

Preparing a FLL Challenge Field Kit Box For Storage

Version 1.1 – 2023/9/13



What are we doing?

- FLL Challenge Field kits have many pieces we do not want to lose.
- Here are instructions for configuring your Challenge Field box to carry all your field parts during the season.
- Note: I originally used Gaffer Tape, ran out, and redid with Duct Tape. Both worked fine. But Duct Tape worked much better! (is that a word?)
- Materials needed
 - Gaffer or Duct Tape, 2 – 3 inches wide if you can get it. If you cannot, just create more fasteners.
 - The Field Kit Box that the FLL Challenge set was shipped in
 - Zip-lock bags (gallon) or a suitable substitute. Gallon may be too big for some but you decide.
 - Magical Marker to mark various things
- Suggestions: flarkin@midatlanticrobotics.org

Tape Down the Bottom Flaps

- Start with the empty box. We will make fasteners to hold the box closed during shipping between locations.
- First tape down the bottom inside left and right tabs. This prevents items from rolling underneath.
(Duct Tape worked great!)
- Don't be afraid to use too much tape. It is a pain to get small parts out from under these.



Fastener Landing Zones (when closed)

- We want to make a stable place for the tape to adhere to the box cardboard by creating Fastener Landing Zones.
- On the right end of the box, right side box flap, about 3 inches in, create a fastener landing zone.
- Use a 13-inch piece of tape, 5 inches for the inside, over the top, then 8 inches outside of the right box flap.
- Apply it straight on one side and then bend over the top onto the other. Try it make it straight.
- We need the extra length outside to resist when we pull the fastener off when opening the box.



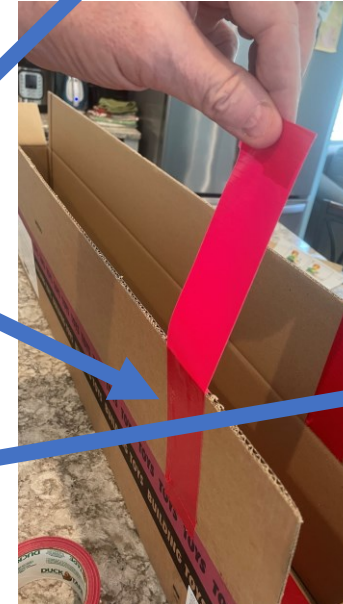
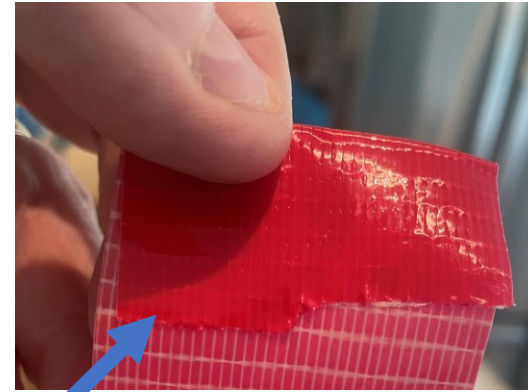
Fastener Landing Zones

- On the right end of the box, left side top flap, about 3 inches in, create a fastener landing zone.
- Use a 13-inch piece of tape, 5 inches for the outside, over the top, then 8 inches inside of the left box flap.
- Apply it straight outside and then bend over the top onto the inside. Try it make it straight.
- We need the extra length inside to resist when we pull the fastener off when stored there when box is open.



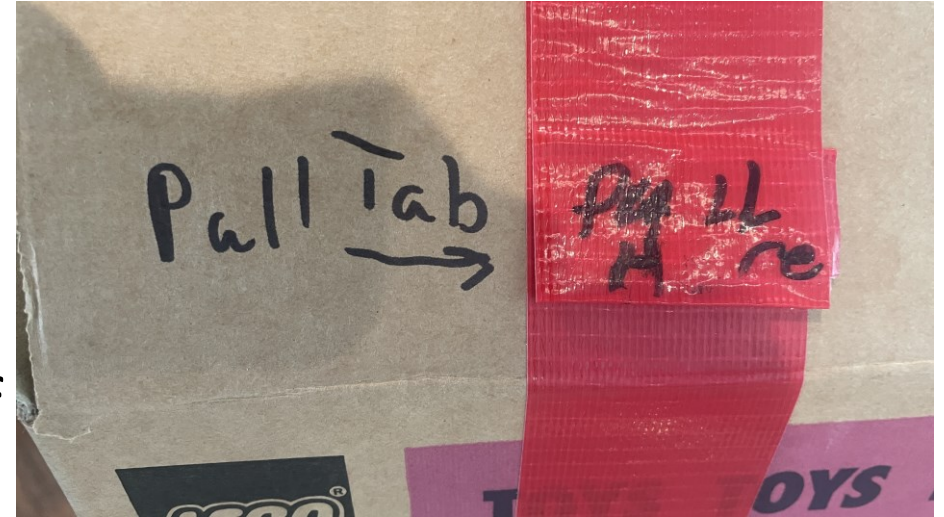
The Box Fastener

- On the right end of the box, left side top flap, about 3 inches in, create the fastener. This is placed outside the box, on the fastener landing zone we just created.
- Use a 13-inch piece of tape. Holding the tape at the top end, fold 1.5 inches back on itself to make a tab.
- Holding the tab, affix the tape starting 5 inches down over the outside landing zone.
- Then over the top, then, put the rest over the inside landing zone. Keeping it straight!!!!
- This is the position the fastener will be stored when the box is “open”.




The Box Fasteners (final steps)

- Now repeat these steps in the middle of the box and the other end of the box.
- Three fasteners should be fine.
- Finally, you may want to write instructions on the outside and inside of the box showing where to pull the tab.
 - You can see that writing with a magical marker on duct tape is useless.
- If someone screws this up you can replace the tape by pulling it off the landing zones. And changing the fastener.



Closing the box

- Open the box top wide.
- Pull the 3 fasteners from their stored “open” positions and fold them outside the box. Make nothing touches them.
- Put materials in the box. (seasonally different)
 - Put any small items in a 1 Gallon Ziplock bag. This prevents them from falling out. Remember to put any bag(s) in box!!! 😊
 - Items should not protrude above the top level of the box.
- Fold the box end flaps in. 
- Roll up the mat and place it on the top of the opened box, covering the box (folded) end flaps.
- Try to center the mat to the length of the box.



Closing the box

- Close box tops forming a tent over the rolled-up mat. The flaps should meet. If not wrap the mat tighter. Best if flaps meet.
- Carefully flip the fasteners over the top pulling tightly. Now affix them to the closed landing zone (tape) on the other box flap side.
- When all done, wiggle the mat a little and it will expand filling the gap and preventing parts from falling out.

