



## Service Bulletin #20

To: Service Manager  
From: Data East Pinball Field Service  
Date: December 4, 1989  
Subject: Special Solenoid Failure

---

Symptom: Pop bumper coils and associated driver circuitry fail due to mechanically related problems that cause the pop bumper activation switch to become stuck closed.

Problem: See the attached recommended adjustments.

Solution: Install a 2.5A slo-blo fuse in series with each blue wire that goes to each of the three pop bumper coils (one fuse per coil). If the switch gets stuck, the fuse will blow before any damage is done to the coil or the driver circuitry.

Note 1: We started adding these fuses on ABC Monday Night Football serial #17586.

Note 2: We have modified our pop bumper design to eliminate the necessity of the attached adjustments. The new pop bumper has been in production since mid-Playboy.

If you need any assistance with this modification, please call Pete or Arnie at 1-800-KICKERS (1-800-542-5377).

Pete and Arnie  
Field Service Department  
Data East Pinball, Inc.

## Recommended Adjustments to Old Pop Bumper Assemblies.

To lessen the likelihood of ever blowing one of the 2.5A slo-blo fuses I recommend that you check the following.

- 1) The position of the pop bumper switch actuator pin. It MUST be dead center in the pop bumper switch spoon and it MUST be touching the bottom of the pop bumper switch spoon when the switch is not being activated. This will prevent the pin from ever climbing up onto the edge of the spoon. (If the pin gets on the edge of the spoon it will close the pop bumper switch. As long as the pop bumper switch is closed the coil will be energized.)
- 2) Check the mounting of the pop bumper coils. You should not be able to move the coil with your hand while its mounted to the frame of the pop bumper. If you find a loosely mounted pop bumper coil tighten all coil mounting hardware and apply some loc-tite as well. A loose coil can cause binding of the plunger and make the coil heat up quite a bit.
- 3) Check the pop bumper yoke. (The yoke is the metal part that attaches the pop bumper coil plunger to the pop bumper ring and stud assembly. The ring and stud assembly is the part that actually hits the ball.) On test games I have seen this yoke break. When it breaks it allows the plunger to pull in at odd angles. By not pulling in straight the plunger can cause the ring and stud to come in contact with the pop bumper skirt and if that happens then the switch will be closed and coil and CPU board damage will occur.

With the added fuses no damage will occur to the coil or the CPU board if the pop bumper switch gets stuck. Instead of coil or board damage, the associated 2.5A slo-blo fuse will blow. These adjustments will prevent the 2.5A slo-blo fuses from blowing intermittently.