

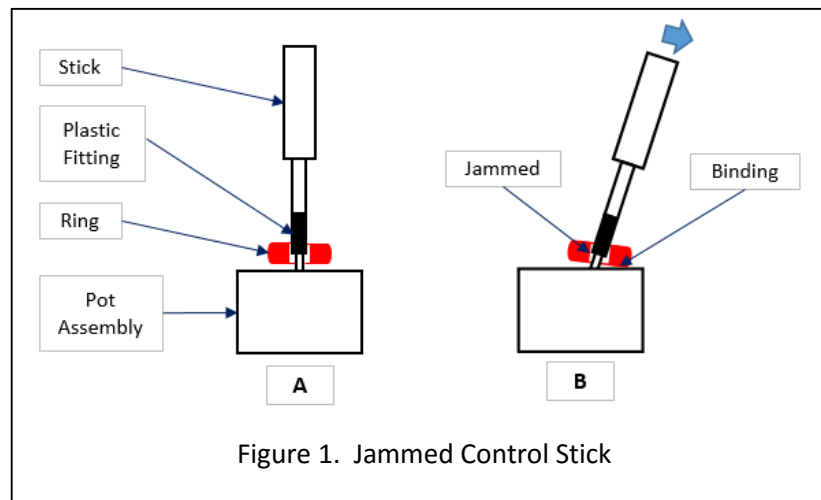
## Joysway Transmitter Sticky Control Stick Problem

DISCLAIMER: Contact the distributor for a warranty replacement before modifying the transmitter. If they do not help, you may want try these solutions that worked for me. Proceed at your own risk! *I take no responsibility for damage caused by your work.* Be careful, the pot assembly looks fragile and heavy pressure may cause damage. Lack of care, too much pressure, or pushing the wrong way while removing the metal rings may cause permanent damage. If you are not sure how to do this, don't.

There are two problems you may experience with the Joysway control stick mechanism.

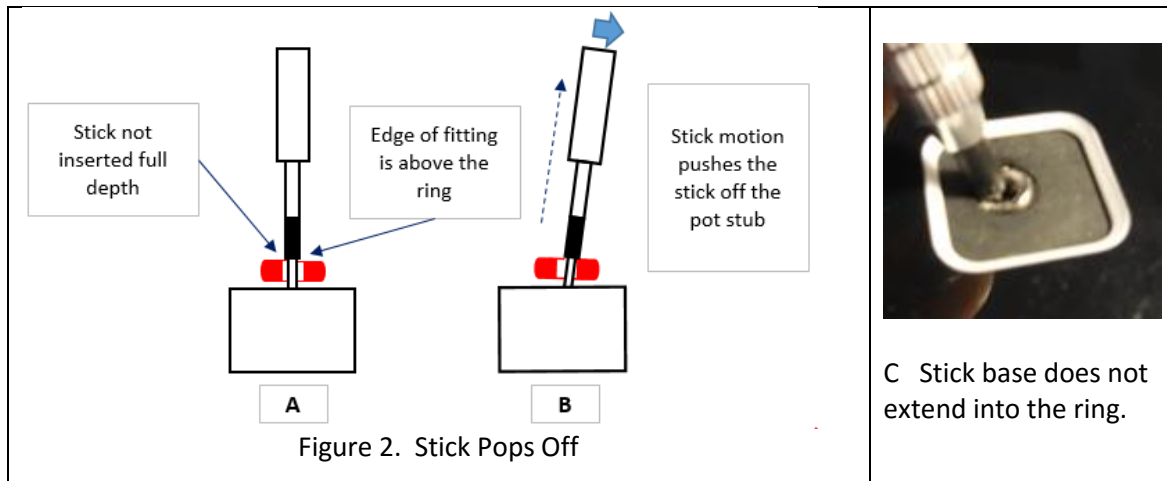
**Problem 1. Control stick binds, or hangs up** about half to three quarters of the way to full throw. A little extra pressure usually makes the stick to go to full throw. This may also result in the stick popping off.

- **Cause:** The little metal ring at the base of the stick jams against the black plastic fitting, and also binds against the top of the potentiometer (pot) assembly. You can see the metal rings moving in strange ways when the stick hangs up. There are also scratch marks on the frame of the pot assembly that can be seen after you open the case.
- **Details:** Figure 1 shows the stick and pot assembly. Figure 1A shows that the plastic fitting does not go fully through the metal ring held loosely by the sliding plate. When the stick is moved as shown in Figure 1B, the metal ring gets jammed by the base of the plastic fitting, binds against the pot frame, and will not slide up the plastic fitting. The bottom of the plastic fitting was found to have excess plastic flash from the molding process, but removal of the flash did not resolve the jamming issue.



**Problem 2. The knurled stick ends pop off the pot shaft** when the stick is pushed to an endpoint.

- **Cause:** The stick is not inserted far enough into the transmitter to position the plastic fitting below the top edge of the metal ring.
- **Details:** Figure 2A shows a control stick that is not seated properly. The bottom of the plastic fitting does not engage the metal ring. When the stick is moved as shown in Figure 2B, the bottom of the plastic fitting catches on the metal ring and the stick is pushed off the pot shaft.
- Figure 2C shows a photo of a stick base that does not engage the ring.
- It's probably not the user's error that the control stick does not slide down far enough to position the end inside the metal ring. It appears that some transmitters are just made that way, and additional pressure does not resolve the issue. CAUTION: Heavy pressure just risks damaging the pot assembly or circuit board.



**Design Solution** for both problems: The plastic fitting needs to extend further down the pot shaft by making it longer or allowing the stick to slide further down on the pot shaft. It may also be necessary to increase the clearance between the metal ring and the pot assembly. This probably won't happen with the transmitter you have. Joysway—are you reading this?

**Practical Solution for Problem 1--binding:** Remove the little metal rings from both sliding plates by disassembling the TX box and carefully pushing out the little rings. Push from outside the case. If the bottoms of the sticks now catch on the plastic sliding plates, remove the plates as well.

**Practical Solution for Problem 2-- sticks popping off:** Remove the *rings and sliding plastic plates* so the bottom of the stick has nothing to catch on. Maybe the opening will make your transmitter more susceptible to water damage when it rains, but the unit was not waterproof to start with. Don't use it in the rain even without the modification.

- **WARNING:** Gluing the stick on the pot shaft in an attempt to solve this problem while the rings and plates are still installed will not fix the problem and will result in restricting stick movement to about 50%. If you also glue the threads, you will not be able to disassemble the transmitter case to properly fix the problem.

**Possibly Risky Solution for Problems 1 and 2:** Remove about 1/8 inch of metal from the top of the pot shaft so the stick will seat further down. There is plenty of room inside. Extreme care should be used. The pot assembly is fragile, and *any* metal shavings that find their way into the transmitter circuits may damage the unit. *I have not tried this solution.*

**Craftsman Solution:** Make replacement control sticks with the required design features.

**NOTES:**

- It is not a good idea to glue the control sticks onto the pot shaft. It won't correct either problem. However, if the sticks are very loose on the pot shafts, you will need to do something to fix it.
- You can glue the sticks to the pot shaft and still disassemble the case if the knurled stick ends can still be unscrewed.
- If your control stick ends keep unscrewing, do not glue the threads. Use a *small* amount of blue Loctite so they will unscrew when required.

