



TROUBLE SHOOTING

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

OSCILLATION PROBLEM for Standard Pat-Trap & Wobble machine

Make certain that all switch wires and cables are properly connected. See plug – in terminal connections J4,J5,J6, and J7, and see Conn#1 and Conn#2 to make certain that the reed limit switch wires are securely connected. (Diagram #)

Stand to the right and rear of the machine near the Electrical Enclosure Box. Put the Auto/Manual switch into the manual position. Turn the machine on. If one or both directional buttons do not work then check the fuse(s). Next check Auto mode. If the machine does not oscillate after firing the throw arm or the oscillation or wobble cylinder is bottomed-out on the cylinder rod then follow the next procedures.

AUTO MODE #11 & #12 (11A & 12A) SWITCHES

If a limit switch is stuck in either an Open or Closed state you can perform a continuity test with a meter. Disconnect the switch wires from their respective terminals and connect to your meter. Put a magnet beside the switch in question and see if the switch changes as it should.

If a limit switch intermittently fails, meaning that the cylinder bottoms out occasionally, then you will need to use trial and error to determine which switch is failing. Begin with the assumption that a switch is sticking in an open state; ie, if switch #12 sticks open then it will cause the machine to bottom out to the left (or down).

If the **#11 (11A) Switch** (N/O Right Angle Limit Reed Switch P/N 9223-G) is stuck “open” then the machine will travel all of the way right (down). This will cause the relief valve in the pump to engage and create a load noise.

Switch to Manual Mode and use the manual push button to bring the machine back to center and replace the switch

If the **#12 (12A) Switch** (N/O Left Angle Limit Reed Switch P/N 9222-G) is stuck “open” then the machine will travel all of the way to the left (down) This will cause the relief valve in the pump to engage and create a load noise.

Switch to Manual Mode and use the manual push button to bring the machine back to center and replace the switch.



If the **#11 (11A) Switch** (N/O Right Angle Limit Reed Switch P/N 9223-G) is stuck “closed” then the machine will travel all of the way to the left (all the way down). This will cause the relief valve in the pump to engage and create a loud noise.

Switch to Manual Mode and use the manual push button to bring the machine back to center and replace the switch.

If the **#12 (12A) Switch** (N/O Left Angle Limit Reed Switch P/N 9222-G) is stuck “closed” then the machine will travel all of the way to the right (all the way up). This will cause the relief valve in the pump to engage and create a load noise.

Switch to Manual Mode and use the manual push button to bring the machine back to center and replace the switch.

AUTO/MANUAL SWITCH FOR STANDARD AND WOBBLE

The default mode is Auto. If the Auto/Manual Board is unplugged the machine will remain in the Auto mode: meaning that the machine should automatically oscillate left (down) and right (up) after firing the throw arm.

If the machine continues to oscillate or wobble automatically when the toggle switch is in manual mode then replace the Auto/Manual Board.

If the Left and/or Right Push Buttons do not work then try the Auto mode to see if the machine oscillates or wobbles in both directions. If the oscillation or wobble function is operational in Auto mode then the Soft Shift solenoid is good (PT9061) and the Main Board is good.

In this case change the Auto/Manual Switch Board.

SOFT SHIFT/SOLENOID VALVE (PT9061) and Main Board

In the case of a defective valve a short circuit might occur. A short will blow a fuse. Replace the correct fuse and follow the next steps.

In this event you will commonly find the oscillation or wobble cylinder bottomed-out on the rod.



Put the Auto/Manual switch into the Manual mode. If both left and right push buttons work then the valve is good. The cause of the bottoming-out of the cylinder could then be a bad limit reed switch, a bad cable connection or a stuck valve.

If the toggle switch is in Manual mode and you find that one directional button does not work and the other button causes a noise from the pump then the valve could be bad.

If both directional buttons do not work then check the fuses.

If a fuse is blown then replace it with proper fuse only. Unplug terminal J4 (oscillation) or J6 (wobble). Turn the machine on and operate the Auto/Manual functions. If the fuse(s) does not blow then the Main Board is good.

Plug in the J4 or J6 terminal, one at a time, and turn on the machine. Operate the Auto/Manual functions. If the fuse(s) blows then replace the valve.

If the fuse(s) blows when either or both J4 and J6 terminals are unplugged when the machine is turned on then also unplug J2 and J3 and try again. If the fuse(s) blows then replace the Main Board.

Check that all cables and limit reed switch wires are properly plugged in or connected to their terminals.

A STUCK SOFT SHIFT VALVE FOR OSCILLATION OR WOBBLE (NON-ELECTRICAL PROBLEM)

In this case you will find the cylinder bottomed out to either the left or right or up and down. With the toggle switch in either Auto or Manual mode the pump will continue to strain (in relief mode). With the On/Off/Release switch in the off position and only the pump running you will hear the pump straining. In this case turn all power off and release the throw arm if cocked. Use a 1/8" diameter tool and push in firmly on both ends of the soft shift valve in question. The Manual shift push-rod should move in about 5/16". You will feel the resistance of a spring inside.

Turn the pump on to see if it runs normally. If it does then the valve is no longer stuck. Then try normal operation of the machine. If it sticks again then replace the valve.



THE THROW ARM WILL NOT COCK

Check **fuses**

Check the **#2 Micro Switch**

Check the **J1, J2 and J3 Cable Connections**

Check the **Hydraulic Solenoid Valve**

Check the **ON/OFF Release Switch** with an OHM meter with the power unplugged.

THROW ARM WILL NOT RELEASE WITH PULL CORD, VOICE RELEASE, OR THE ON/OFF/RELEASE SWITCH IN THE POWER BOX

Check fuses

Check the **#2 Switch**

Check cable connections J1, J2, J3.

Check the plug ends at the pull cord or voice release connection

Check the ON/OFF/RELEASE SWITCH with an OHM meter with the power unplugged.

THROW ARM DOES NOT STOP ON THE BRAKE (continually throws targets)

Disconnect the **Pull Cord** or **Voice Release System**

Check **Brake Assembly**

Check the **#2 Switch**: See "Cold Temperature Adjustment"

Check the **Hydraulic Solenoid Valve**

TARGETS BEGIN TO FALL SHORT OR THERE ARE AN UNUSUAL NUMBER OF TURNS ON THE CRANK HANDLE TO THROW A 50 YARD TARGET

Check for a broken **Uni-Band** (Main Spring)

Grease the **Main Shaft Bearing** with a low viscosity grease.



TARGETS ARE BEING THROWN MORE TO THE RIGHT

See **Target Brush** section

See **Throw Arm Maintenance** in **Maintenance** section

Check timing of the pinion

Check for a broken elevator spring

BROKEN TARGETS

Check the **Target Brush**

Check the **O-rings**

Check the **Elevator Springs**

Check the **Roller Plate Spring** tension

Check the **Throw Plate** surface for corrosion: Sand with 80 grit sand paper if needed.

Check **Pinion Timing**

If throwing Doubles, check the **Doubles Finger**: there will be a problem if the **Double finger** is bent upwards.

Check the **Singles Finger** and **Doubles Finger** measurement. See Diagram 50