



**SERVICE BULLETIN #9**  
**Shorted flipper driver transistor / burnt or melted flipper coil**

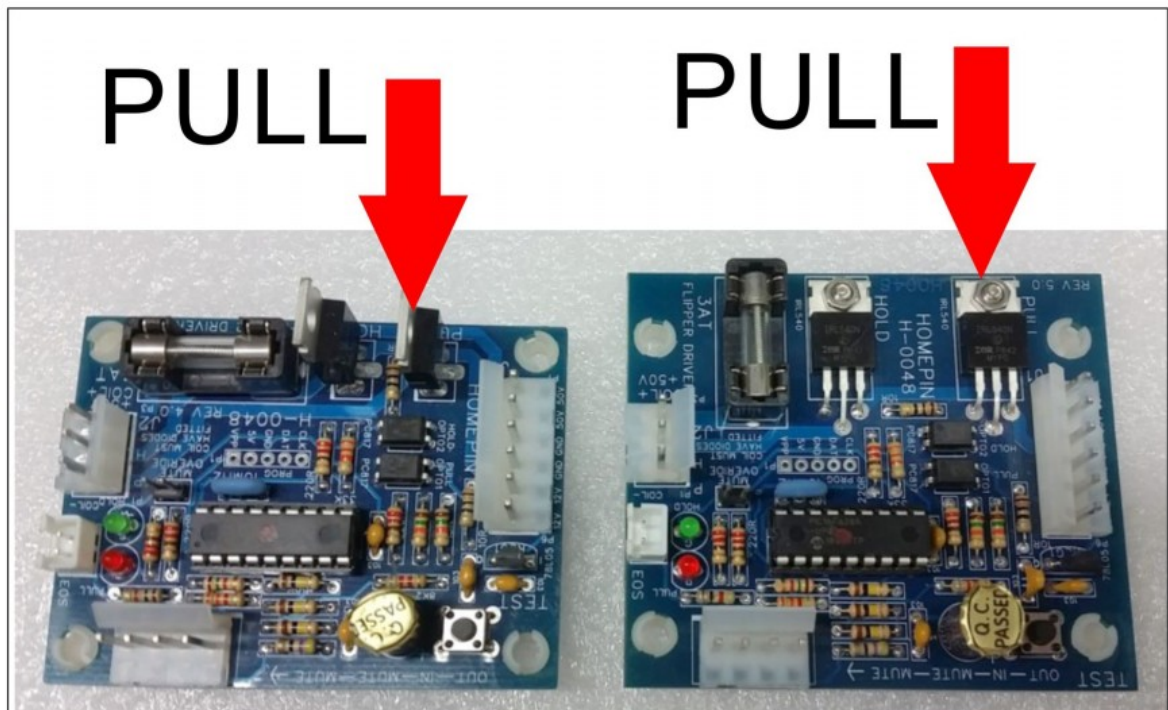
28<sup>th</sup> June 2019 - REV 1.0

**TAG.** Burnt or melted flipper coil or flipper locked on when powering up machine.

**Application:** All machines under serial number 101.

**Remedy:** Replace the 'PULL' transistor on the driver board if it is marked with "MYPO" - also replace the coil if it has visible signs of stress.

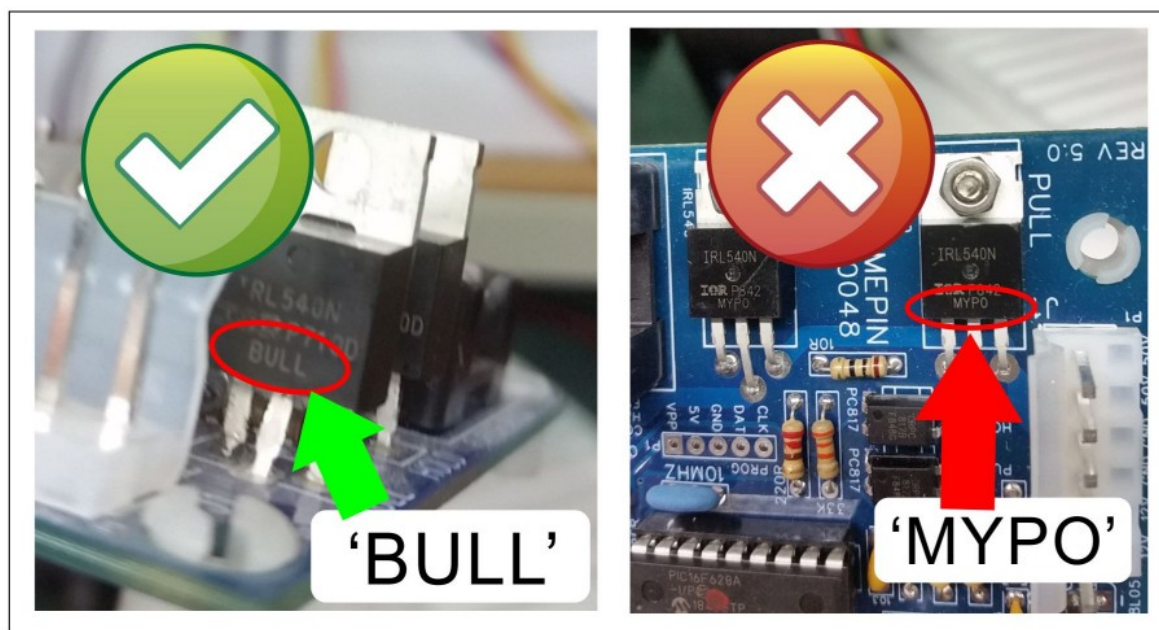
**NOTE:** There are two versions of the Homepin H-0048 flipper driver board. They are both electrically identical with the only difference being the newer version has the output transistors mounted flat on the PCB to avoid them being accidentally broken off the board. See picture below showing both boards with the hold transistor in question arrowed. ('PULL' is also written on the PCB next to the transistor).



The transistors used are IRL540N. These are "logic level FETs" which means they can be fully driven from a 5V drive source. Homepin circuits are designed so that an IRF540N could also be used as the gate is driven by 12V in Homepin circuits. We have chosen to use the logic level device as there can be no doubt it will fully switch with 12V applied.

If you can only source an IRF540N in your area it should work just as well.

We have received several batches of devices from our suppliers and found that the ones marked with "BULL" on the lower line have a lower ON resistance than those marked with "MYPO".



The outcome of using "MYPO" marked devices in the 'PULL' position can result in the part overheating and shorting when subjected to repeated and ongoing flips such as a child playing and simply banging the flippers constantly - "flip, flip, flip, flip". After 50 or so such actions immediately after one another it is likely the "MYPO" device will short where with the "BULL" transistor the 3AT fuse on the flipper board will probably blow.

**Using the "MYPO" parts for the flipper hold and also for solenoid drivers has not resulted in a single failure. They are adequate in these positions.**

[https://www.homepin.com/kits/flipper\\_transistor.pdf](https://www.homepin.com/kits/flipper_transistor.pdf)

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