

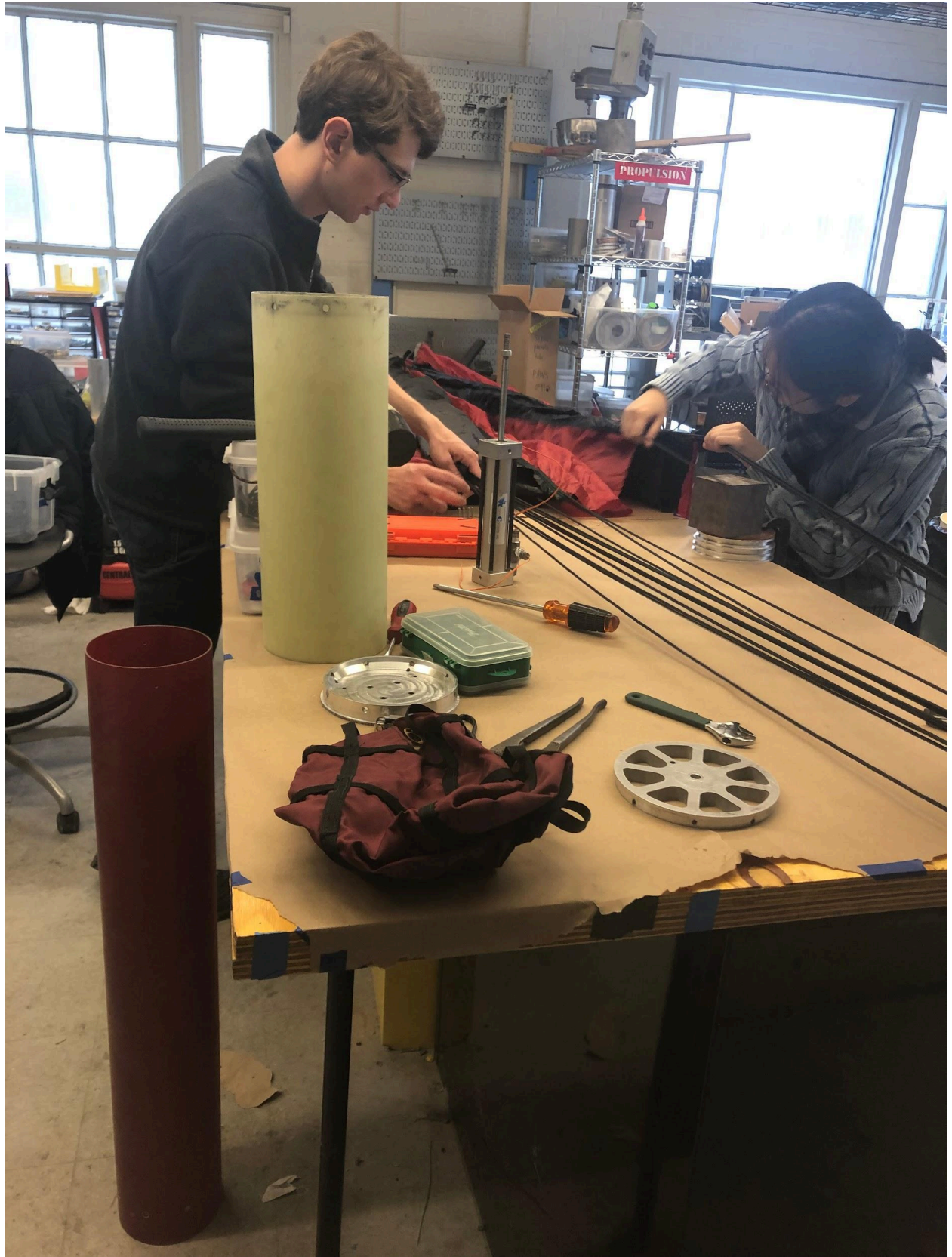
## Sections to integrate

1. Motor
2. Piston
  - a. Using a 1/4 inch torque wrench, ensure that the bolts holding the piston together are very tight. If the bolts are loose, the piston will lose pressure as it extends.
  - b. Check continuity of Firebolt (about 1.0-1.4 ohms) and twist the wires to short it. Two people should visually confirm that it is shorted. Wrap the Firebolt with five wraps of teflon tape. Use pliers to screw firebolt into the NPT plug.
  - c. **Everyone put on safety glasses.** From now on, everyone within the vicinity of the pyrotechnics must wear safety glasses.
  - d. Measure out the appropriate amount of black powder into a weigh boat (will vary over testing matrix) and pour it into the other side of the tee , holding over a weigh boat. Seal the opening by wrapping over the head and opening three times with teflon tape.
  - e. Compress the piston.
  - f. Screw an elbow joint into a side female end of the tee.
  - g. Wrench the elbow and tee assembly into the inlet hole of the piston with 5 wraps of teflon tape until extremely tight.
  - h. Screw a 1/4 NPT plug into a female end of a 1/4 NPT tee adapter.
  - i. Seal the open female end of the tee fitting with a plug.
3. Payload - NC
4. AV tower
5. Soft goods- pack, coil



















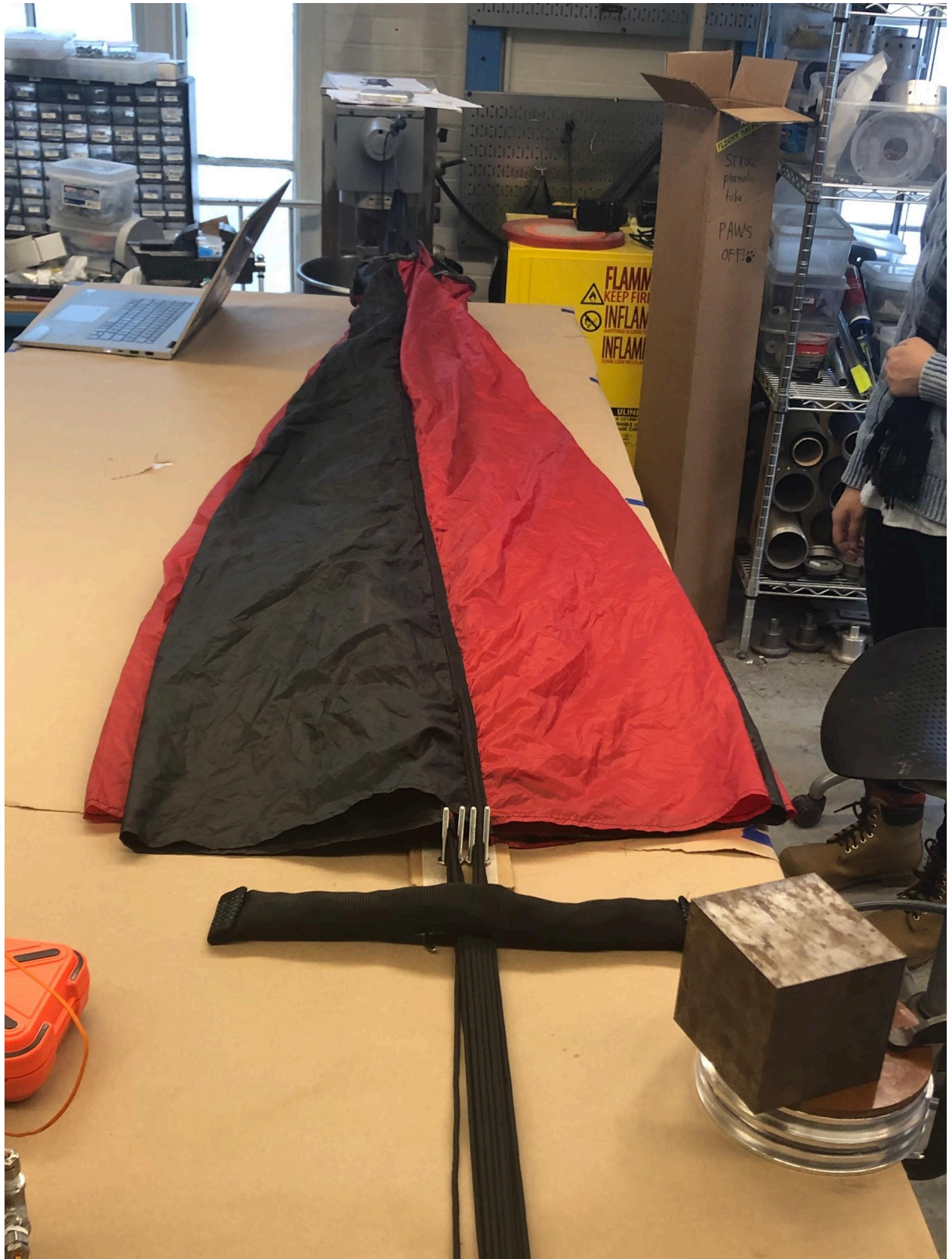




















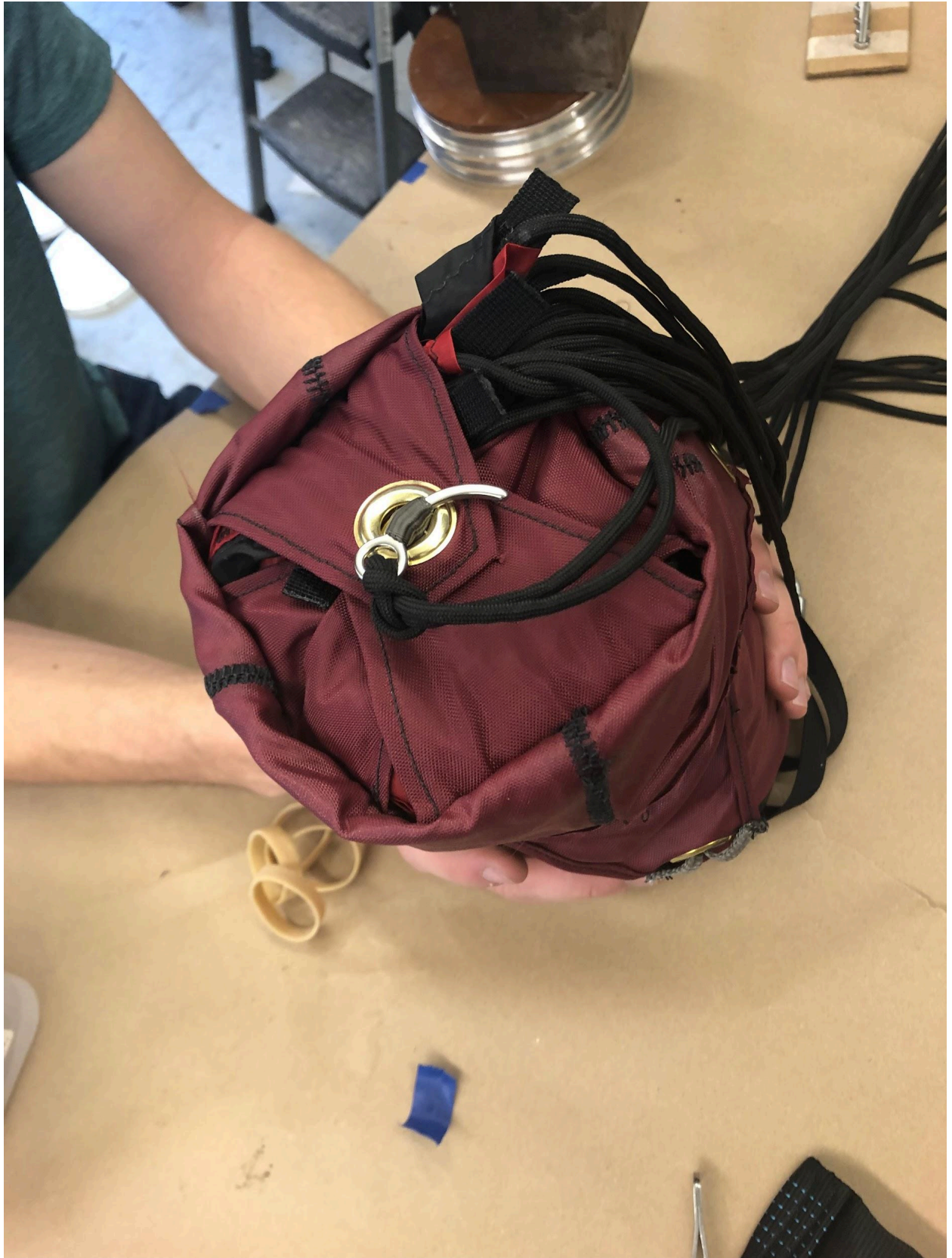








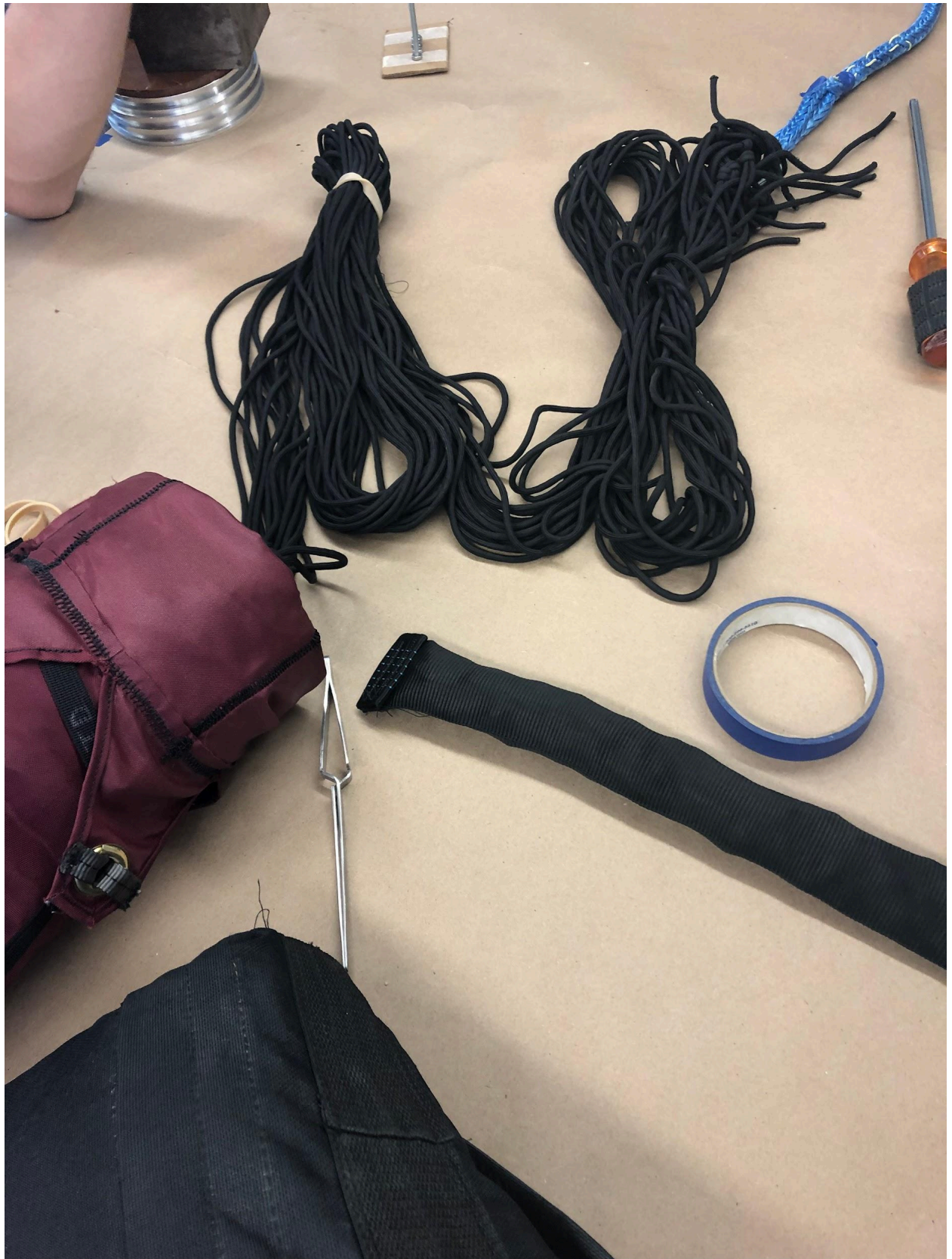














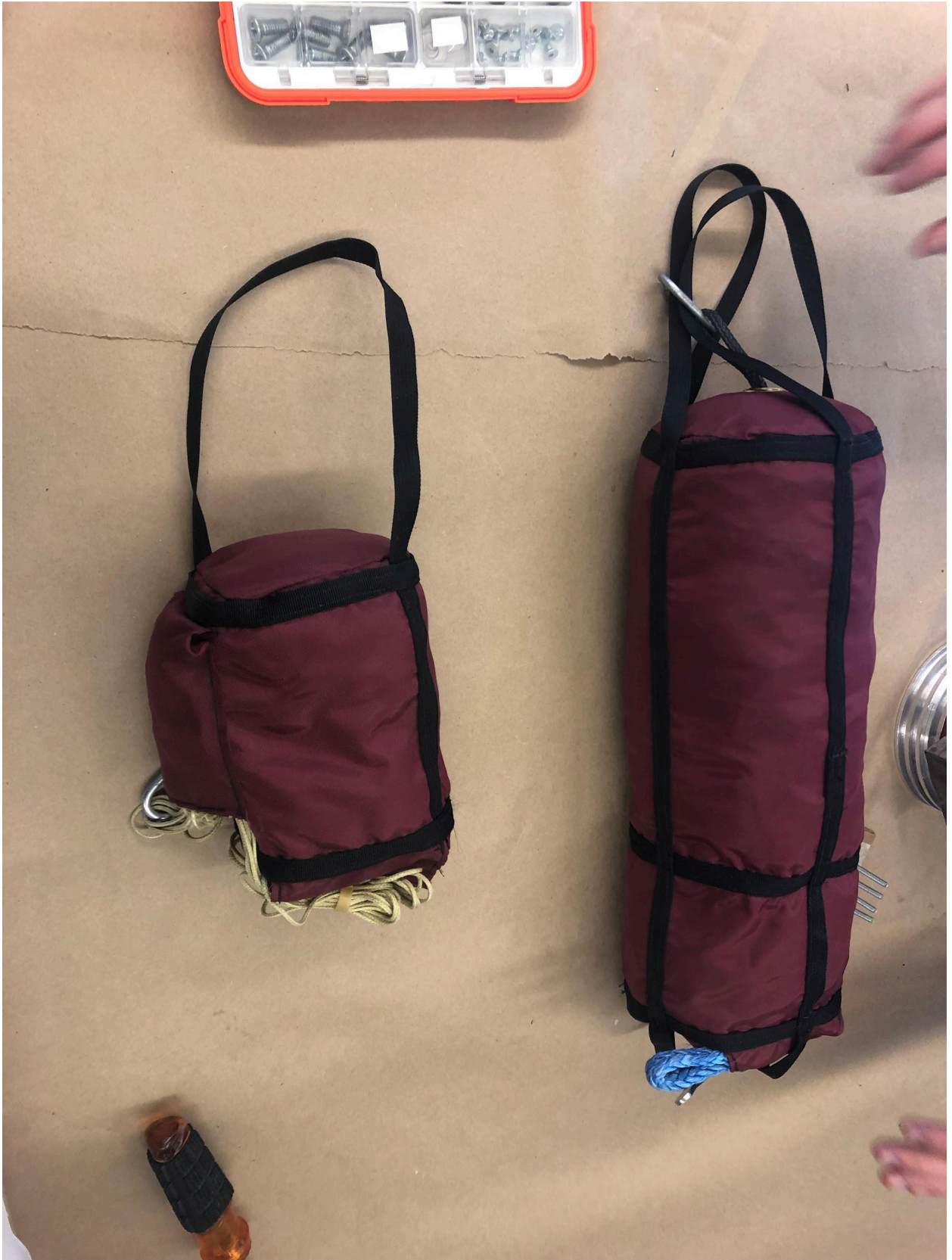














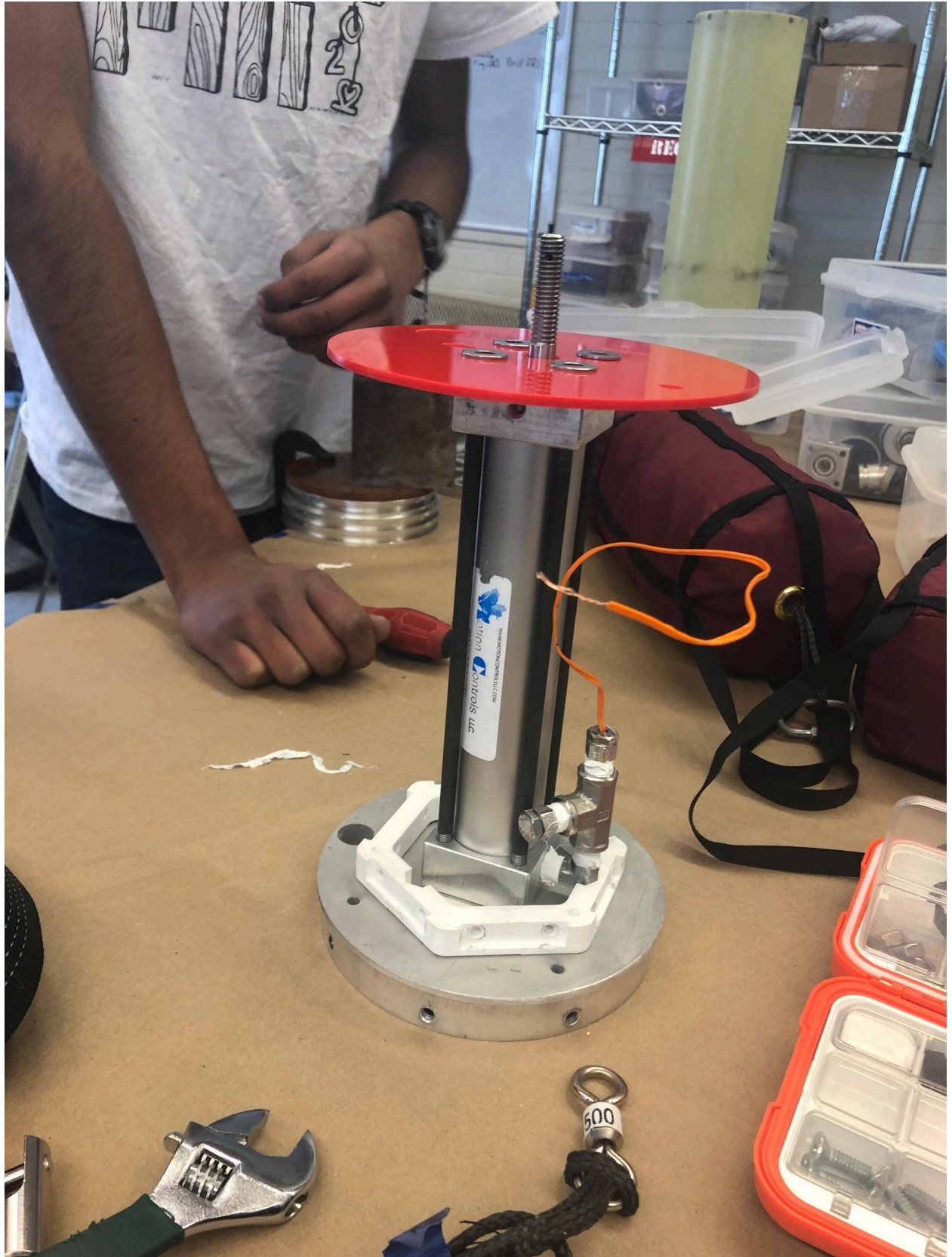


a. Pack Main

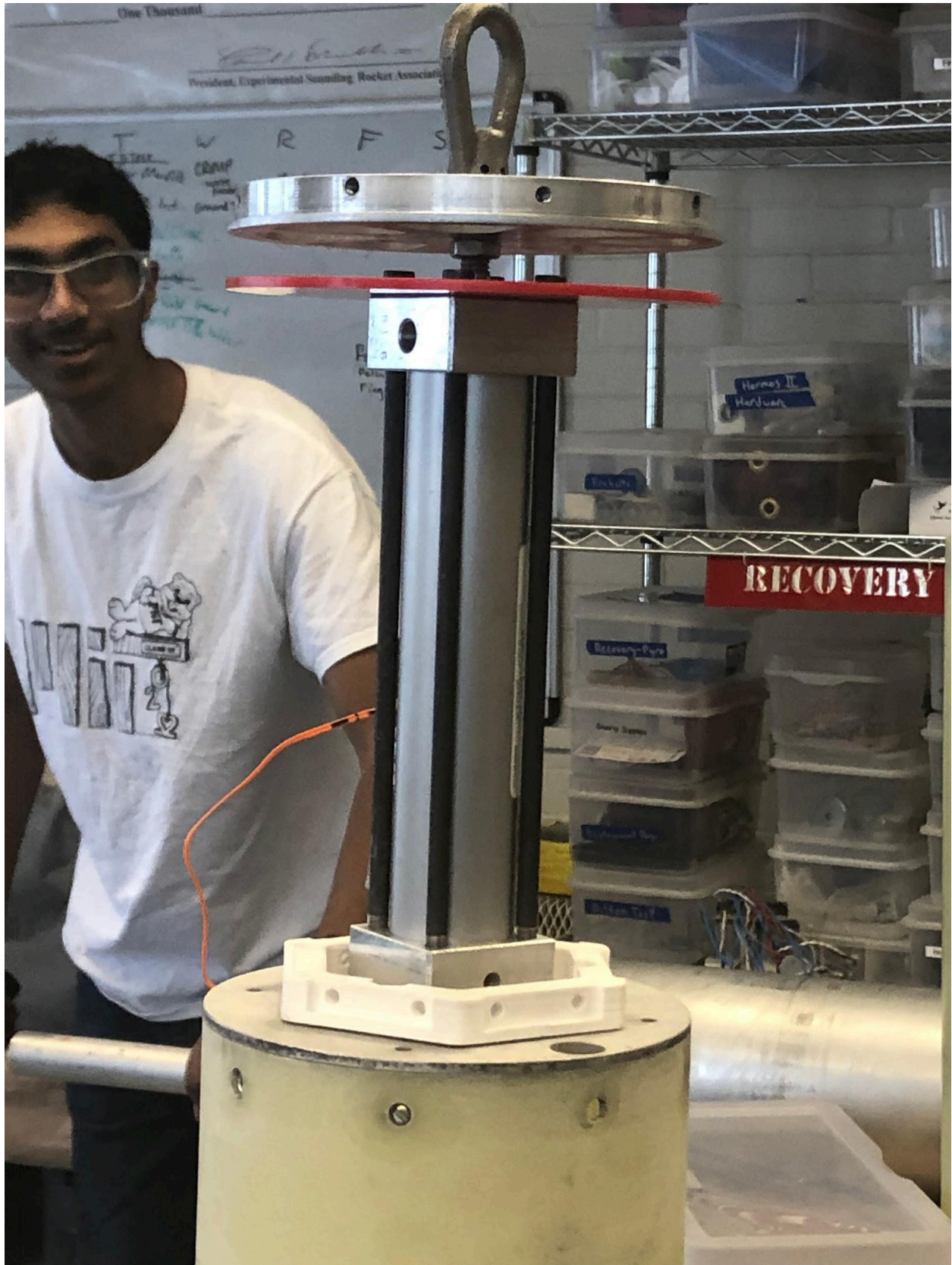


- i. Get out parachute packing parts (Sandbags, Rubber bands, Lines holder).
- ii. Fold Main
  - 1. String main parachute from top to end of lines, applying moderate tension.
  - 2. Gather 8 lines and put them into the lines holder with weights, so you can focus on the other 8 lines.
  - 3. Go through each line and gore, inspecting gores for tears
  - 4. Pleat gores so middles are together and put the lines in the holder as you go.
  - 5. Once you've nicely folded one side (8 lines and gores), repeat on the other side
  - 6. Fold up base of parachute towards middle in a triangle pattern
  - 7. Fold the wider sides of the parachute in towards the center line, using sandbags for assistance
- iii. Pack Main
  - 1. Untie top of parachute from tension
  - 2. Pull vent to bag bridle through the inside of the bag and the hole at the end. Secure bag handles and vent to bag bridle with a quick link.
  - 3. Pull the inner layer of flaps forward so the bag is partially inside out
  - 4. Z fold the parachute and pack it into the bag.
  - 5. Once the entire parachute is in the lower portion of the bag, securing flaps using the locking loop and locking pin.
  - 6. Fold lines into bites, secure two bites with rubber bands on both ends. Secure spectra in z fold with 2 rubber bands.
  - 7. Pack lines into lines portion of the main bag and secure locking loop
- b. Pack Drogue
  - i. Similar to main
  - ii. Secure flaps with banding system (TBD)
  - iii. Figure 8 lines, pack lines into side pocket.
- c. Coil lines
  - i. Get green swivels/hardware box and lines and risers
  - ii. Droque riser (figure 8s)
    - 1. Attach eye to eye swivel
  - iii. Motor section riser (2 coils, figure 8s)
    - 1. Attach fork to fork swivel using motor riser loop
    - 2. Tighten forks hard!
  - iv. Mission package riser (figure 8s)
    - 1. Attach smallest swivel
- 6. Mystery box
- 7. MP assembly

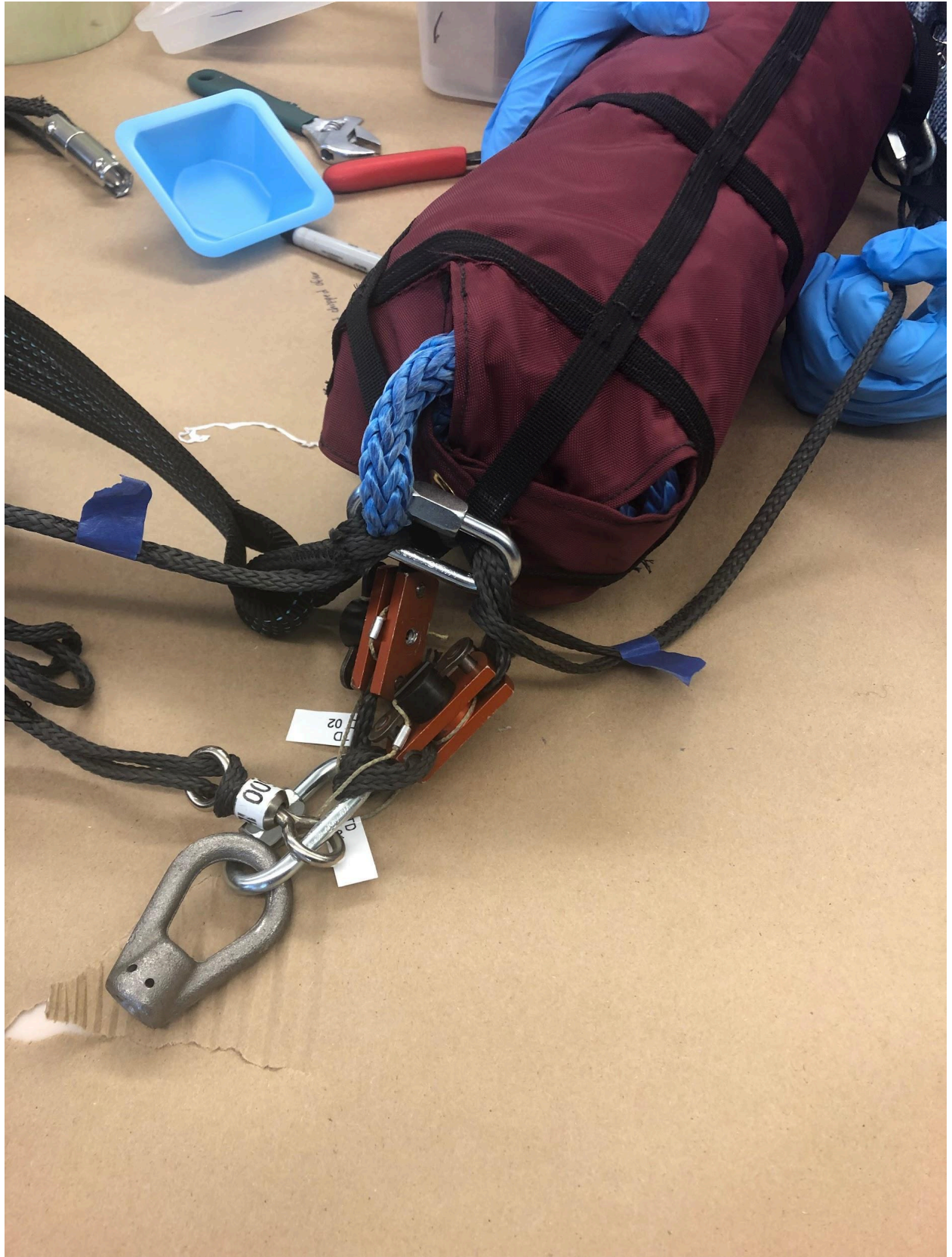






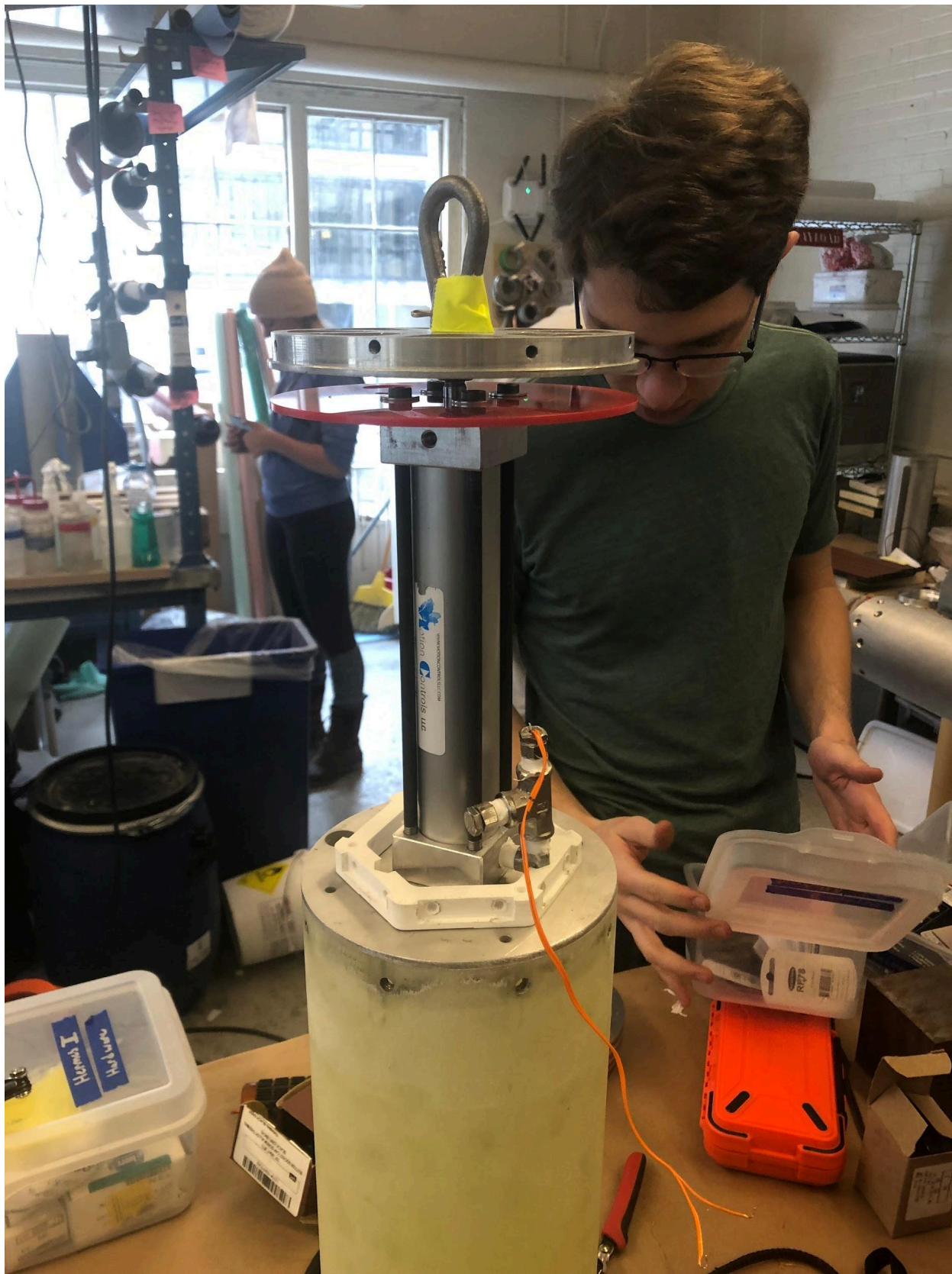
















a. Attach AV tower to payload bulkhead with 6-32 bolts

- b. Attach integrated piston to payload bulkhead with ¼ 28 bolts
- c. Wire piston to AV tower
- d. Attach recovery guard to piston using ¼ 28 bolts and washers
- e. Attach payload stack to payload bulkhead
- f. Attach nosecone coupler using 3 chamfered 6-32 bolts, attach nosecone
- g. Integrate soft goods with Tender descender: Just follow the picture it's super complicated. Tighten all quick lengths with a wrench
- h. Screw antirotation rod into diaphragm with locknut
- i. Attach diaphragm. Screw on skinny god nut and place diaphragm on. Next screw the eye nut on and insert cotterpin.. Finally, hold the skinny god nut with small pliers and screw the eye nut tight. Fold down and gaff tape over the spikey bits of the cotterpin!
- j. Set up integration stands. Stand piston-diaphragm assembly and cup close to each other. Thread main bag with lines and tender descenders through cup, so tender descenders are close to the diaphragm. Pull tender descender wires through half-moon shaped hole and attach tender descenders to eye nut.
- k. Push cup (with main bag, TDs and lines) onto diaphragm and secure with 10-32 nuts
- l. Attach swivel (on motor riser) to quick link on top of main bag
- m. Quick link drogue to drogue riser