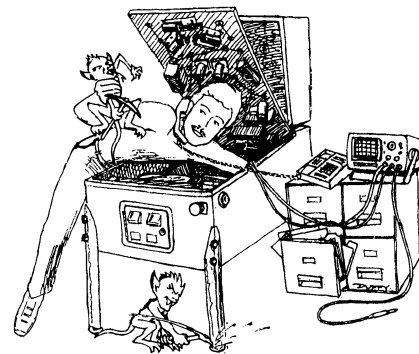




Nº 114 SERVICE BULLETIN



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Technical Support Doc.
Administrator



TO: Parts & Service Managers

DATE: February 11, 2000

SUBJ: Operator Alert #19 - Motor Relay (Harley-Davidson® Pinball)

Symptom:

"Operator Alert #19-Motor Relay" appears in the Display.

Problem:

This suggests the *Motor Relay* is inoperable; however, a number of other things can create this symptom.

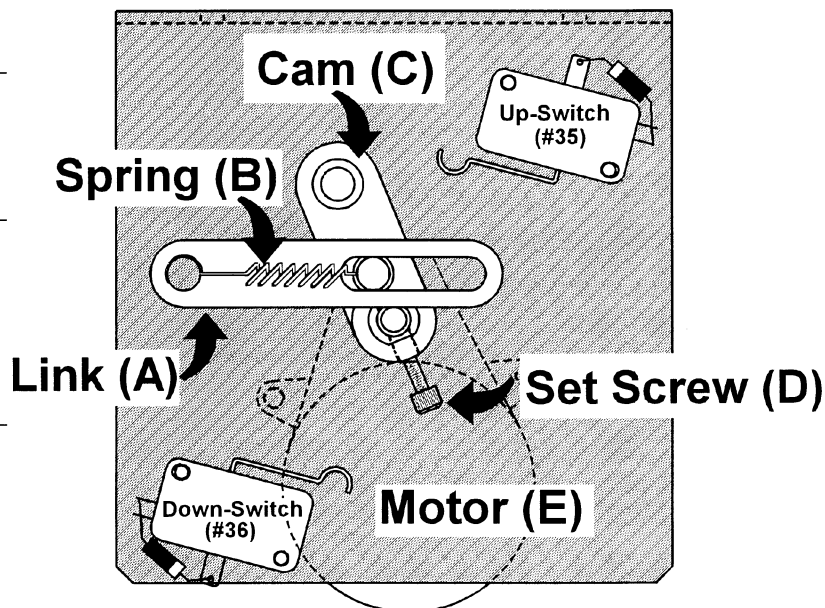
Explanation:

We have observed several different instances of mechanical problems related to the **Lift (Motor) Assembly**. There are a few preventative measures you can take to ensure proper operation of the **Lift (Motor) Assembly** explained below in **Solution**:

Solution:

1. During Shipping, sometimes the **Spring (B)** will pop-off the **Link (A)** of the **Lift (Motor) Assy**. Before operation, simply look at the spring and make sure the spring-ends (the "hooks") are parallel on both sides, then reinstall the spring firmly to the pem-studs, thus securing the link. If the spring is not properly seated, or one end is excessively bent, the spring can pop-off. The **Link (A)** will then fall off, thus operation of the **Lift Plate & Cycle Assy**. will not move up & down.
2. The elongated end of the **Link (A)** should be bent *ever-so-slightly* away from the rotating **Cam (C)** so as not to bind up.
3. Ensure the **Set Screw (D)** is firmly secured tightly through the **Cam (C)** to the *Motor Shaft* on the **FLAT CUT SIDE**.
4. The switches are supposed to be set so the cam can stop on the **Up-Switch (#35)** and the **Down-Switch (#36)**. If the rotating **Cam (C)** doesn't seem to move, you must enter **Portals™ Diagnostics (Harley-Davidson Specific Test)**, in the *Service Game Manual Front Inside Cover* and repeated on *Page 24* and check for proper operation of the *Motor & Switches*. (**See the Test Procedure on Page 2**).
5. We have also seen where the **Motor Cam (C)** catches on the *motor mounting screws*. Loosen the **Set Screw (D)** and pull the **Cam (C)** back enough so that it clears the threads of the *mounting screws*.
6. Finally, we have seen technicians go through all the above procedures and still have no results. Turn the **Motor Cam (C)** manually (*to check for any binding*) and then retry the **Automatic Test in Portals™** to get the motor to turn. There may be a dead spot in the motor (*broken tooth on the gear inside the motor, which is unseen without actually opening the motor case*). If the above procedures do not fix the problem, the motor may be bad. For further instructions, call Technical Support at the below numbers. The next page summarizes how to **test the motor** in your **H-D® Pinball Game**.

Lift (Motor) Assembly, Harley-Davidson® Pinball

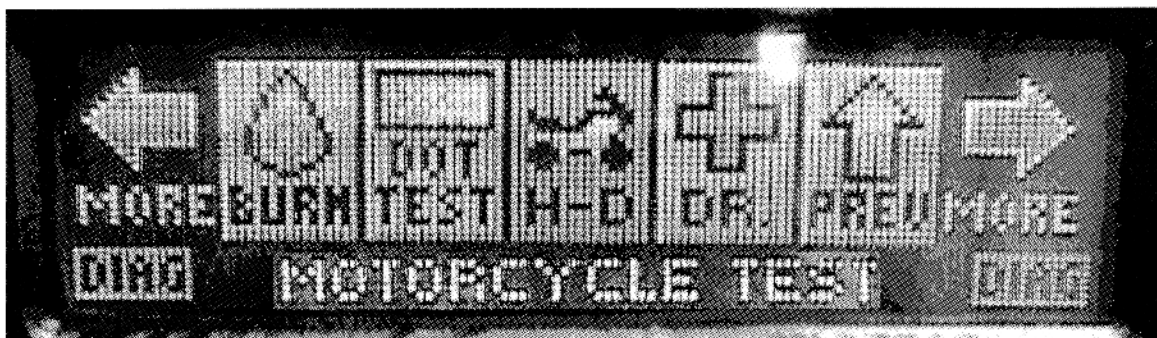


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Testing the motor in Portals™ Harley-Davidson Specific (Motorcycle Test):

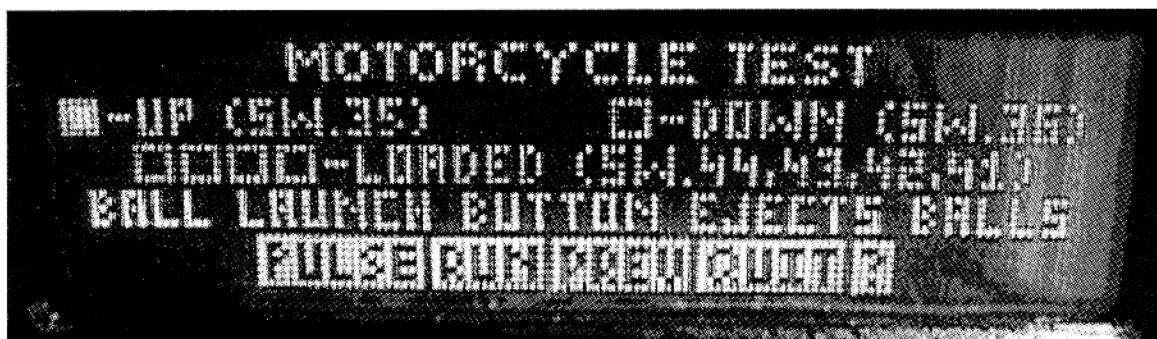
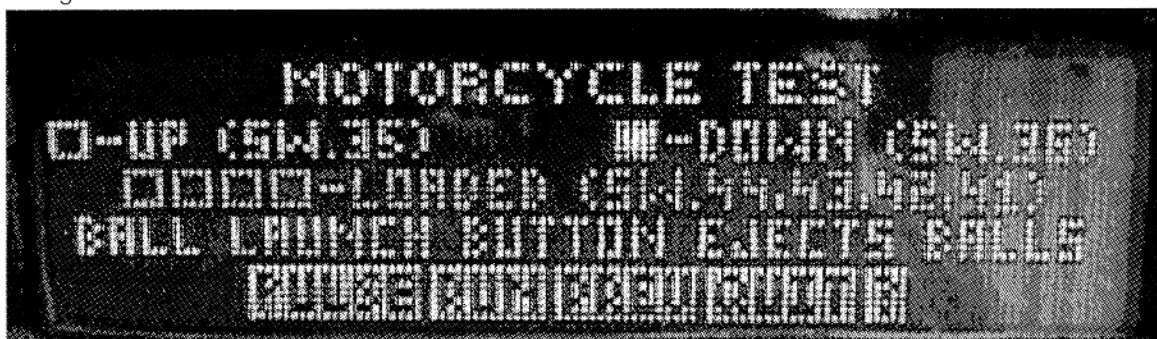
To initiate, from the **DIAGNOSTICS MENU**, select the "H-D" *Icon* with either the Red "LEFT" or Green "RIGHT" Button and press the Black "ENTER" Button (the **START** Button operates in the same manner). (New to our Portals™ Service Menu? Review Section 3, Chapter 1 in your Service Game Manual.)



This will bring up the **HARLEY-DAVIDSON SPECIFIC MENU**. Similar to "BEGIN PLAY TEST," this menu is used to test and adjust Game Specific Features. The feature in this game is **MOTORCYCLE TEST**. *Important:* The **Power Interlock Switch** must be pulled out for this Test to Function.

Motor Up/Down Test Procedure:

Select the "RUN" *Icon* to automatically bring the Motor & Trough from the **DOWN** or **UP** position to the opposite position. Select the "PULSE" *Icon* to move the motor slowly **UP and/or DOWN** one pulse at a time. This test allows you to operate the Motor on this mechanism which is controlled by a **Relay** driven by **Q19** on the I/O Power Driver Board for the purpose of troubleshooting.



Any questions, comments or you require further instructions, please contact Technical Support at the below numbers.

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