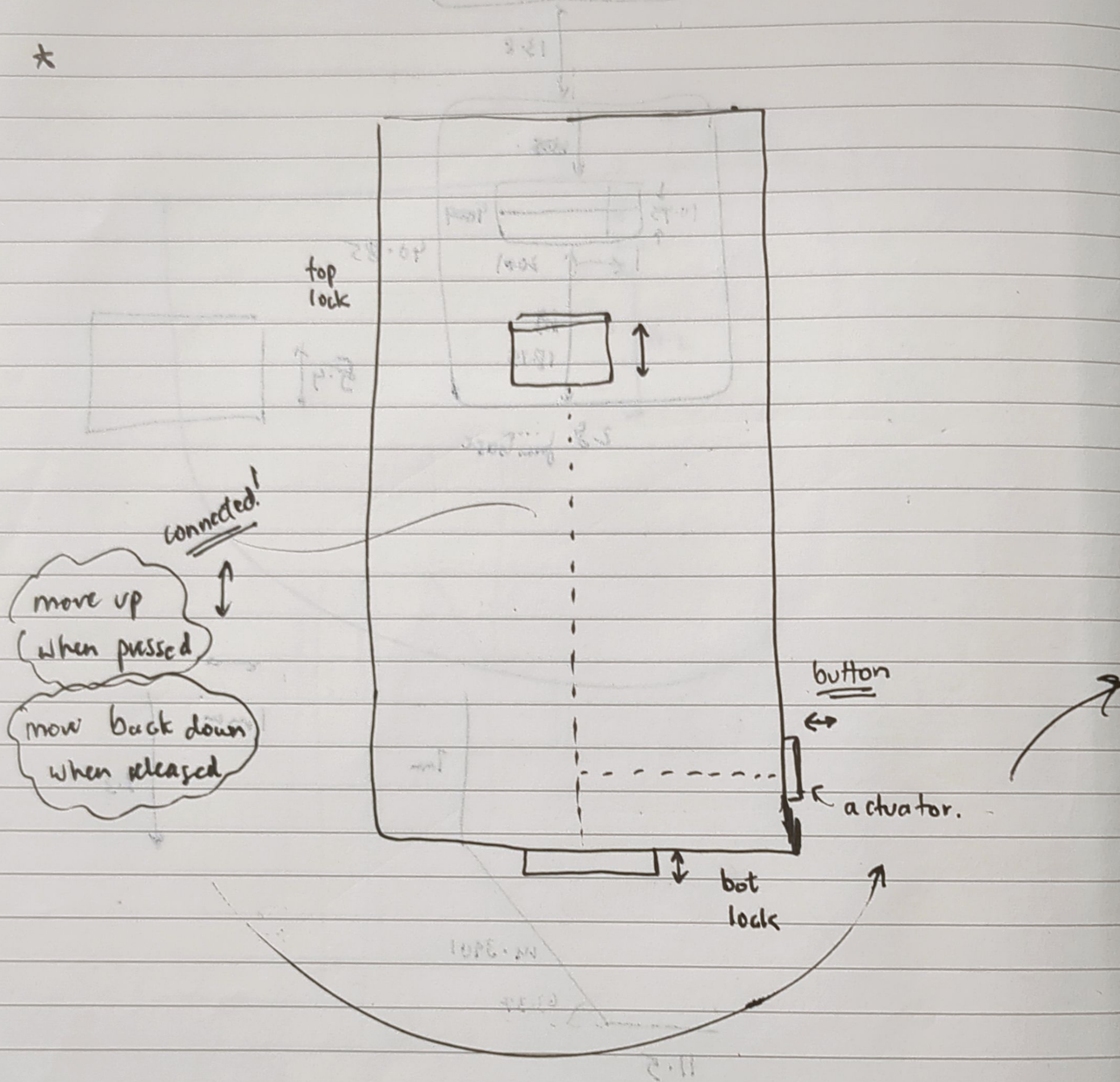
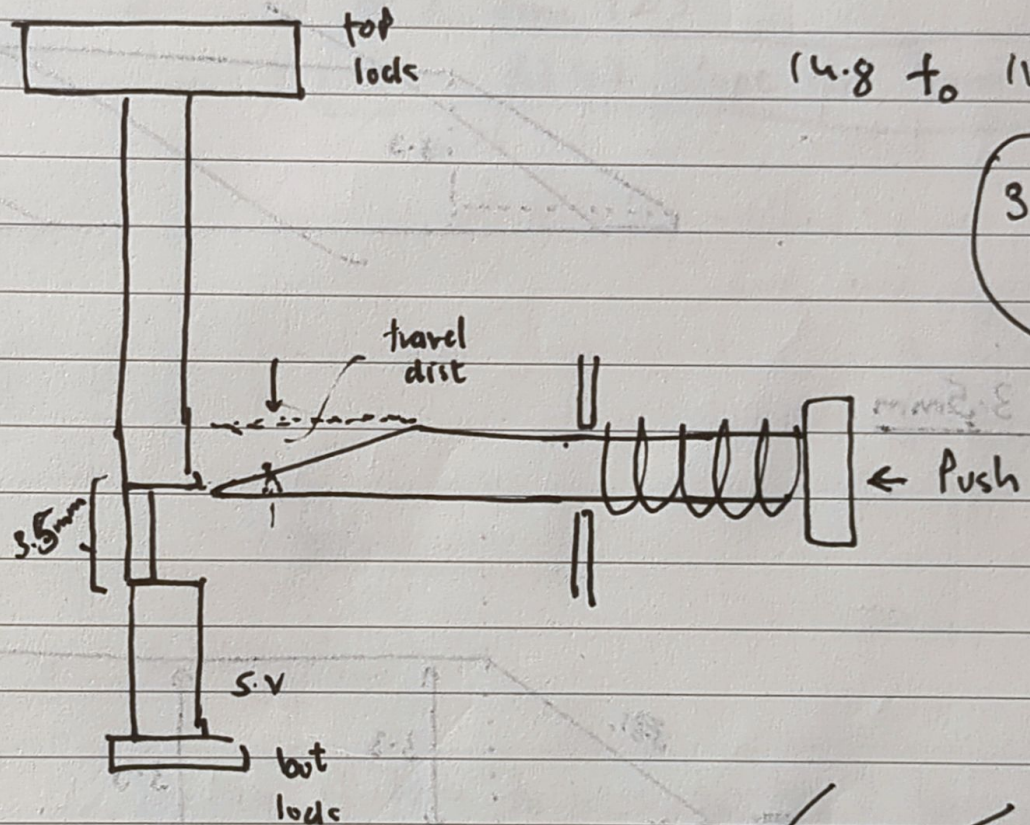
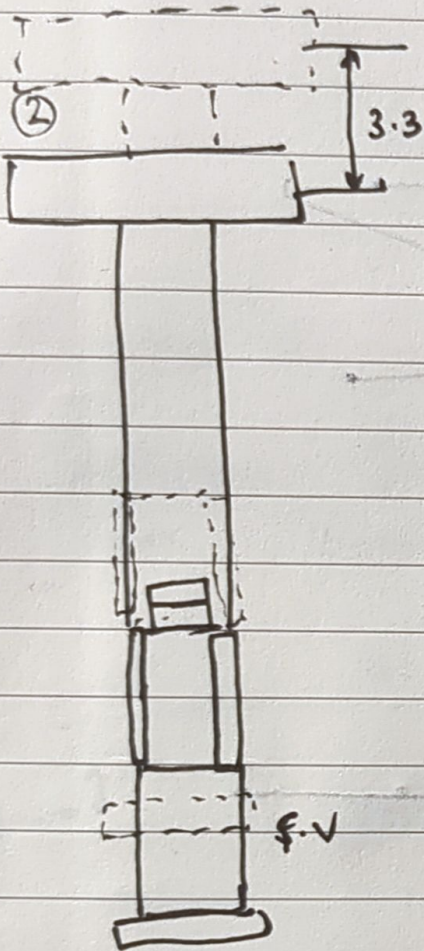
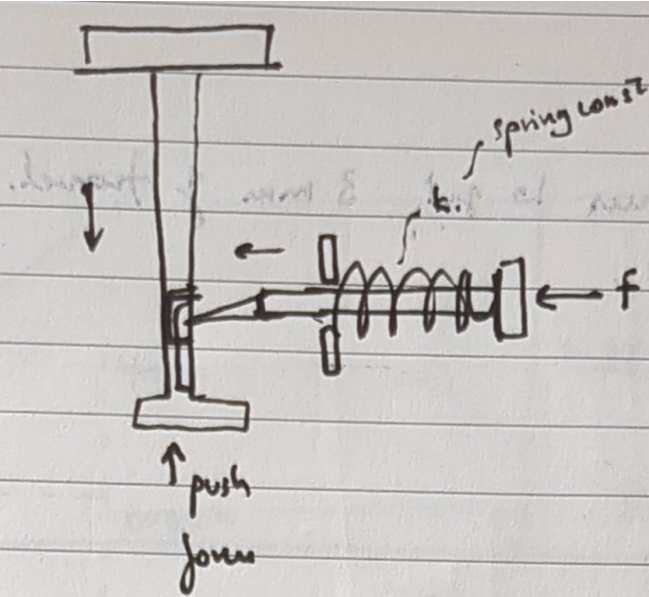


LOCKING MECHANISM

*



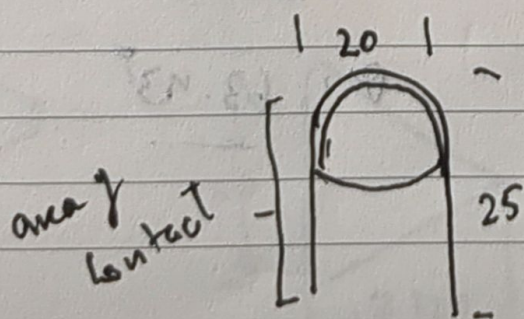
①



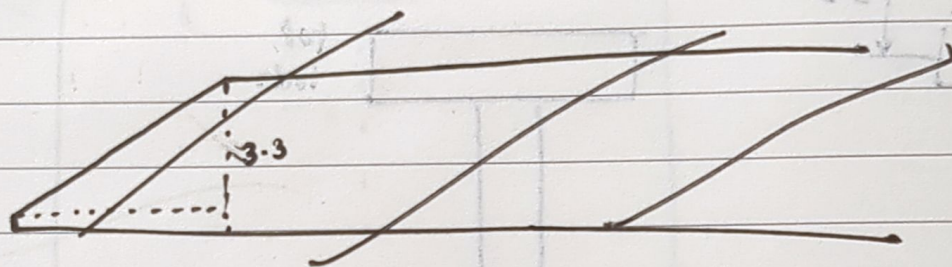
abrupt med smooth

* Factors / Needs

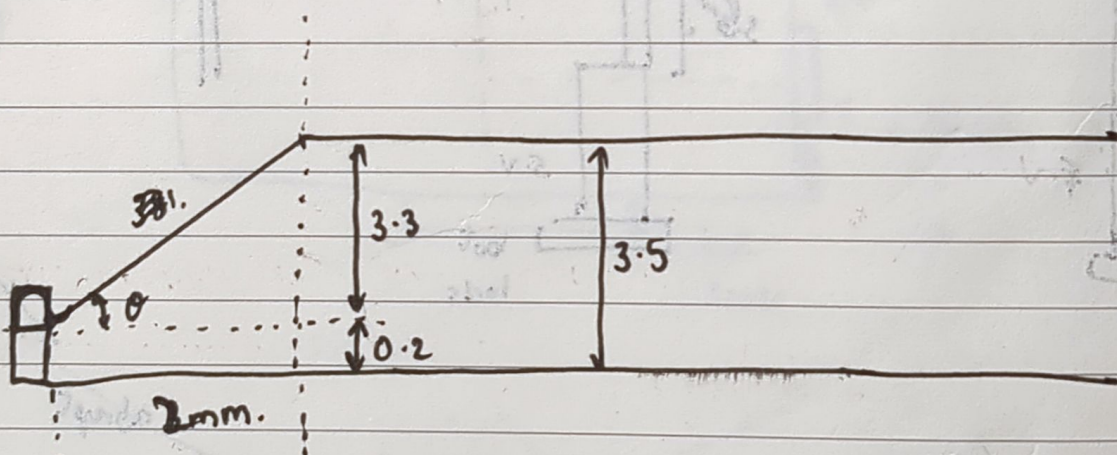
- Spring Const. k . (force / Dist) (F/x)
- abrupt, med, smooth lock. push (& length of plunger)
- 3.3 mm travel ↓
- Tip of plunger always engaged to a lock
- Thumb dimensions avg. for button.



- Button Remain flush
- longer Contact area
- Eat through thickness to get 3 mm of travel.
- * take support from inside.



* Min = 3.5mm.



$$\theta = 60$$

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\sin 60 = \frac{3.3}{\text{hyp.}}$$

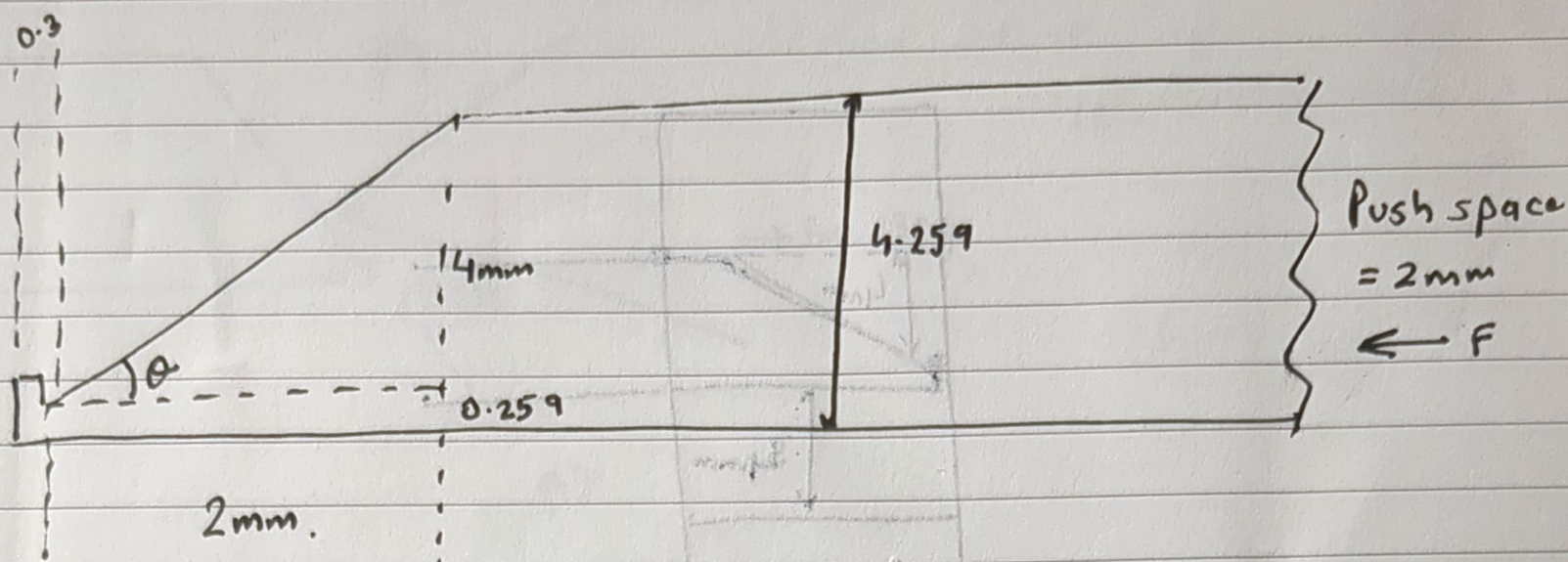
$$\text{hyp} = \frac{3.3}{\sin 60} = 4.61$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}, \quad \frac{4}{2}$$

$$\theta = \tan^{-1}(2)$$

$$\theta = 63.43^\circ$$

2



$$\tan \theta = \frac{4}{2}$$

$$\theta = \tan^{-1}(2)$$

$$\theta = 63.43^\circ \text{ slope for 4mm travel}$$

* Spring Rate

deflection: 2mm.

Force: 500gms 0.5kg : 5N

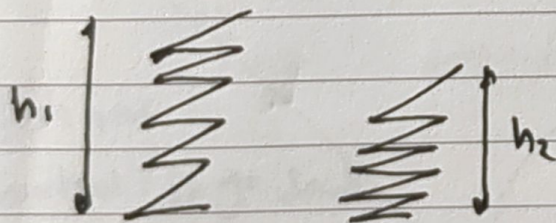
$$K: 5/2 \quad K: 2.5 \text{ N/mm}$$

3.5mm

$$7.821 \text{ lb/in.} = 0.13 \text{ kg/mm.}$$

*

130g of force to push button + stick resistance



n:

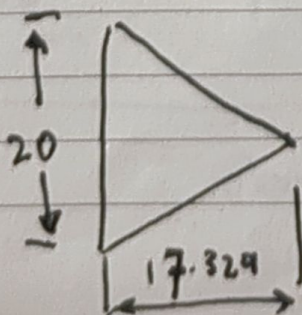
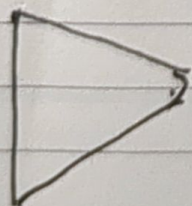
d: 0.026"

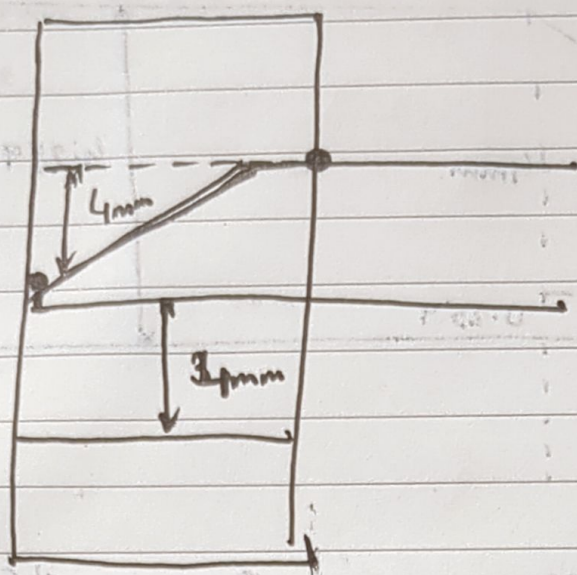
Solid length = h_{25} : 0.25"

Free length = h_f : 0.75"

0.5" compress.

= 12.7mm.





* Bring Button closer to boss.

* Bring button 0.3-0.5mm out

* Remove end lock.

* Make a Δ block on slide lock for sliding.

* Shells for slide lock.

* Stopper for button if needed (boss) from enclosure.

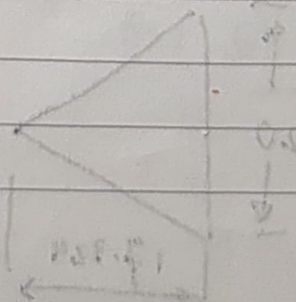
*

* Make collar separate

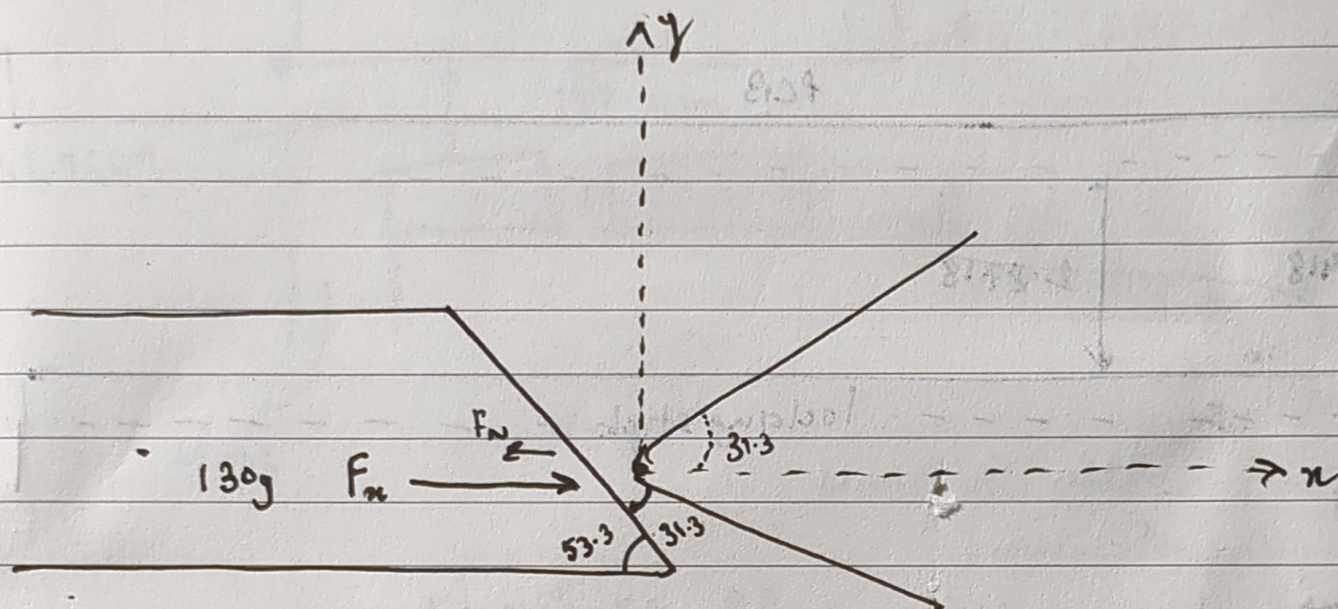
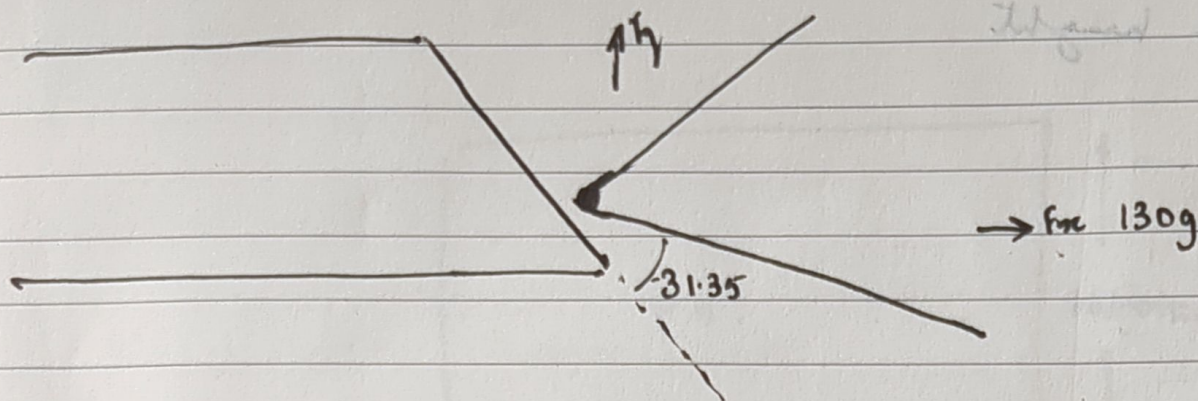
* Move shaft down. (lower than lid height.

* Put insert into collar.

* *



↑ need up travel



$$F_1 \neq F_2$$

$$F_n = F_2 = 130g$$

$$F_1 = F_{1y} \times f_{2y}$$

$$R_x = 0 \text{ or } 1.2N$$

$$R_y = F_n \sin(31.35)$$

$$F_1 =$$

Push here
Contact (to go down)

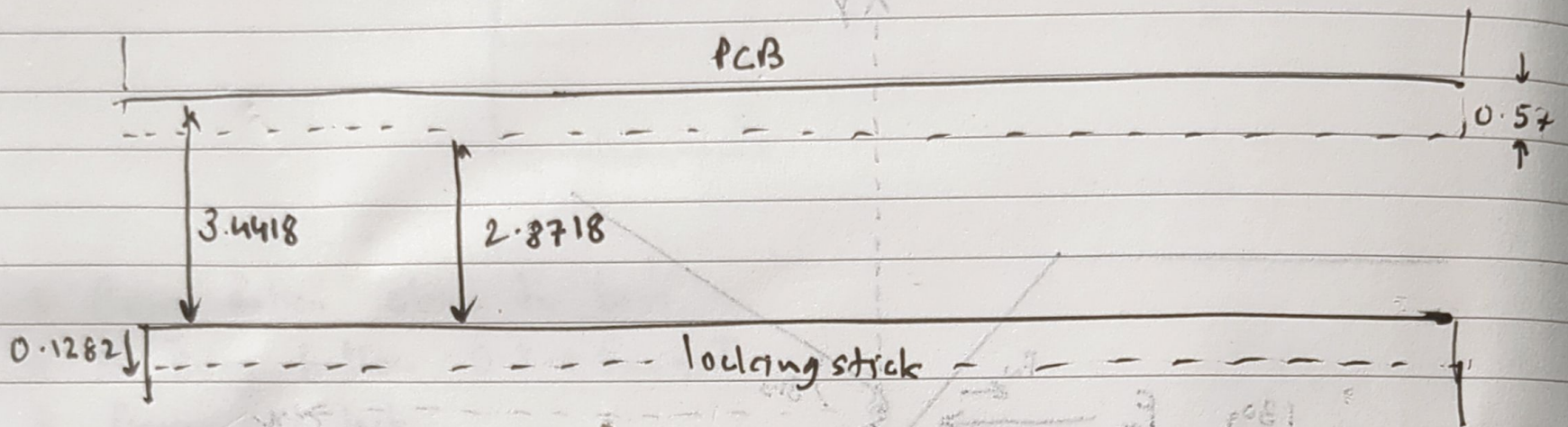
Push here
(Contact)
to go up

↑ To go up
— Neutral Axis.
↓

derive using from Axis coordinate steps.

- * Make Cover as thin Acrylic
- * Recess shelves to lid height
- * Make stand offs.
- *

Current Model



Remove Bosses
Flat Side

* B.O. 4.04 4-40 quarter 1/4

Top 6-32 5/16 Enclosure S-S-18-8.

* 4-40 90°/4 Bottom lid, Recess clearance 0.1mm

* Add Rib  on stick

* Blade Connector Recess for outer pins

