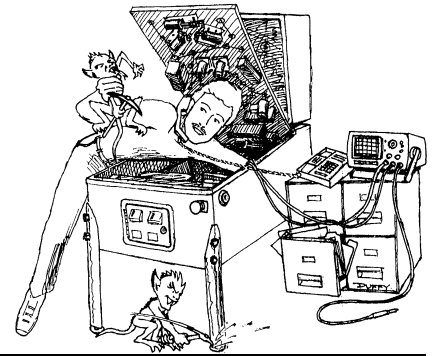




# Nº 130 SERVICE BULLETIN



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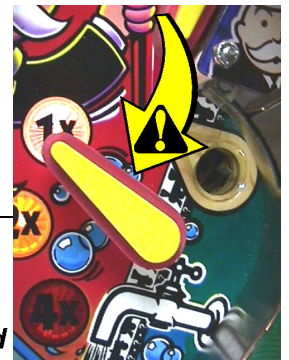
DATE: December 10, 2001



SUBJ: Tips & Tricks - The Water Works Rotating Flipper

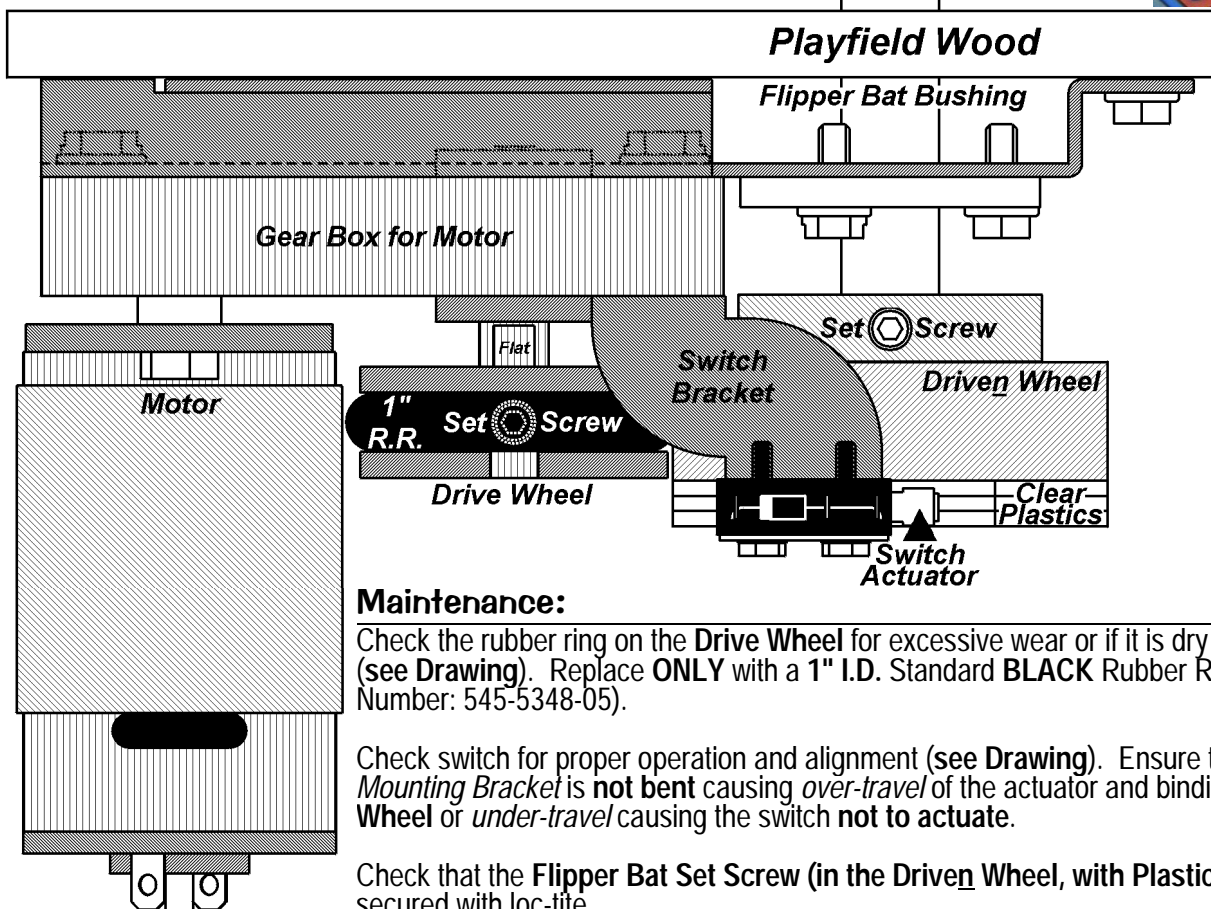
## Explanation:

This is a very simple and reliable design that can take a beating, thanks to it's unique clutch design. Below are a few **Tips & Tricks** for *maintaining the assembly and troubleshooting*.



## Water Works Rotating Mini-Flipper Motor

Mini-Flipper  
above Playfield



## Maintenance:

Check the rubber ring on the **Drive Wheel** for excessive wear or if it is dry and cracking (see **Drawing**). Replace **ONLY** with a 1" I.D. Standard **BLACK** Rubber Ring (SPI Part Number: 545-5348-05).

Check switch for proper operation and alignment (see **Drawing**). Ensure the *Switch Mounting Bracket* is **not bent** causing *over-travel* of the actuator and binding of the **Driven Wheel** or *under-travel* causing the switch **not to actuate**.

Check that the **Flipper Bat Set Screw (in the Driven Wheel, with Plastics)** is tight and secured with loc-tite.

Check all fasteners to ensure they are tight (**DO NOT** over-tighten the **Motor Gearbox Screws** as this may cause binding of the gears). *Note: Don't forget the Set Screw in the Drive Wheel under the 1" Rubber Ring.*

*Troubleshooting Continued on the Next Page*

• 2020 Janice Ave • Melrose Park, IL 60160 • Tel 708-345-7700 (Option 1) • Toll-Free (USA/Canada) 1-800-542-5377 • Fax 708-345-7889 •

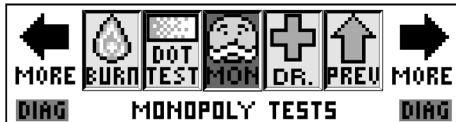
## Troubleshooting:

For testing, enter the **Portals™ Service Menu System** (for Access & Use, review Section 3, Chp. 1, and Chp. 2, Page 26) of your **MONOPOLY®** Game Manual).

From the **MAIN MENU**, select the "DIAG" *Icon*.



From the **DIAGNOSTICS MENU**, select the "MON" *Icon*.



From the **MONOPOLY TESTS MENU**, select the "WTR" *Icon*.



Now in the **WATER WORKS TEST MENU**, select the appropriate *Mini-Icon* for testing.



### Motor does not turn or energize:

1. Check the **Bi-Directional Relay Board** located underneath the playfield (SPI Part Number: 520-5066-00) for cold solder or bad connections.
2. Check for **20v DC** at the **Relay Board** on the Brown wires at Pins 3 & 6.
3. Check **Transistor Q25** (this drives the motor) and **Q27** (this energizes the relay for Forward/Reverse motion) on the I/O Power Driver Board.

### The flipper is moving but cannot get the ball out of the hole:

1. Ensure the **Set Screw** on the **Driven Wheel** for the **Flipper Bat** is tight and aligned *with the flat* on the **Flipper Bat Shaft**. Make sure the **Flipper** is as tight to the playfield as it can be without binding. If it has a lot of upward movement, it can ride up the side of the ball and force it down. *Ensure the Flipper Bat Red Rubber Ring is seated properly; it is possible the rubber ring may have slid up the flipper bat and have a similar effect.*
2. Check that the **Rubber Ring** on the **Drive Wheel** is a **1" I.D. Black Rubber Ring** and *not smaller (the size is printed on the side with raised lettering)*. By design, this rubber ring appears to be oversized and fits somewhat loosely, this is correct. *Note: Do not replace with a 1" I.D. White Rubber Ring as the material differs slightly and operation could be affected.*
3. It is possible that the fasteners (screws) that hold the motor gearbox together may have been over-tightened. Try loosening them up a 1/4 turn and see if this helps.
4. In rare instances, it may be necessary to place washers as spacers between the motor and mounting plate so as to relieve stress on the gearbox.

*Please phone or eMail with any questions or comments at the below numbers or address.*