COMPONENT REPLACEMENT
THROWING WHEEL REPLACEMENT

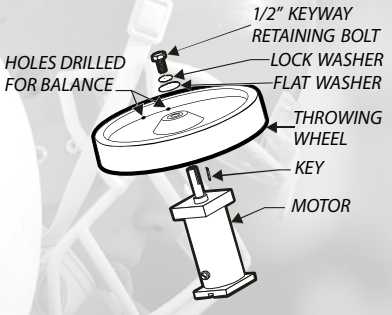
1. Turn the throwing wheels "OFF" and unplug the power cord. Remove 4 bolts holding the top wheel guard to the bottom wheel guard.
2. Hold the wheel so that it cannot move. Turn the keyway retaining bolt counter-clockwise using a box end wrench (See Figure 10).
   SUGGESTION: If the bolt is too tight, give the opposite end of the wrench a series of light taps with a hammer making sure the wrench remains on the bolt.
3. Remove the bolt and washers.
4. Work the wheel off of the motor shaft. Be sure to catch the key as it is freed from the keyway.
5. Ball throwing wheels are machine balanced. Small holes in the side of the wheel are applied at the factory and are normal.

Reassemble in reverse order.

a. Install wheel to motor shaft with key slots aligned
b. Be sure the key is in place, and inserted so that it is flush with the boss at the wheel center.
c. Be sure the Washer and Lock Washer are installed in the right order, and that the keyway retaining bolt is tightened.
d. Test the wheel by spinning it by hand and making sure that it spins freely without wobble before turning the unit "ON".
e. Be sure the top wheel guard is properly and securely reinstalled.

NOTE: Check bolts for tightness once a season. Tighten bolts securely, but be sure not to over-tighten.

Figure 10 Hold wheel in place while loosening bolts.



COMPONENT REPLACEMENT (cont'd)

MOTOR REPLACEMENT

1. Turn the power switch "OFF" and unplug the power cord.
2. Remove top wheel guard.
3. Remove the throwing wheel (See page 11).
4. Remove bottom wheel guard.
5. Remove four screws holding the controller into the control box casting. Note the position of the motor wires on the controller, then disconnect the wire for the motor to be replaced (See Figure 14 on page 13).
6. Note the routing of the motor wires. Loosen wire clamps and pull wire away from machine.
7. Pivot motor to "K" position. The 2 - 1/4" x 3/4" coarse Allen sockethead bolts can only be accessed in the "K" position (See Figure 11).
8. To remove motor, remove the 2 - 1/4" x 3/4" coarse Allen flat socket cap screws using a 5/32" Allen wrench. Then remove the 2 - 5/16" x 1" coarse thread bolts using a 1/2" socket.
9. Reassemble in reverse order.

NOTE: Check bolts for tightness once a season. Tighten bolts securely, but be sure not to over-tighten.

MOTOR REPLACEMENT TOOLS

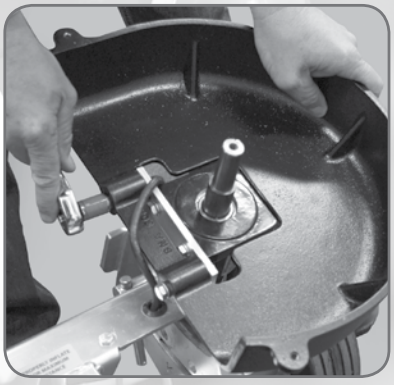
When replacing the motor, you will see two sets of bolts:

2 - 1/4" x 3/4" coarse Allen flat socket cap screw

2 - 5/16" x 1" coarse thread bolts

The Allen wrench needed for the 1/4" Allen screw is a 5/32".

The wrench or socket size needed for the 5/16" bolt is a 1/2".



Removing bottom wheel guard, shown using a 1/2" socket.

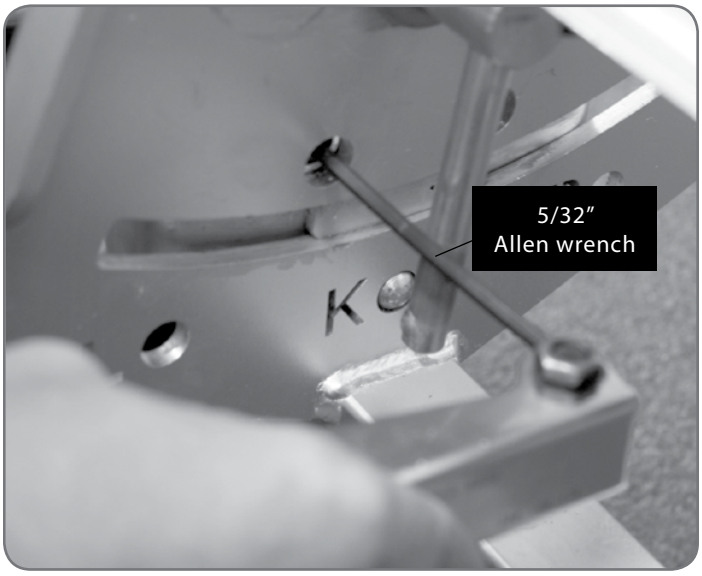


Figure 11 Shown using a 1/2" socket.

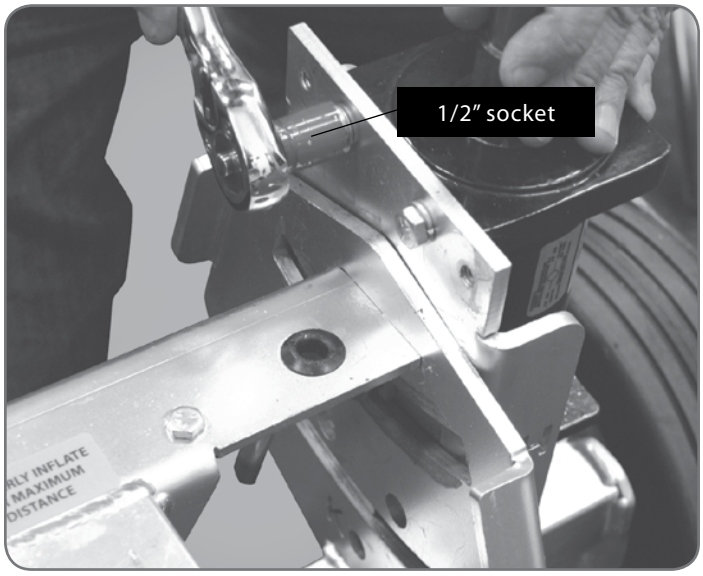


Figure 12 Shown using a 1/2" socket.

CONTROLLER REPLACEMENT

1. Turn the **power switch** "OFF" and unplug the power cord.
2. Remove knob from the controller.
3. Remove four screws holding controller faceplate into main casting. Note the position of the main power and motor wires on the controller, then disconnect the wires. See Figure 14 for the two motor wires. See Figure 13 for the main power cord wires.
4. Loosen the nuts holding the speed control shaft (potentiometer) to the faceplate, then remove the controller.

Reassemble in reverse order.

Be sure wires are correctly reinstalled. Motor wire connectors are different sizes. Be sure they are installed on the correct size terminal. See Figure 14 for the two motor wires and Figure 13 for the power cord wires.

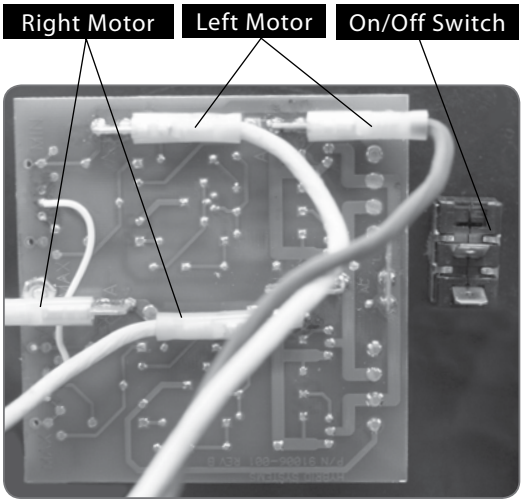


Figure 14 Wiring diagram for all two motors.

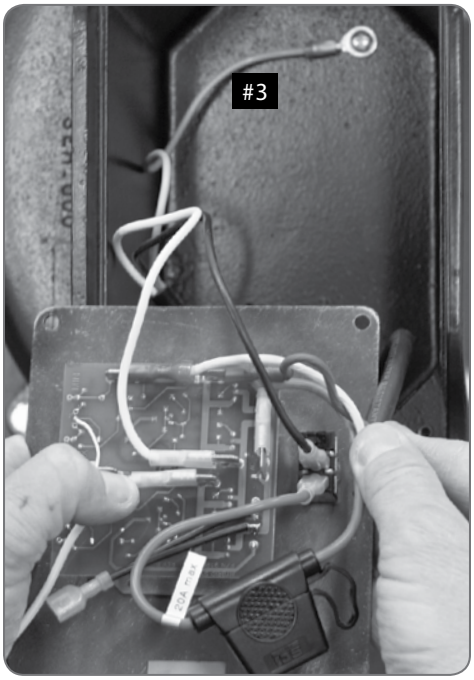


Figure 15 Wiring for all two motors.

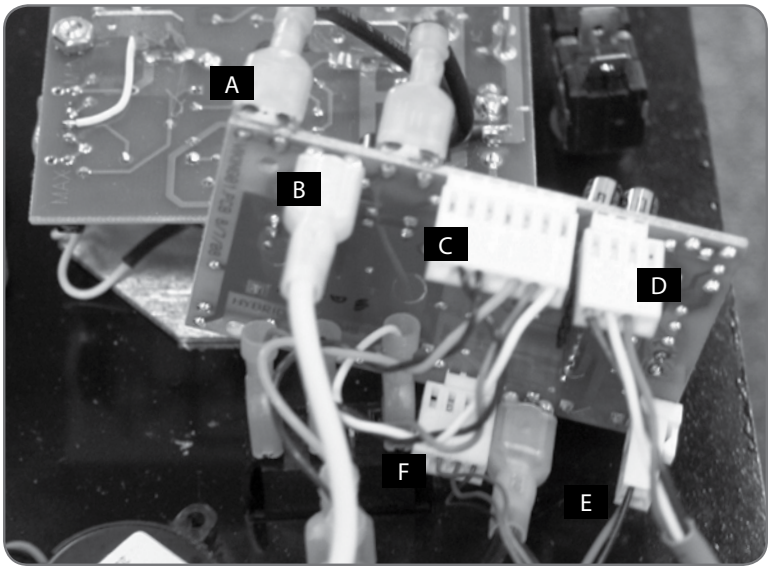


Figure 16 Wiring diagram for Automatic Model.

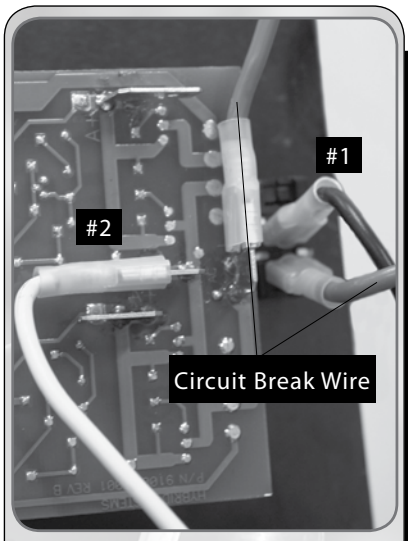


Figure 13

Power Cord Wire

Black (#1)
On/Off switch

White (#2)
N on green control board

Green (#3)
Grounds to machine

Connecting Wires

Motor	Black Wire	White Wire
Right	A-	A+
Left	A+	A-

Left is the side with the Control Plate as you stand behind

Black motor wires are 3/16" female disconnect and white wires are 1/4" female disconnect.