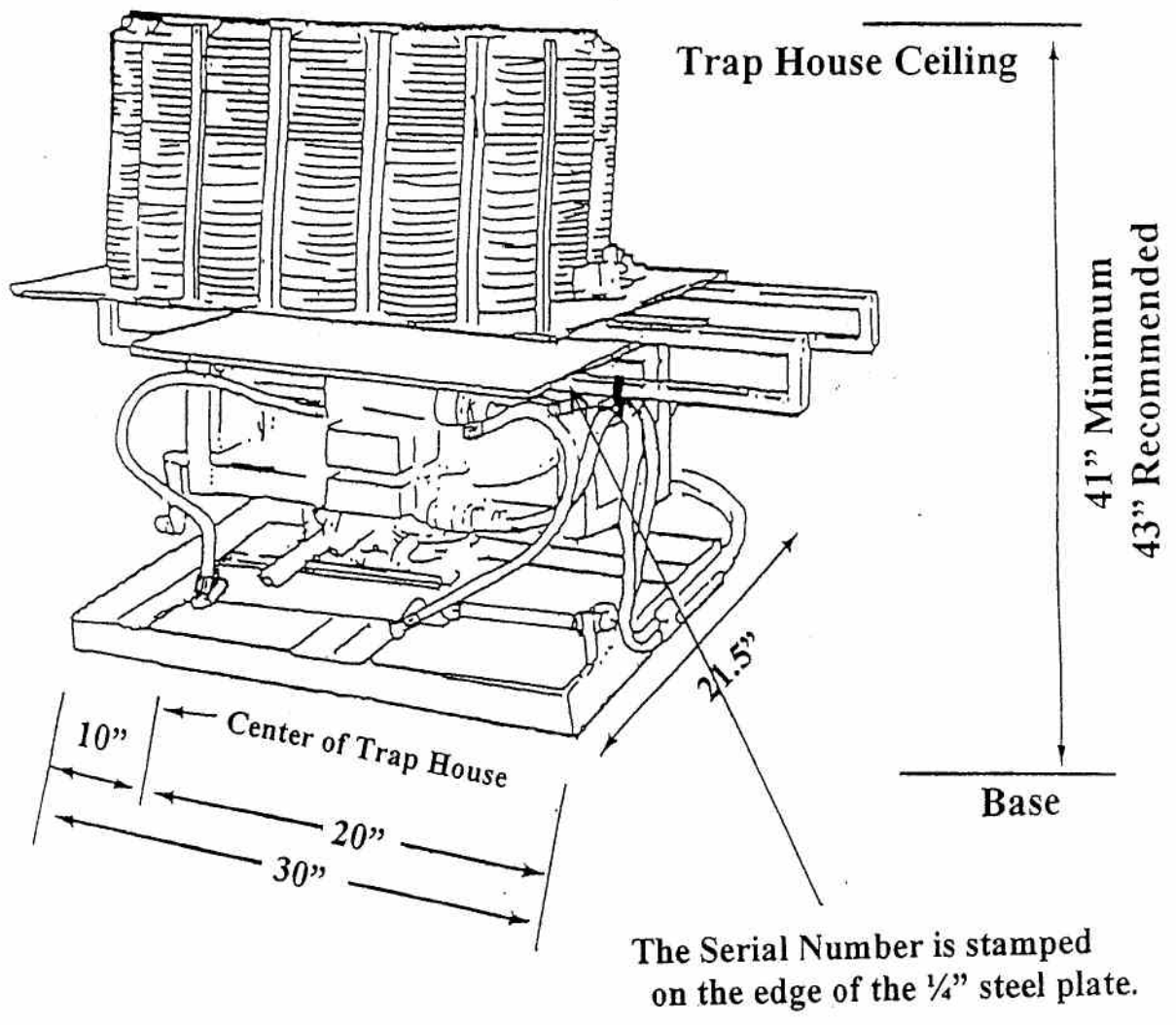
The target throw arm extends 4" beyond the plates. Keep away from the moving parts. Never stand in front of the trap machine.

When the machine is turned ON the throw arm will travel forward to the cocked position through the danger zone.

When the throw arm is fired, the arm will travel through the indicated danger area zone.

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.





(Diagram 1)

INSTALLATION OF THE TRAP MACHINE AND PUMP

1. Place the trap machine in the trap house with the front of the machine as close as possible to the front wall. The platform which the trap machine sits on must be level. See Diagram 2. If necessary, the turret may be removed from the machine to place the trap into the house. Please refer to the directions below.

2. The trap is to be set *off center* of the trap house. See Diagram 2

Measure and mark the center of the trap house. The front of the base is marked with a scratched line at 10" in from the left – facing the front of the machine. Set the machine so that this line is now at the center of the trap house. The base of the trap machine should be set at 41" minimum from the ceiling; however, a setting of approximately 43" is best for loading targets.

3. Holes are provided in the corners of the base to screw down/secure your machine.

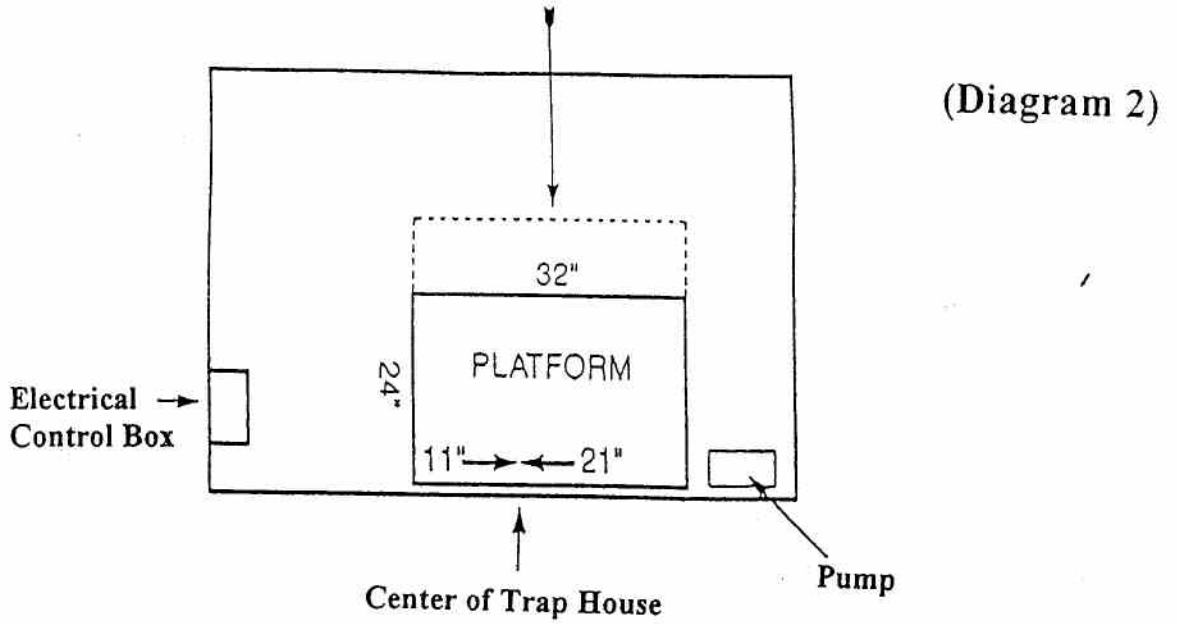
4. The pump reservoir is filled at the factory.

5. Place the pump on the floor – on the left side of the trap house. See Diagram 2

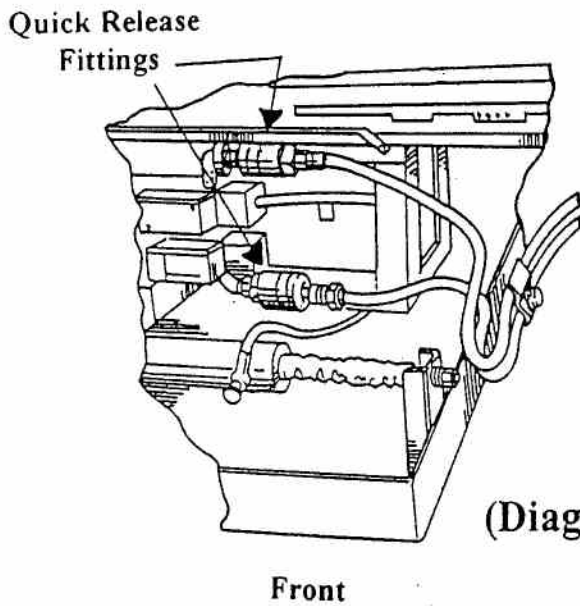
6. If not already connected, connect the quick release fittings from the hydraulic hoses to the front of the trap machine; slide back the outer sleeve of the female fitting while pushing onto the male fitting. Allow the female sleeve to slide forward to lock. Gently tug on the connections to check that they are securely fastened. See Diagram 5

7. To hold the hydraulic hoses in position, clamp to the rear side of the machine approximately 3 feet (of hose) from the quick release fittings. Hoses must be positioned so they do not rub against each other (or the wall of the trap house) when oscillating. See Diagram 6

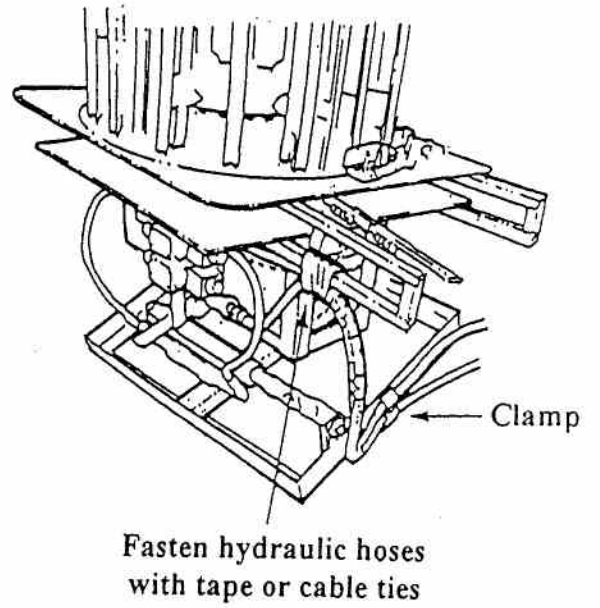
The platform can be extended back if you
Want a place to set targets or tools.



(Diagram 6)



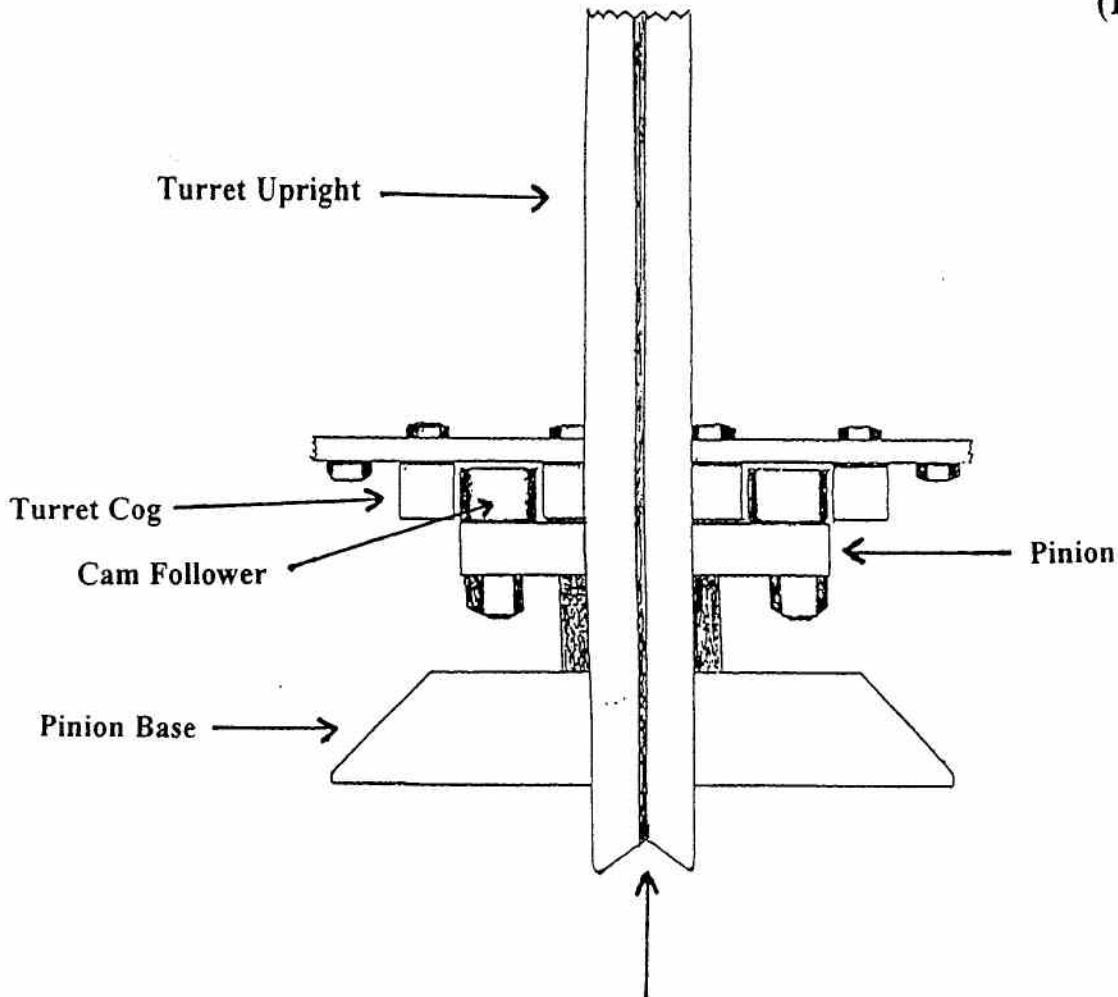
(Diagram 5)



REPLACEMENT OF THE TURRET

WARNING: To prevent damage to your machine the turret must be replaced the same way as it was removed.

(Diagram 42)



Be aware that the turret upright will be aligned with the center of the pinion when the pair of cam followers are meshed with a pair of cogs

1. Observe how the cogs are meshed with the cam followers: i.e., the pair of cam followers have to mesh with a pair of cogs.
2. Two people, one on each side of the machine, must lift evenly to remove the turret. Place the machine inside the trap house. Replace the turret in the same way that it was removed.

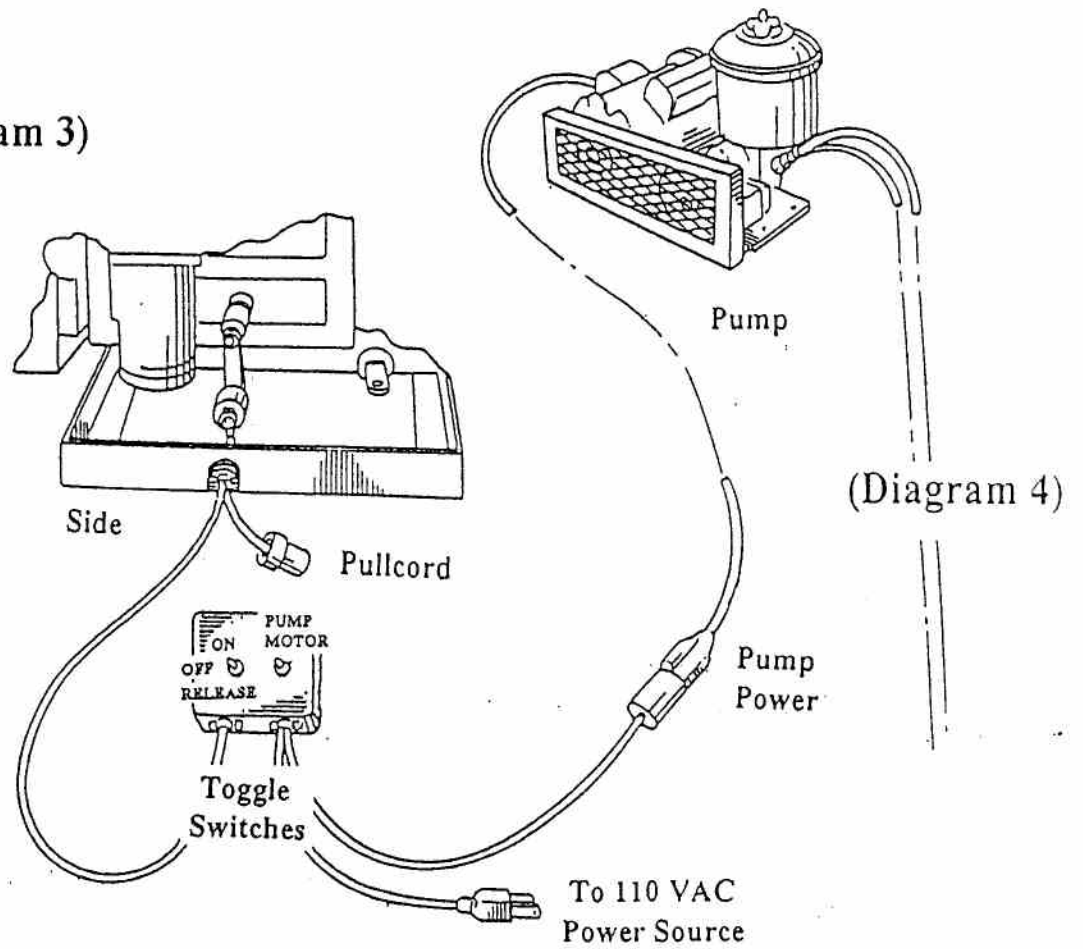
MOUNTING THE POWER CONTROL BOX

Mount the power control box just inside the trap house on the right wall near the ceiling of the trap house. This should be the side of the trap where personnel enter/exit the trap house. The power control box should be easily accessible so that it can be operated by placing your hand around the corner of the wall and not exposing your body to the front of the trap machine. The power control box will also be accessible to trap personnel when setting the machine for Doubles. Proper location of the control box is important to insure safety. *Remember:* Never stand in front of a trap machine without having first released the target. See Diagram 2

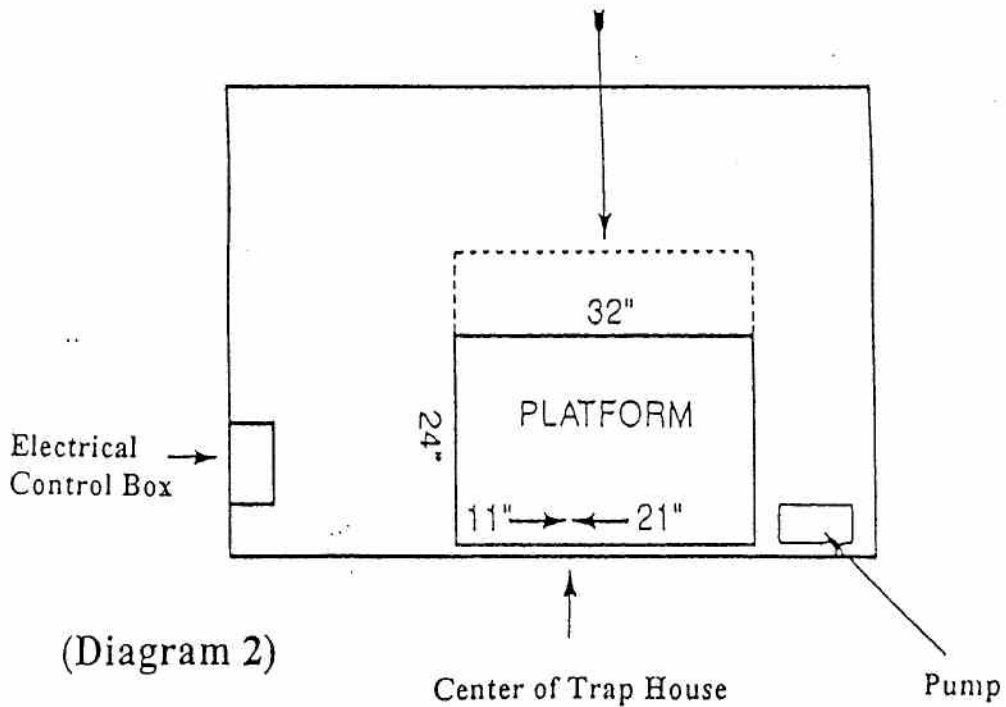
CONNECTING THE TRAP TO THE POWER SOURCE

1. Check the power control box to confirm that the *motor* and the *on/off/release* switches are in the OFF position. When both toggle switches are snapped downward they are in the off position. See Diagram 3
2. Connect the pump to the power control box by plugging the pump motor into the outlet coming from the power control box. See Diagram 4
3. The trap machine uses 110 volt AC power. Connect the trap machine to the power source using the plug from the power control box.
4. Connect the pullcord to the machine. The pullcord must have a male Bryant adapter (Winchester type pullcord). See Diagram 3

(Diagram 3)



The platform can be extended back if you want a place to set targets or tools.



HOW THE PAT-TRAP® AUTOMATIC DOUBLES MACHINE WORKS

Turn on the pump and the trap machine. 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. The throw arm is now at the brake (in the cocked position) and the target is set. See Diagram 32

When the pullcord button is pushed, Switch #1 overrides Switch #2 which then advances the throw arm off the throw arm brake causing the machine to fire. See Diagrams 9 and 10

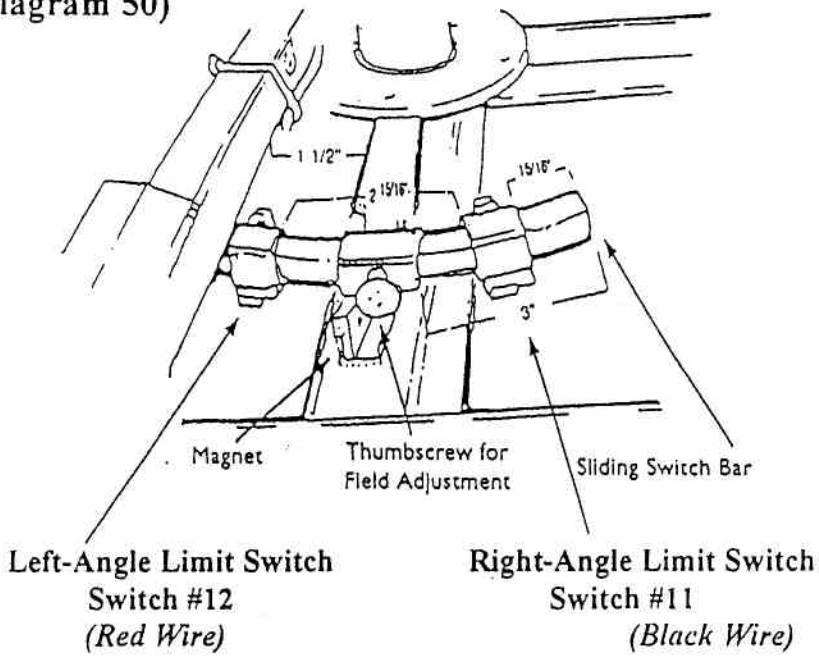
When the activator leaves Switches #2 and #3, the #2 switch closes and begins a new cycle of loading a target. The #3 switch also closes, which starts the oscillation interrupter for a pre-determined length of time*

* The machine oscillates to the left until it comes to Switch #12 activating Relay #2 causing the machine to change direction to the right. Switch #11 holds the Relay engaged until the machine reaches it, breaking the circuit which then disengages Relay #2 causing the machine to oscillate left. See Diagrams 25 and 50. The switching sequence is the same for the wobble machine. See Diagrams 51 and 52

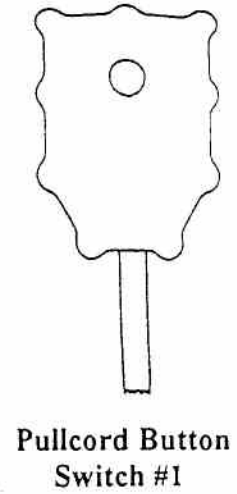
Switch #1	Pullcord button switch
Switch #2	Throw arm limit switch
Switch #3	Oscillation interrupter switch
Switch #11	Right-angle limit switch (black wire)
Switch #12	Left-angle limit switch (red wire)

**Field-Angle Adjustment
Up to Serial # 2739**

(Diagram 50)

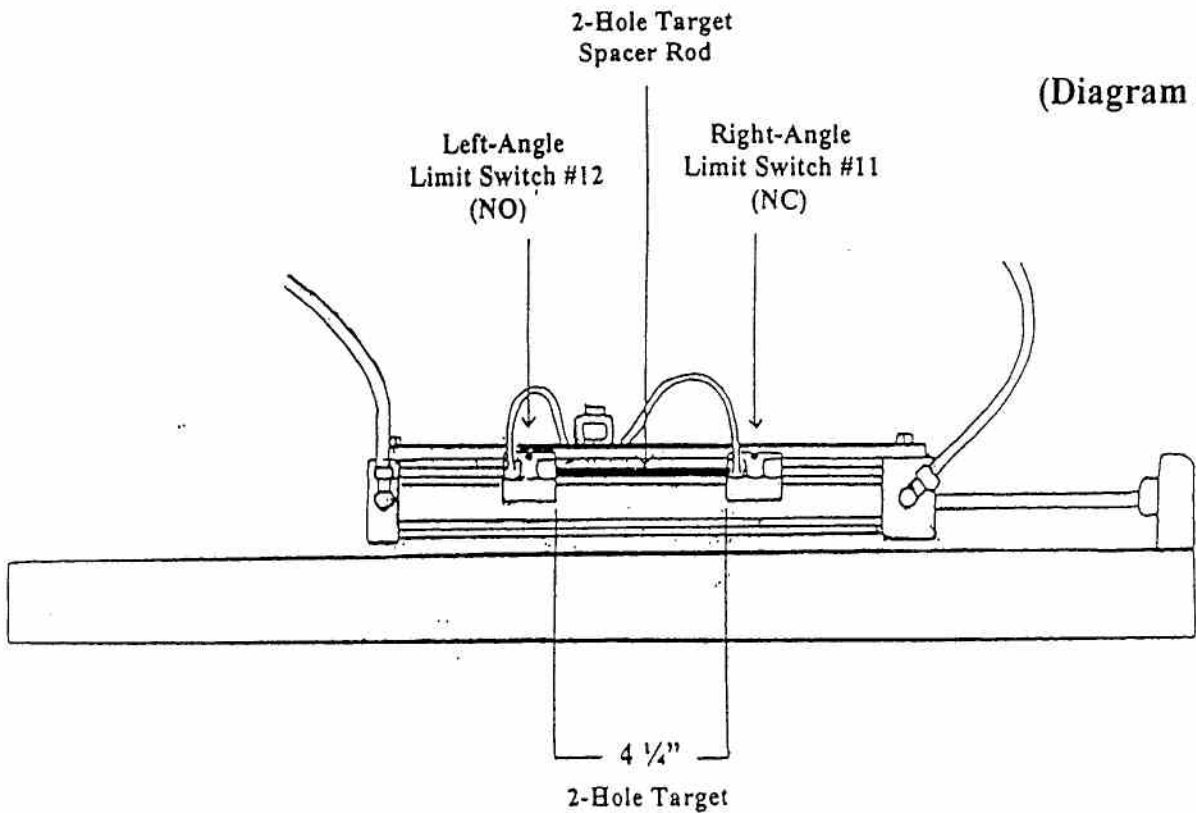


(Diagram 9)

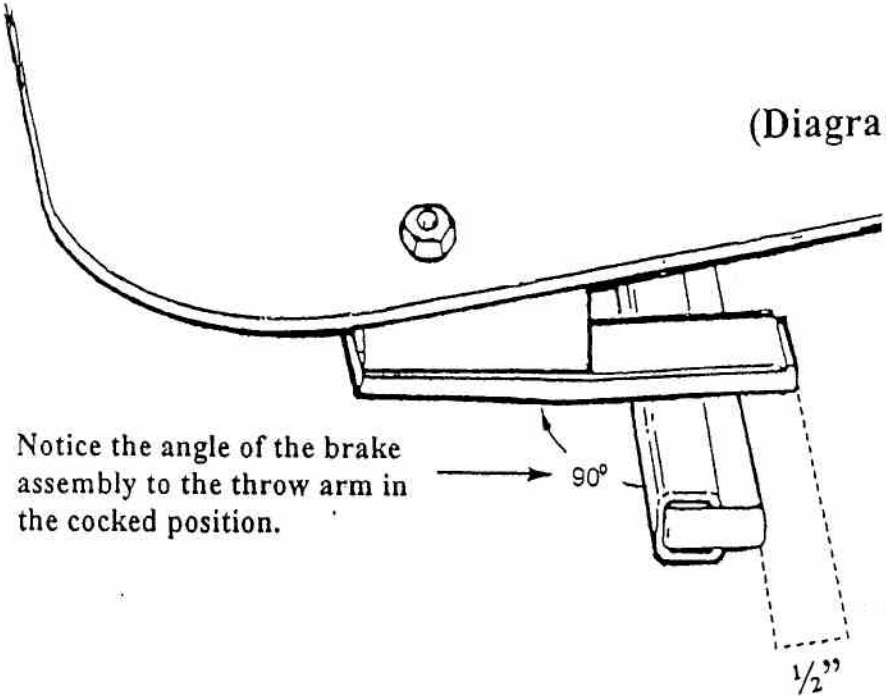


**Field-Angle Adjustment
From Serial # 2740 ...**

(Diagram 25)

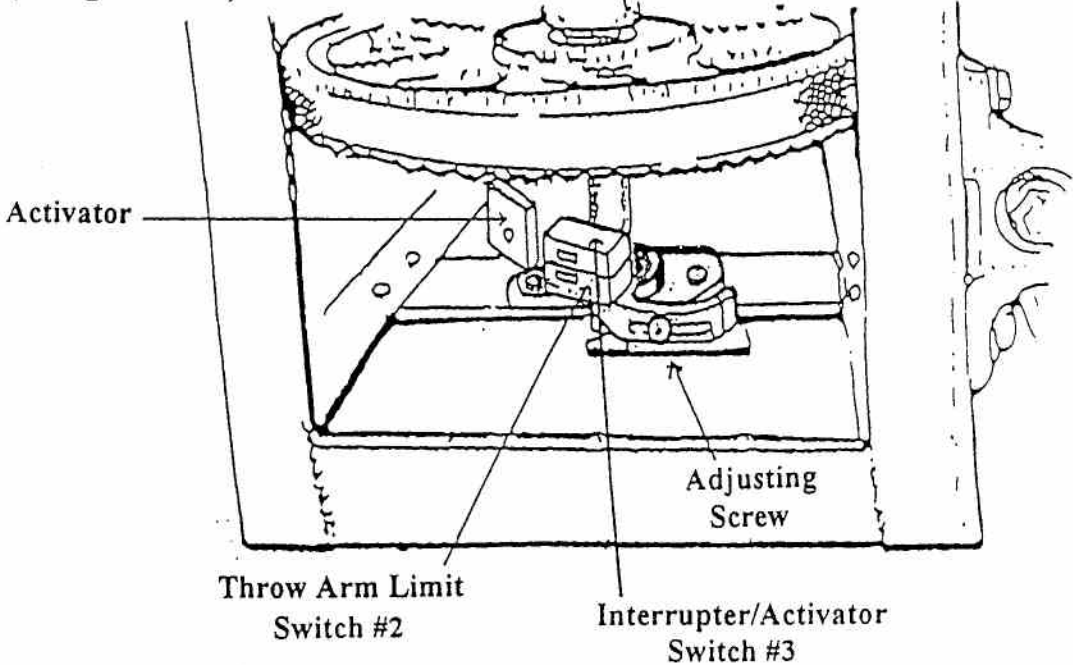


(Diagram 32)



**The stopping position of the throw arm on the brake is approximately 1/2" behind the end of the brake

(Diagram 10)



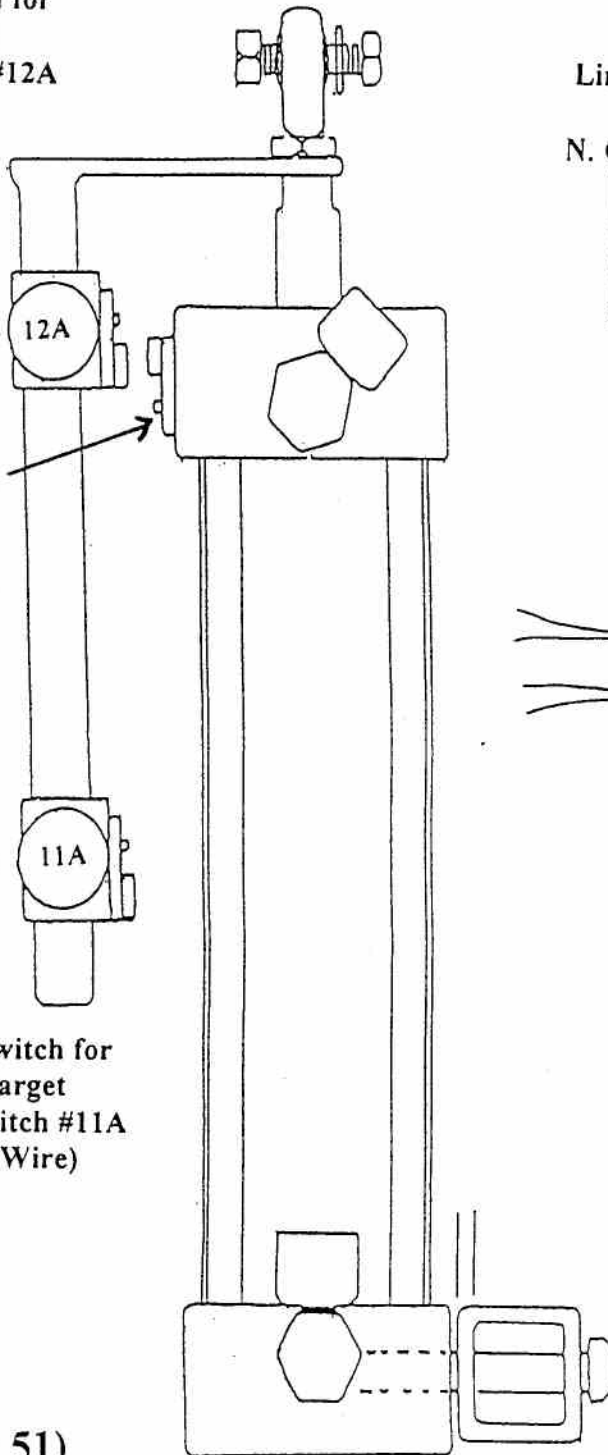
Up To Serial # 2804

Limit Switch for
low target
N. O. Switch #12A
(Red Wire)

Magnet

Limit Switch for
high target
N. C. Switch #11A
(Black Wire)

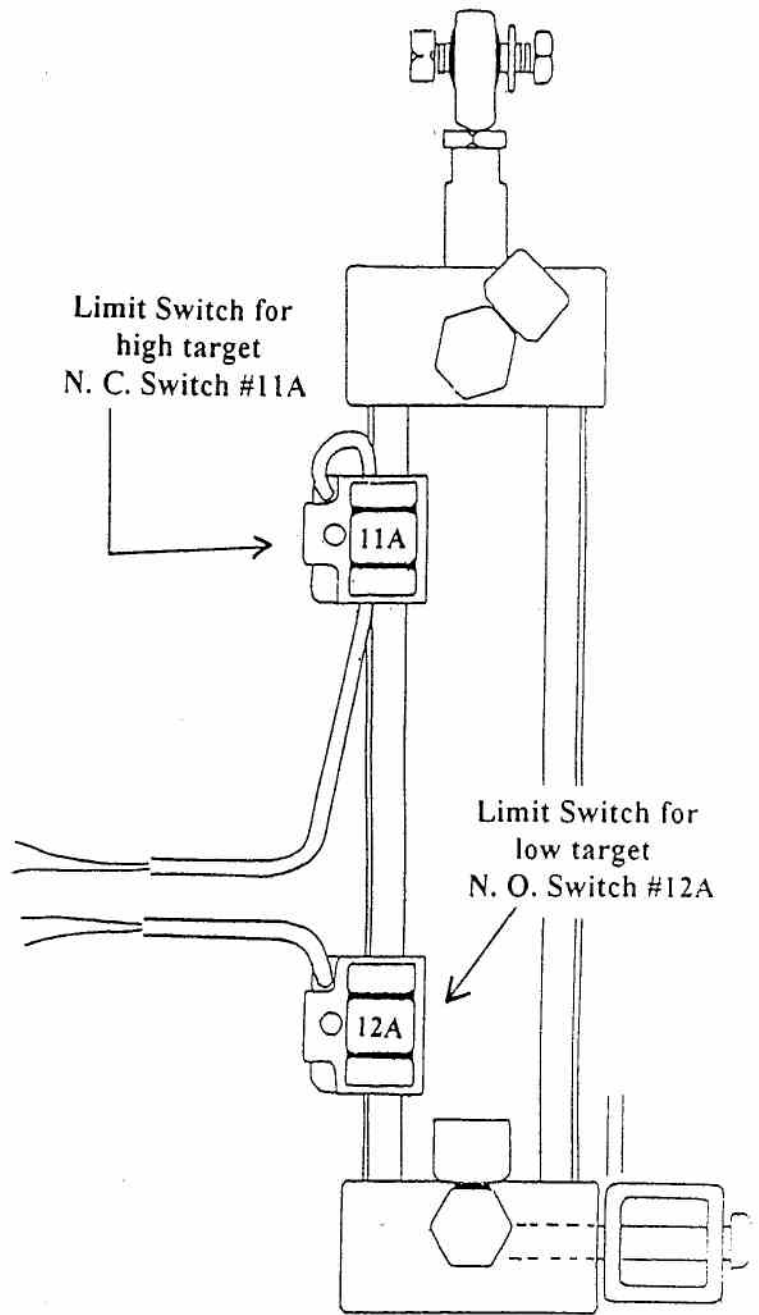
(Diagram 51)



Limit Switch for
high target
N. C. Switch #11A

Limit Switch for
low target
N. O. Switch #12A

(Diagram 52)



TURNING THE PAT-TRAP® MACHINE “ON”

1. Push the Pump Motor toggle switch UP to the “ON” position. See Diagram 11

IMPORTANT: Turn the 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. (see pages – Cold Weather Adjustment)

2. Push the On/Off/Release toggle switch UP to the “ON” position.

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.

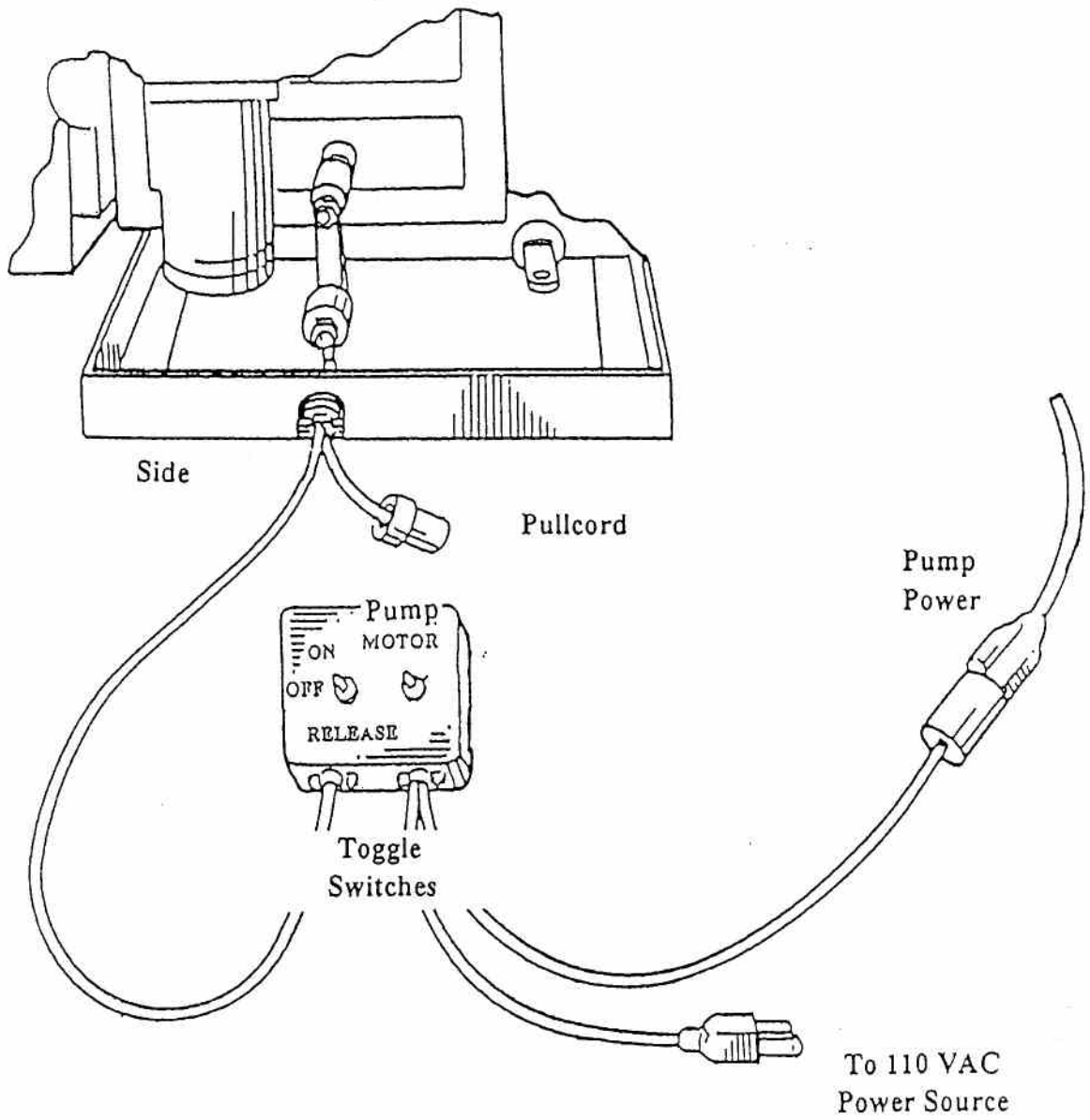
LOADING THE PAT-TRAP® MACHINE

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

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

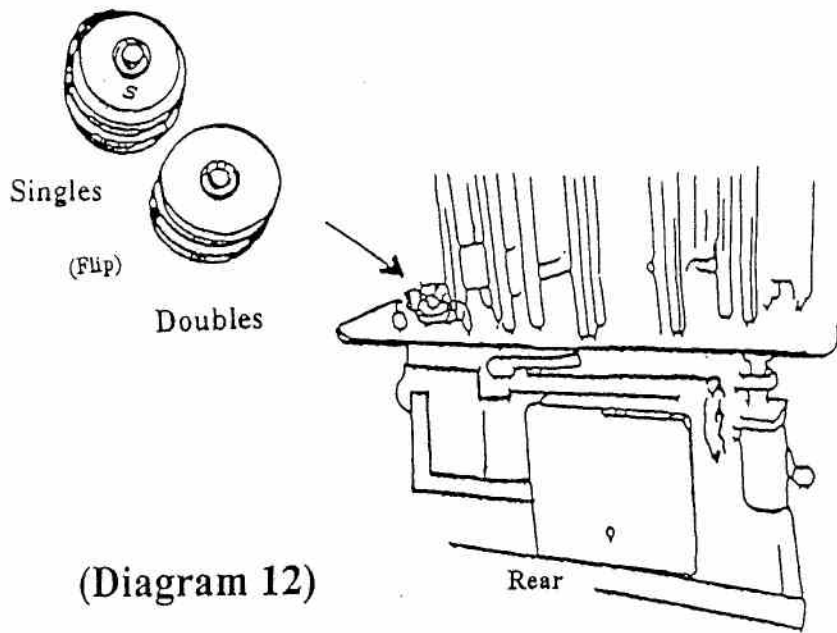
IMPORTANT: If the machine is not released, the throw arm may accidentally be hit and discharge a target.

(Diagram 11)

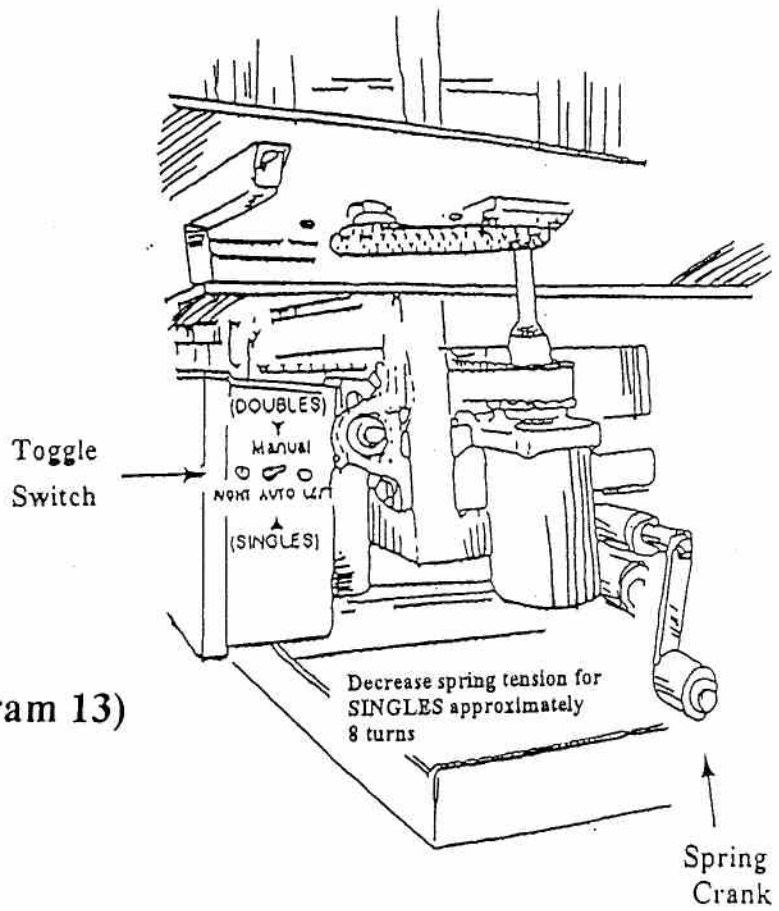


PAT-TRAP® SINGLES

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.
2. The lower roller must be turned so that the stamped "S" is facing upward. Slide the roller off, invert and replace the roller. See Diagram 12
3. The spring tension can be adjusted by rotating the spring crank *clockwise to increase tension; counter-clockwise to reduce the tension*. When changing from Doubles to Singles, rotate the spring crank counter-clockwise the same number of turns that were used to increase the tension for Doubles --- approximately 8 rotations. See Diagram 13
4. 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 13
5. *Before exiting* the trap house, staying clear of the trap, reach over to the power control box and *release the target* to prevent *accidental* target release.
6. Once out of the trap house, push the On/Off/Release toggle switch up to the ON position.



(Diagram 12)



(Diagram 13)

PAT-TRAP® DOUBLES

IMPORTANT: BE SAFE – stay clear of the throw arm travel path and
NEVER stand in front of the trap machine

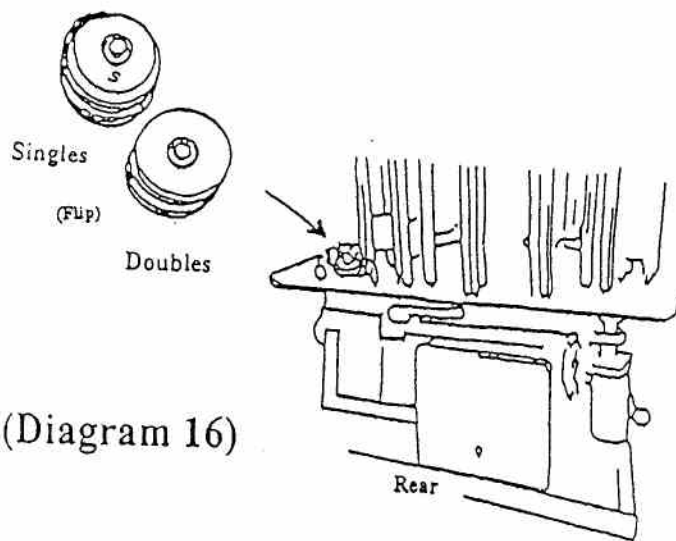
1. *Release the target.* The power to the pump motor can be left on.
2. The lower roller must be turned so that the stamped “S” is facing downward. Slide the roller off, invert and replace the roller. See Diagram 16
3. The spring tension must be *increased* to throw Doubles. Rotate the spring crank *clockwise* approximately 8 rotations from the Singles setting. See Diagram 15
4. On the trap machine electrical box, the toggle switch must be pushed up to the *Manual* position. See Diagram 15. This will stop the automatic horizontal oscillation and will activate the Right and Left buttons. The trap machine must be *ON* to operate the Right and Left buttons. 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. See Diagram 3

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

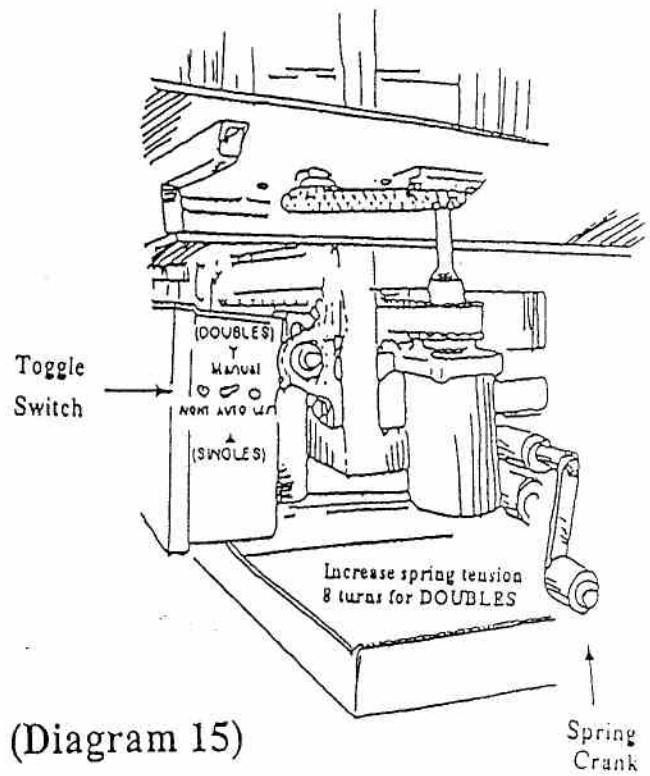
5. *Before exiting* the trap house, staying clear of the trap, reach over to the power control box and *release the target* to prevent *accidental* target release.
6. Once out of the trap house, push the On/Off/Release toggle switch up to the *ON* position.

ADJUSTMENT FOR DOUBLES

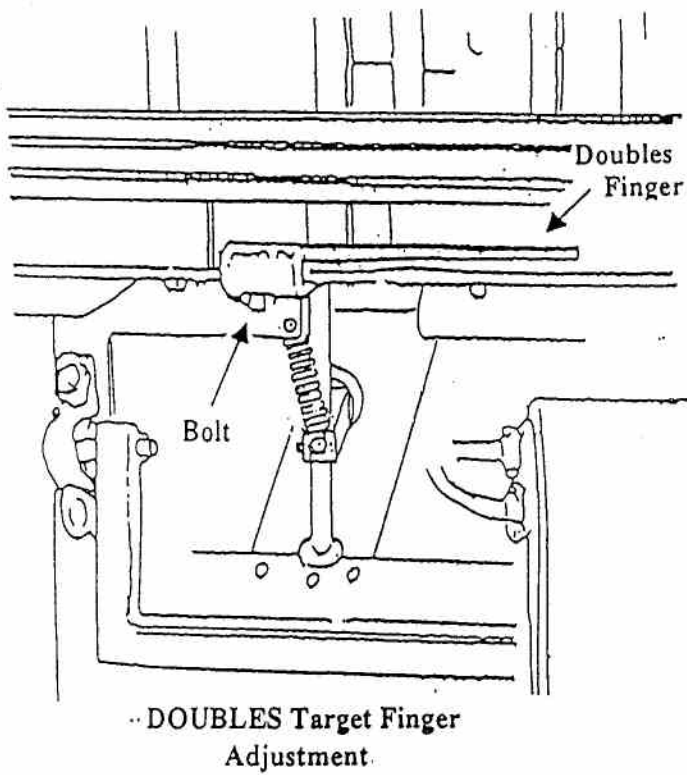
The adjustment for Doubles should only need to be done the very first time the machine is used. Using a 7/16” wrench, loosen the bolt, move the Doubles Finger in 1/8” increments. Pull the Doubles Finger towards *self* to *lower* the height of the right target. Push *in* to *raise* the height of the right target. Tighten the bolt. See Diagram 17. Refer to the section for correct positioning of the Doubles Finger (“X” Finger).



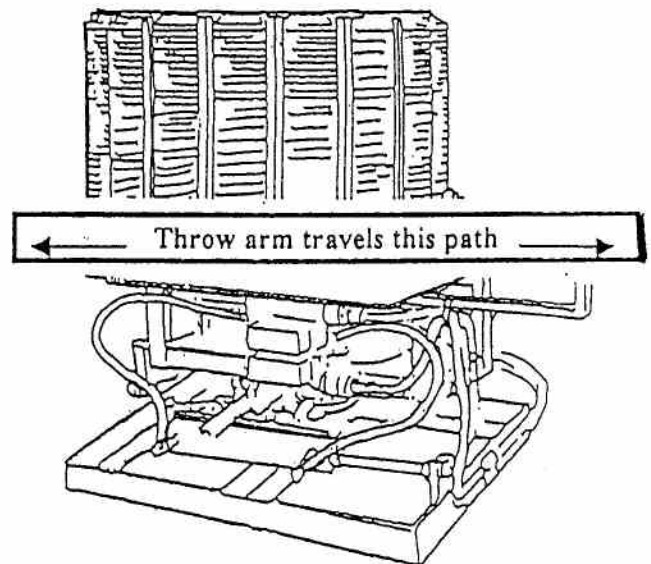
(Diagram 16)



(Diagram 15)



(Diagram 17)



(Diagram 18)

PAT-TRAP® WOBBLE

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

STATIONARY

X Singles
X Doubles

OSCILLATING HORIZONTAL

X Singles
X Doubles

OSCILLATING VERTICAL

X Singles
X Doubles

OSCILLATING HORIZONTAL/VERTICAL

X Singles
X Doubles

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.

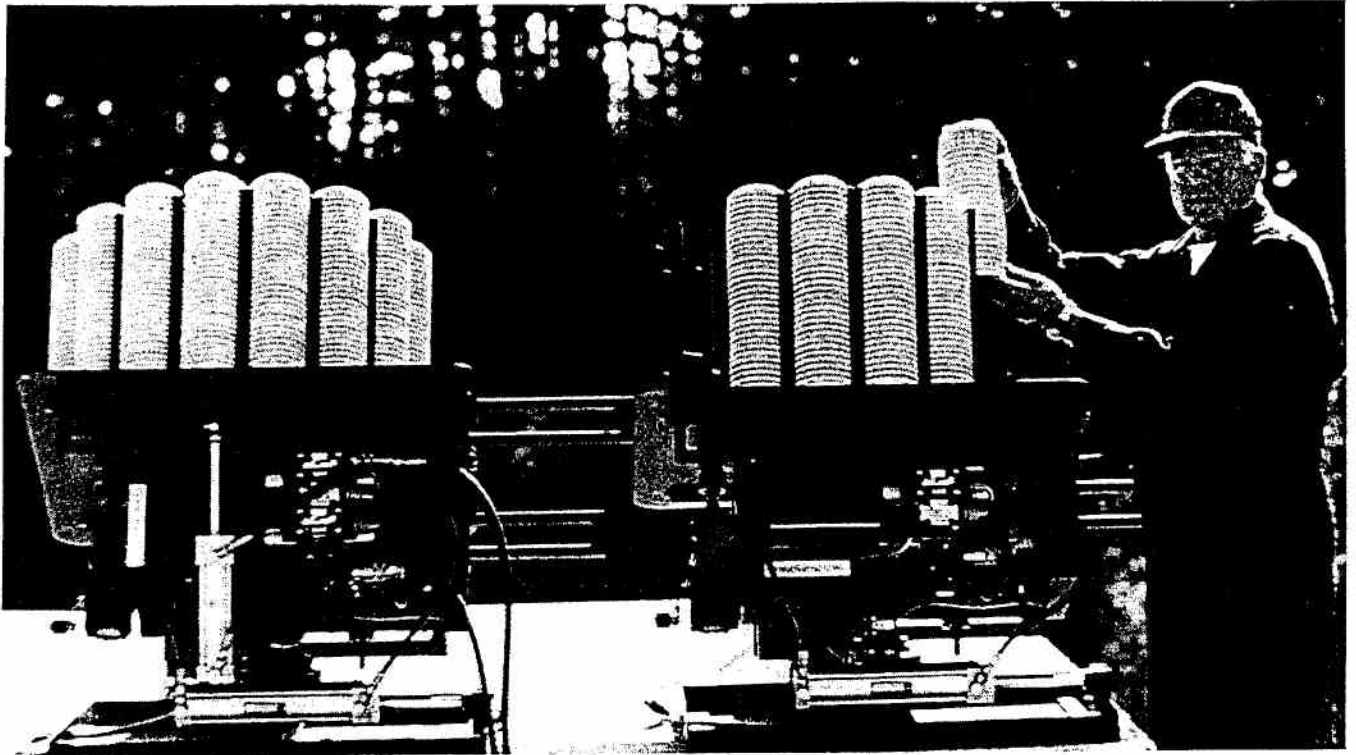
CHANGE OVER TO WOBBLE

Stand 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 box. This engages the machine to the automatic horizontal/vertical oscillation mode.

HEIGHT ADJUSTMENT FOR SINGLES/DOUBLES WOBBLE

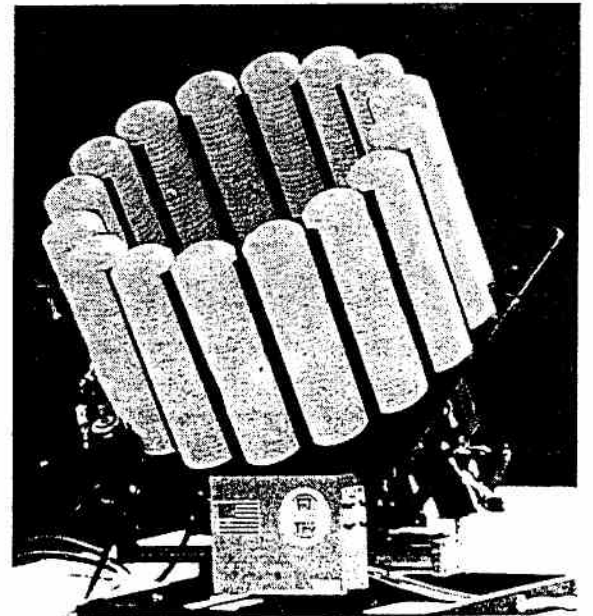
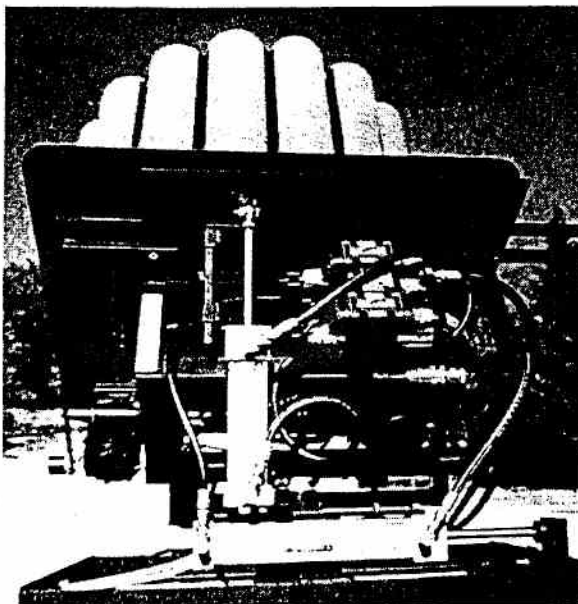
On the trap machine electrical box, the horizontal switch must be moved to the MANUAL position. For desired height, push UP switch to go up; push DOWN switch to go down.



Pat-Trap® w/Wobble

Pat-Trap®

Stuart
Patenaude



SETTING DISTANCE/SPEED

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

Counter clockwise rotation of the crank *decreases* the spring tension. Continued counter-clockwise rotation will remove the tension from the crank and the spring tension lock-nut with hold. The elastic lock-nut holds the spring at the set minimum tension.

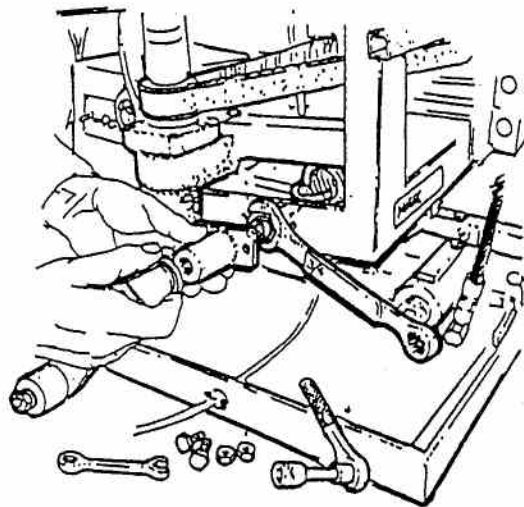
The standard minimum tension should be set so that the spring tension for a Singles target is as follows:

1. Remove the crank by rotating it counter clockwise
2. Remove the nylon washer
3. Remove the two (2) $\frac{1}{4}$ " bolts from the stand off collar
4. Remove the stand off collar
5. See the elastic lock-nut. Use a $\frac{3}{4}$ " wrench on this nut to adjust the distance/speed.
6. When proper/desired distance/speed is achieved, back off the elastic lock-nut three (3) turns.
7. Re-assemble the parts.
8. When the crank becomes snug, continue to turn three (3) more times for the proper setting.

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.

NOTE: Singles are always set first, then follow the procedures for Doubles as outlined in that section.

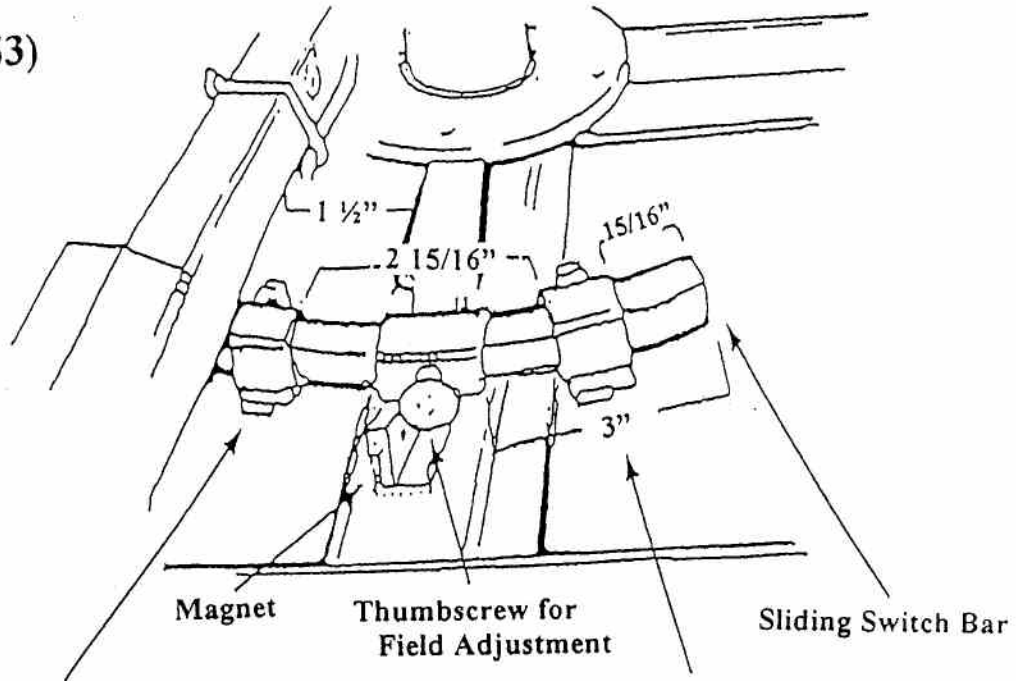
(Diagram 21)



FIELD-ANGLE ADJUSTMENT

Up to Serial #2739

(Diagram 53)



Left-Angle Limit Switch #12 (Red Wire)	Loosen Thumbscrew To Adjust	Right-Angle Limit Switch #11 (Black Wire)
----------------------------------------------	-----------------------------------	-------------------------------------------------

The measurements in the above diagram are for 2-hole targets. The 2 15/16" spread between the switch holders allows 5 7/8" of total cylinder rod travel --- which equals a 2-hole target. 7" of travel equals a 3-hole target.

If the flight-paths of both the right and left targets are too far to the left, slide the switch bar to the right. 1/8" will make a significant difference.

IMPORTANT: Be sure that the power is off and the trap machine has been released. NEVER attempt to make any adjustment when the arm is cocked. NEVER stand in front of a cocked trap machine. NEVER increase the limit switches beyond the travel path of the cylinder. This may cause the hydraulic cylinder to "bottom out" and damage the cylinder.

ADJUSTING HEIGHT OF TARGETS

Up to Serial #2739

Tilt the table by pushing *up* on the front of the machine. The elevation cog can be positioned up or down. See Diagram 22.

ANGLE ADJUSTMENTS

STRAIGHT-AWAY TARGETS

Set the toggle switch to the manual position. Use the right and left buttons to achieve Straight-Away Targets. See Diagram 13

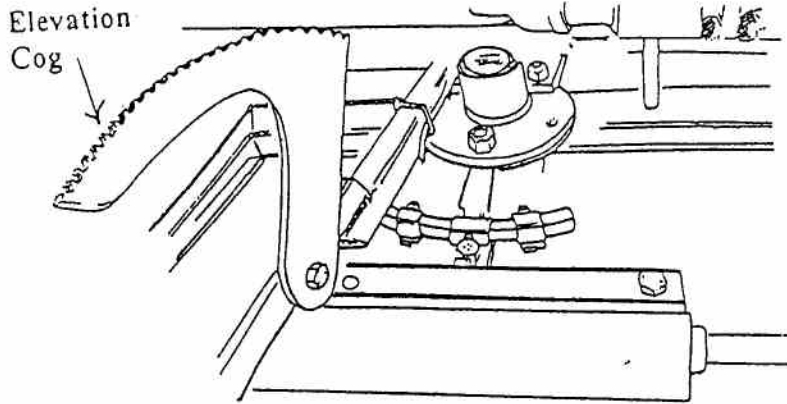
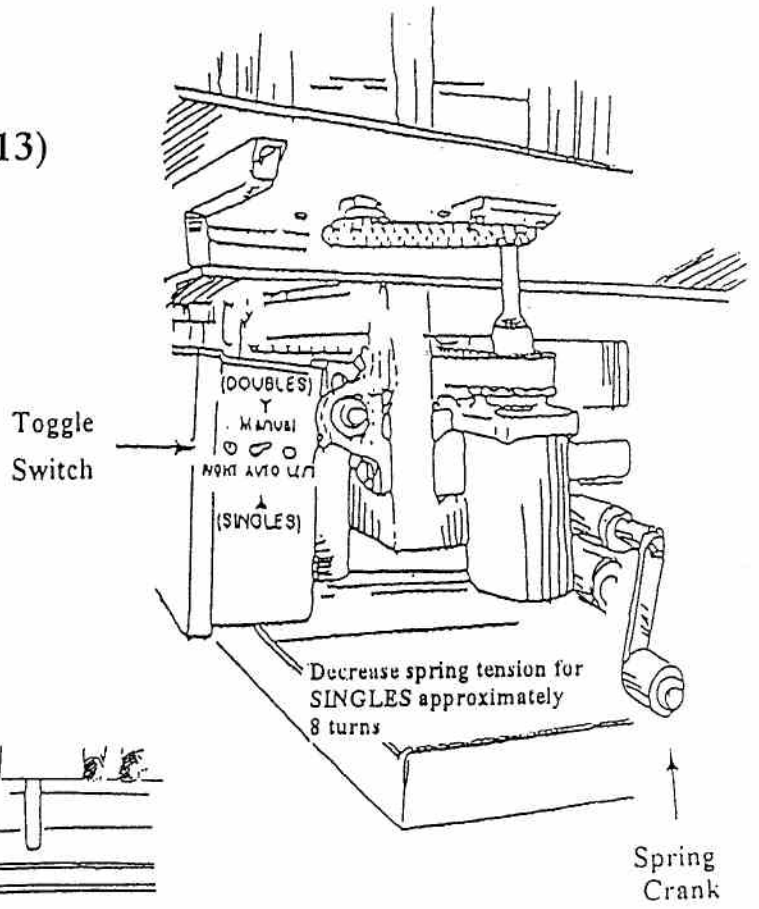
2-HOLE TARGETS

The measurements in Diagram 53 are for 2-hole targets. The $2 \frac{15}{16}$ " spread between the switch holders allows for $5 \frac{7}{8}$ " of total cylinder rod travel --- which equals a 2-hole target. Seven (7) inches of travel equals a 3-hole target.

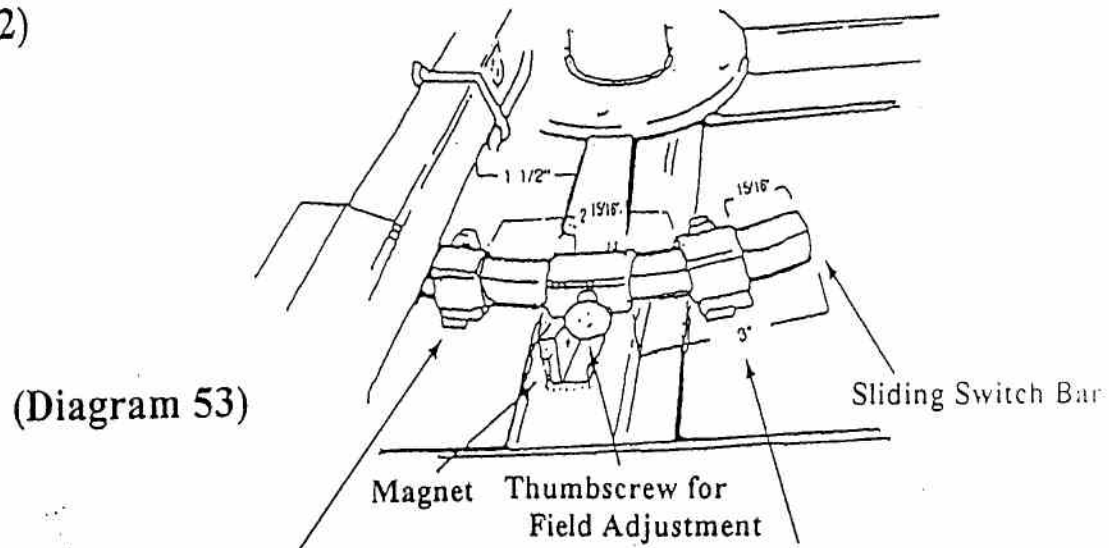
Loosen the screws. Slide the angle switch toward the "magnet" to *decrease* the angle. Slide the angle switch away from the "magnet" to *increase* the angle. Re-tighten the screws to hold the switch in place. See Diagram 53

IMPORTANT: *Be sure that the power is off and the trap machine has been released. Never attempt to make any adjustments when the arm is cocked. Never stand in front of a cocked trap machine. Never increase the limit switches beyond the travel path of the cylinder. This may cause the hydraulic cylinder to "bottom out" and damage the cylinder.*

(Diagram 13)



(Diagram 22)



(Diagram 53)

Left-Angle Limit Switch #12 (Red Wire)	Loosen Thumbscrew To Adjust	Right-Angle Limit Switch #11 (Black Wire)
----------------------------------------------	-----------------------------------	-------------------------------------------------

ADJUSTING HEIGHT OF TARGETS

From Serial # 2740

Tilt the table by pushing *up* on the front of the machine. The elevation cog can be positioned up or down. See Diagram 22.

ANGLE ADJUSTMENTS

STRAIGHT-AWAY TARGETS

Set the toggle switch to the manual position. Use the right and left buttons to achieve Straight-Away Targets. See Diagram 13

2-HOLE TARGETS

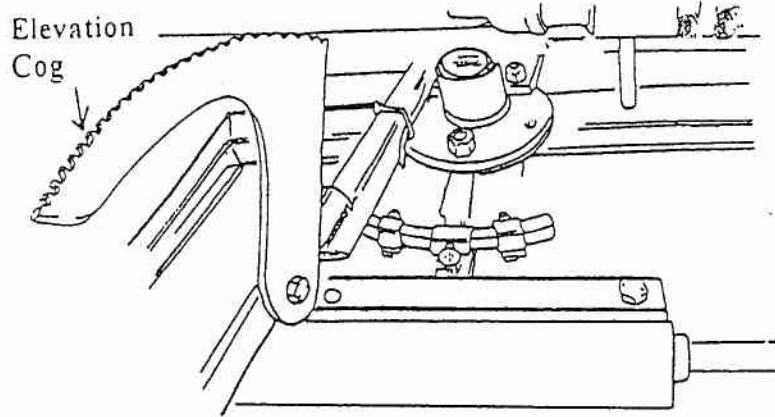
The measurement in Diagram 25 is for 2-Hole Targets. The 4 ¼" spread between the switches allows for 5 7/8" of total cylinder rod travel --- which equals a 2-Hole Target. The 5 ¼" spread between the switches allows for 6 7/8" of total cylinder rod travel --- which equals a 3-Hole Target.

SHIFTING THE TARGET FIELD

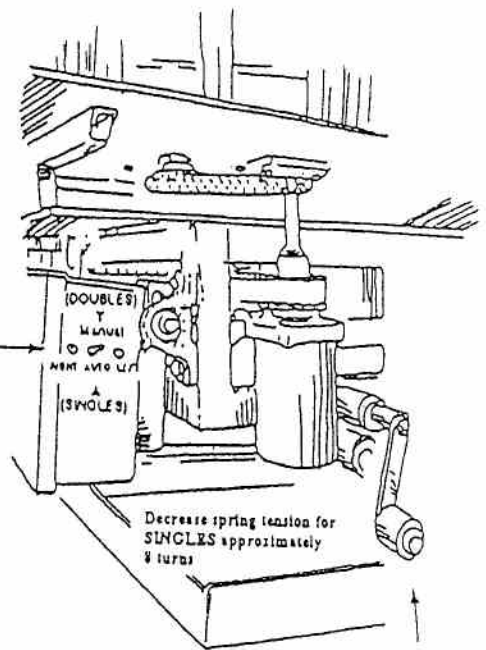
The 9/64" hex head set screws on the limit switches are already pre-set. A spacer rod that is 4 ¼" long is provided for setting a 2-Hole target field width. The field can be adjusted by sliding the limit switches in the direction you want to move the field; to move the field to the right, slide the switches to the right as you are facing the machine. Use 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.

IMPORTANT: *Be sure that the power is off and the trap machine has been released. Never attempt to make any adjustments when the arm is cocked. Never stand in front of a cocked trap machine. Never increase the limit switches beyond the travel path of the cylinder. This may cause the hydraulic cylinder to "bottom out" and damage the cylinder.*

(Diagram 22)



Toggle Switch



(Diagram 13)

(Diagram 25)

