

INSTALLATION - SAFETY - MAINTENANCE

# Manual

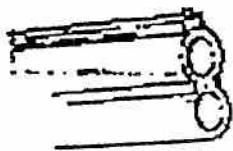


Singles To Doubles In Seconds!

Serial #

#1 through SW 2417 XR

Date: \_\_



## **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. 5,249,563. 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.

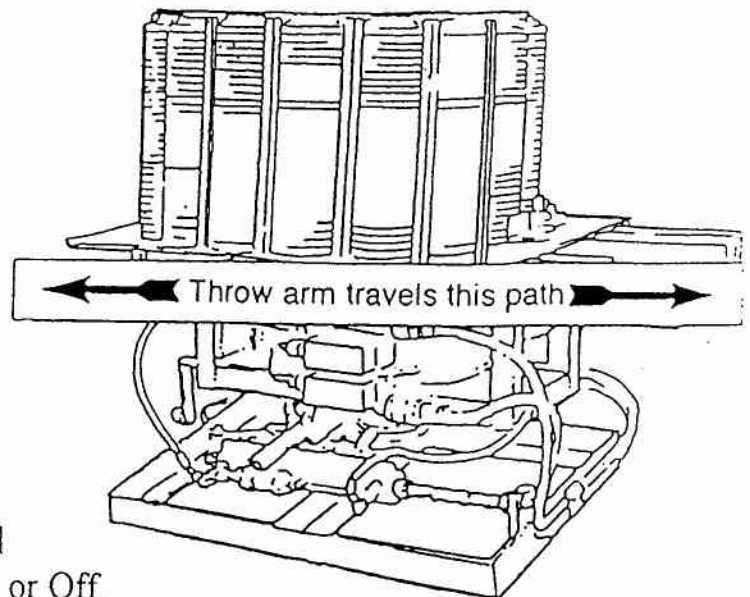
NEVER ADVANCE THE THROW ARM BY HAND WHEN THE ON/OFF/RELEASE SWITCH IS IN THE ON POSITION. THIS MAY DAMAGE THE MACHINE.

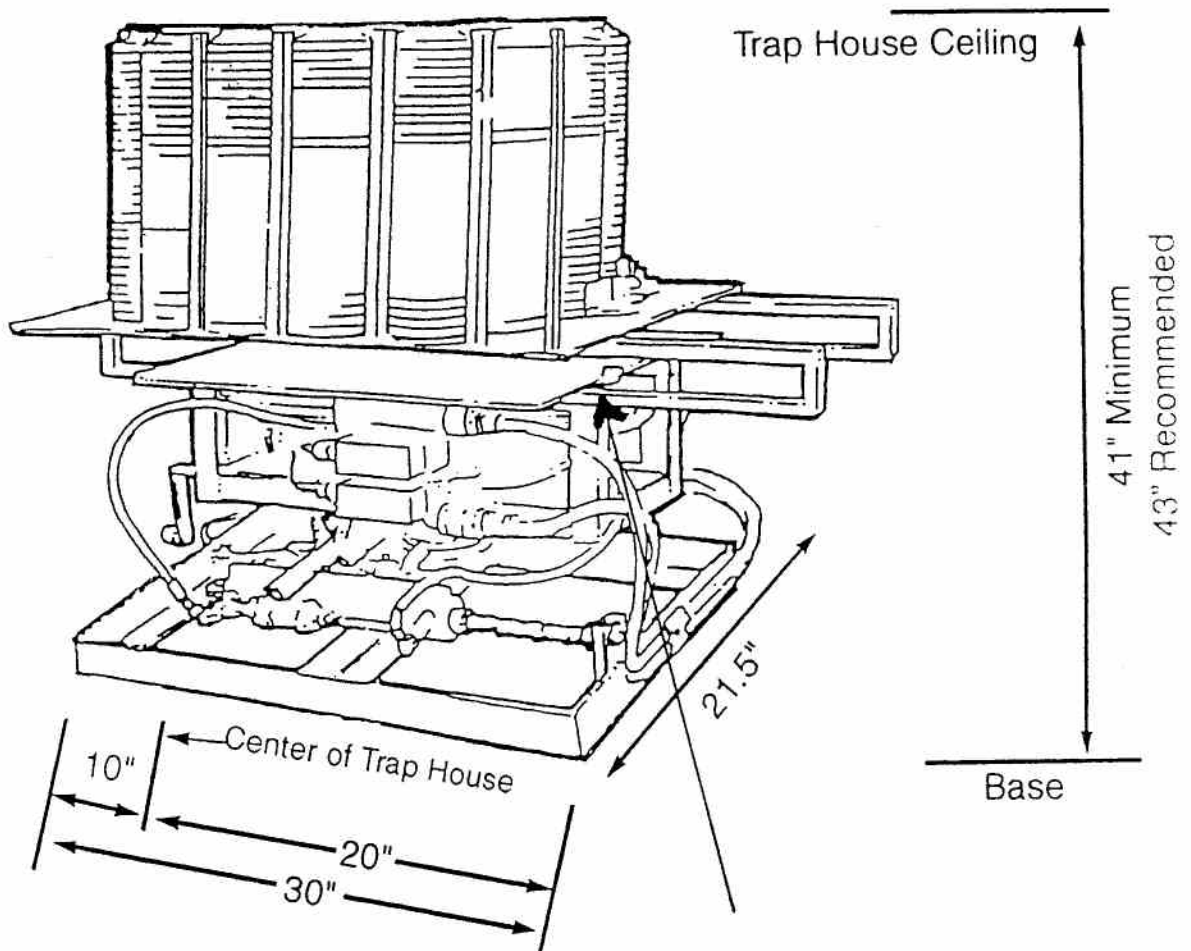
**The target throw arm extends 4" beyond the plates. Keep away from the moving parts. Never stand in front of the trap machine.**

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.





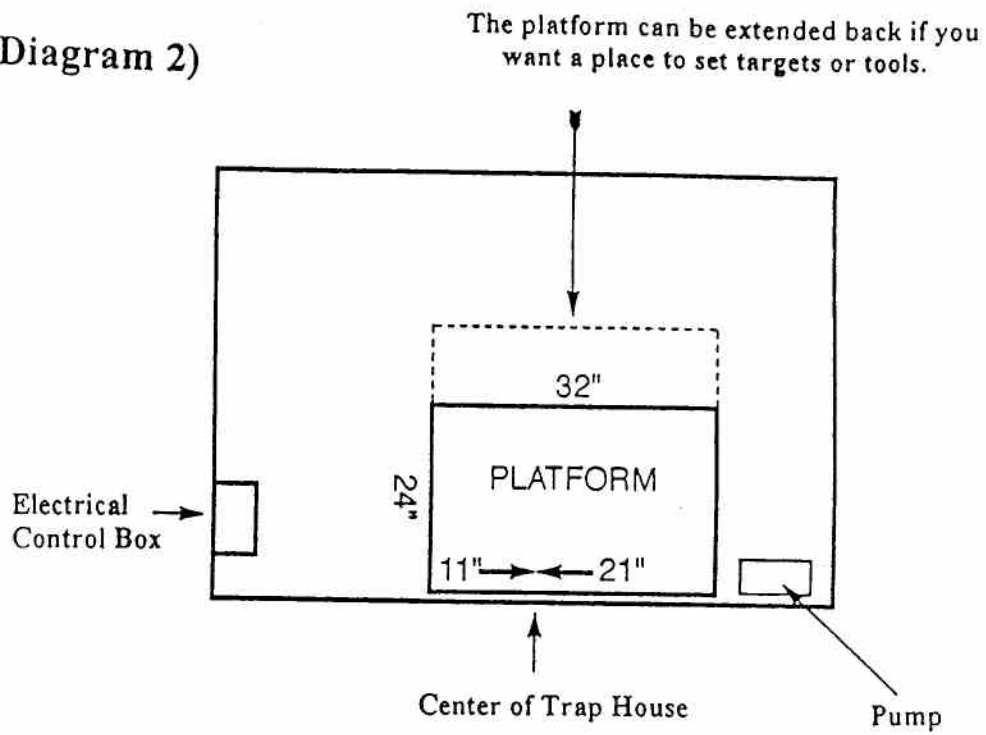
## INSTALLATION OF THE TRAP MACHINE AND PUMP

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. See 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 *notch* 10 inches in from the left facing the front of the machine. Set the machine so this line is now at the center of the trap house. The base of the trap machine should be set at 41 inches minimum from the ceiling; however, a setting of approximately 43 inches is best for loading targets.
3. Holes are provided in the corners of the base to secure the 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. 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 ensure that they are securely fastened. See diagram 5.
7. To hold the hydraulic hoses in position, clamp to the right 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.

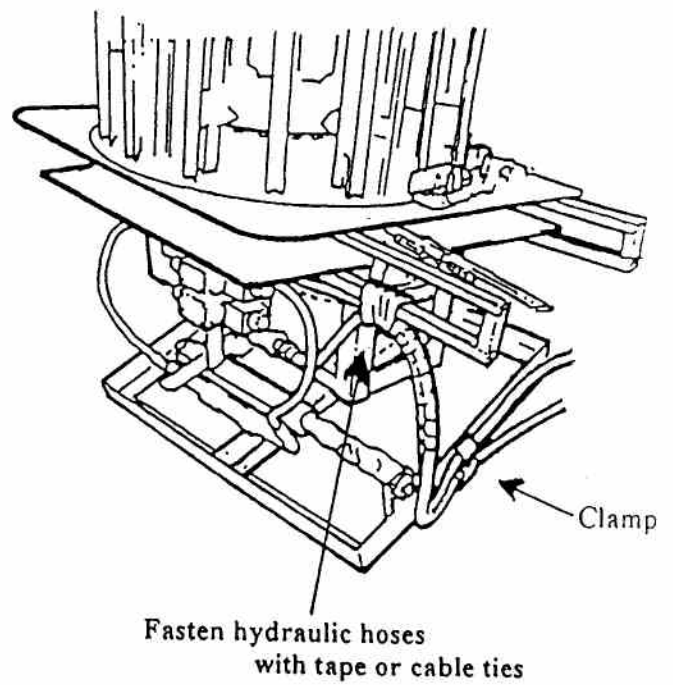
## REMOVAL/REPLACEMENT OF TURRET

1. Note how the drive engages the turret. **This must be replaced the same way.** Observe how the cogs are meshed with the pinion.
2. Two people, one on each side of the machine, must lift evenly and take the turret off. Place the machine inside the house. Replace the turret in the same way that it was removed.
3. The turret must be rotated by hand; turn the clutch clockwise to ensure that the cogs are enmeshed properly **before** the electrical power is turned on. ***Never push the turret directly or you risk damaging the turret.*** If the turret cannot be easily advanced, the cogs are not meshed. Pick up the turret and set it down again.

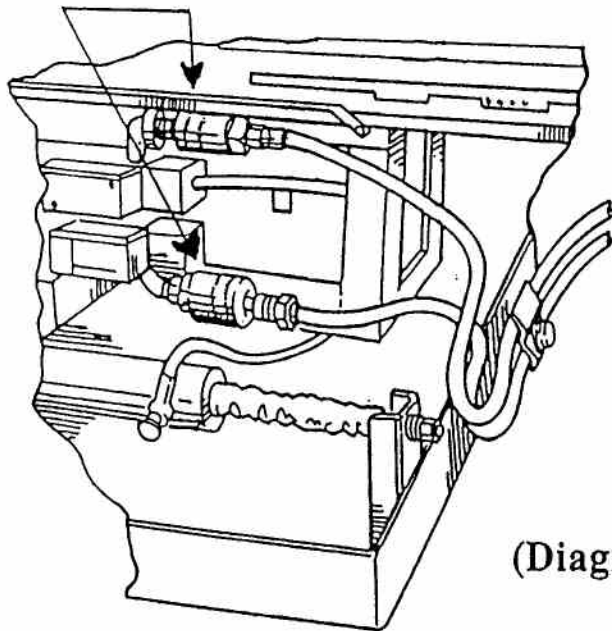
(Diagram 2)



(Diagram 6)



Quick Release Fittings



(Diagram 5)

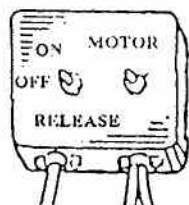
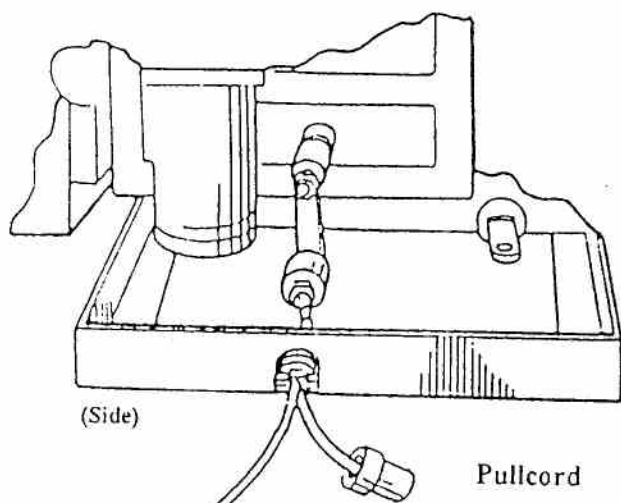
## MOUNTING THE POWER CONTROL BOX

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. *Never stand in front of a trap machine without having first released the target.* See Diagram 2.

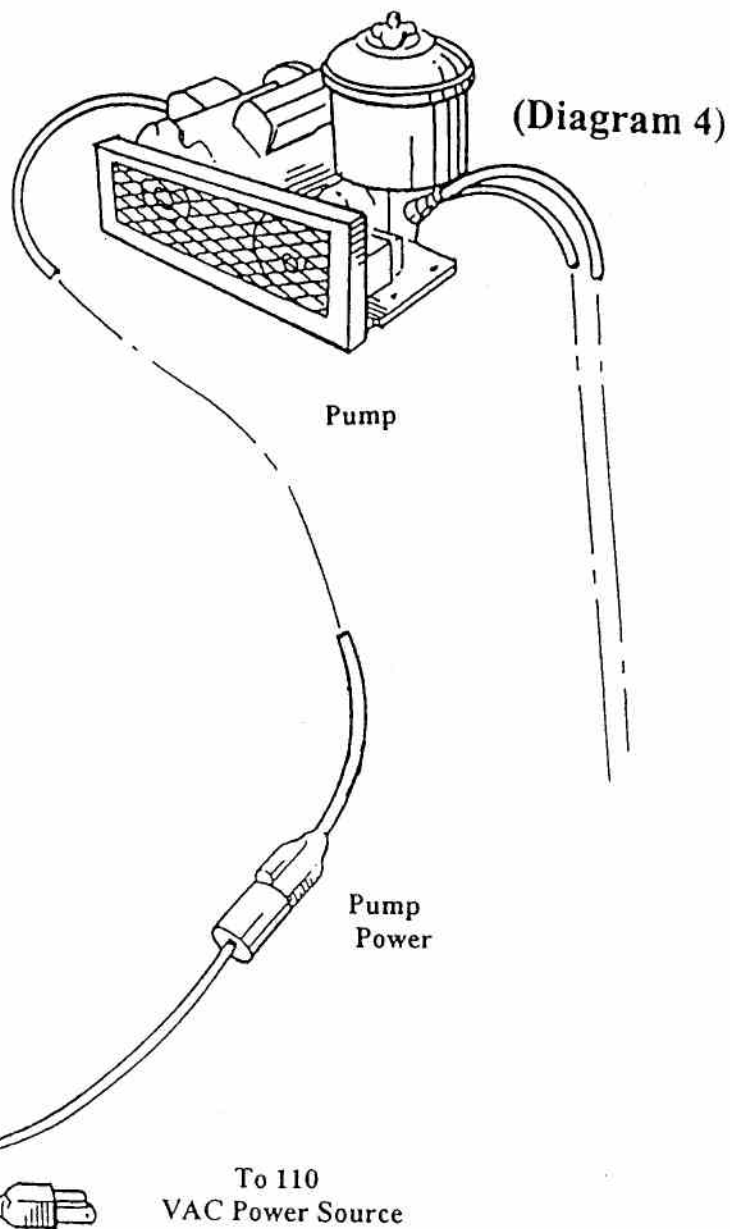
## CONNECTING THE TRAP TO THE POWER SOURCE

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)

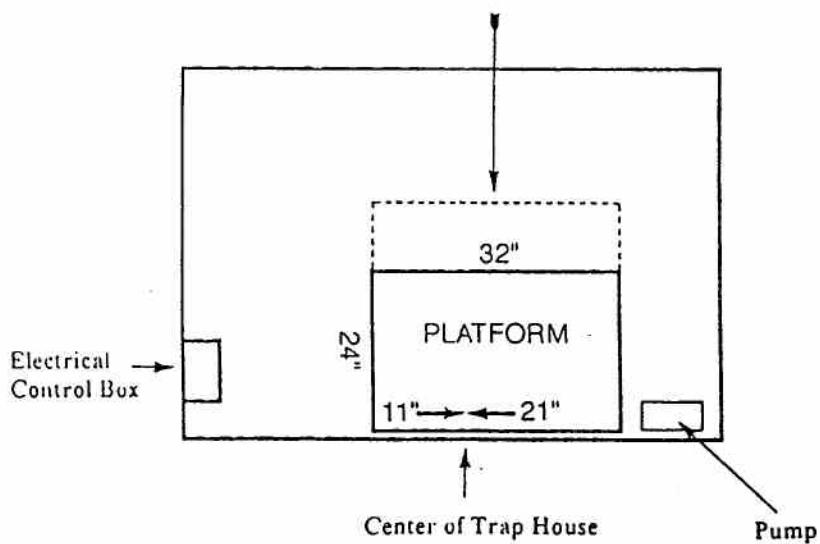


Toggle  
Switches



(Diagram 2)

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 trap machine. The throw arm advances to a point where the activator comes to Switch #2 and stops the throw arm in the *cocked position*. See Diagram 10.

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 Diagram 9.

As the activator leaves Switch #2, it passes Switch #4, which activates Relay #1, causing the elevator to go up, the turret to index and the oscillation interrupter/timer to start for a pre-determined length of time.\*

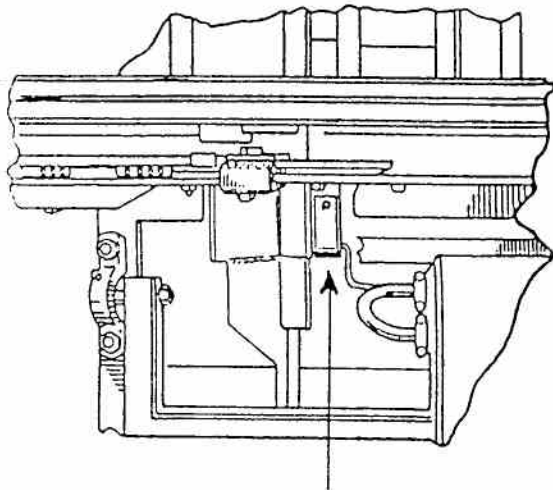
Switch #5, which is under the elevator, holds Relay #1 until Switch #4, which is under the turret, is activated. See Diagram 8.

Switch #4 is turned off when the turret is indexed and Relay #1 disengages and advances the throw arm to Switch #2 which then stops the throw arm in the cocked position. See Diagram 7.

\*The machine angles to the left until it comes to Switch #12 activating Relay #2, causing the machine to change directions 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 cycle left. See Diagram 22 on page 18.

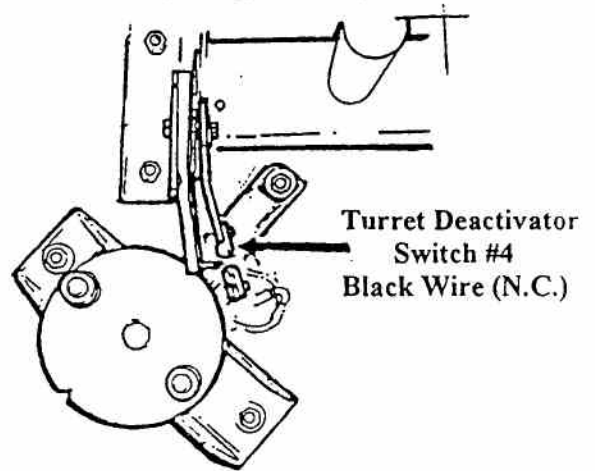
|            |                                                                               |
|------------|-------------------------------------------------------------------------------|
| Switch #1  | Pullcord button switch                                                        |
| Switch #2  | Throw arm limit switch (black wire)<br>connected to the white and black wires |
| Switch #3  | Turret activator switch (red wire)<br>connected to the green and red wires    |
| Switch #4  | Turret deactivator switch (black wire)                                        |
| Switch #5  | Elevator switch (red wire)                                                    |
| Switch #11 | Right-angle limit switch (black wire)                                         |
| Switch #12 | Left-angle limit switch (red wire)                                            |

(Diagram 8)



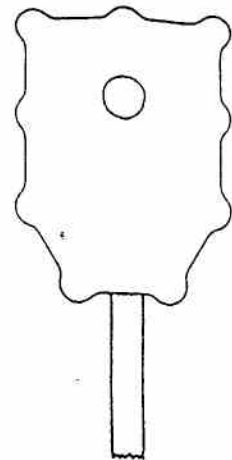
View from back of trap elevator  
Switch #5  
Red Wire (N.O.)

(Diagram 7)



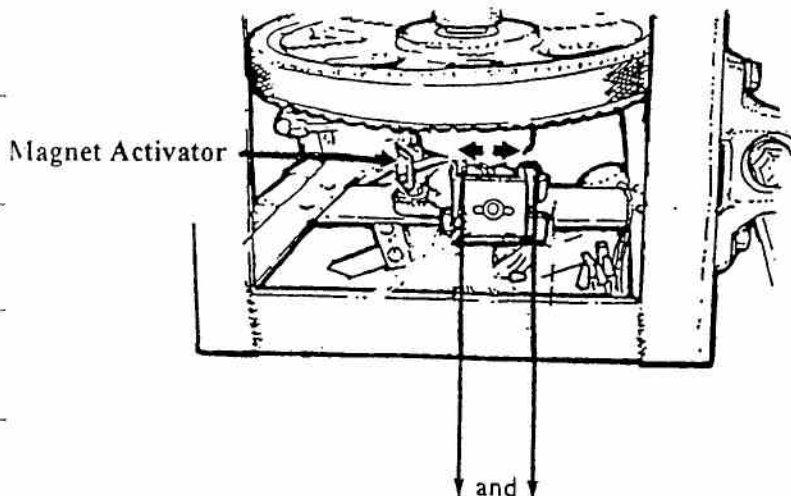
Turret Deactivator  
Switch #4  
Black Wire (N.C.)

(Diagram 9)



Pullcord Button  
Switch #1

(Diagram 10)



Magnet Activator

and

Throw Arm Limit Switch  
Switch #2  
Black Wire (N.C.)

Turret Activator Switch  
Switch #3  
Red Wire (N.O.)



## TURNING YOUR 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. Colder temperatures may cause the throw arm to cycle repeatedly if the hydraulic oil is not warm. See page 25.

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. The trap will throw the target and not cock the spring.
2. Push the Motor toggle switch **down** to the OFF position.

## LOADING THE MACHINE

The PAT-TRAP® machine holds four (4) full cases of clay targets.

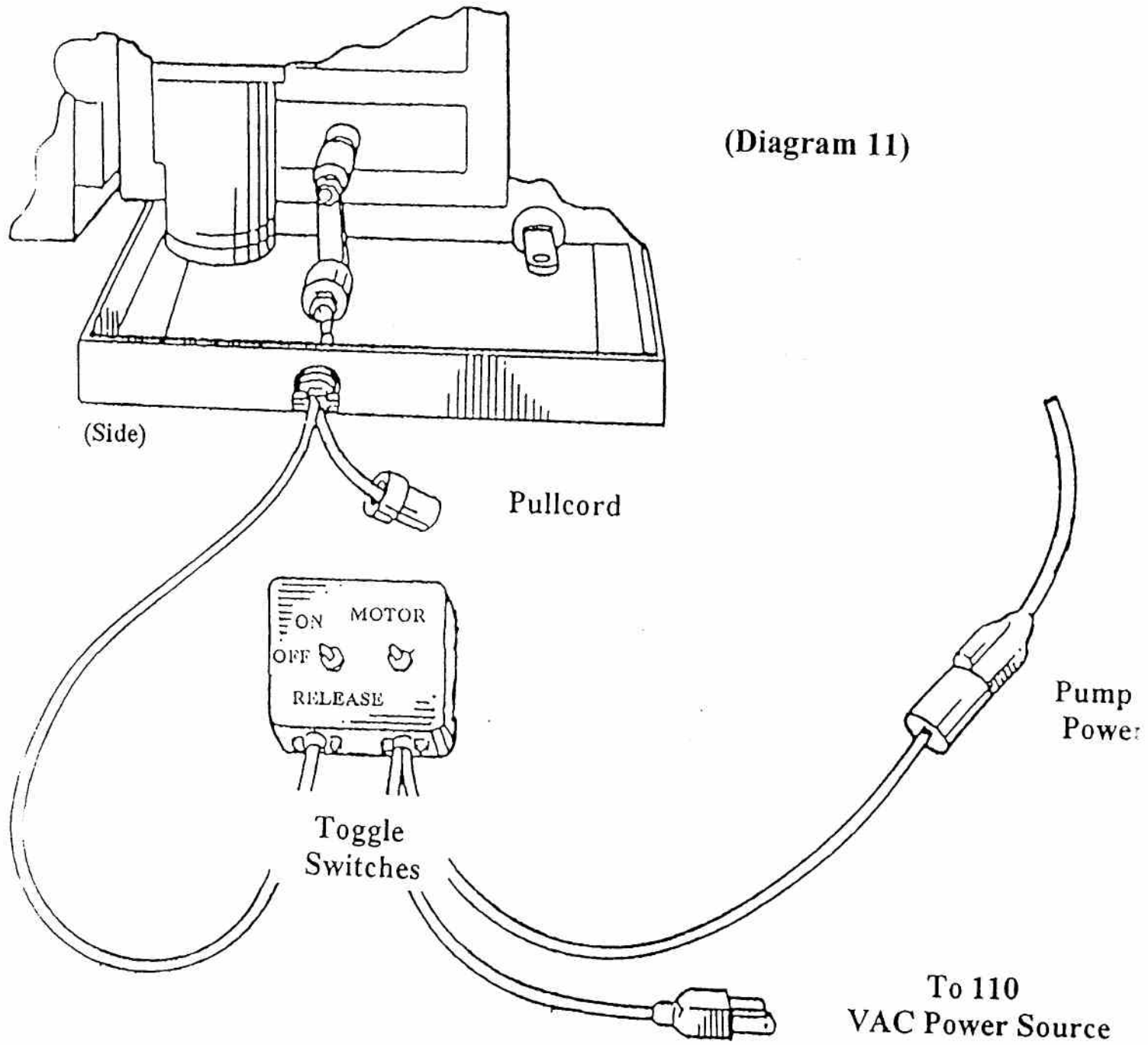
*Never attempt to load the clay targets without first releasing the trap machine.*

Leave the On/Off/Release switch in the Release position. If the machine's target stalls are empty or the targets are below the rollers, load all the turret stalls except those in front of the rollers. Use the clutch to advance the turret until the target drops through the hole and the stalls ahead can be filled. Remove the dropped target from the machine, then fill the empty target stalls.

## 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. Advance the turret ahead until the pressure is off the lower roller and targets. To advance the turret, turn the clutch *clockwise*. *Never push the turret directly or you risk damaging the turret.*
3. The lower roller must be turned so the stamped "S" is facing upward. Slide the roller off, invert and replace the roller. See Diagram 12A.
4. Spring tension can be adjusted by rotating the spring crank *clockwise* to *increase tension*, *counter-clockwise* to *reduce tension*. If 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 10 rotations. See Diagram 13.
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 13.
6. *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.
7. Once out of the trap house, push the On/Off/Release toggle switch up to the ON position.

## PAT-TRAP® DOUBLES

**IMPORTANT: BE SAFE --- Stay clear of the throw arm travel path and *never* stand in front of the trap machine.**

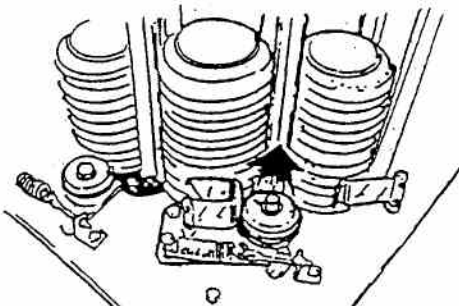
1. ***Release the target.*** The power to the pump motor can be left on.
2. Advance the turret ahead until the pressure is off the Doubles roller and targets. To advance the turret, turn the ***clutch clockwise***. **Never push the turret directly or you risk damaging the turret.** See Diagram 15.
3. 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 14.
4. The spring tension must be increased to throw Doubles. Rotate the spring crank ***clockwise*** approximately 10 rotations from the Singles setting. See Diagram 15.
5. 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. 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.
6. ***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.
7. Once out of the trap house, push the On/Off/Release toggle switch up to the On position.

## ADJUSTMENT FOR DOUBLES

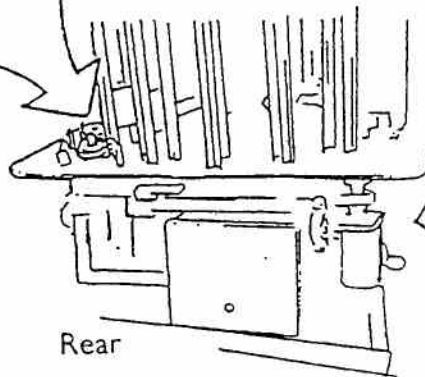
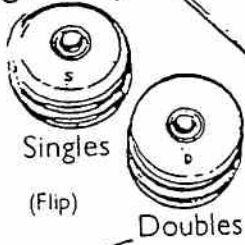
The adjustment for Doubles should only have to be done the very first time the machine is used. Using a 7/16" wrench, loosen the nut, move the target finger in 1/8" increments. Pull the target finger toward ***self to lower*** the height of the right target. Push ***in to raise*** the height of the right target. Tighten the nut. See Diagram 17. Refer to page 31 for correct positioning of the Double Finger ("X" Finger).

(Diagram 12)

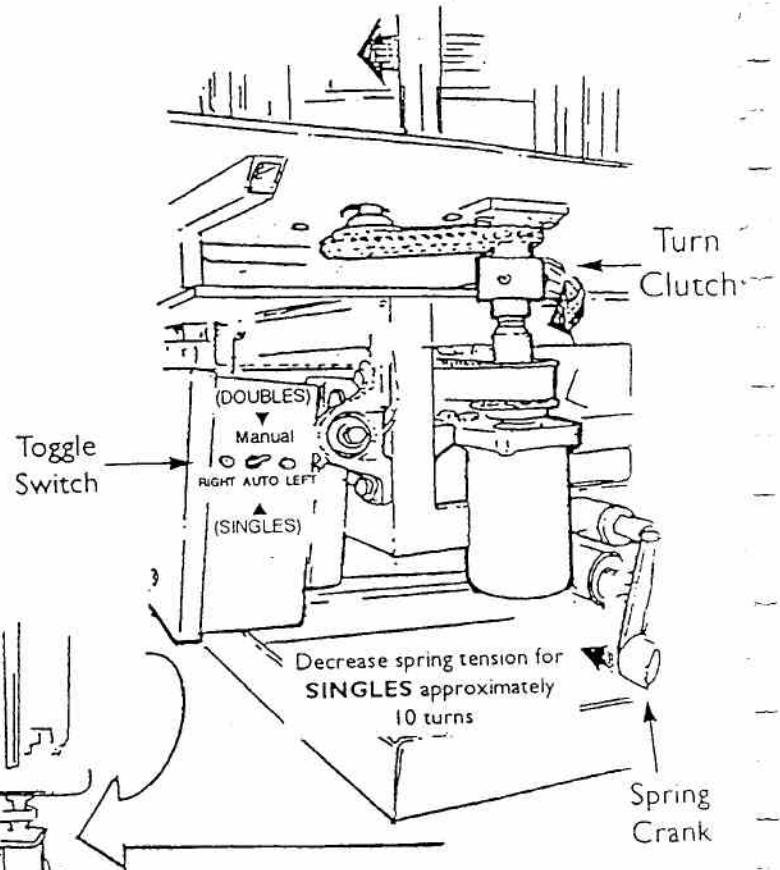
Align turret to change roller



(Diag. 12A)



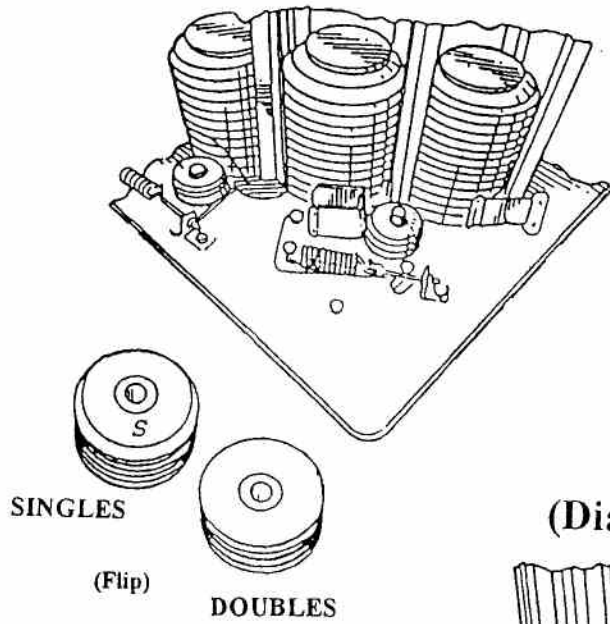
(Diagram 13)



(Diagram 15)

(Diagram 14)

Align turret to change roller



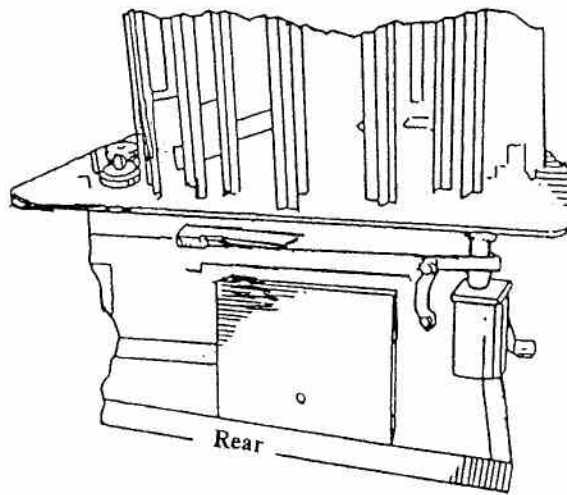
Toggle Switch

Turn Clutch

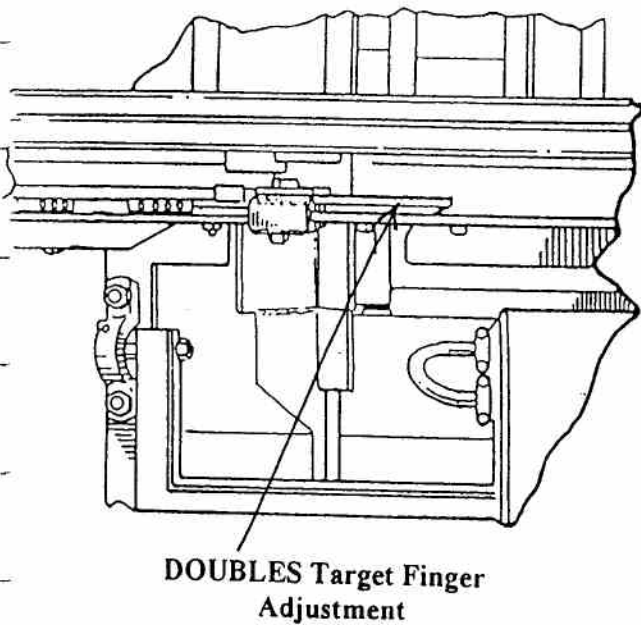
Increase spring tension  
10 turns for DOUBLES

Spring Crank

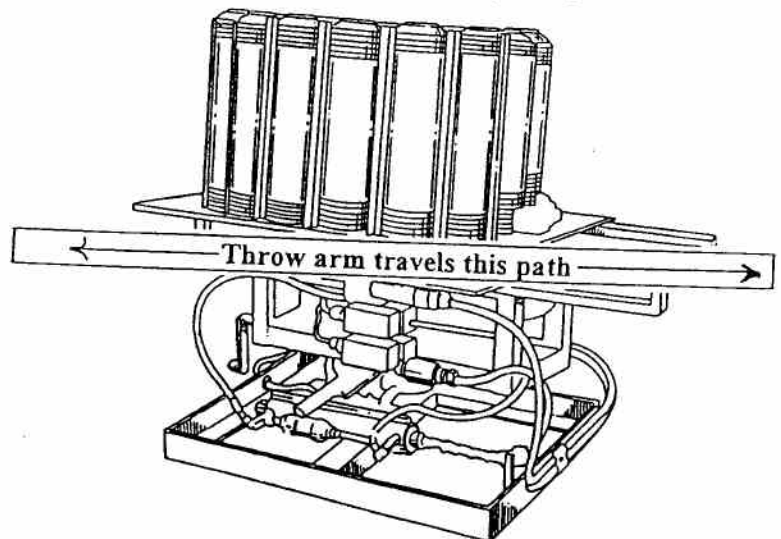
(Diagram 16)



(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.

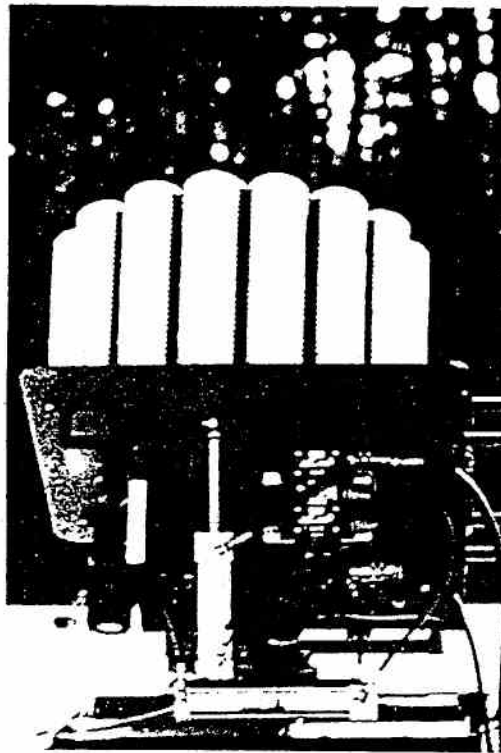
## CHANGE OVER TO WOBBLE

*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 WOBBLE

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

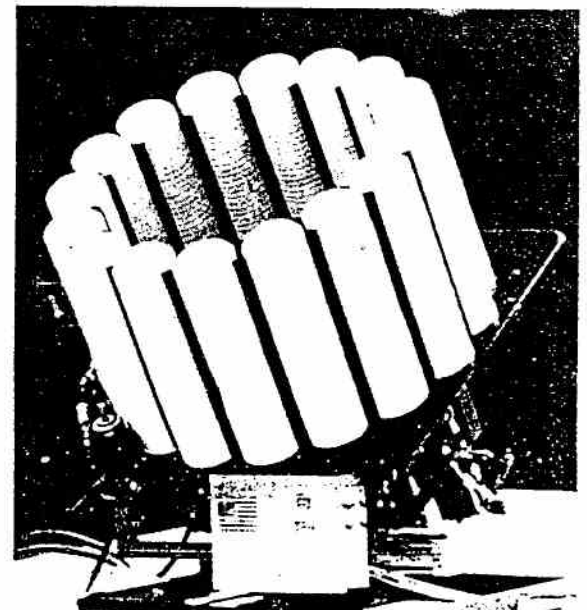
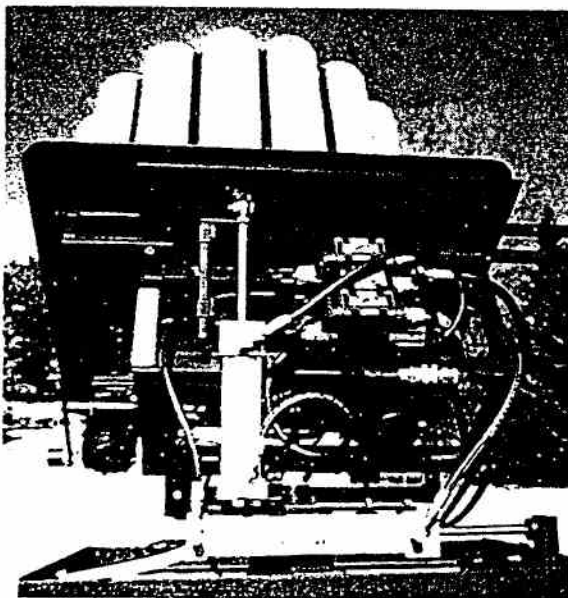
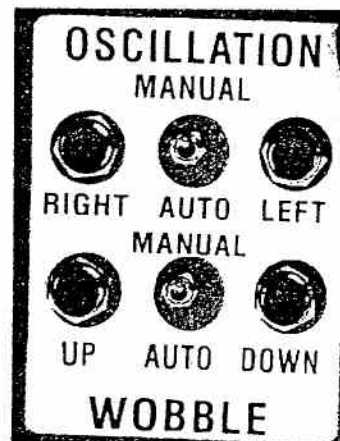


Pat-Trap® w/Wobble



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 will hold. The elastic lock-nut holds the spring at the set minimum tension.

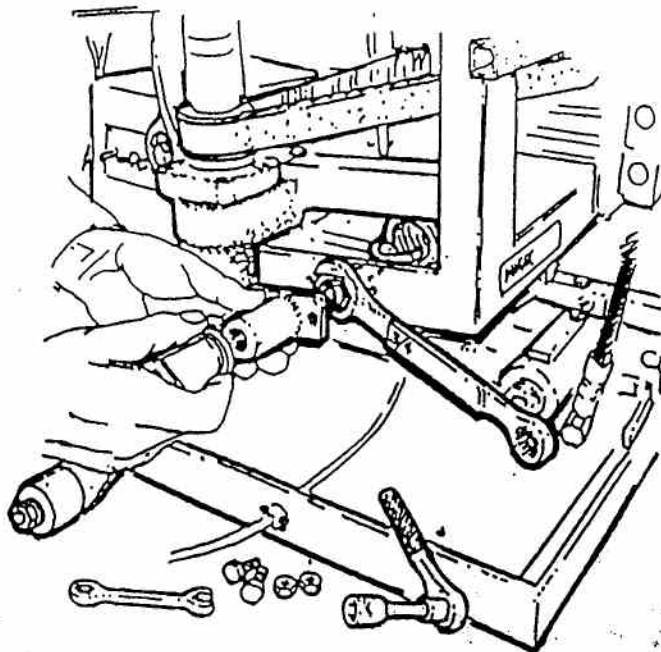
The standard minimum tension should be set so that the spring tension for a Singles target is as follows:

1. Remove the crank by rotating counter clockwise.
2. Remove the nylon washer,
3. Remove 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 the proper 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 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.

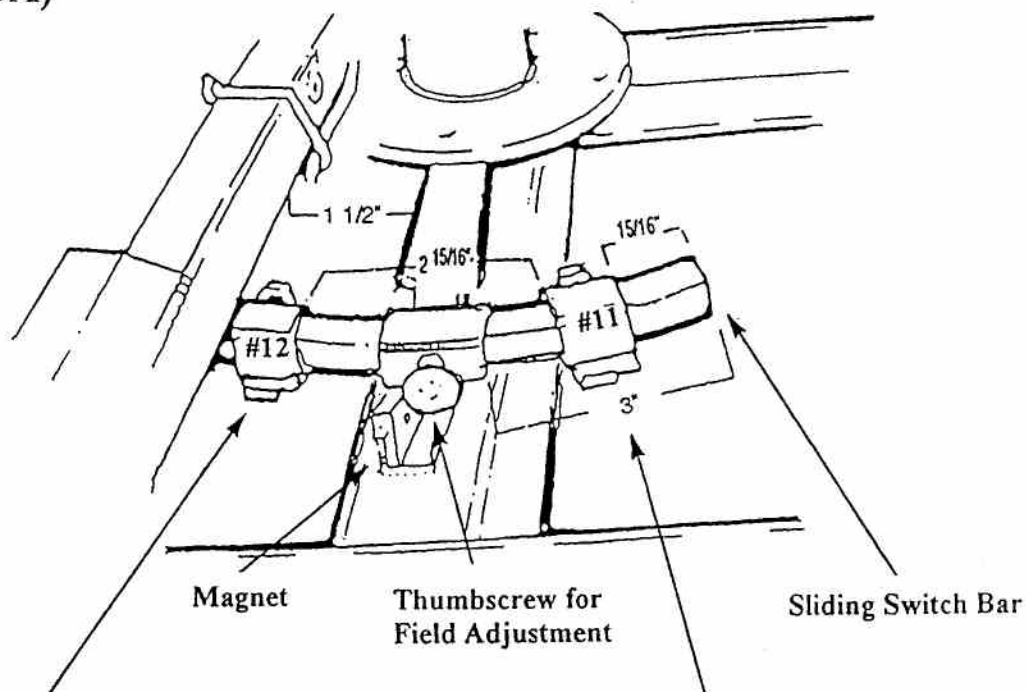
NOTE: SINGLES are always set first, then follow the procedures described for DOUBLES on page 11.

(Diagram 21)



## FIELD-ANGLE ADJUSTMENT (Sliding Switch Bar Style)

(Diagram 23A)



|                                              |                                   |                                                 |
|----------------------------------------------|-----------------------------------|-------------------------------------------------|
| Left-Angle<br>Limit Switch<br>#12 (Red Wire) | Loosen<br>Thumbscrew<br>to adjust | Right-Angle<br>Limit Switch<br>#11 (Black Wire) |
|----------------------------------------------|-----------------------------------|-------------------------------------------------|

The measurements in the above diagram are for 2-hole targets. The  $2 \frac{15}{16}$ " spread between the switch holders allows  $5 \frac{7}{8}$ " 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.  $\frac{1}{8}$ " 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 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.

## ADJUSTING HEIGHT OF TARGETS

**THE TRAP MACHINE HAS BEEN RELEASED AND THE POWER IS OFF. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHEN THE ARM IS COCKED. NEVER STAND IN FRONT OF A COCKED TRAP MACHINE.**

Tilt the table by pushing up on the front of the machine. The rack can be positioned up or down. The rack can be roughly adjusted by loosening the assembly and sliding it up or down. See Diagram 22

## ANGLE ADJUSTMENTS

**RELEASE THE TARGET BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHEN THE ARM IS COCKED. NEVER STAND IN FRONT OF A COCKED TRAP MACHINE.**

First, set the STRAIGHT-AWAY target; then follow the procedure for the right and left angle adjustment for 2-hole targets.

### 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

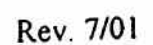
Loosen the thumbscrews. Slide the angle switch *toward the "magnet" to decrease the angle*. Slide the angle switch *away from the "magnet" to increase the angle*. See Diagram 22

Measure and set the switch approximately  $1 \frac{3}{4}$ " from the "magnet" to the front edge of the right-angle limit switch. Re-tighten the thumbscrew to hold the switch in place. See Diagram 23

Do the same for the left-angle switch. The total travel path of the oscillating cylinder rod is  $5 \frac{7}{8}$ ".  $2 \frac{15}{16}$ " left of center and  $2 \frac{15}{16}$ " right of center.

**IMPORTANT: 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)



## INSTALLING PLASTIC PINION BACKSTOP, SPRING and SWITCH BRACKET (Proximity Switch Style)

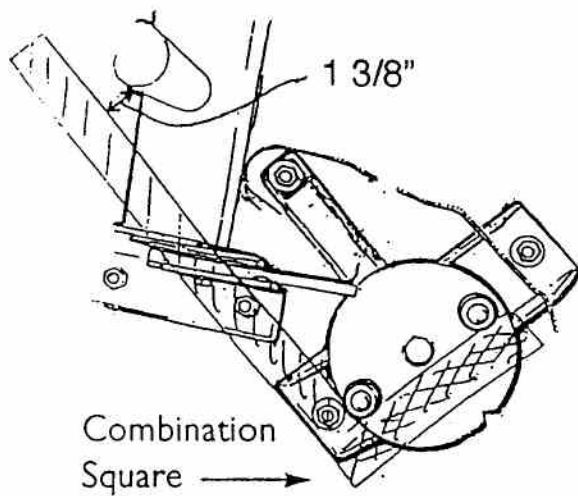
1. Remove the turret being careful not to loose the spacer washer between the kingpin base and the turret (most traps do not have a spacer washer).
2. Using the  $\frac{1}{4}$  - 28 x 1  $\frac{1}{8}$ " bolt, install the backing, plastic and spring on to the kingpin base. See Diagram 25. To "time the turret" properly, use a combination square so that the pinion wheel's cam followers are up against the square and are at 90 degrees, at 1-3/8" from the kingpin. See Diagram 24. Now, slide the plastic all the way into the notch. Tighten the bolt. Check to make sure the end of the spring is even with the end of the plastic.
3. Place the switch bracket on the kingpin base with the washer and nut. See Diagram 25. Set the switch so that the spring is as close to the switch as possible, because when the plastic backstop is out of the notch, the spring will bend in and move closer to the magnet. Use two 7/16" wrenches to tighten the nut, hold the head of the bolt so that the bolt doesn't spin when tightening the nut.

## ADJUSTING SWITCH #4 (Proximity Switch Style)

Turn the power off to the machine. Disconnect the power wires to the proximity switch\*. Use an ohm meter ( or continuity tester) to check when the switch is activated. Rotate the pinion wheel by turning the clutch by hand. The gap between the end of the plastic and the notch in the pinion wheel *must be* 1/8" when the switch is activated (when the switch closes). Use a 1/8" hex key as a feeler gauge to set the gap. See Diagram 26.

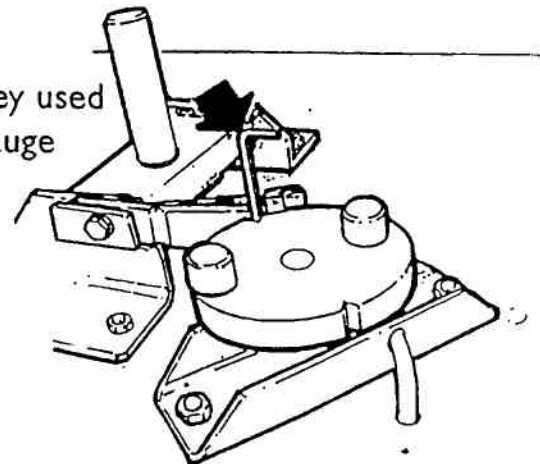
The correct setting is found by trail and error. Adjust the bracket by bending as necessary or use an adjusting screw. For example: If the turret does not stop indexing .... the gap is too little. Adjust by bending the bracket toward the front of the trap. See Diagram 26.

**\*NOTE: BE SURE TO DISCONNECT THE POWER WIRES; OR YOU MUST BLOCK THE ELEVATOR SWITCH BY PUTTING A STEEL RULER BETWEEN THE MAGNET AND THE PROXIMITY SWITCH.**



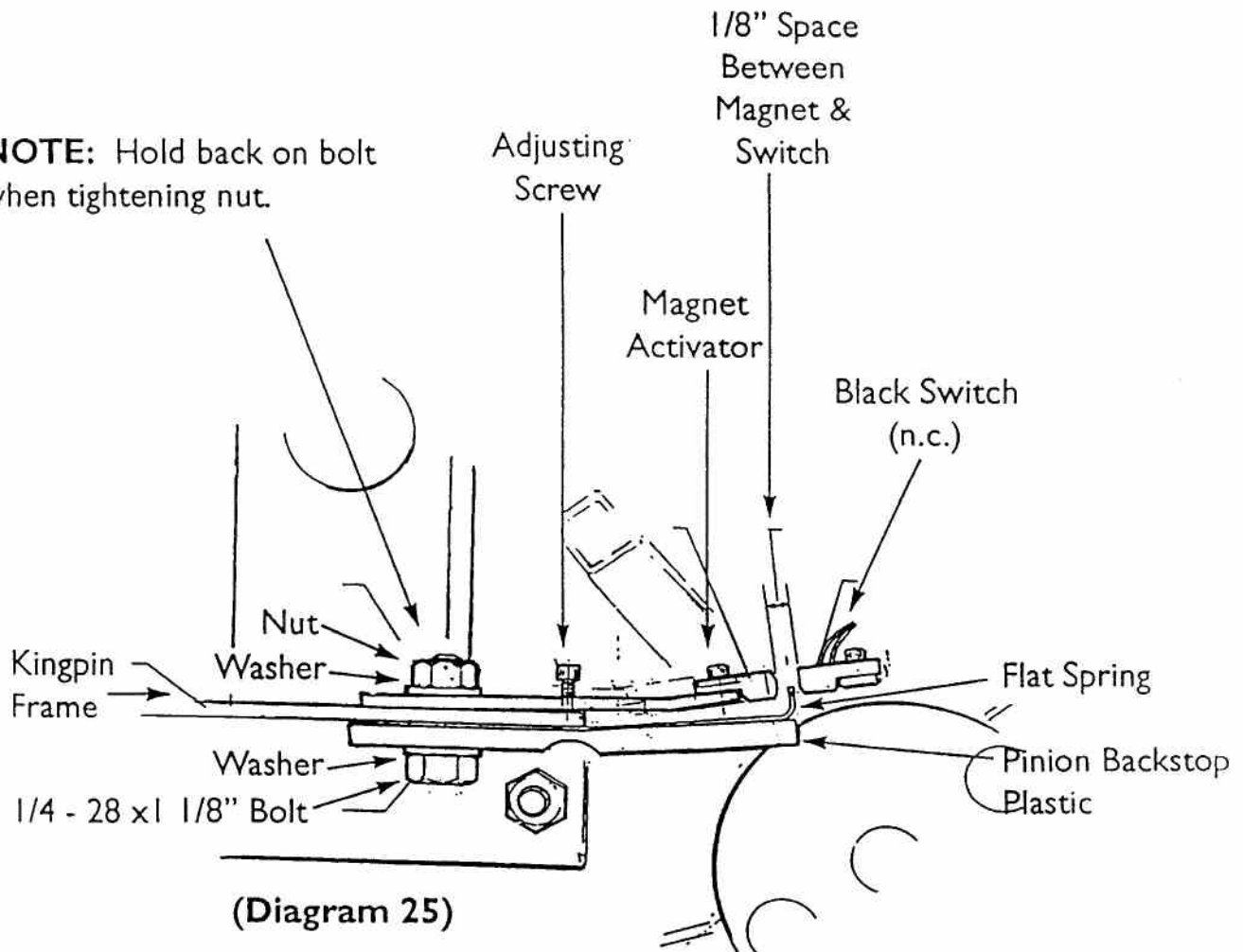
(Diagram 24)

1/8" hex key used  
as feeler gauge



(Diagram 26)

**NOTE:** Hold back on bolt  
when tightening nut.



(Diagram 25)

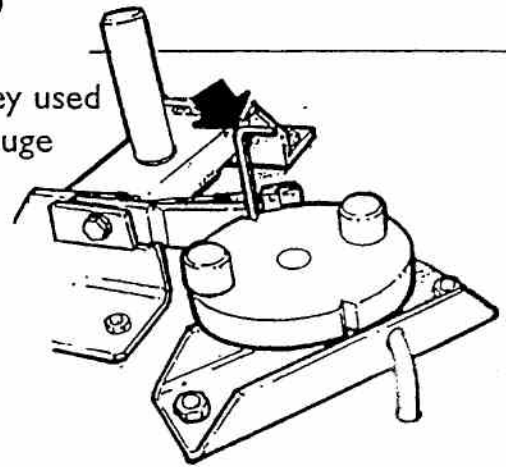
Spring to be near switch so when the pinion rotates, the spring moves in towards the activator magnet. Make sure that the spring does not hit switch or magnet.

## **INSTALLING PLASTIC PINION BACKSTOP, SPRING and SWITCH BRACKET (New Roller Switch Style)**

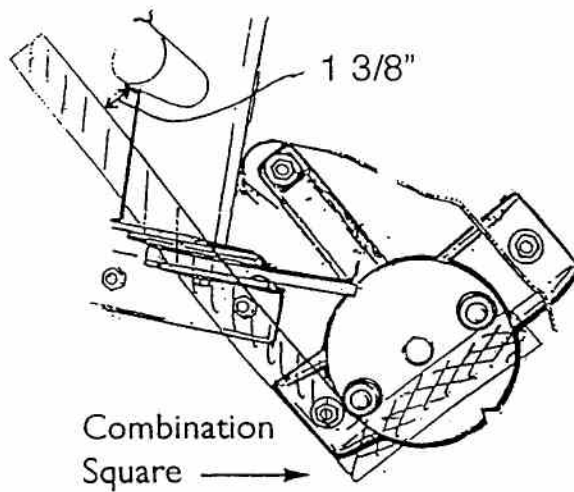
1. Remove the turret being careful not to loose the spacer washer between the kingpin base and the turret (most traps do not have a spacer washer).
2. Using the  $\frac{1}{4}$  - 28 x 1-1/8" bolt, install the backing, plastic and spring on to the kingpin base. See Diagram 25A. To "time the turret" properly, use a combination square so that the pinion wheel's cam followers are up against the square and are at a 90 degree angle, at 1 3/8" from the kingpin. See Diagram 24. Now, slide the plastic all the way into the notch. Tighten the bolt.
3. Place the switch bracket on the kingpin base with the washer and nut. See Diagrams 25A and 25B. Use two 7/16" wrenches to tighten the nut, hold the head of the bolt so that the bolt doesn't spin when tightening the nut.

(Diagram 26)

1/8" hex key used  
as feeler gauge

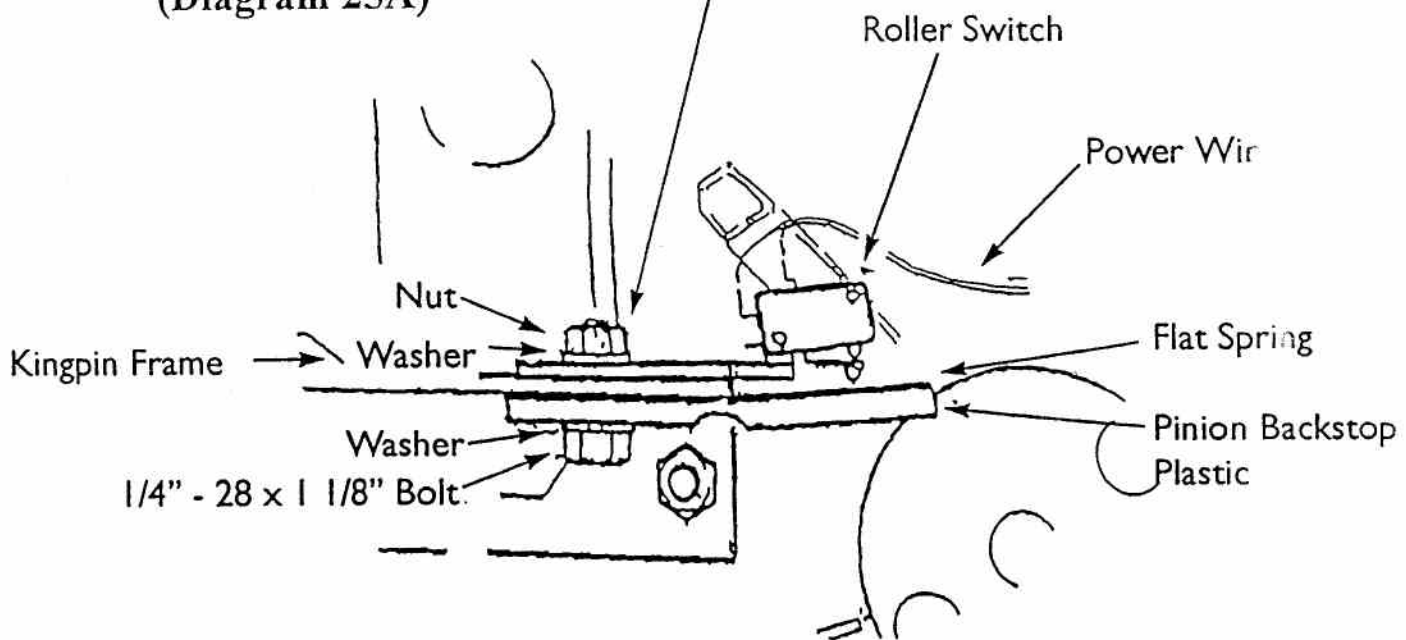


(Diagram 24)



NOTE: Hold back on bolt  
when tightening nut

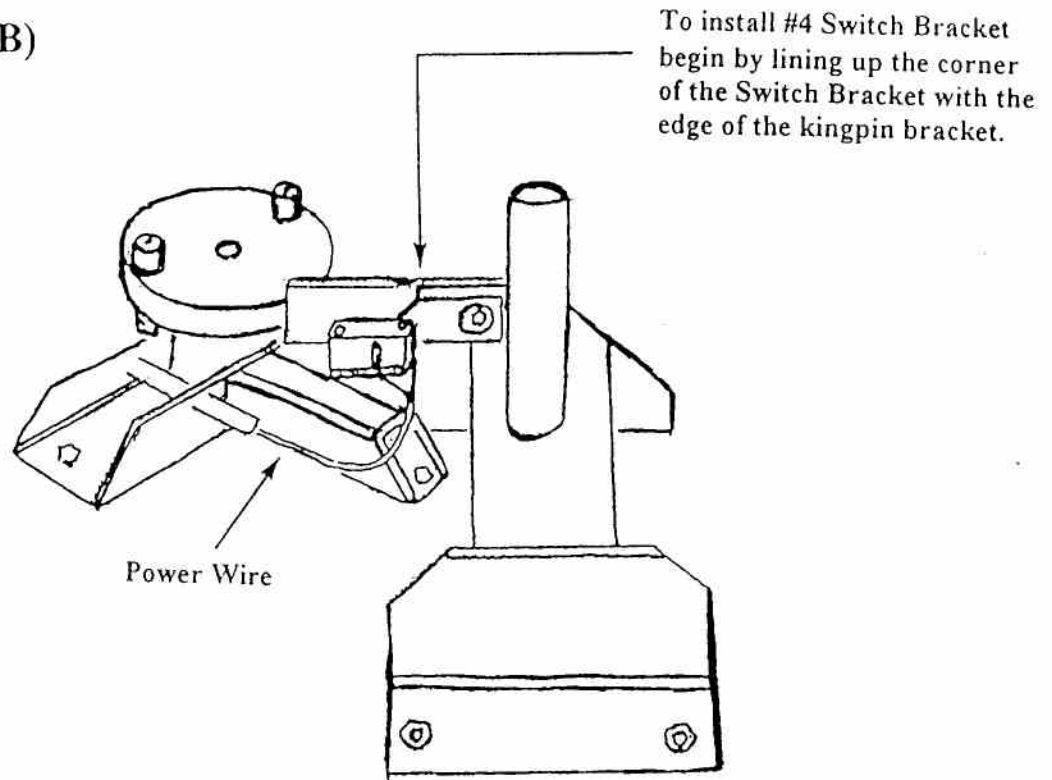
(Diagram 25A)





## ADJUSTING THE #4 SWITCH (New Roller Switch Style)

(Diagram 25B)



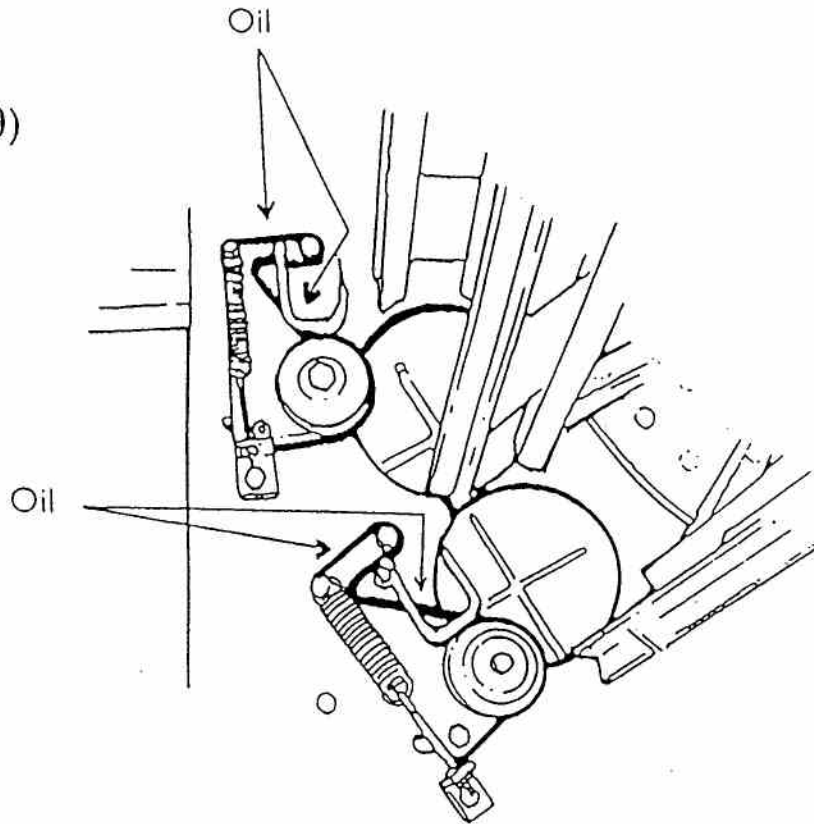
Turn the power off to the machine. Disconnect the power wires to the roller switch. Use an ohm meter (or continuity tester) to check when the switch is activated. Rotate the pinion wheel by turning the clutch by hand. The gap between the end of the plastic and the notch in the pinion wheel *must be* 1/8" when the switch is activated (when the switch closes). Use a 1/8" hex key as a feeler gauge to set the gap. See Diagram 26.

Slide the switch bracket *toward* the pinion wheel to close the gap; slide *away* from the pinion to open the gap. If there is not enough slot to adjust for the 1/8" gap, the bracket can be bent: bend *IN* toward the flat spring to close the gap. Bend *AWAY* from the flat spring to open the gap.

**NOTE:** You can hear this switch "click" when it closes while setting the 1/8" gap.

# ROLLER PLATE MAINTENANCE

(Diagram 20)



## PROBLEM:

- 1 Dropping Doubles while in Singles mode.
2. Breaking Targets

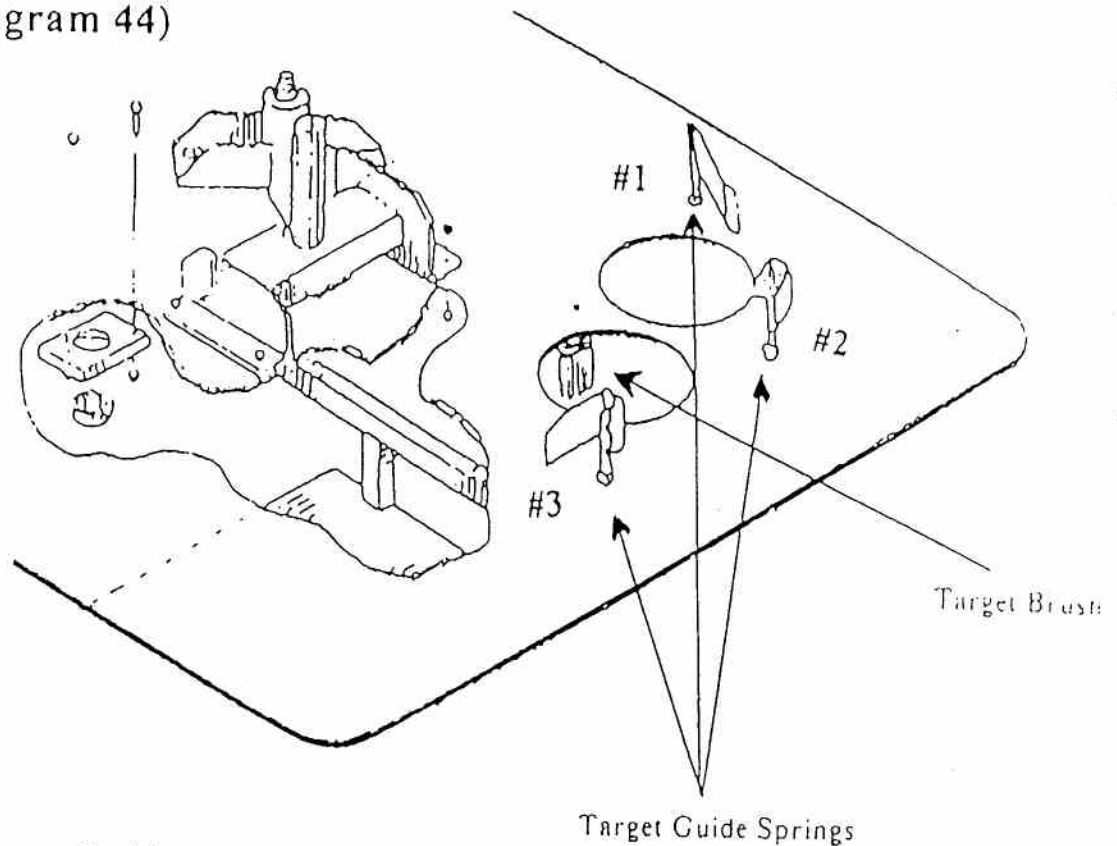
## SOLUTION:

Place a few drops of light oil under the top edges of the roller plate. Be sure to inspect the roller plates every three weeks by pulling back and forth on the wheel to see that they slide smoothly. Any excessive oil will drop down onto the throw arm and brake causing the machine to cycle.

**DO NOT USE** sprays such as RemOil, WD-40 or other such oils as they may dissolve the clay target dust. Super Lube is okay.

# TARGET BRUSH MAINTENANCE

(Diagram 44)



## PROBLEM:

1. Breaking targets
2. Targets being thrown further to the right

## SOLUTION:

It may be time to change the target brush. When the target brush becomes worn out, the target can be bumped ahead *and/or* slide down the throw plate. This can cause either the target to break or be thrown further to the right.

## PURPOSE:

The purpose of the target brush is to hold the target against the throw arm when the throw arm advances to the cocked position.

## MAINTENANCE:

When the brush begins to "flair out", loosen the screw and turn the brush 180 degrees. The brush(s) needs to be aligned within it's slot. Replace the brush when needed.

## **COLD WEATHER ADJUSTMENT TEMPERATURE/RELEASE TIME**

In very cold weather, the pump motor should be turned on one-half to one hour *before* operating time to warm up the hydraulic oil. If the On/Off/Release switch is turned on too soon, the machine will keep cycling.

Extreme temperature changes may affect the stopping position of the throw arm. Very cold temperature may cause the machine to keep cycling by itself. Very warm weather may stop the throw arm too soon and cause slow pulls. Refer to the figure of the throw arm brake assembly for proper stopping position of the throw arm. See Diagram 32.

## **ADJUSTING RELEASE TIME & CORRECTION OF CYCLING PROBLEM**

There are two switches on the left side of the trap machine which are mounted on a bracket. With a hex key, loosen the set screw. Move the switch bracket by increments of 1/16" to the left (toward the front of the trap house) to *stop* cycling --- or lengthen the throw time. To *shorten* the throw time, move the switch bracket to the right --- toward the back of the trap house. See Diagram 27. For proper stopping position of the throw arm on the brake, please refer to Diagram 35.

### **CAUTION**

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

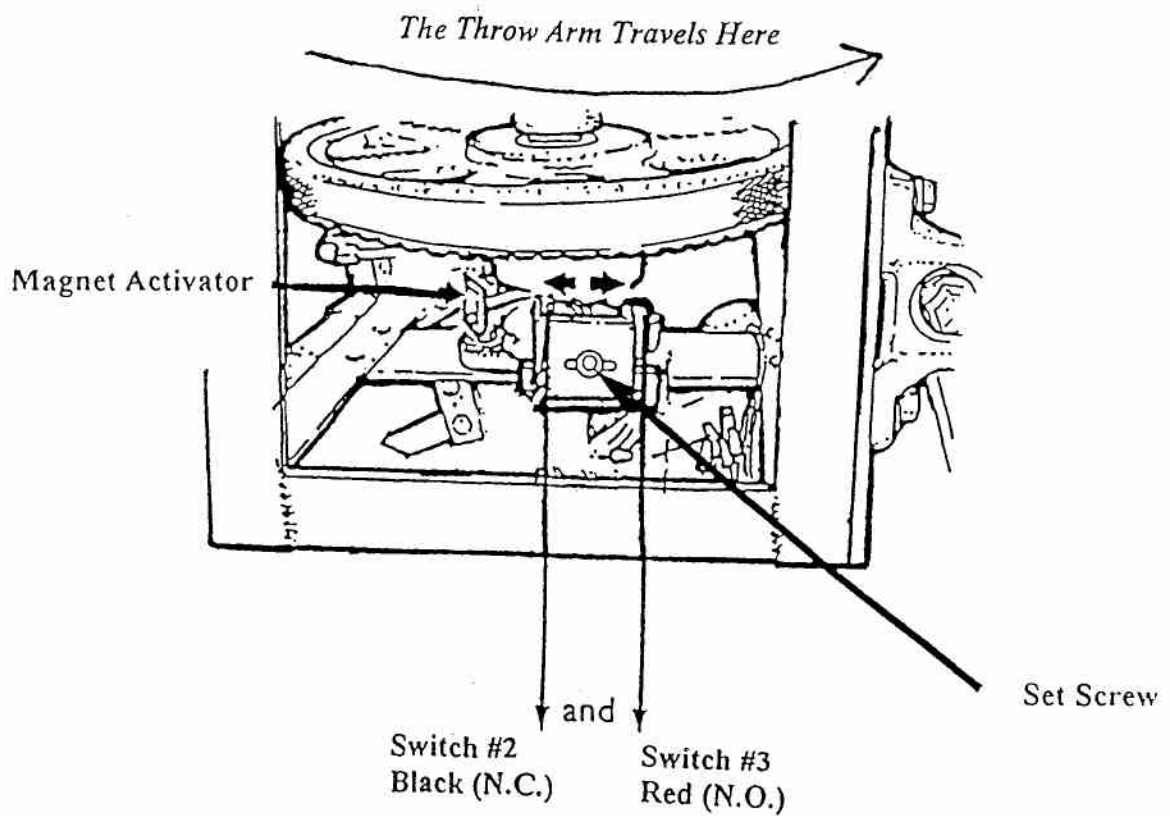
**When the throw arm is FIRED, the arm will travel through the indicated danger area.**

**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.**

DANGER

DANGER

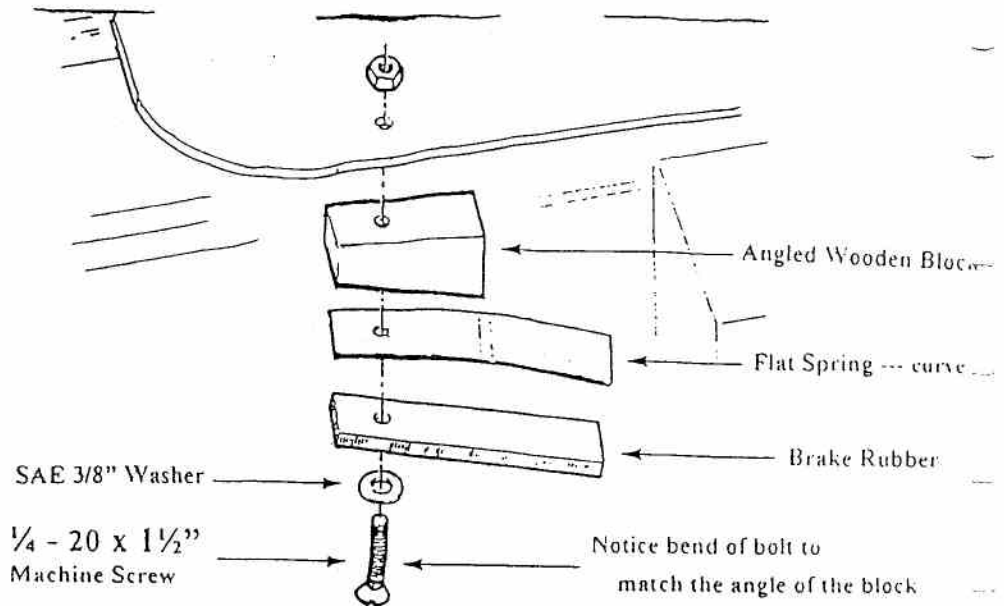
DANGER



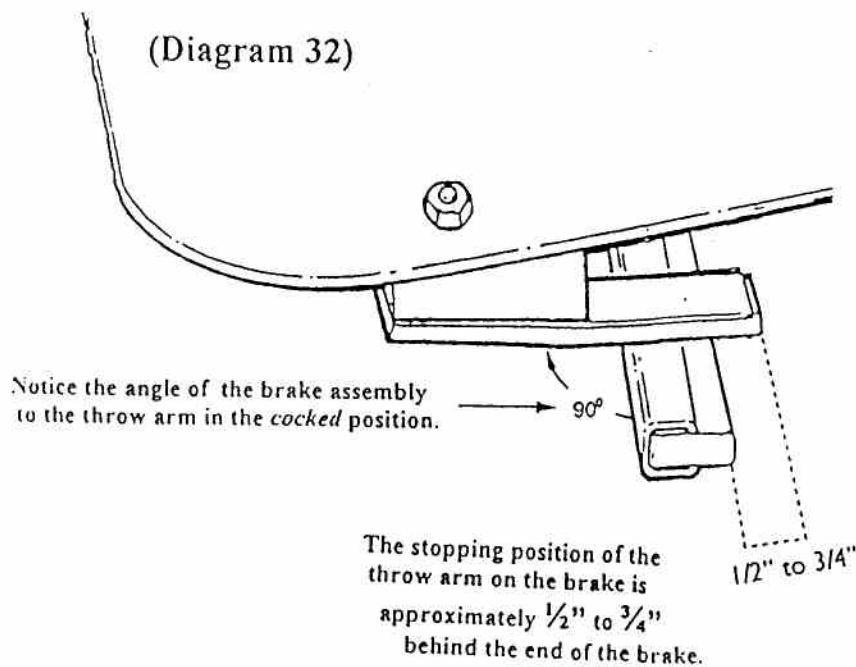
(Diagram 27)

# ASSEMBLY OF THROW ARM BRAKE

(Diagram 31)



(Diagram 32)



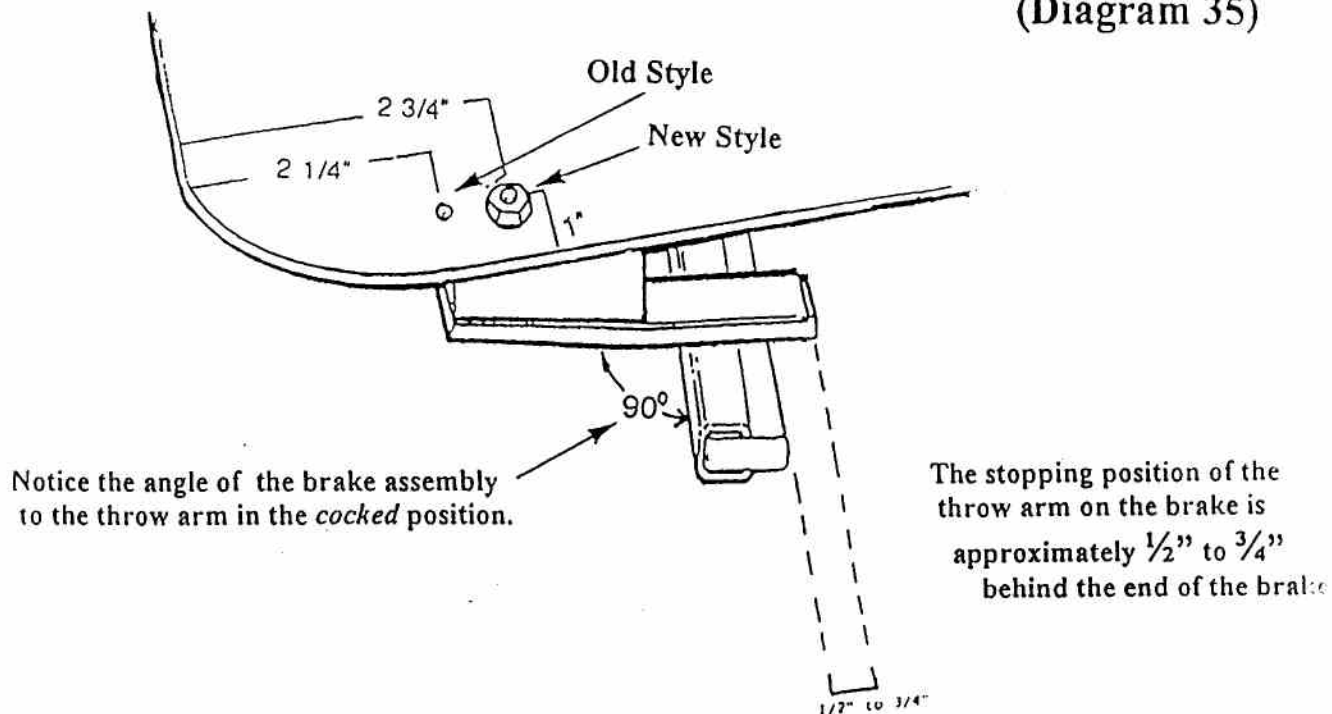
Keep surfaces dry where the throw arm contacts the brake rubber.  
Replace the brake rubber when it begins to wear out.

# THROW ARM BRAKE INSTALLATION

**NOTE:** Proper installation of your throw arm brake depends upon the style of the throw arm being installed. The "new style" throw arm rubber is  $\frac{1}{2}$ " further ahead than the "old style". You may need to drill a new hole. Please refer to the diagram below.

1. Stand back from the machine. Release the target and turn off the machine.
2. Remove the brake assembly.
3. Measure the placement of the hole, if necessary. Drill a new hole using a  $\frac{1}{4}$ " drill bit.
4. Install the brake assembly.

(Diagram 35)

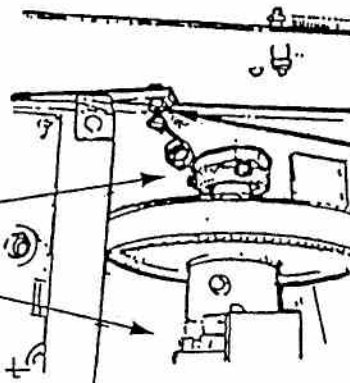


## MAINTENANCE

Keep surfaces dry where the throw arm contacts the brake rubber.  
Replace the brake rubber when it begins to wear out.

## THROW ARM BACKSTOP

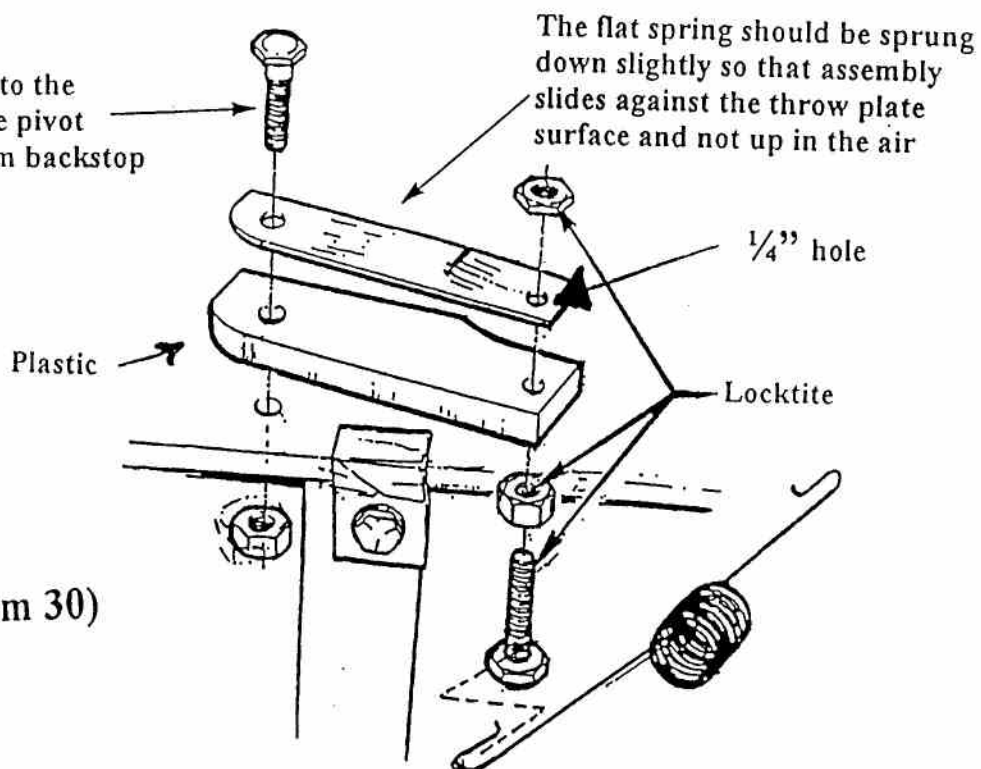
Grease the throw arm  
shaft bearings once  
every two (2) years



The flat edge of the hex nut  
rests against the plate

(Diagram 29)

Adjust the bolt to the  
nut to allow free pivot  
of the throw arm backstop



(Diagram 30)

If you are only replacing the "plastic", align the flat spring so that it is 1/16" inside the edge of the plastic. Use a vise grip to clamp the two together onto the throw plate and drill with a 1/4" drill bit.

When assembling the throw arm backstop, LOCKTITE glue must be used as pictured above. See Diagram 30

The purpose of the throw arm backstop is to minimize the cycle-time for the loading of targets for SINGLES.



## INSTALLATION OF THROW ARM

1. Release the throw arm. **Never** attempt to work on your machine while it is in the cocked position.
2. Turn off the machine and “drop” the machine to the lowest elevation for easier working conditions.
3. Disconnect the main spring **before** working with the throw arm. Refer to page 34 for guidelines to disconnect the main spring.

With the main spring disconnected, check to see that the height of the bottom of the throw arm rubber is  $\frac{1}{2}$ ” above the throw plate. (This measurement allows for  $\frac{1}{32}$ ” clearance between the lip of the target and the throw arm rubber.) Set a target on the throw plate against the throw arm and check the clearance between the two. The best place to check this is the area where the target leaves the throw plate. The nut on the throw arm can be torqued a maximum of 15 ft/lbs.

Check to see that the throw arm has clearance where it passes by the “doubles” finger. If necessary, the “doubles” finger can be bent down using a pair of water pump pliers. A screwdriver can be used between the “doubles” finger and the throw plate to pry it up.

# **INSTALLATION**

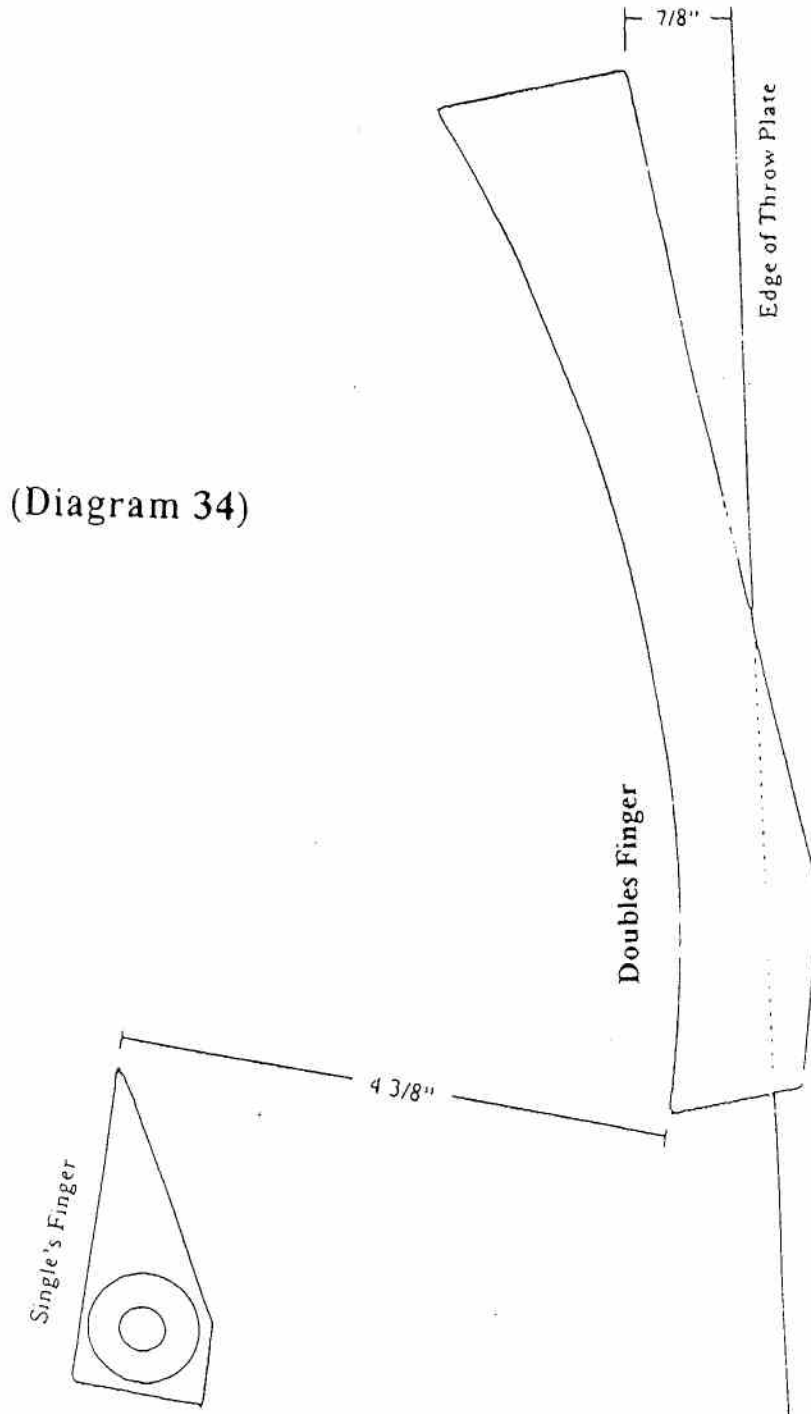
## **of the**

### **"X" DOUBLES FINGER**

1. Release the throw arm and turn off the machine.
2. Remove the old Doubles Finger and replace with the "X" Doubles Finger.
3. Set the "X" Doubles Finger so that the right-hand end measures  $7/8$ " up from the bottom edge of the throw plate. Tighten the bolt. This is the approximate position of the Doubles Finger for level double targets. See Diagram 34.
4. Loosen the nut on the Singles Finger and move the Singles Finger downwards so that the right-hand tip of the Singles Finger measures  $4 \frac{3}{8}$ " from the left-hand end of the "X" Doubles Finger. When tightening the nut, hold back on the Singles Finger so that it does not rotate upwards.
5. Check to see that the throw arm clears the "X" Doubles Finger.
  - A. Reduce the main spring tension --- unwind the crank handle
  - B. Disconnect the main spring --- see page 34
  - C. Move the throw arm manually past the brake and through the area of the "Doubles Finger" to check clearance. Water-pump pliers can be used if the Doubles Finger needs to be bent downwards. A long screwdriver can be used if the "Doubles Finger" needs to be pried upwards.

Presuming the machine is sitting on a level platform, with no wind; these directions should yield a level pair of DOUBLES.

**DOUBLES  
"X"  
FINGER**



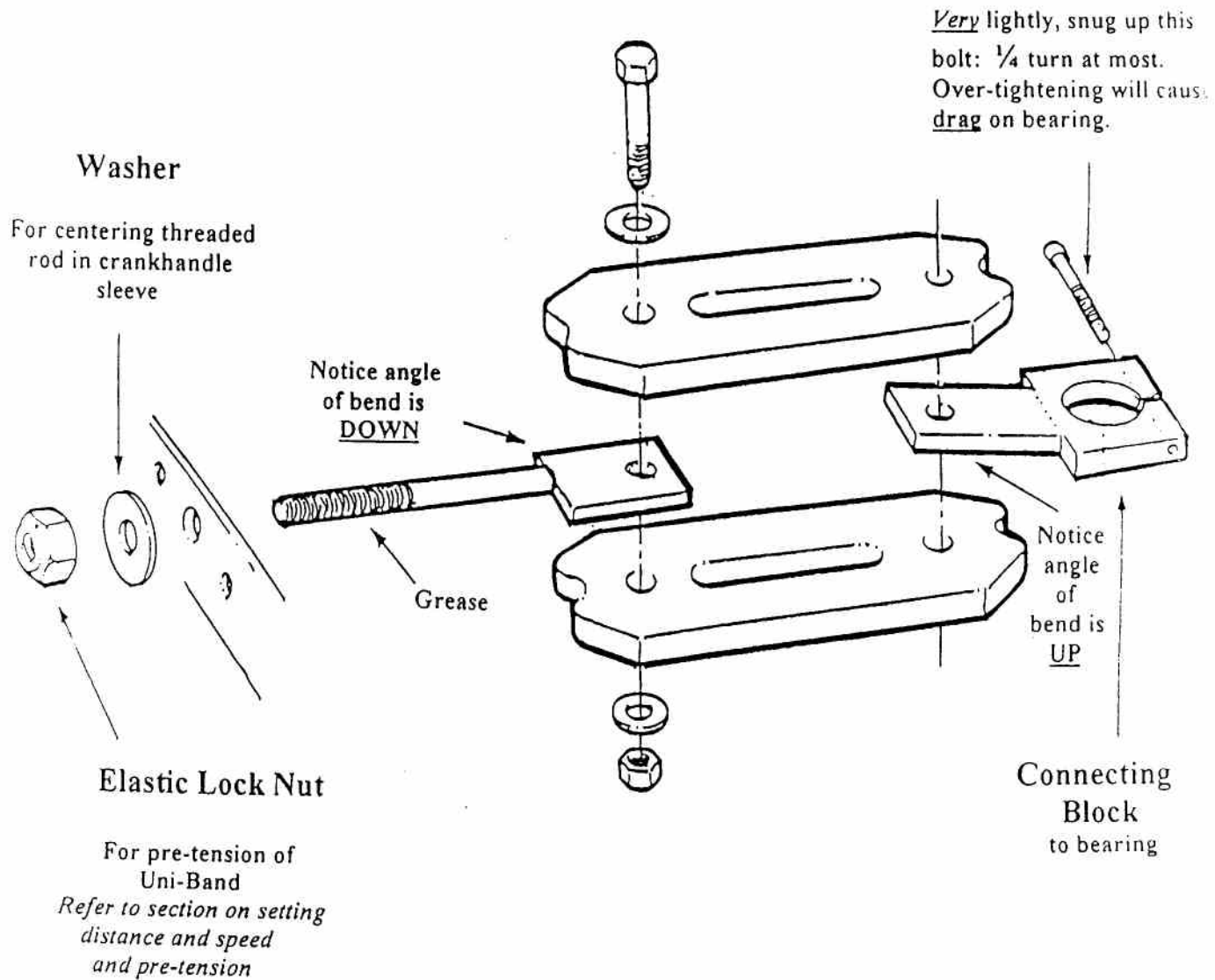
## DISCONNECTING THE MAIN SPRING

**RELEASE THE TARGET BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHEN THE ARM IS COCKED. NEVER STAND IN FRONT OF A COCKED TRAP MACHINE.**

1. Release the throw arm and turn off the machine.
2. Reduce the main spring tension (unwind the crank handle).
3. Move the throw arm forward (by hand) to the throw arm brake.
4. Loop a cord or rope around the end of the throw arm. While holding tension on the cord, against the throw arm, *slowly* guide the throw arm around to the front of the machine. Be aware that the throw arm is being pulled by the main spring as soon as the throw arm goes past the brake. A pair of gloves is recommended to prevent the cord from slipping through your hands. Remove the cord when finished. The intention here is to move the arm to opposite the cocked position; which is the short point of the throw (or neutral).
5. If your machine has a *Uni-Band*, you can now loosen the set screw on the connecting block. Pull back and down on the Uni-Band to remove it from the bearing. See Diagram 28.
6. The throw arm can now be freely moved around the throw plate.
7. If your machine has a *coil spring*, you can pull the coil end over the hook with a large screwdriver. *Or* you loosen the elastic lock nut on the threaded rod to create some slack.
8. Refer to pages 15/35 and diagrams 21/28, respectively, for re-assembly directions.

# ASSEMBLY/INSTALLATION OF THE UNI-BAND (Main Spring)

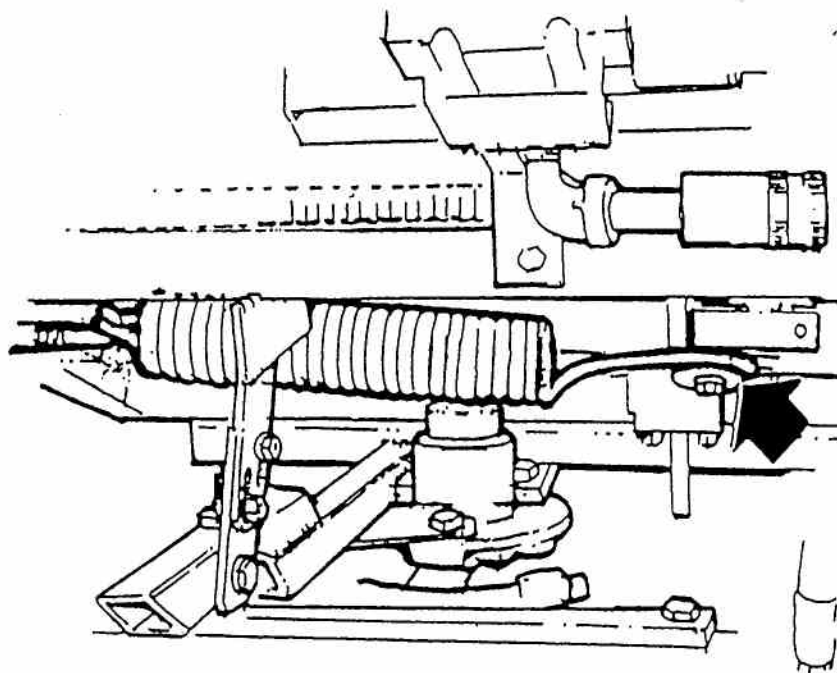
TOP



(Diagram 28)

# INSTALLATION OF COIL SPRING

(Diagram 36)



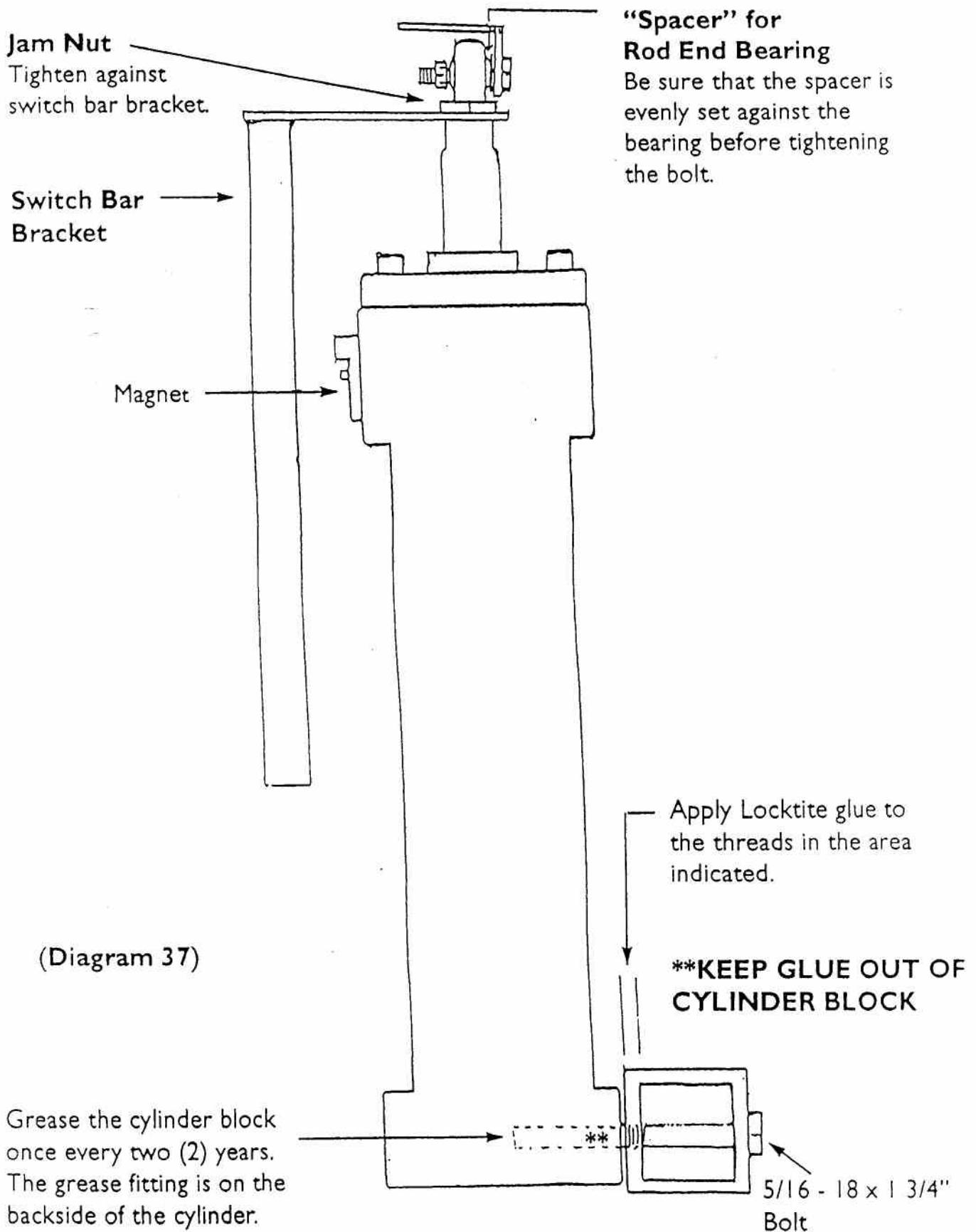
Place the long hook-end around the throw block bearing with the *coils facing up* so that the top of the coils are higher than the long hook-end, and the long hook-end is open toward the back of the machine.

## REMOVAL OF THE THROW ARM/TURRET VALVE

**RELEASE THE TARGET BEFORE ENTERING THE TRAP HOUSE. NEVER ATTEMPT TO MAKE ANY ADJUSTMENT WHEN THE ARM IS COCKED. NEVER STAND IN FRONT OF A COCKED TRAP MACHINE.**

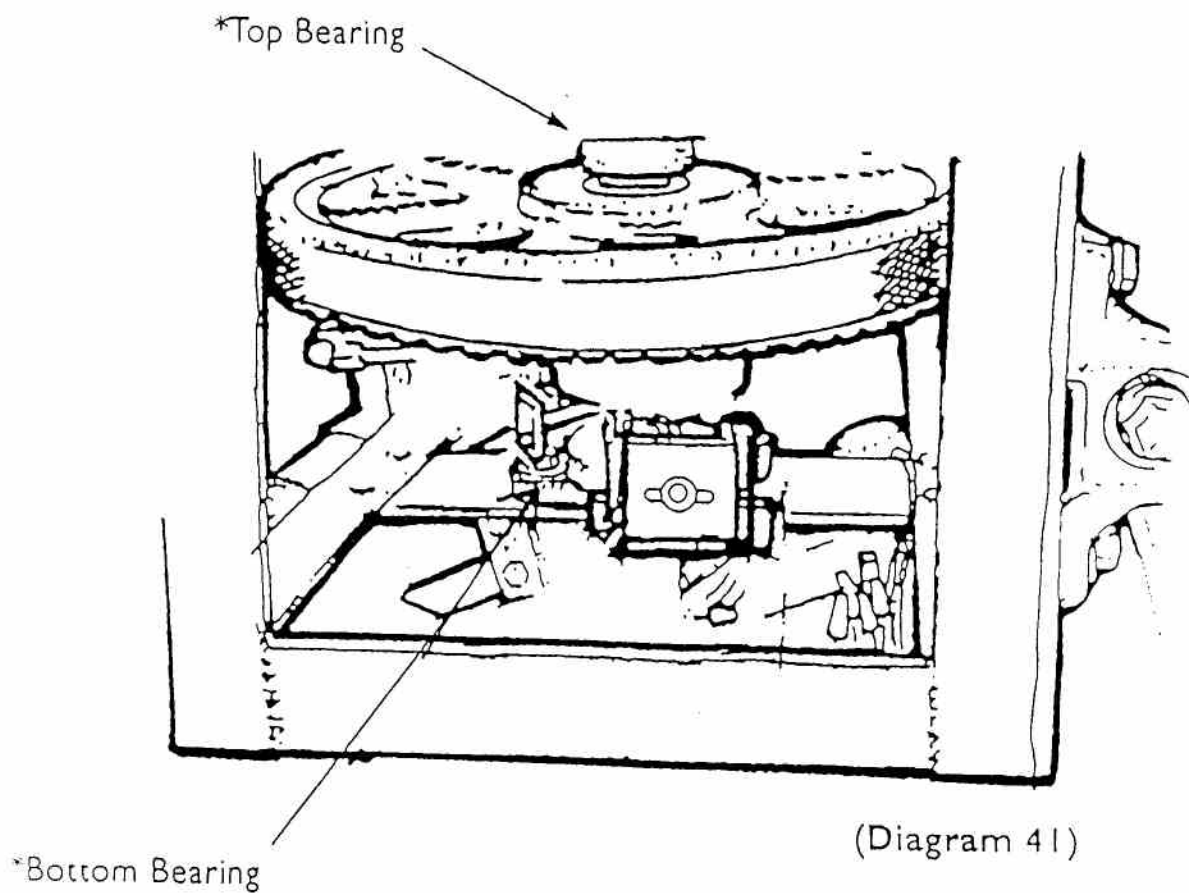
1. Release the throw arm and turn off the machine.
2. Reduce the main spring tension (unwind the crank handle).
3. Move the throw arm forward (by hand) to the throw arm brake.
4. Loop a cord or rope around the end of the throw arm. While holding tension on the cord, against the throw arm, *slowly* guide the throw arm around to the front of the machine. **Be aware** that the throw arm is being pulled by the main spring as soon as the throw arm goes past the brake. A pair of gloves is recommended to prevent the cord from slipping through your hands. Remove the cord when finished. The intention here is to move the arm to opposite the cocked position; which is the short point of the throw (or neutral).
5. The valve can now be removed with minimal loss of oil.

## HYDRAULIC CYLINDER FOR WOBBLE



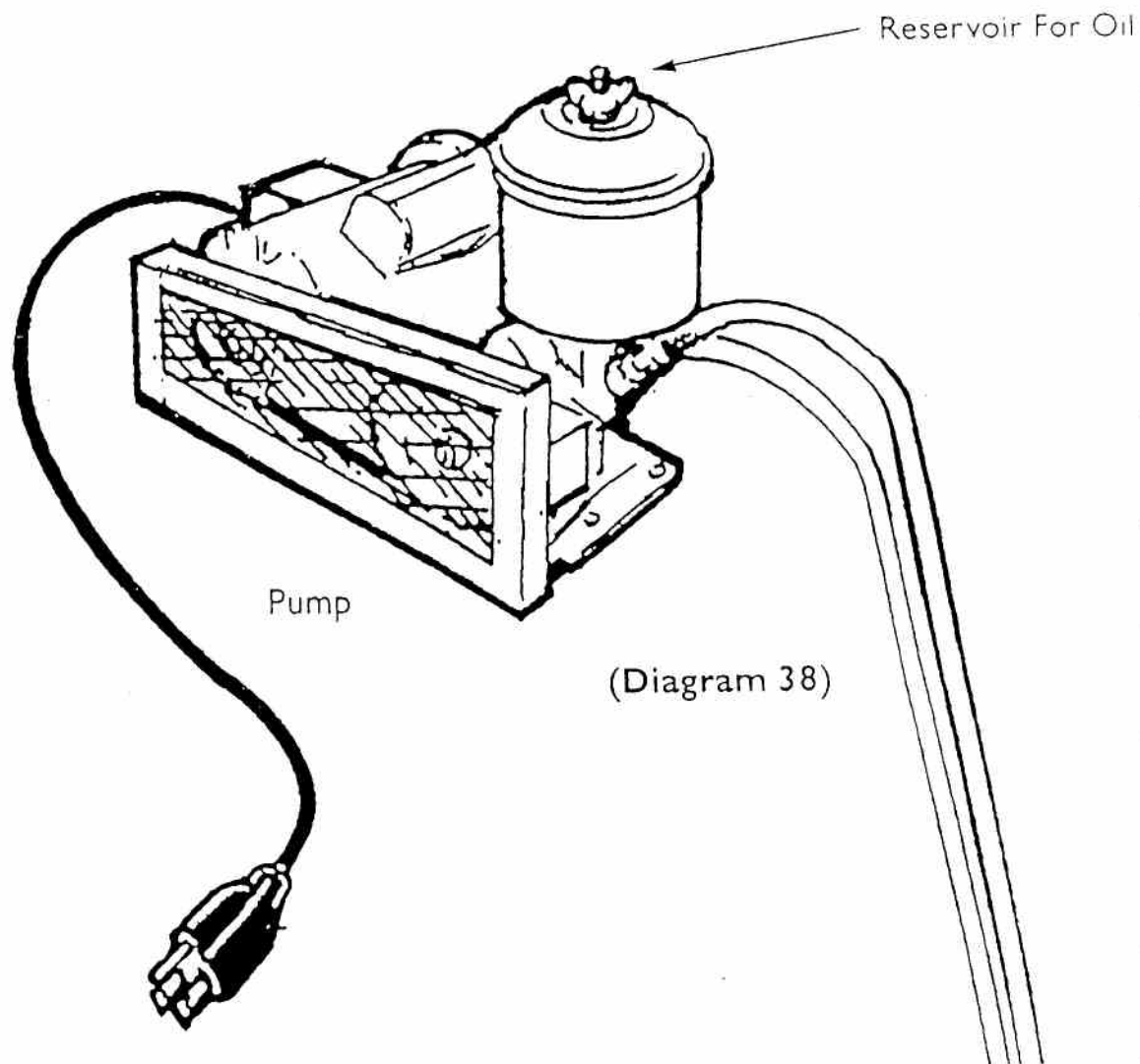


## THROW ARM SHAFT BEARING MAINTENANCE



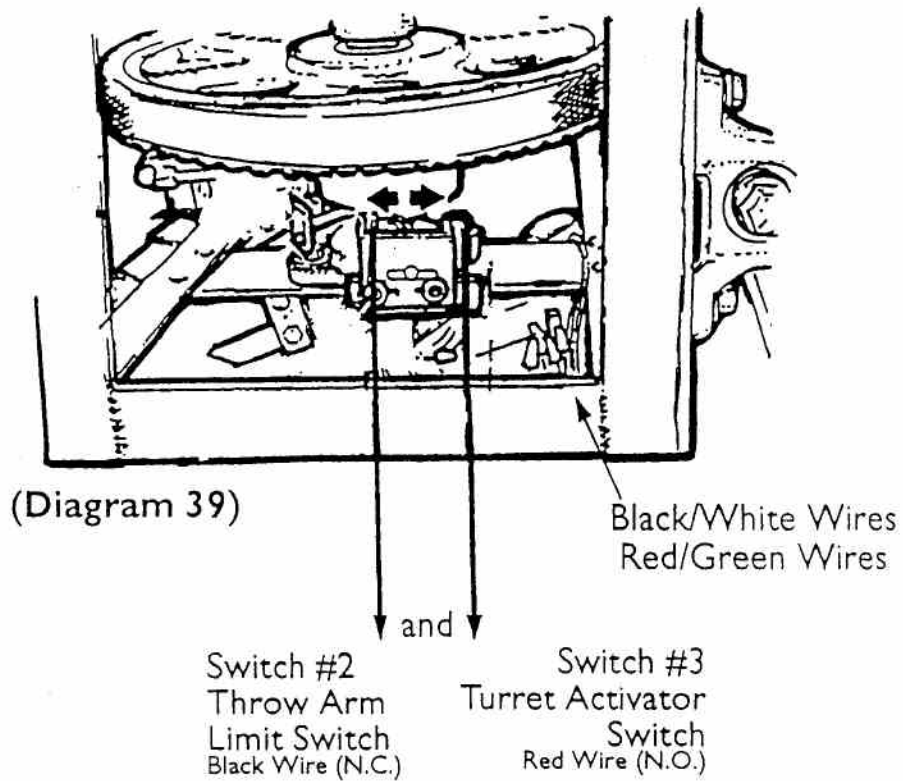
\*Grease *both* the top and bottom throw arm shaft bearings every one and one half to two years.

## PUMP MOTOR MAINTENANCE



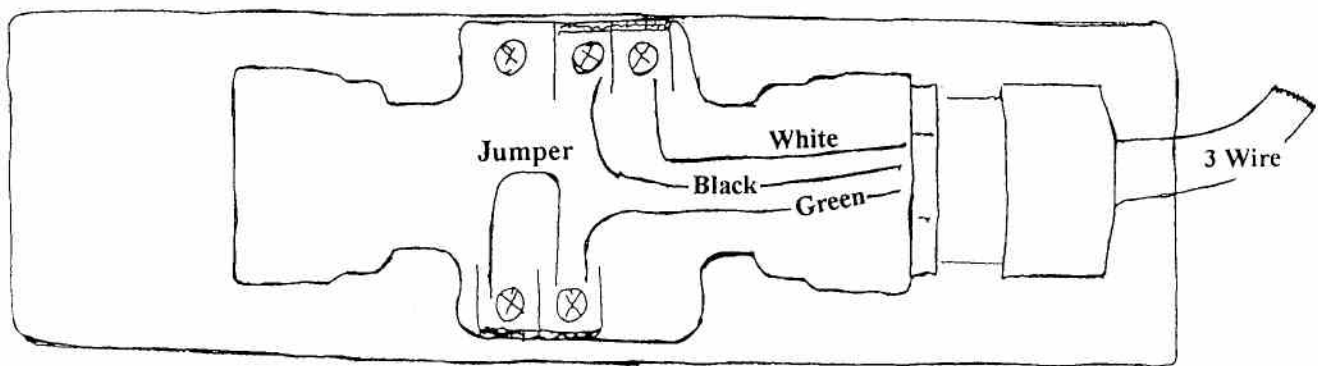
For pump motor fluid *use*: **MOBIL 1: OW-30**

# WIRING GUIDE FOR #2 and #3 SWITCHES



1. The #2 switch *black wires* go to the Black and White Wires.
2. The #3 switch *red wires* go to the Red and Green Wires.

# WIRING GUIDE FOR REXROTH VALVE

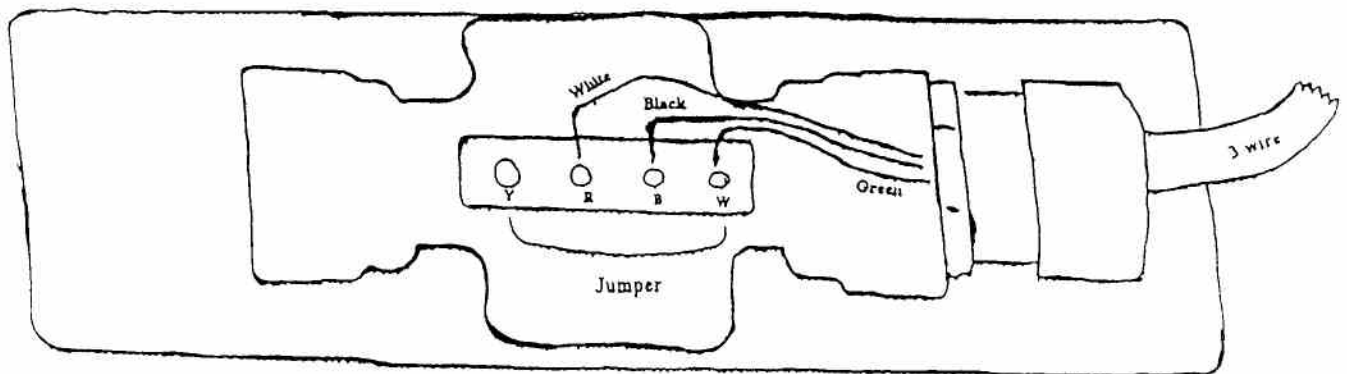


(Diagram 43)

## OSCILLATION SOFT SHIFT VALVE WIRING GUIDE

The top valve on a standard PAT-TRAP®  
The top *and* bottom valves on a PAT-TRAP® WOBBLE  
(The middle valve on the Wobble is NOT a soft shift valve)

The guide for wiring the Parker Soft Shift Valve on a standard PAT-TRAP® is as pictured:

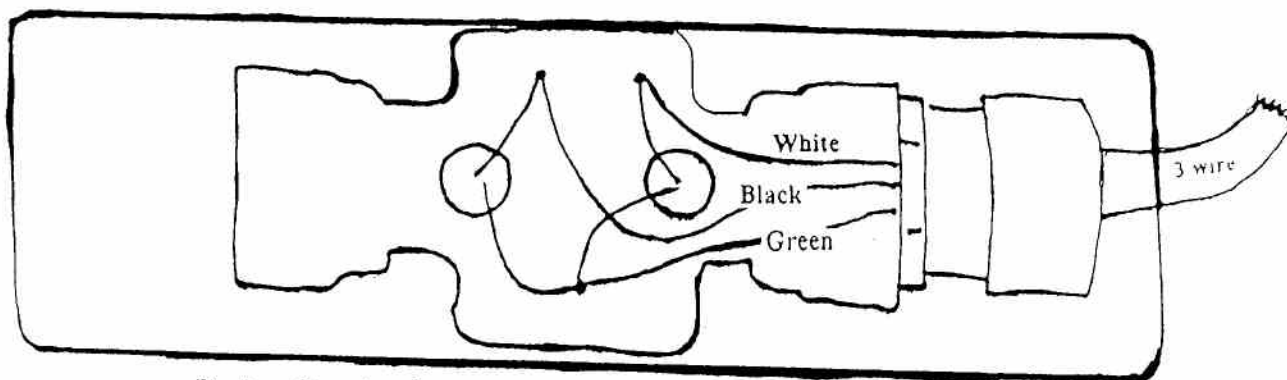


The guide for wiring the Parker Soft Shift Valve on a PAT-TRAP® *WOBBLE* is as follows:

1. The Black Wire goes to the Red terminal
2. The White Wire goes to the Black terminal
3. The Green Wire goes to the Yellow terminal

## WIRING GUIDE FOR THROW ARM/TURRET VALVE

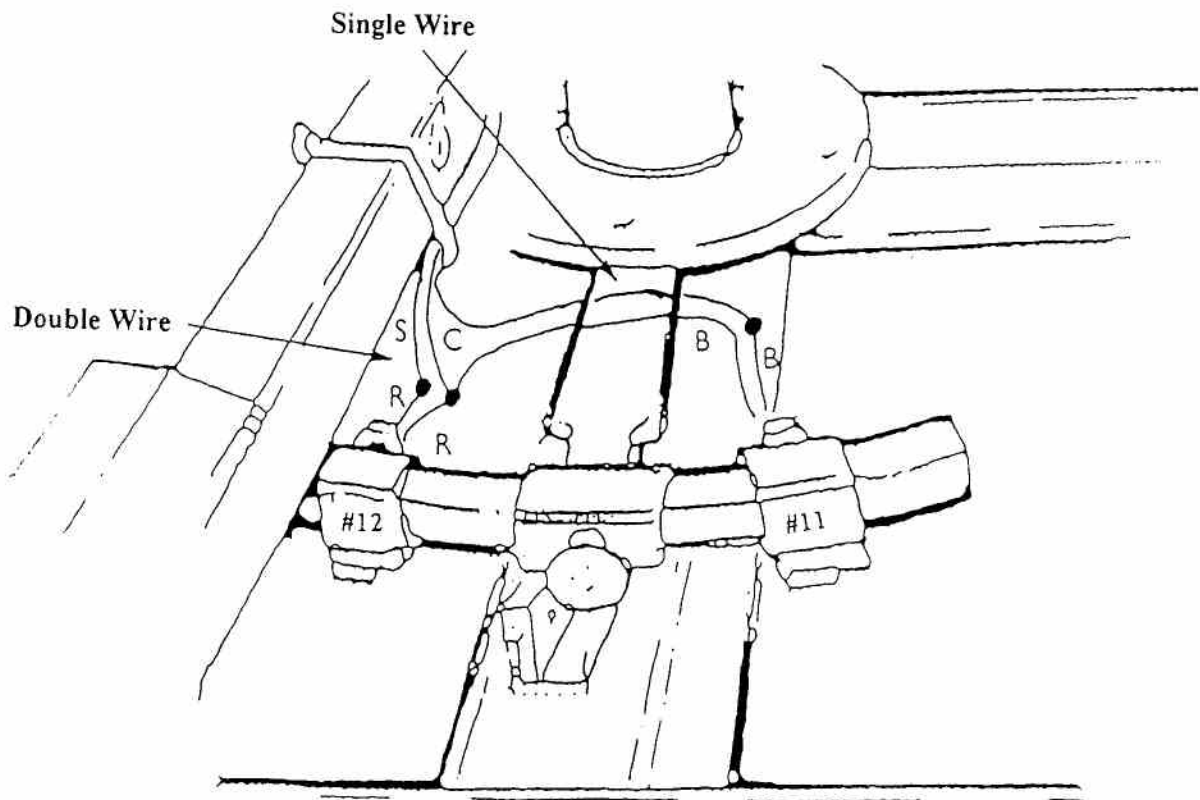
The bottom valve on a standard PAT-TRAP®  
The middle valve on a PAT-TRAP® WOBBLE



Parker Standard

*NOTE: Release the throw arm and turn off the machine.*

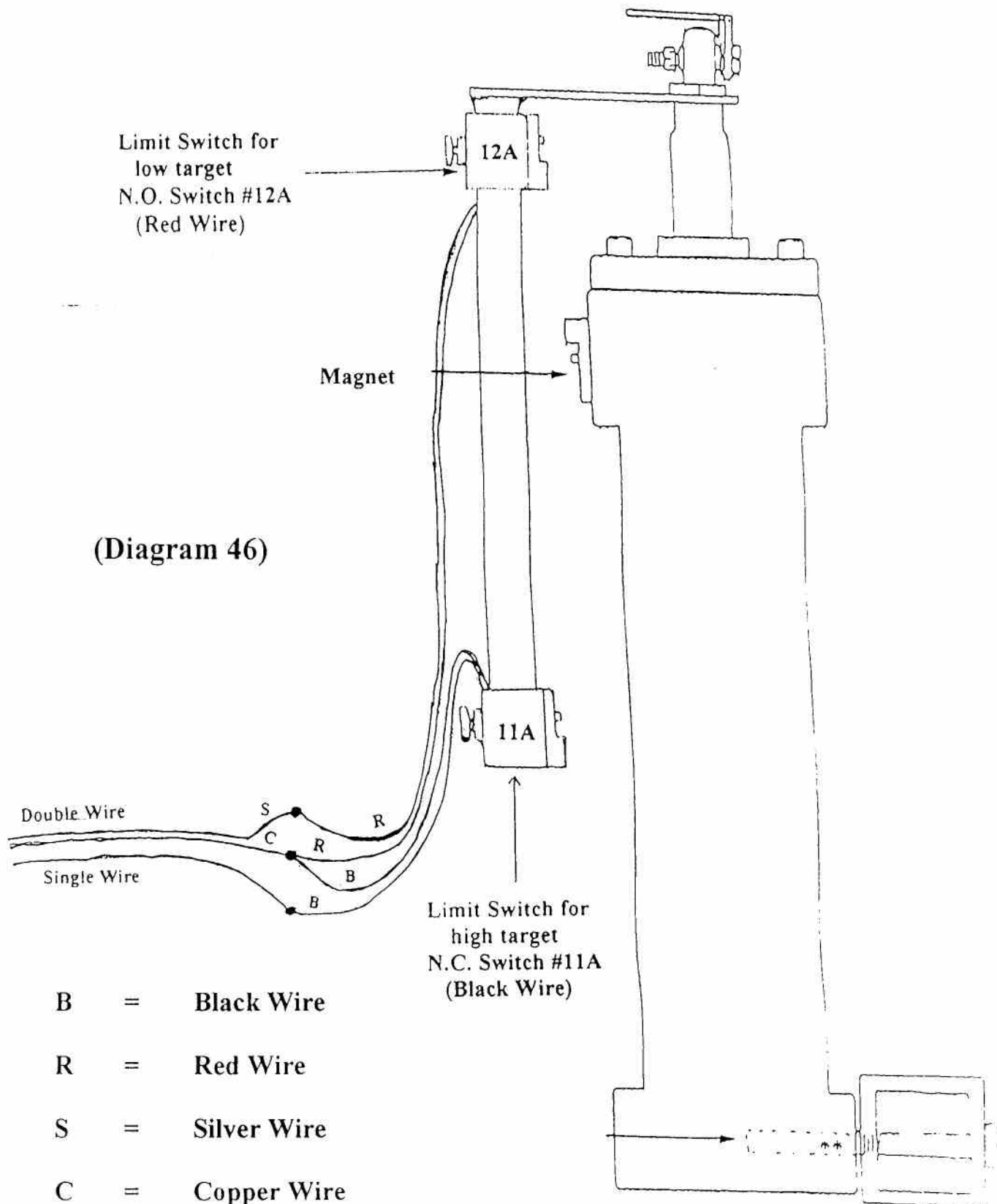
# WIRING GUIDE FOR #11 and #12 SWITCHES



(Diagram 40)

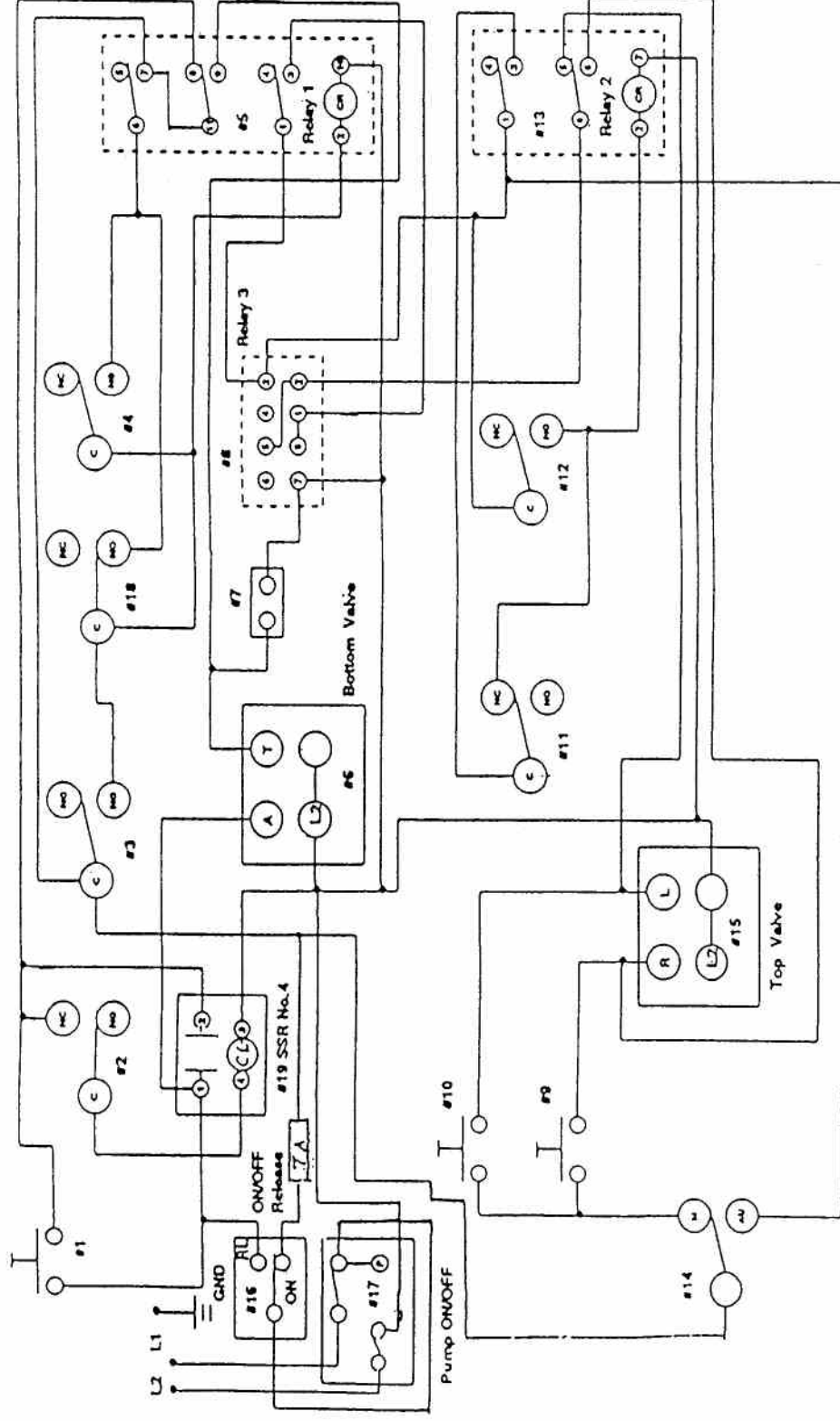
- B = Black Wire
- R = Red Wire
- S = Silver Wire
- C = Copper Wire

# HYDRAULIC CYLINDER FOR WOBBLE WIRING GUIDE





## Pullcord Switch



Machine is on and ready to throw:

- #1 pullcord switch #1
- #2 throw arm limit switch #2
- #3 turret activator switch #3
- #4 turret deactivator switch #4
- #5 throw arm turret relay #1
- #6 throw arm turret valve
- #7 counter
- #8 interrupter/dimer Relay 3
- #9 manual right-angle
- #10 manual left-angle
- #11 right-angle limit switch #7
- #12 left-angle limit switch #8
- #13 right/left relay RELAY 2
- #14 manual/automatic angle switch
- #15 right/left angle valve
- #16 on/off/release switch
- #17 master switch
- #18 switch #5 on elevator that holds relay closed until turret switch #4 has time to close
- #19 solid state relay RELAY 4
- RL release throw arm
- ON activates machine
- P pump motor
- L1 line one
- L2 line two
- AU automatic
- M manual
- R right
- L left
- A throw arm
- T turret

# PAT TRAP<sup>®</sup> - Wiring Diagram

**PAT-TRAP PRICE LIST****October 1, 2001**

\*\*\*PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE/PRICE DOES NOT INCLUDE SHIPPING.

| PART #  | DESCRIPTION                                          | RETAIL   |
|---------|------------------------------------------------------|----------|
| PT9012  | OSCILATING CYLDR HYDROLINE, COMPLETE                 | \$185.00 |
| PT9013  | WOBBLE OSCILATION CYL. HYD, COMPLETE                 | \$246.00 |
| PT9017  | 1/4 HYDRAULIC HOSE                                   | \$10.00  |
| PT9023  | SINGLES FINGER, PLASTIC                              | \$6.00   |
| PT9024  | ELEVATION COG                                        | \$28.00  |
| PT9025  | X DOUBLES FINGER                                     | \$28.00  |
| PT9026  | THROW ARM                                            | \$128.00 |
| PT9026A | THROW ARM THROW RUBBER                               | \$15.00  |
| PT9026B | TO REBUILD THROW ARM                                 | \$20.00  |
| PT9027  | THROW ARM BRAKE RUBBER                               | \$6.00   |
| PT9027A | THROW ARM BRAKE FLAT SPRING                          | \$6.00   |
| PT9027B | BRAKE, COMPLETE                                      | \$24.00  |
| PT9028  | MAIN SPRING/WIRE                                     | \$33.25  |
| PT9030  | MAIN SPRING ANCHOR BOLT (threaded rod)               | \$24.00  |
| PT9031  | MAIN SPRING CRANK                                    | \$33.25  |
| PT9032  | UNI-BAND/Pair (Mainspring)                           | \$33.25  |
| PT9033  | MAIN SPRING CHANGE OVER (wire to uni-band)           | \$125.00 |
| PT9039  | THROW ARM BACKSTOP, COMPLETE                         | \$35.00  |
| PT9040  | THROW ARM BACKSTOP SPRING                            | \$6.00   |
| PT9040A | THROW ARM BACKSTOP BOLT W/NUT 1/4-28                 | \$6.00   |
| PT9040B | THROW ARM BACKSTOP PLASTIC                           | \$6.00   |
| PT9040C | THROW ARM BACKSTOP FLAT SPRING                       | \$3.00   |
| PT9041  | TARGET BRUSH                                         | \$6.00   |
| PT9048  | HYDRAULIC MOTOR                                      | \$225.00 |
| PT9060  | HYDRAULIC VALVE                                      | \$145.00 |
| PT9061  | SOFT SHIFT VALVE                                     | \$178.00 |
| PT9075  | HYD CYLINDER TARGET ELEVATOR                         | \$130.00 |
| PT9076  | ELEVATOR GUIDE ROD                                   | \$45.00  |
| PT9095  | TARGET GUIDE, SPRING MOUNT                           | \$14.00  |
| PT9096  | SET OF 3 TARGET SPRINGS                              | \$30.00  |
| PT9097  | TARGET GUIDE SPRING #1                               | \$10.00  |
| PT9098  | TARGET DROP GUIDE SPRING #2                          | \$10.00  |
| PT9099  | TARGET DROP GUIDE SPRING #3                          | \$10.00  |
| PT9100  | EXTENSION SPRING/ROLLER PLATES                       | \$3.00   |
| PT9101  | EYE BOLT                                             | \$1.00   |
| PT9102  | EYE BOLT ANCHOR BRACKET                              | \$3.00   |
| PT9104  | O RING/ROLLER                                        | \$0.50   |
| PT9105  | SINGLE ROLLER PLATE                                  | \$100.00 |
| PT9106  | DOUBLE ROLLER PLATE                                  | \$125.00 |
| PT9107  | DOUBLES ROLLER                                       | \$95.00  |
| PT9107A | SINGLES ROLLER                                       | \$95.00  |
| PT9108  | BRONZE ROLLER BUSHING                                | \$4.45   |
| PT9123A | PINON BACKSTOP SPRING (L-SHAPE)                      | \$6.00   |
| PT9123B |                                                      | \$6.00   |
| PT9123C | PLASTIC PINON BACKSTOP                               | \$6.00   |
| PT9124  | #4 Snap Action Switch/Interrupter Switch             | \$33.25  |
| PT9125  | #4 SWITH BRACKET, New Roller Style (micro), Complete |          |

| PART #  | DESCRIPTION                             | RETAIL   |
|---------|-----------------------------------------|----------|
| PT9127  | #5 SWITCH BRACKET                       | \$4.00   |
| PT9129  | PUMP, VICKERS VTM 42                    | \$285.00 |
| PT9129A | PUMP FILTER                             | \$22.50  |
| PT9130  | PULLEY FOR PUMP                         | \$5.00   |
| PT9131  | ELECTRIC MOTOR                          | \$138.00 |
| PT9132  | PULLEY FOR ELECTRIC MOTOR               | \$4.50   |
| PT9133  | V-BELT                                  | \$7.50   |
| PT9138  | PUMP UNIT, COMPLETE                     | \$725.00 |
| PT9139  | HYDRAULIC HOSE                          | \$25.00  |
| PT9140  | HYDRAULIC HOSE RETURN, 3/8"             | \$10.00  |
| PT9142  | O-RING FOR COUPLING                     | \$1.00   |
| PT9144  | HYDRAULIC COUPLING, FEMALE              | \$14.50  |
| PT9145  | HYDRAULIC COUPLING, MALE                | \$8.00   |
| PT9198  | VALVE WIRE (3-Wire)                     | \$1.50   |
| PT9199  |                                         |          |
| PT9200  | COUNTER                                 | \$30.00  |
| PT9201  | HUBBLE MALE CONNECTOR                   | \$15.25  |
| PT9202  | HUBBLE FEMALE LOCK CAP                  | \$20.50  |
| PT9207  | FUSE (7 AMP)                            | \$1.00   |
| PT9208  | RELAY #2 10 AMP (8-Pin)                 | \$13.00  |
| PT9209  | DOUBLE MAGNET                           | \$12.00  |
| PT9209A | NEW #2 & #3 SWITCH BRACKET              | \$133.00 |
| PT9210  | ACTIVATOR BOLT FOR PT9209               | \$8.00   |
| PT9211  | PROX SENSOR (N/C Black Wires)           | \$8.50   |
| PT9212  | PROX SENSOR (N/O Red Wires)             | \$8.50   |
| PT9212A | PROX SENSOR 3-WIRE                      | \$11.75  |
| PT9213  | ROLLER SWITCH #2 and #3 with wire leads | \$8.00   |
| PT9214  | RELAY #1 (11-Pin)                       | \$22.50  |
| PT9215  | MAGNET (Hamlin)                         | \$4.50   |
| PT9216  | TIMER/INTERRUPTER                       | \$48.00  |
| PT9217  | RELAY, SOLID STATE                      | \$31.25  |
| PT9218  | PUSH BUTTON MANUAL FOR LEFT/RIGHT       | \$6.00   |
| PT9219  | TOGGLE SWITCH AUTO/MANUAL               | \$6.00   |
| PT9220  | SWITCH ON/OFF                           | \$6.75   |
| PT9221  | SWITCH ON/OFF MOMENTARY                 | \$10.00  |
| PT9300  | TURRET, COMPLETE                        | \$925.00 |
| PT9301  | UPRIGHT                                 | \$24.00  |
| PT9302  | SIDE LOADER, UPRIGHT                    | \$49.00  |
| PT9303  | SIDE LOADER, UPRIGHT TOP PIECE          | \$24.00  |
| PT9304  | TURRET BUSHING CAP                      | \$1.00   |
| PT9305  | SWITCH BRACKET FOR ANGLE LIMIT SWITCH   | \$33.25  |
| PT9320  | PULLCORD, COMPLETE                      | \$100.00 |
| PT9321  | PULLCORD HANDLE                         | \$34.00  |
| PT9322  | PULLCORD SWITCH                         | \$10.00  |
| PT9400  | MANUAL                                  | \$8.00   |
| PT9425  | SINGLES SCORE PADS (50 sheets)          | \$3.00   |
| PT9430  | DOUBLES SCORE PADS (50 sheets)          | \$3.00   |
| 9146    | ELBOW Long HYP cyl.                     |          |
|         |                                         |          |
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## Wiring Guide

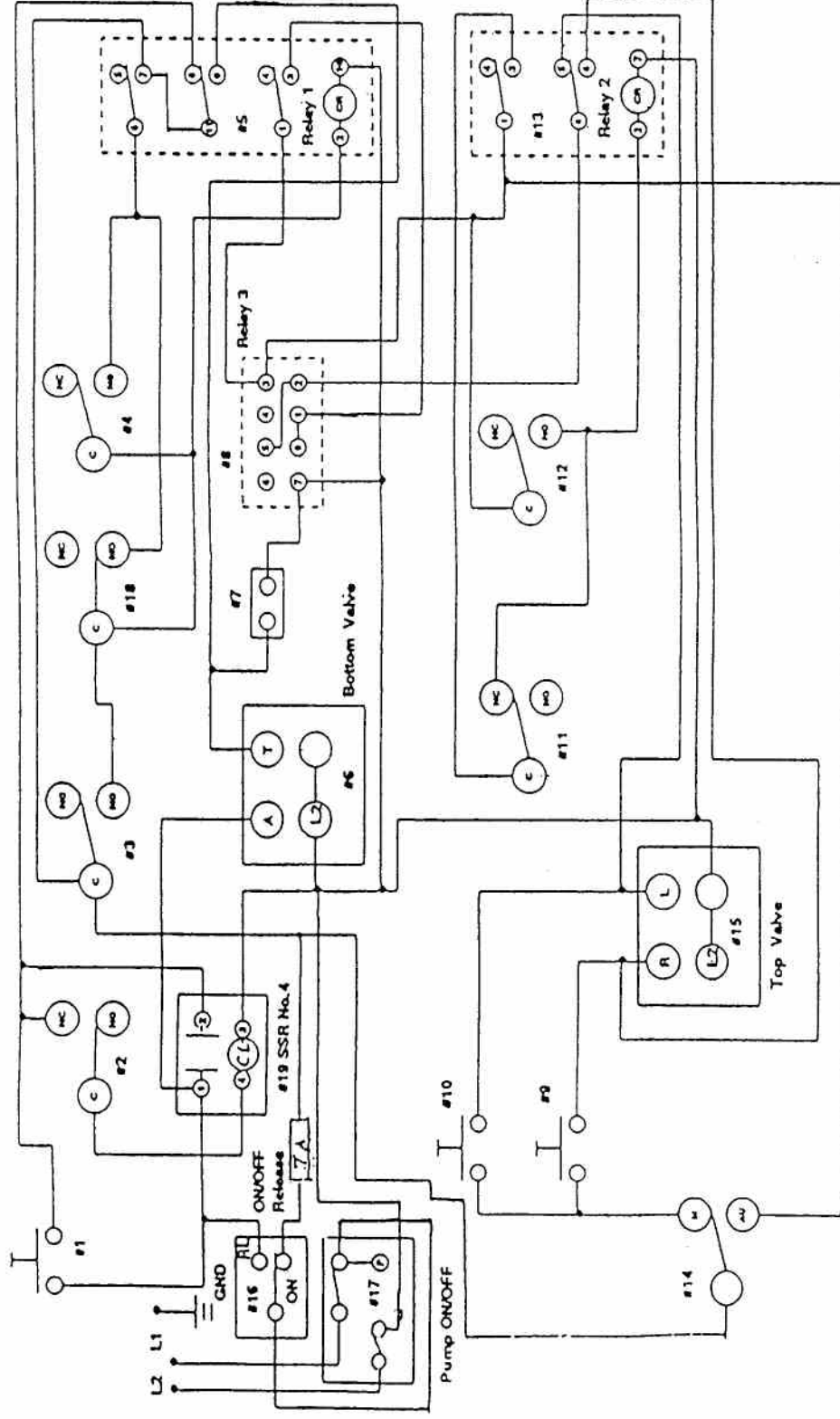
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Pullcord Switch



Machine is on and ready to throw:

- #1 pullcord switch #1
- #2 throw arm limit switch #2
- #3 turret activator switch #3
- #4 turret deactivator switch #4
- #5 throw arm turret relay #5
- #6 throw arm turret valve
- #7 counter
- #8 Interrupter/timer Relay 3
- #9 manual right-angle
- #10 manual left-angle
- #11 right-angle limit switch #7
- #12 left-angle limit switch #8
- #13 right/left relay RELAY 2
- #14 manual/automatic angle switch
- #15 right/left angle valve
- #16 on/off/release switch
- #17 master switch
- #18 switch #5 on elevator that holds relay closed until turret switch #4 has time to close
- #19 solid state relay RELAY 4
- RL release throw arm
- ON activates machine
- P pump motor
- L1 line one
- L2 line two
- AU automatic
- M manual
- R right
- L left
- A throw arm
- T turret

# PAT TRAP® - Wiring Diagram



**PAT-TRAP PRICE LIST****October 1, 2001**

\*\*\*PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE/PRICE DOES NOT INCLUDE SHIPPING.

| PART #  | DESCRIPTION                                          | RETAIL   |
|---------|------------------------------------------------------|----------|
| PT9012  | OSCILATING CYLDR HYDROLINE, COMPLETE                 | \$185.00 |
| PT9013  | WOBBLE OSCILATION CYL. HYD, COMPLETE                 | \$246.00 |
| PT9017  | 1/4 HYDRAULIC HOSE                                   | \$10.00  |
| PT9023  | SINGLES FINGER, PLASTIC                              | \$6.00   |
| PT9024  | ELEVATION COG                                        | \$28.00  |
| PT9025  | X DOUBLES FINGER                                     | \$28.00  |
| PT9026  | THROW ARM                                            | \$128.00 |
| PT9026A | THROW ARM THROW RUBBER                               | \$15.00  |
| PT9026B | TO REBUILD THROW ARM                                 | \$20.00  |
| PT9027  | THROW ARM BRAKE RUBBER                               | \$6.00   |
| PT9027A | THROW ARM BRAKE FLAT SPRING                          | \$6.00   |
| PT9027B | BRAKE, COMPLETE                                      | \$24.00  |
| PT9028  | MAIN SPRING/WIRE                                     | \$33.25  |
| PT9030  | MAIN SPRING ANCHOR BOLT (threaded rod)               | \$24.00  |
| PT9031  | MAIN SPRING CRANK                                    | \$33.25  |
| PT9032  | UNI-BAND/Pair (Mainspring)                           | \$33.25  |
| PT9033  | MAIN SPRING CHANGE OVER (wire to uni-band)           | \$125.00 |
| PT9039  | THROW ARM BACKSTOP, COMPLETE                         | \$35.00  |
| PT9040  | THROW ARM BACKSTOP SPRING                            | \$6.00   |
| PT9040A | THROW ARM BACKSTOP BOLT W/NUT 1/4-28                 | \$6.00   |
| PT9040B | THROW ARM BACKSTOP PLASTIC                           | \$6.00   |
| PT9040C | THROW ARM BACKSTOP FLAT SPRING                       | \$3.00   |
| PT9041  | TARGET BRUSH                                         | \$6.00   |
| PT9048  | HYDRAULIC MOTOR                                      | \$225.00 |
| PT9060  | HYDRAULIC VALVE                                      | \$145.00 |
| PT9061  | SOFT SHIFT VALVE                                     | \$178.00 |
| PT9075  | HYD CYLINDER TARGET ELEVATOR                         | \$130.00 |
| PT9076  | ELEVATOR GUIDE ROD                                   | \$45.00  |
| PT9095  | TARGET GUIDE, SPRING MOUNT                           | \$14.00  |
| PT9096  | SET OF 3 TARGET SPRINGS                              | \$30.00  |
| PT9097  | TARGET GUIDE SPRING #1                               | \$10.00  |
| PT9098  | TARGET DROP GUIDE SPRING #2                          | \$10.00  |
| PT9099  | TARGET DROP GUIDE SPRING #3                          | \$10.00  |
| PT9100  | EXTENSION SPRING/ROLLER PLATES                       | \$3.00   |
| PT9101  | EYE BOLT                                             | \$1.00   |
| PT9102  | EYE BOLT ANCHOR BRACKET                              | \$3.00   |
| PT9104  | O RING/ROLLER                                        | \$0.50   |
| PT9105  | SINGLE ROLLER PLATE                                  | \$100.00 |
| PT9106  | DOUBLE ROLLER PLATE                                  | \$125.00 |
| PT9107  | DOUBLES ROLLER                                       | \$95.00  |
| PT9107A | SINGLES ROLLER                                       | \$95.00  |
| PT9108  | BRONZE ROLLER BUSHING                                | \$4.45   |
| PT9123A | PINON BACKSTOP SPRING (L-SHAPE)                      | \$6.00   |
| PT9123B |                                                      |          |
| PT9123C | PLASTIC PINON BACKSTOP                               | \$6.00   |
| PT9124  | #4 Snap Action Switch/Interrupter Switch             | \$6.00   |
| PT9125  | #4 SWITH BRACKET, New Roller Style (micro), Complete | \$33.25  |

| PART #  | DESCRIPTION                             | RETAIL   |
|---------|-----------------------------------------|----------|
| PT9127  | #5 SWITCH BRACKET                       | \$4.00   |
| PT9129  | PUMP, VICKERS VTM 42                    | \$285.00 |
| PT9129A | PUMP FILTER                             | \$22.50  |
| PT9130  | PULLEY FOR PUMP                         | \$5.00   |
| PT9131  | ELECTRIC MOTOR                          | \$138.00 |
| PT9132  | PULLEY FOR ELECTRIC MOTOR               | \$4.50   |
| PT9133  | V-BELT                                  | \$7.50   |
| PT9138  | PUMP UNIT, COMPLETE                     | \$725.00 |
| PT9139  | HYDRAULIC HOSE                          | \$25.00  |
| PT9140  | HYDRAULIC HOSE RETURN, 3/8"             | \$10.00  |
| PT9142  | O-RING FOR COUPLING                     | \$1.00   |
| PT9144  | HYDRAULIC COUPLING, FEMALE              | \$14.50  |
| PT9145  | HYDRAULIC COUPLING, MALE                | \$8.00   |
| PT9198  | VALVE WIRE (3-Wire)                     | \$1.50   |
| PT9199  |                                         |          |
| PT9200  | COUNTER                                 | \$30.00  |
| PT9201  | HUBBLE MALE CONNECTOR                   | \$15.25  |
| PT9202  | HUBBLE FEMALE LOCK CAP                  | \$20.50  |
| PT9207  | FUSE (7 AMP)                            | \$1.00   |
| PT9208  | RELAY #2 10 AMP (8-Pin)                 | \$13.00  |
| PT9209  | DOUBLE MAGNET                           | \$12.00  |
| PT9209A | NEW #2 & #3 SWITCH BRACKET              | \$133.00 |
| PT9210  | ACTIVATOR BOLT FOR PT9209               | \$8.00   |
| PT9211  | PROX SENSOR (N/C Black Wires)           | \$8.50   |
| PT9212  | PROX SENSOR (N/O Red Wires)             | \$8.50   |
| PT9212A | PROX SENSOR 3-WIRE                      | \$11.75  |
| PT9213  | ROLLER SWITCH #2 and #3 with wire leads | \$8.00   |
| PT9214  | RELAY #1 (11-Pin)                       | \$22.50  |
| PT9215  | MAGNET (Hamlin)                         | \$4.50   |
| PT9216  | TIMER/INTERRUPTER                       | \$48.00  |
| PT9217  | RELAY, SOLID STATE                      | \$31.25  |
| PT9218  | PUSH BUTTON MANUAL FOR LEFT/RIGHT       | \$6.00   |
| PT9219  | TOGGLE SWITCH AUTO/MANUAL               | \$6.00   |
| PT9220  | SWITCH ON/OFF                           | \$6.75   |
| PT9221  | SWITCH ON/OFF MOMENTARY                 | \$10.00  |
| PT9300  | TURRET, COMPLETE                        | \$925.00 |
| PT9301  | UPRIGHT                                 | \$24.00  |
| PT9302  | SIDE LOADER, UPRIGHT                    | \$49.00  |
| PT9303  | SIDE LOADER, UPRIGHT TOP PIECE          | \$24.00  |
| PT9304  | TURRET BUSHING CAP                      | \$1.00   |
| PT9305  | SWITCH BRACKET FOR ANGLE LIMIT SWITCH   | \$33.25  |
| PT9320  | PULLCORD, COMPLETE                      | \$100.00 |
| PT9321  | PULLCORD HANDLE                         | \$34.00  |
| PT9322  | PULLCORD SWITCH                         | \$10.00  |
| PT9400  | MANUAL                                  | \$8.00   |
| PT9425  | SINGLES SCORE PADS (50 sheets)          | \$3.00   |
| PT9430  | DOUBLES SCORE PADS (50 sheets)          | \$3.00   |
| 9014    | GROMMET - exl.                          |          |
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| #8 .....   | 6      |
| #9 .....   | 6      |
| #10 .....  | 6      |
| #11 .....  | 8      |
| #12 .....  | 10     |
| #13 .....  | 10     |
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## Wiring Guide

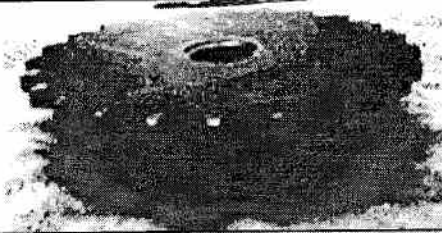
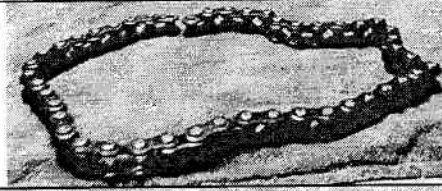
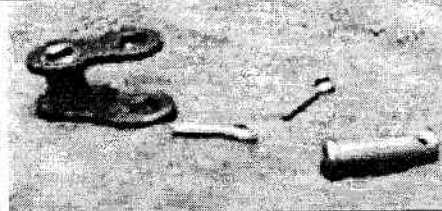
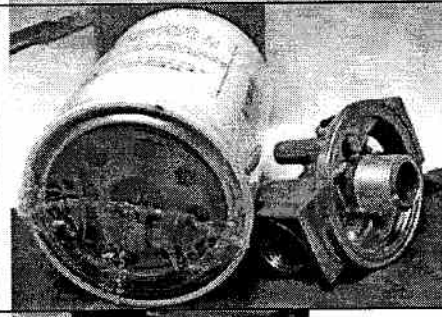
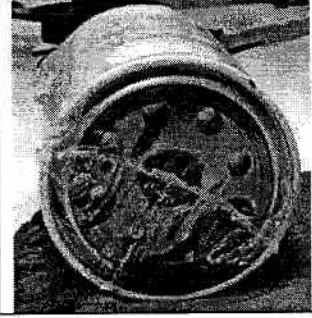
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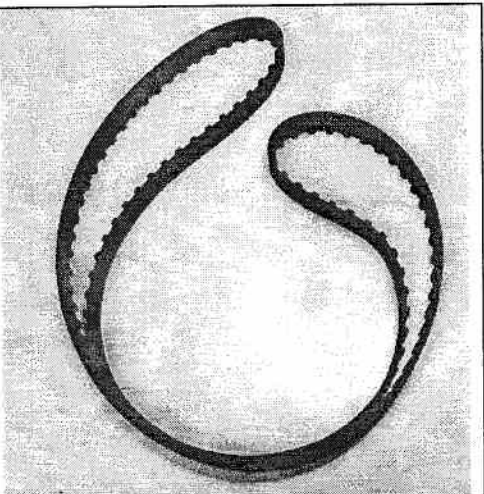
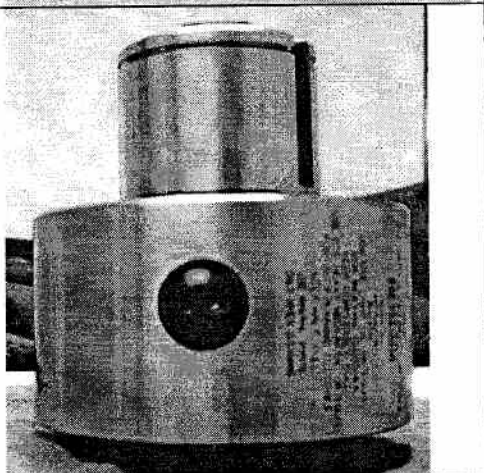
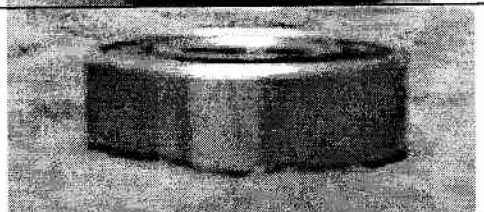
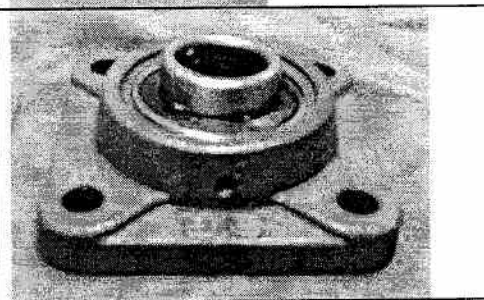
## Wobble

|                          |    |
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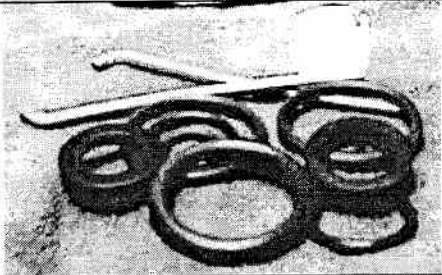
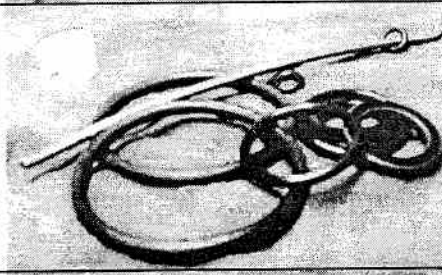
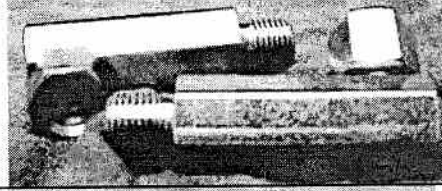
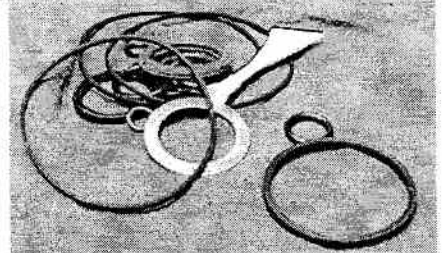
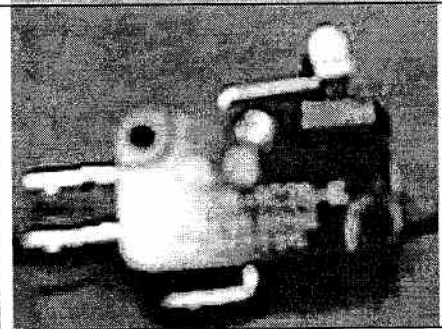
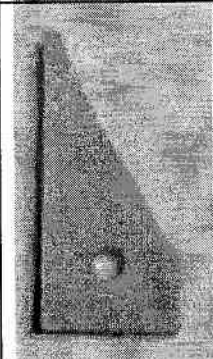
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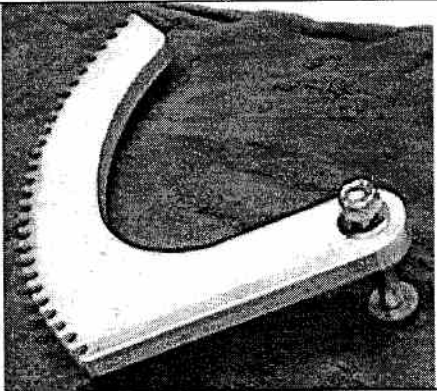
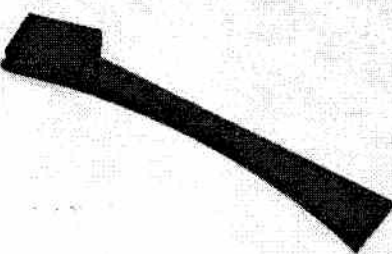
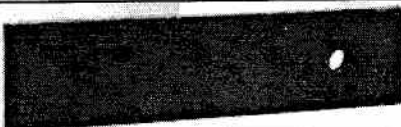
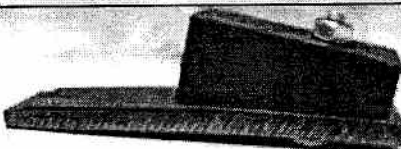
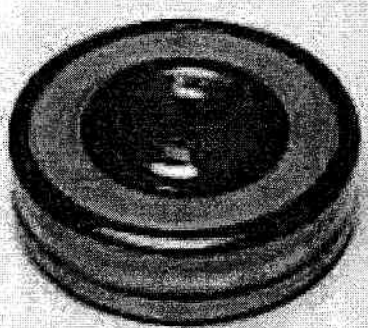


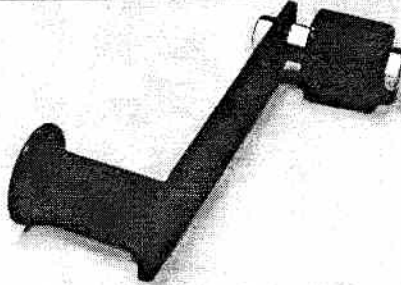
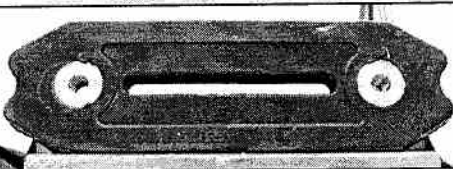
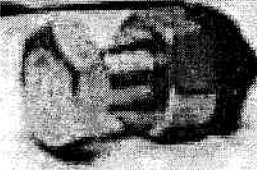
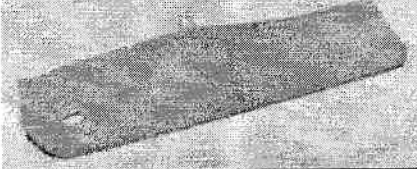
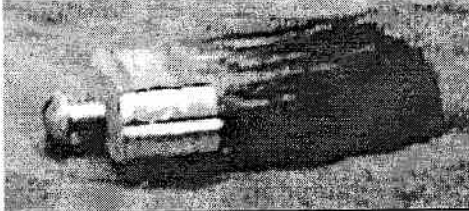
| Part # | Description     | Photo                                                                                |
|--------|-----------------|--------------------------------------------------------------------------------------|
| PT1    | Chain Sprocket  |    |
| PT3    | Chain And Link  |    |
| PT30   | Full Link       |    |
| PT37   | Filter Assembly |   |
| PT38   | Filter          |  |

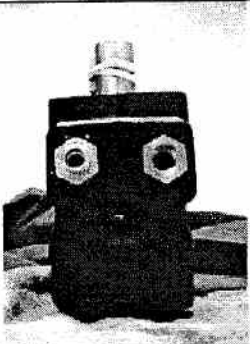
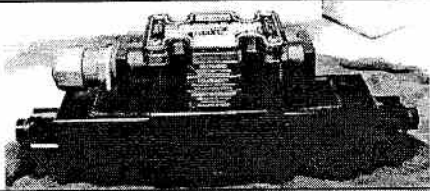
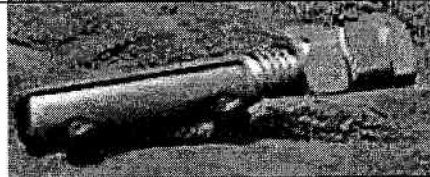
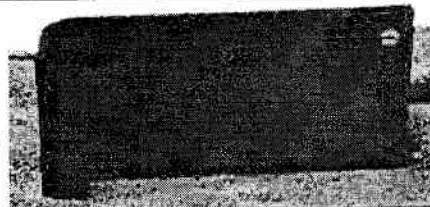
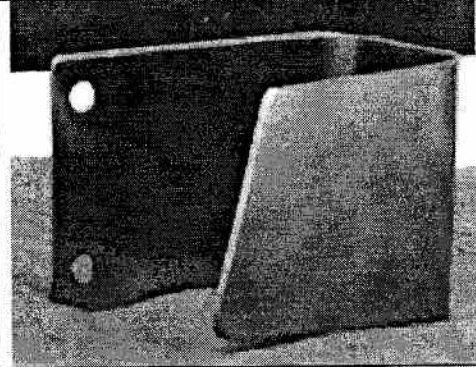
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|------|-------------------------------|--------------------------------------------------------------------------------------|
| PT39 | Browning Belt                 |    |
| PT41 | Clutch for Large Pulley Wheel |   |
| PT48 | 6202RS Bearing                |  |
| PT49 | Bushing For Roller Plate      |  |
| PT50 | Pillow Block Bearing          |  |

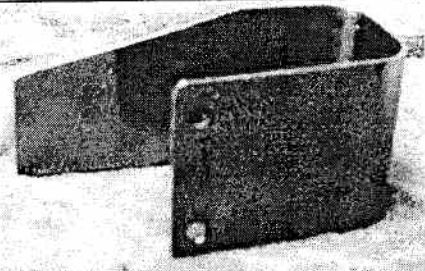
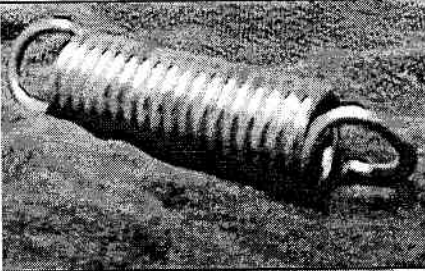
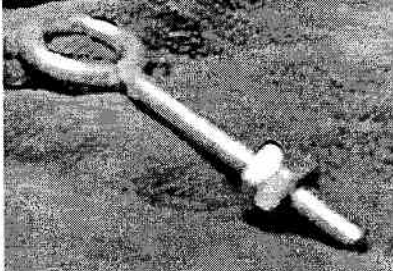
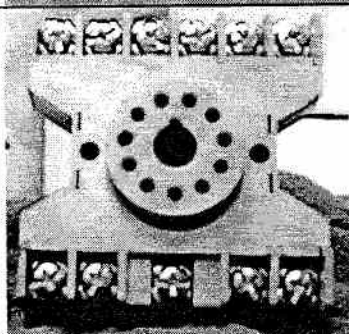
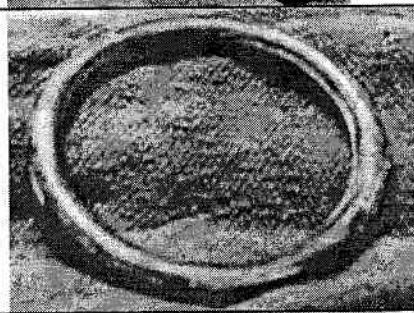
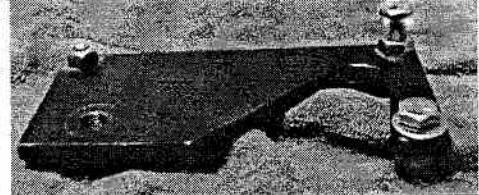


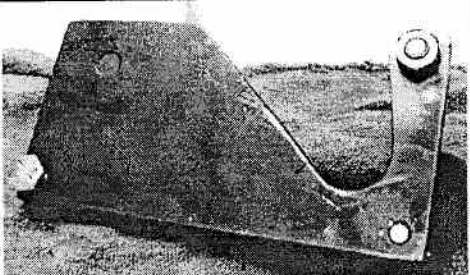
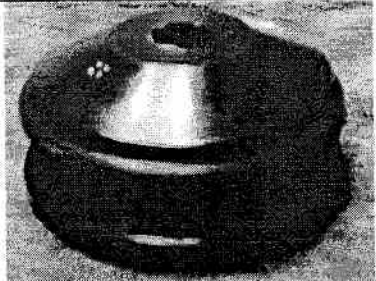
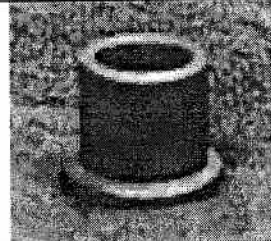
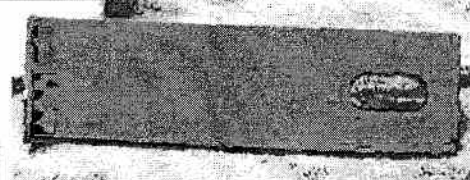
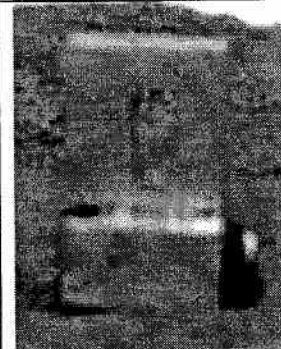
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|--------|------------------------------------------------|--------------------------------------------------------------------------------------|
| PT51   | Packing Kit For Elevator                       |    |
| PT52   | Seal Kit For Oscillation Cylinder              |    |
| PT53   | Long Elbows                                    |    |
| PT54   | Seal Kit For Drive Motor<br>(Replaces PT 9048) |   |
| PT57   | Switch For PT9125                              |  |
| PT9023 | Singles, Finger, Plastic                       |  |

|         |                        |                                                                                      |
|---------|------------------------|--------------------------------------------------------------------------------------|
| PT9024  | Elevation Cog          |    |
| PT9025  | X Doubles Finger       |    |
| PT9026  | Throw Arm              |    |
| PT9026A | Throw Arm Throw Rubber |   |
| PT9027  | Throw Arm Brake Rubber |  |
| PT9027A | Throw Arm Brake Rubber |  |
| PG9027B | Brake, Complete        |  |
| PT9029  |                        |  |

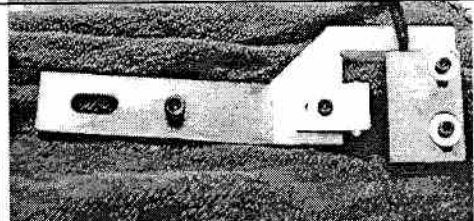
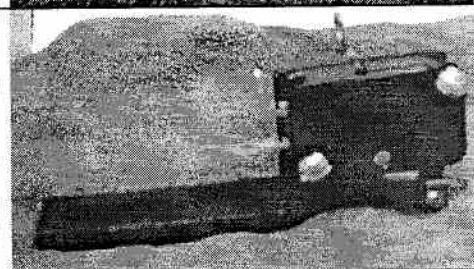
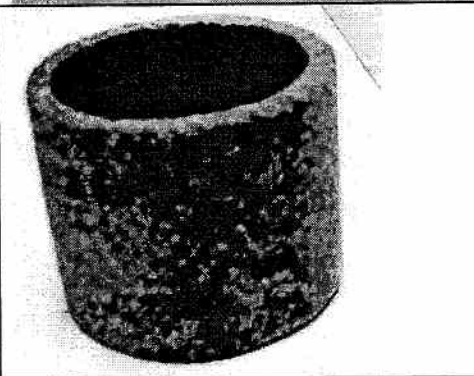
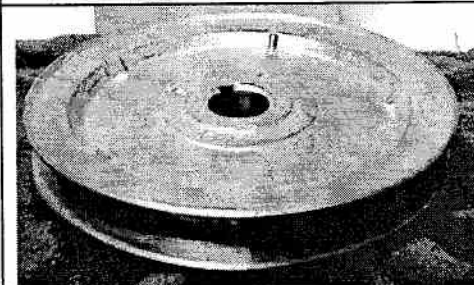
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|---------|-------------------------------------------|--------------------------------------------------------------------------------------|
| PT9030  | Main Spring Anchor Bolt<br>(Threaded Rod) |    |
| PT9031  | Main Spring Crank                         |    |
| PPT9032 | Uni-Band/Pair<br>(Mainspring)             |    |
| PT9039  | Throw Arm Backstop,<br>Complete           |    |
| PT9040  | Throw Arm Backstop,<br>Spring             |   |
| PT9040A | Throw Arm Backstop Bolt<br>W/Nut 1/4-28   |  |
| PT9040B | Throw Arm Backstop,<br>Plastic            |  |
| PT9040C | Throw Arm Backstop Flat<br>Spring         |  |
| PT9041  | Target Brush                              |  |

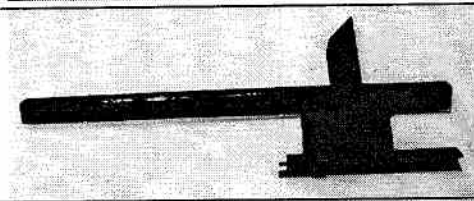
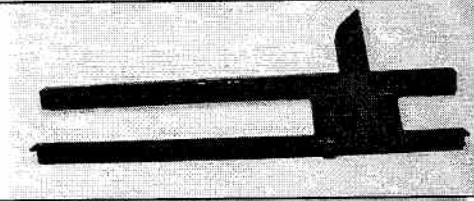
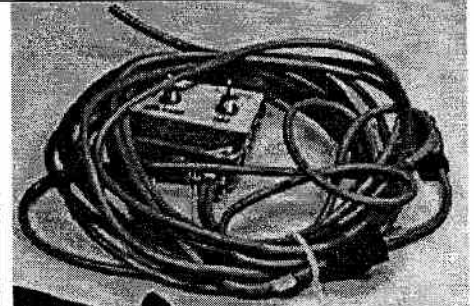
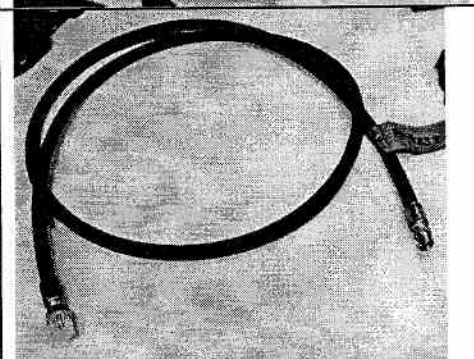
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| PT9048 | Hydraulic Motor                    |    |
| PT9061 | Soft Shift Valve                   |    |
| PT9075 | Hydraulic Cylinder Target Elevator |    |
| PT9076 | Elevator Guide Rod                 |    |
| PT9095 | Target Guide Spring Mount          |   |
| PT9097 | Target Guide Spring #1             |  |
| PT9098 | Target Drop Guide Spring #2        |  |

|        |                                |                                                                                      |
|--------|--------------------------------|--------------------------------------------------------------------------------------|
| PT9099 | Target Drop Guide Spring #3    |    |
| PT9100 | Extension Spring/Roller Plates |    |
| PT9101 | Eye Bolt                       |   |
| PT9102 | Eye Bolt Anchor Bracket        |  |
| PT9104 | O Ring/Roller                  |  |
| PT9105 | Single Roller Plate            |  |

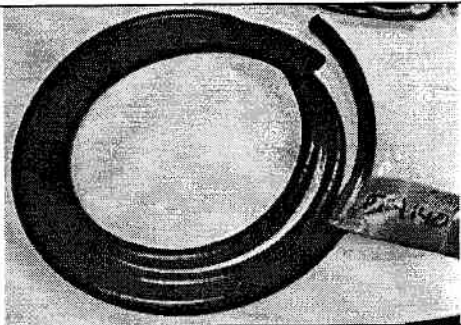
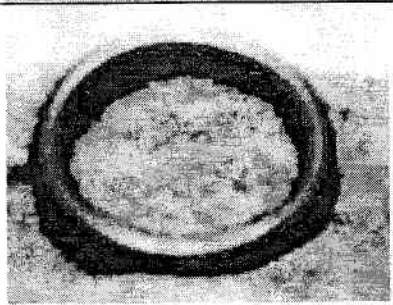
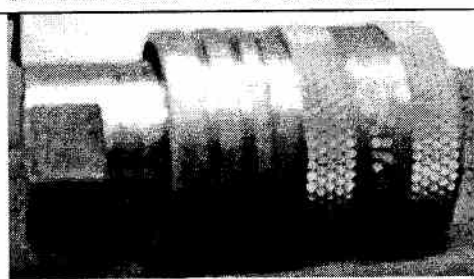
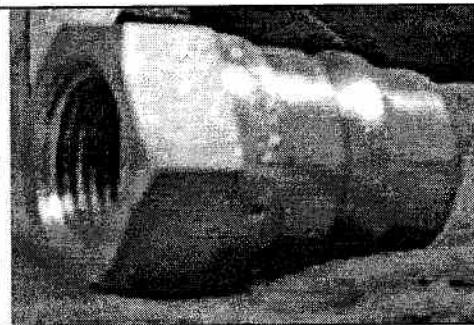
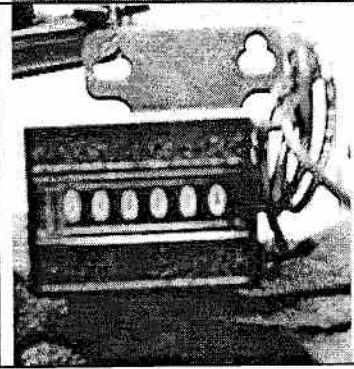
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| PT9106  | Double Roller Plate             |    |
| PT9107  | Doubles Roller                  |    |
| PT9107A | Singles Roller                  |   |
| PT9108  | Bronze Roller Bushing           |  |
| PT9123A | Pinon Backstop Spring (L-Shape) |  |
| PT9123B |                                 |  |

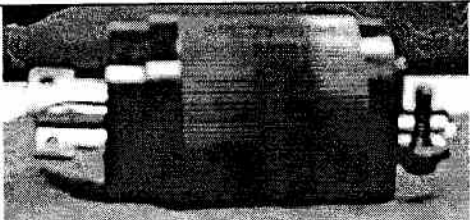
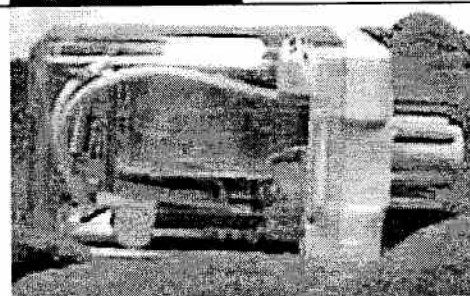
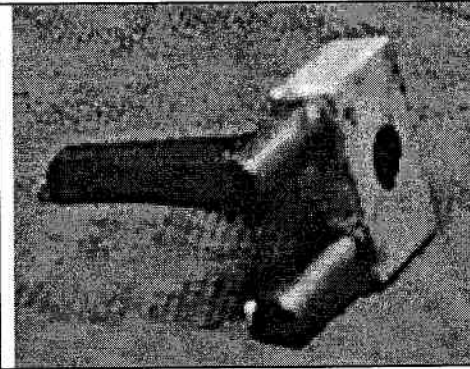


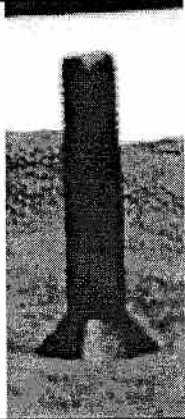
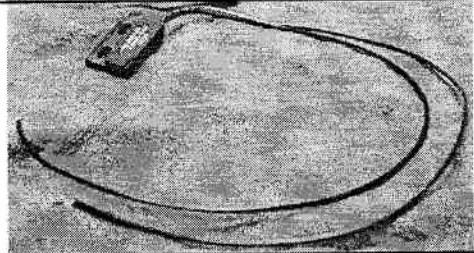
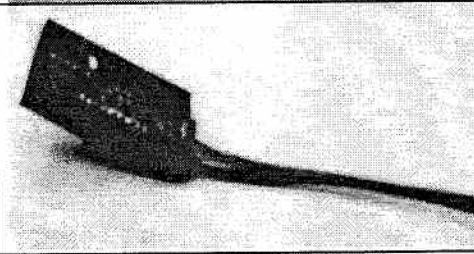
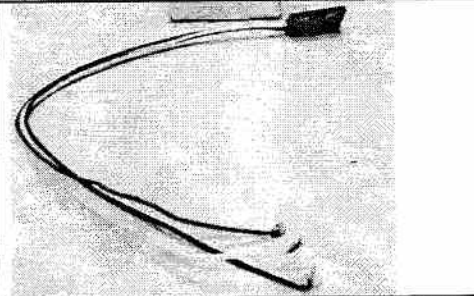
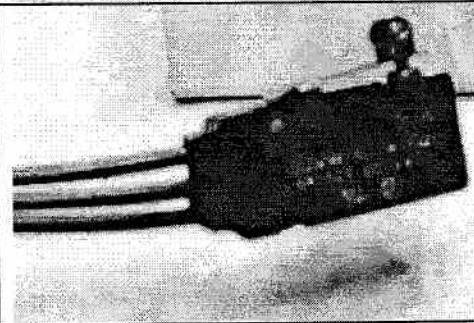
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|---------|------------------------------------------------------|--------------------------------------------------------------------------------------|
| PT9123C | Plastic Pinon Backstop                               |    |
| PT9124  | #4 Snap Action Switch/Interrupter Switch             |    |
| PT9125  | #4 Switch Bracket, New Roller Style (Micro) Complete |   |
| PT9129A | Pump Filter                                          |  |
| PT9130  | Pulley For Pump                                      |  |
| PT9132  | Pulley For Electric Motor                            |  |

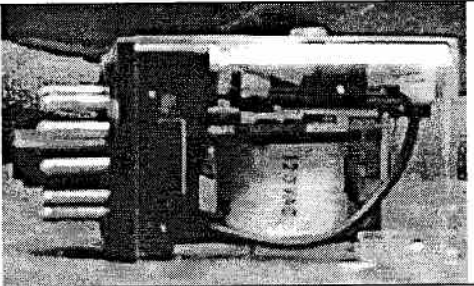
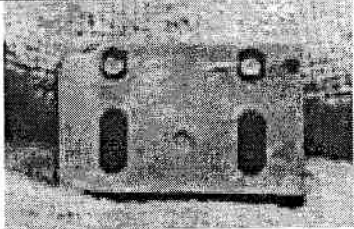
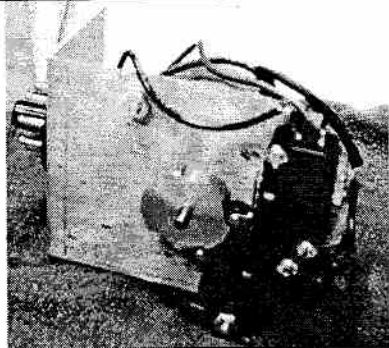
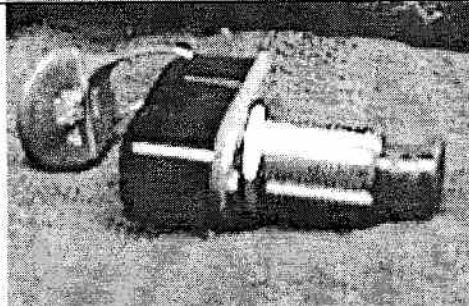
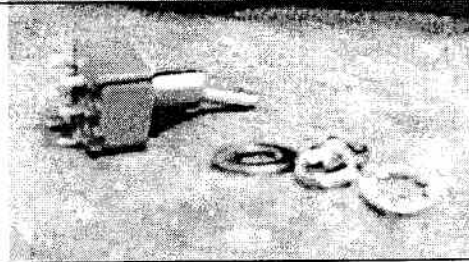
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|--------|---------------------|--------------------------------------------------------------------------------------|
| PT9133 | V-Belt              |    |
| PT9135 |                     |    |
| PT9136 |                     |    |
| PT9137 |                     |   |
| PT9138 | Pump Unit, Complete |  |
| PT9139 | Hydraulic Hose      |  |

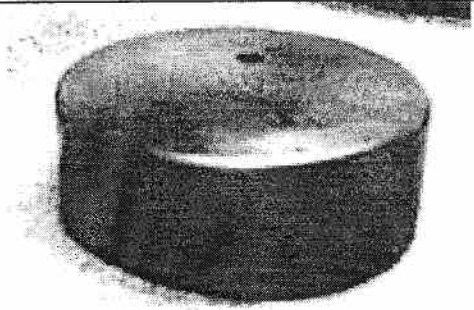
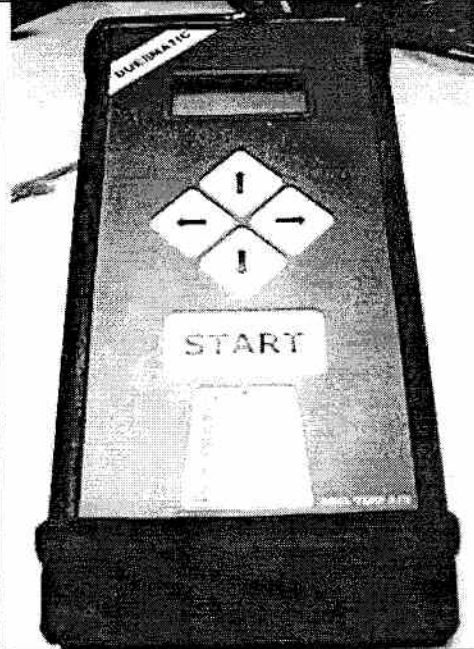


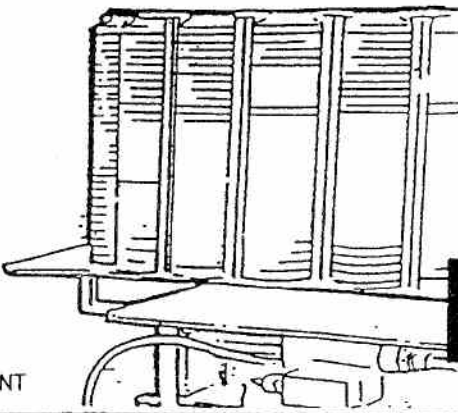
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|--------|--------------------------------|--------------------------------------------------------------------------------------|
| PT9140 | Hydraulic Hose Return,<br>3/8" |    |
| PT9142 | O-Ring For Coupling            |    |
| PT9144 | Hydraulic Coupling,<br>Female  |   |
| PT9145 | Hydraulic Coupling, Male       |  |
| PT9200 | Counter                        |  |

|        |                         |                                                                                      |
|--------|-------------------------|--------------------------------------------------------------------------------------|
| PT9201 | Hubble Male Connector   |    |
| PT9202 | Hubble Female Lock Cap  |    |
| PT9207 | Fuse (7 Amp)            |   |
| PT9208 | Relay #2 10 Amp (8-Pin) |  |
| PT9209 | Double Magnet           |  |

|         |                               |                                                                                      |
|---------|-------------------------------|--------------------------------------------------------------------------------------|
| PT9210  | Activator Bolt For PT9209     |    |
| PT9211  | Prox Sensor (N/C Black Wires) |    |
| PT9212  | Prox Sensor (N/O Red Wires)   |   |
| PT9212A | Prox Sensor 3 Wire            |  |
| PT9213  | Roller Switch #2 And #3       |  |

|        |                                   |                                                                                                    |
|--------|-----------------------------------|----------------------------------------------------------------------------------------------------|
| PT9214 | Relay #1 (11-Pin)                 |                  |
| PT9215 | Magnet (Hamlin)                   |                  |
| PT9216 | Timer/Interrupter                 |                 |
| PT9217 | Relay, Solid State                | <p>PT9217</p>  |
| PT9218 | Push Button Manual For Left/Right |                |
| PT9219 | Toggle Switch Auto/Manual         |                |

|        |                                       |                                                                                      |
|--------|---------------------------------------|--------------------------------------------------------------------------------------|
| PT9303 | Side Loader, Upright Top Piece        |    |
| PT9304 | Turret Bushing Cap                    |    |
| PT9305 | Switch Bracket for Angle Limit Switch |    |
|        |                                       |   |
| Tester |                                       |  |



PATENT

# Pat-Trap<sup>TM</sup>

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## AUTOMATIC DOUBLES

*manufactured by*  
PAT-TRAP, Inc.  
110 Western Avenue  
Henniker, New Hampshire 03242

Tel: (603) 428-3396  
Fax: (603) 428-7340

Pat-Trap, Inc, warrants the PAT-TRAP Automatic Doubles Machine against defects in material or workmanship for a period of one year from the date of the original purchase; and agrees to repair or, at our option, replace any defective unit without charge.

**IMPORTANT:** This warranty does not cover transportation costs. Nor does it cover any damage resulting from accident, misuse or abuse, and any modifications or alteration including attaching the unit to other than the recommended receptacle or voltage.

**NO RESPONSIBILITY IS ASSUMED FOR ANY SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES.**



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