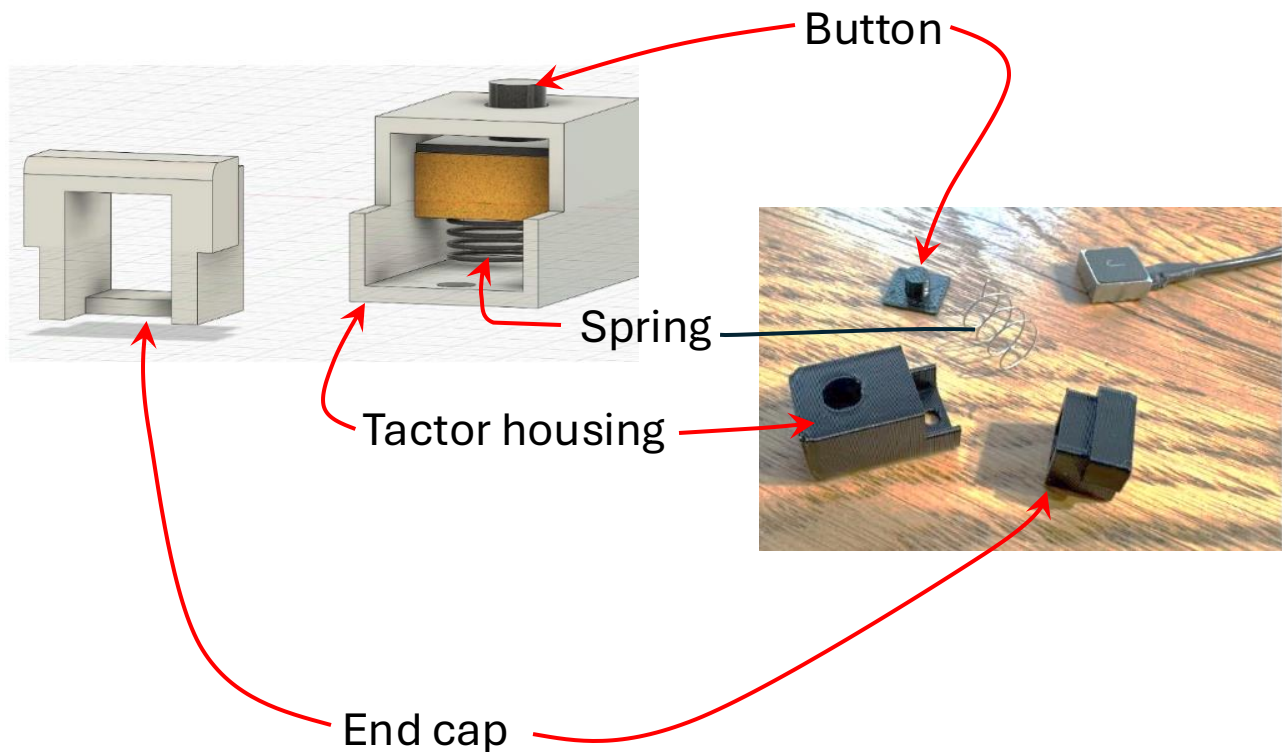


Building a tactor pod for a vibrotactile glove

Materials needed

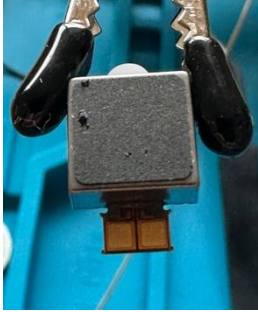
- 3D tactor housings (8 each).
- LRA buzzer model VLV101040A from Digikey (8 each)
- Soldering kit
- 28 gauge silicone stranded wire
- Project source gloves from Lowes (large)
- Sticky-back Velcro hook and loop strips – 1” wide – get this at just about any hardware store
- ½” tubular nylon webbing – 2 yards - get this from Seattle Fabrics
- Hot glue gun and glue
- 10” X 3/16” dia tube for threading wires through tubular webbing
- Shrink tubing of various sizes (see materials list included in documents provided by TactileDesign in appendix)
- Heat gun
- Archery gloves (3 each). <https://www.cabelas.com/shop/en/neet-products-deluxe-leather-shooting-gloves> Other sources are available. No matter your finger size, MAKE SURE TO GET EXTRA LARGE

Print tactor housing using 3D printer

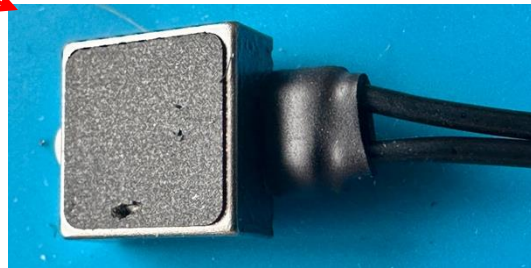


Find this file: **3D 8 Tactors Main Housing.stl** at <https://github.com/MDBalen/PD-Glove-Design/tree/main> for use in 3D printing tactor housing parts.

Step 1 – Solder wires to the LRA



- LRA before soldering
- LRA after solder applied to contacts
- LRA after soldering conductors to the contacts (tin the ends of the conductors first)
- LRA after applying heat-shrink tubing to cover the solder joint

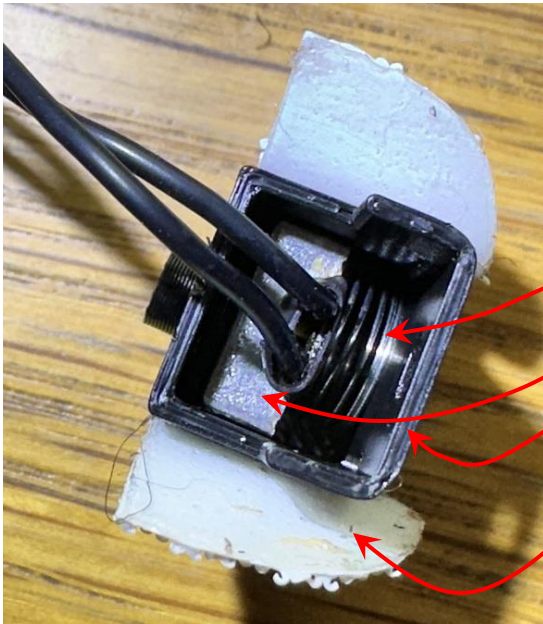


Step 2 – Make springs according to instructions provided by TactorDesign at <https://healthunlocked.com/cure-parkinsons/posts/151628618/diy-vibrotactile-pd-glove-design-that-features-a-new-spring-based-lra-tactor-and-a-bluetooth-speakerphone>

Step 3 – Assemble LRA and spring into tactor housing



LRA with spring attached.
The LRA comes with a small amount of adhesive on its base that serves to hold the spring place.



Place the button inside the housing, then slide the LRA with spring into the housing below the button.

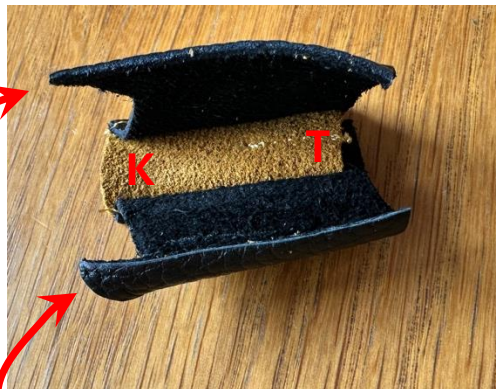
- Spring
- LRA
- Housing
- Velcro pads - see next page(s)

Finally, slide the end cap over the wires and secure the LRA inside the housing.

Step 3 – Build tactors into finger cots



Unmodified leather archery glove (see parts list for source)



When complete – finger inserts in the direction from K to T. This view is the inside of the finger cot.

Clip off these 'wings' so the end product looks like this (looking top-down).



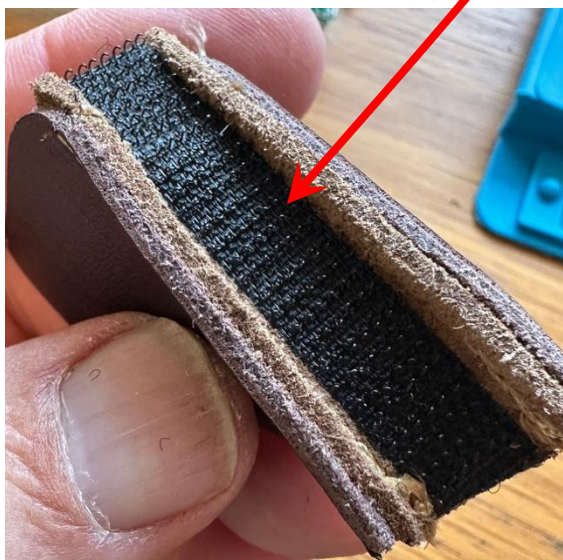
Assemble the tactor into the finger cot



Apply the loop side of hook-and-loop sticky-back Velcro as shown to the inside of the finger cot



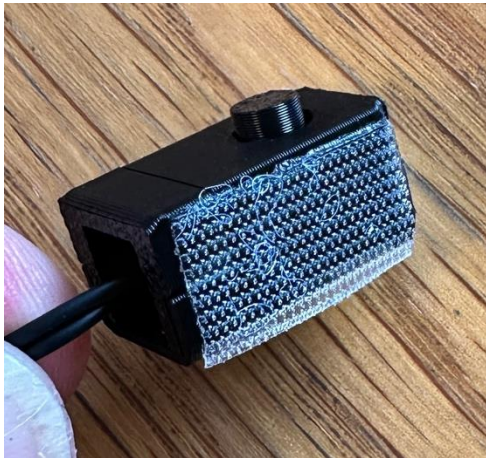
Add the hook side of hook-and-loop sticky-back Velcro to the top outside of the finger cot as shown



Assemble the tactor into the finger cot



- Assembled tactor



- Add the hook side of hook-and-loop sticky-back Velcro (SBV) to the both the left and right sides of the tactor. Add hook SBV to the bottom of the tactor as well

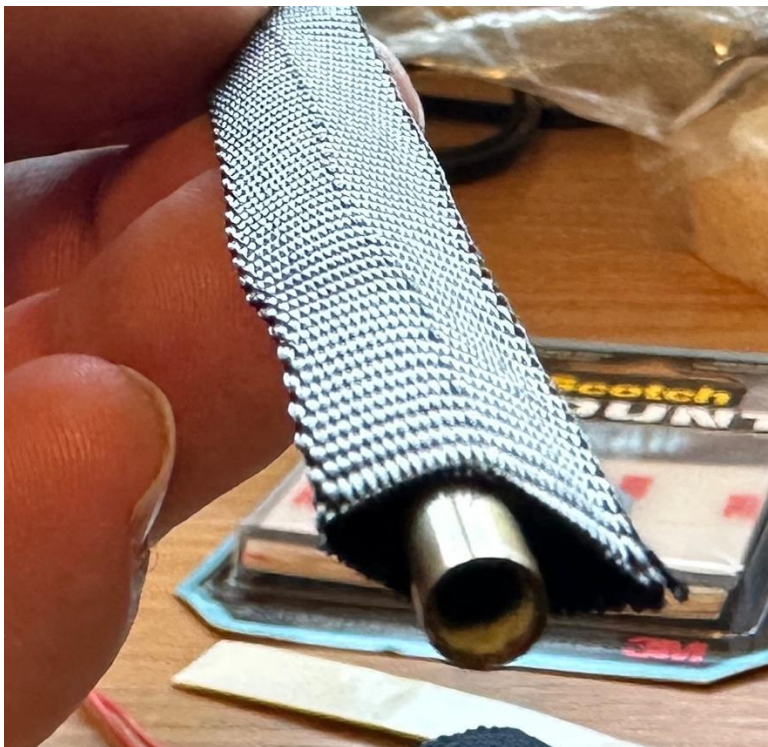


- Place the tactor onto the left SBV as shown. Attach the right side of the finger cot to the enclosure the tactor leaving sufficient room for your finger to rest on top of the button when inserted into the completed assembly.

Assemble the tactor into the finger cot



- Assembled tactor inside the finger cot.



- Cut 10" of tubular webbing and thread the metal 1/8" dia tube through the webbing. Push the wires from the tactor through the metal tube. Pull the tube from the webbing. The wires should be exposed at the far end of the webbing.

Assemble the tactor into the finger cot



- Another view of a tactor fastened to SBV inside the finger cot. This view also shows the webbing containing the wires as it wraps around the finger cot assembly.

Assemble the tactor into the finger cot



- Attach the loop side of a piece of SBV to the hook SBV previously attached to the top of the finger cot. Remove the protective film and then...
(see below)



- Wrap the webbing with wiring inside around the finger cot and adhere to the exposed SBV on the top of the finger cot.

Assemble the tactor into the finger cot



- Cut the fingers off the Project Source gloves and hot-glue the hook side of SBV to the gloves as shown.



- Hot glue the loop side of SBV to the webbing as shown. Do this for each finger assembly.

Completed glove assembly.



Shown here is how a set of finger pods can be attached to the Project Source glove from Lowe's. I glued a strip of Velcro to the top of the glove, then glued Velcro strips to the bottom of the nylon tubing that contains the wiring to the LRAs. The nylon tubing used here was purchased at REI and is normally used as a climbing harness. This is the product of my 3rd iteration of vibrotactile gloves.



Appendix

See : <https://github.com/MDBalen/PD-Glove-Design/tree/main> for additional documentation.

The following links will take you to information created by TactorDesign (HealthUnlocked main site:

<https://healthunlocked.com/user/TactileDesign>)

Link to *The Buzzah Neck Speaker DIY PD Glove Build:*

<https://github.com/MDBalen/PD-Glove-Design/blob/main/Buzzah%20Neck%20Speaker%20Build%20Description%20-%204.pdf>

Link to *Design Considerations for LRA Tactors:*

<https://github.com/MDBalen/PD-Glove-Design/blob/main/Design%20Considerations%20for%20LRA%20Tactors.pdf>