

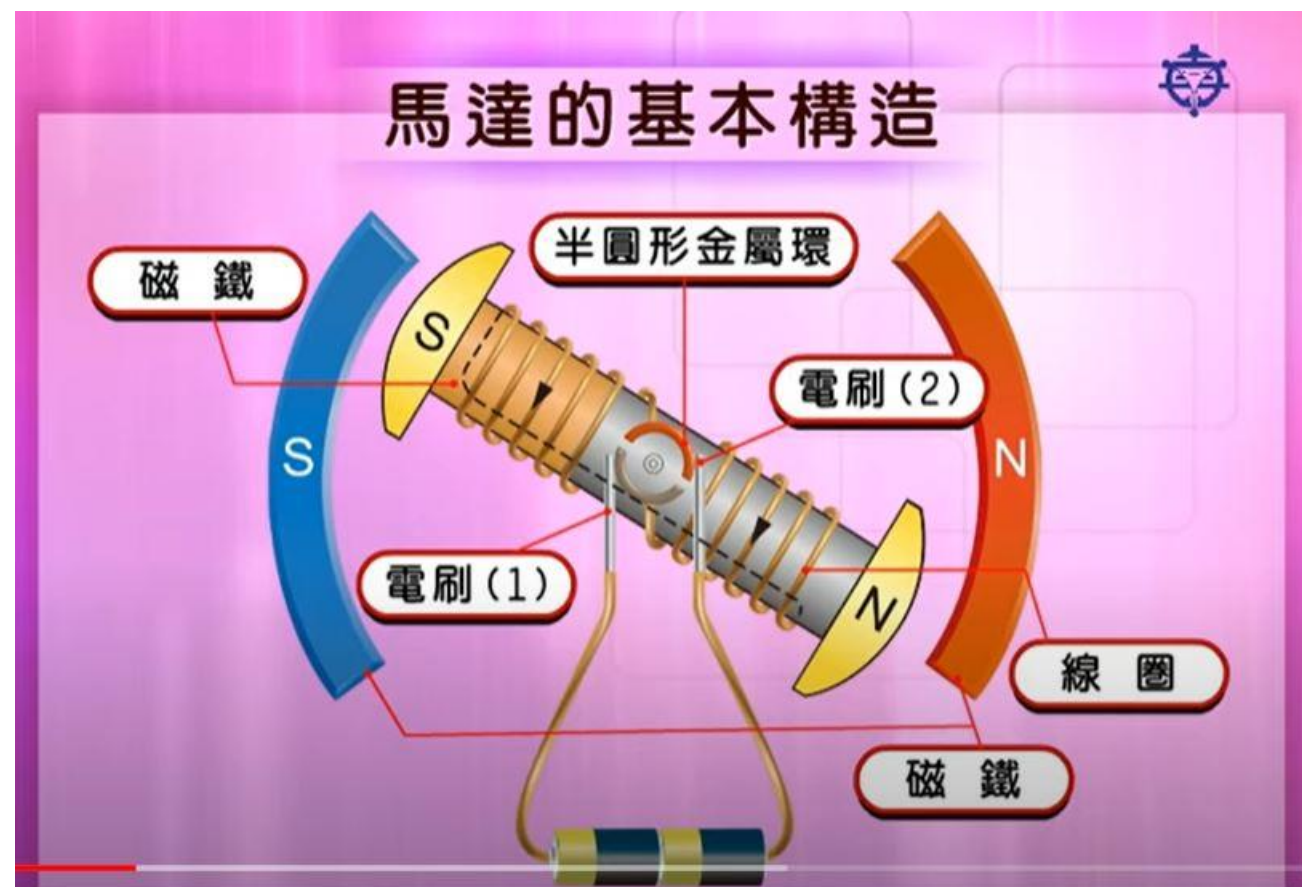
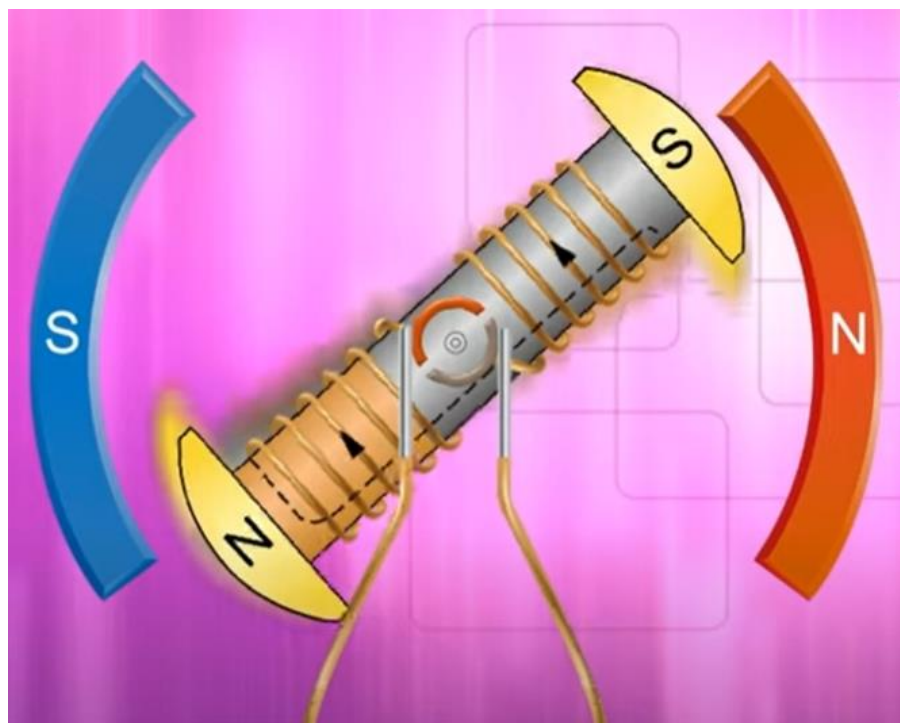


枋寮高中能源動力理念學校

搨風機器人

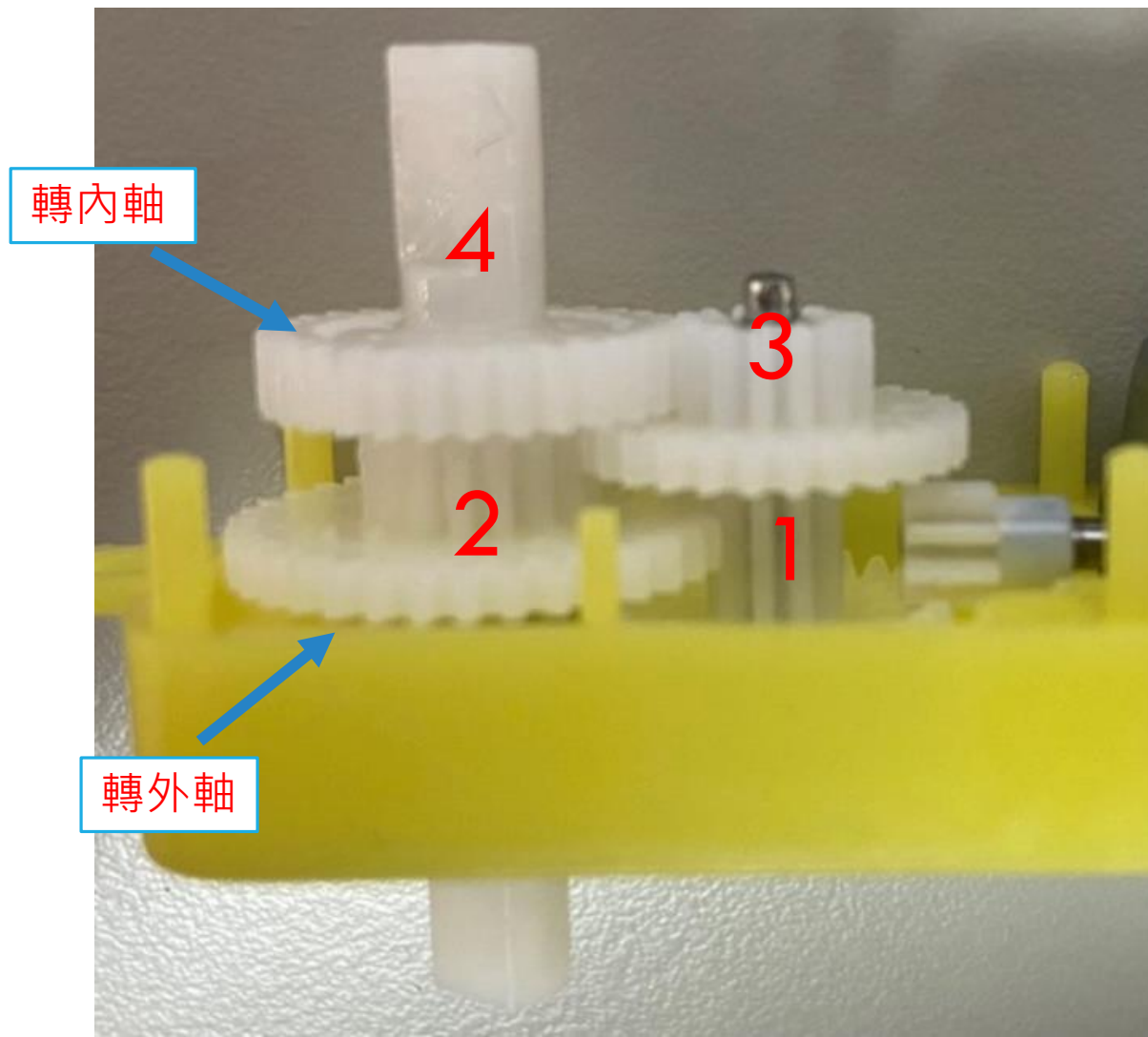
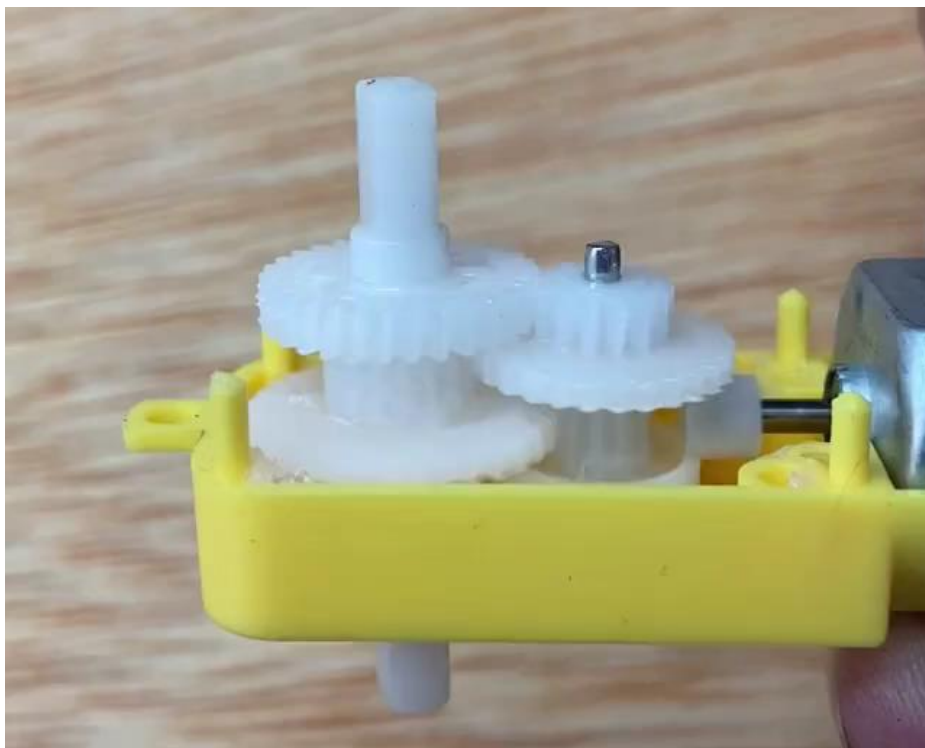
直流馬達工作原理

<https://www.youtube.com/watch?v=L9MOA705y0I>



我們的馬達 - 變速

- 小齒轉大齒(如小輪轉大輪)
轉速下降，扭轉力量提升
- 圖中有1-2-3-4級減速齒輪
※其中1級減速為90度轉折



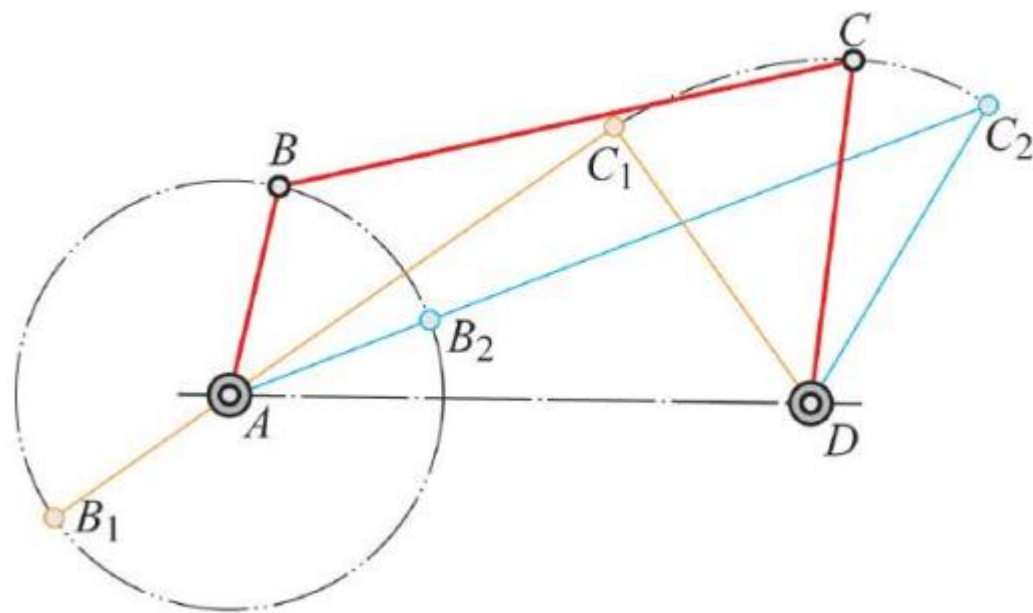
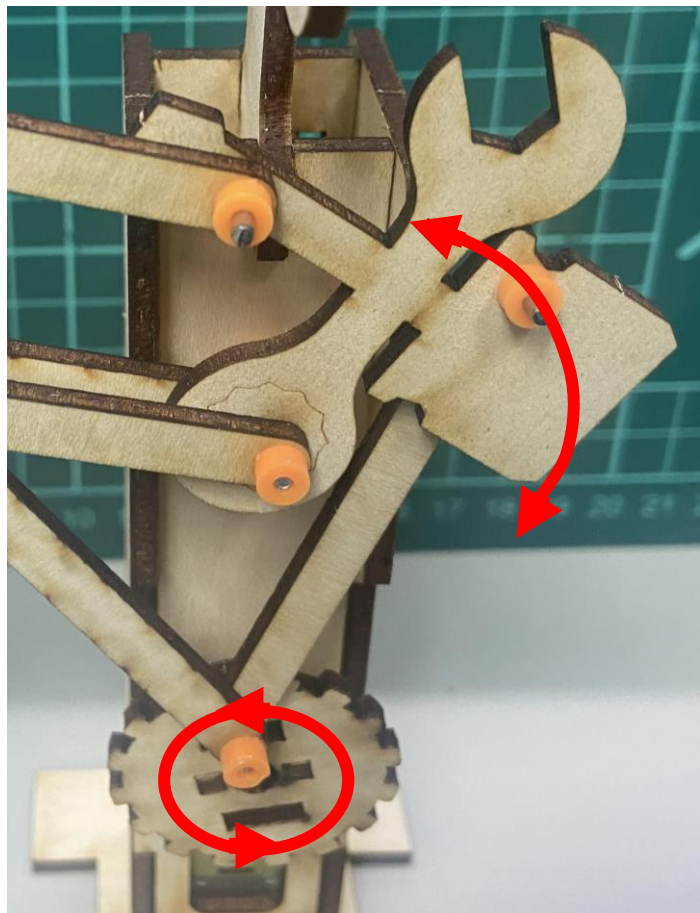
四連桿機構

四連桿機構中，按照連架桿是否可以做整周轉動，
可以將其分為三種基本形式，
即曲柄搖桿機構，雙曲柄機構和雙搖桿機構。

四連桿機構



搨風機器人連桿結構

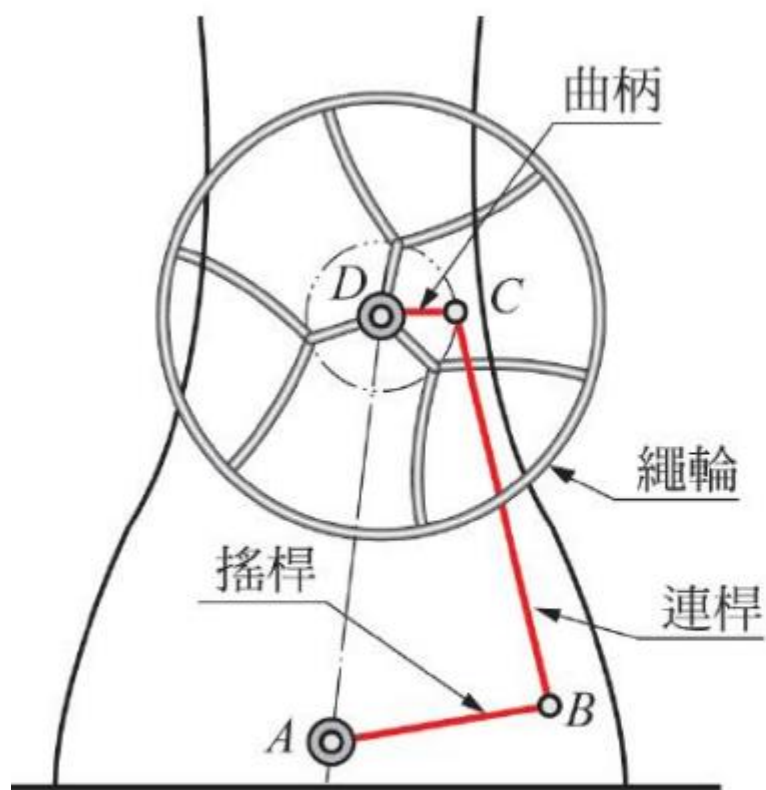


搨風機器人

連桿連續慢動作



四連桿相關應用 1



(a) 示意圖



(b) 實體圖

四連桿相關應用 2

火車機車頭：

紅色 B C 桿為火車機車頭**平行連桿**，

A B、C D 為曲柄。

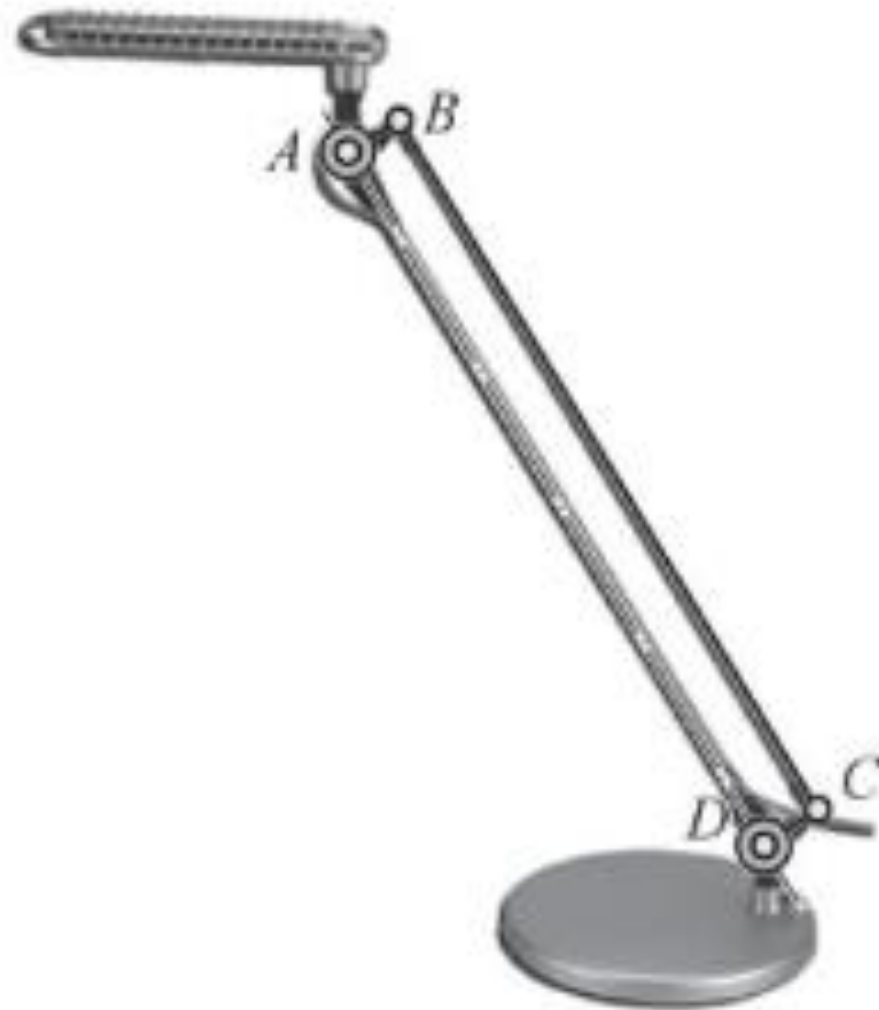
當 A B 旋轉時即可同時驅動數輪，
增加拖曳動力。



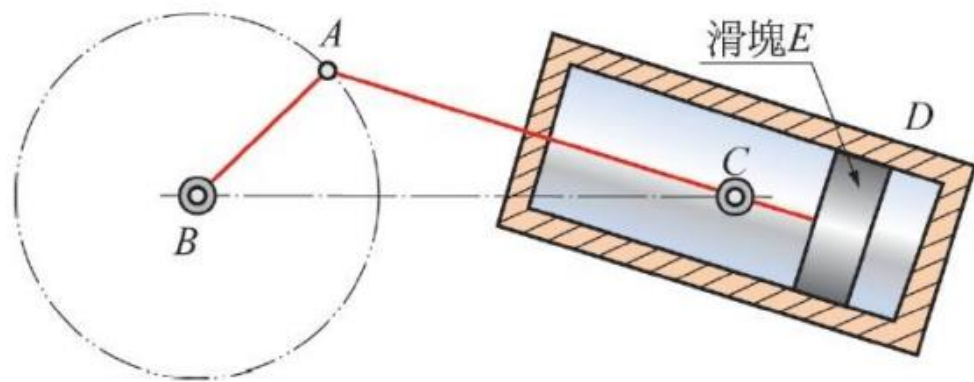
四連桿相關應用 3

如右圖所示，

此種檯燈之支架極為平行相等曲柄機構，
要調整檯燈之高度可以用此結構來達成。

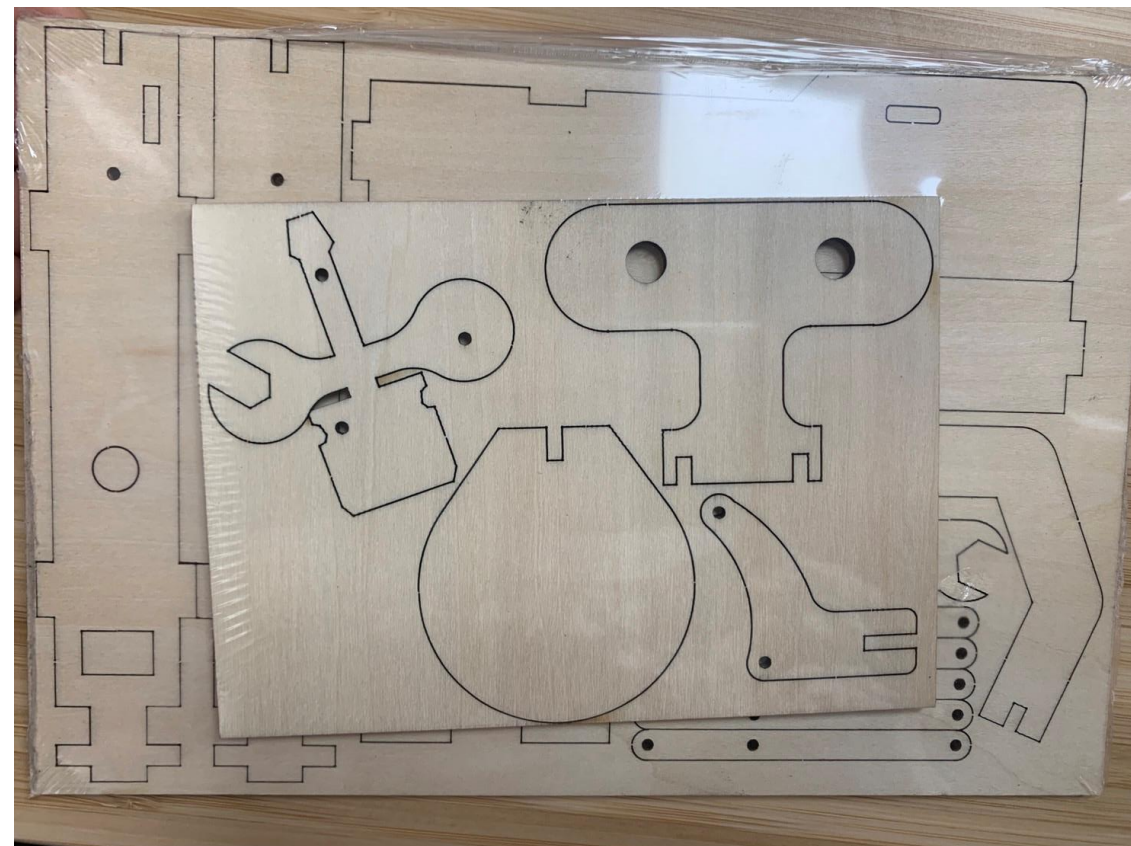


四連桿相關應用 4

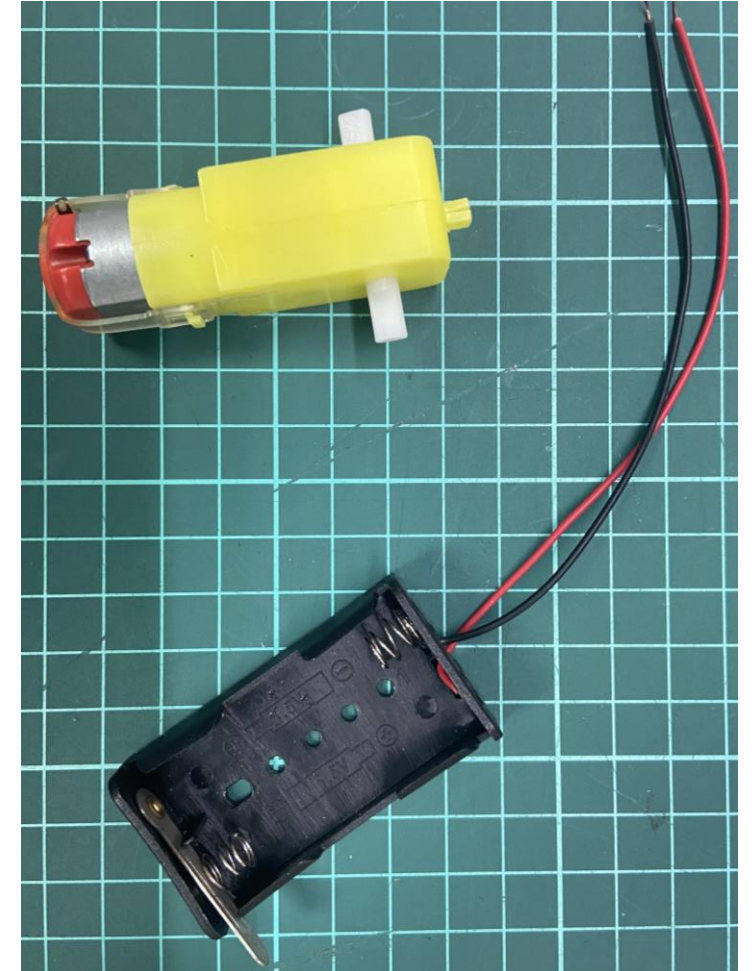
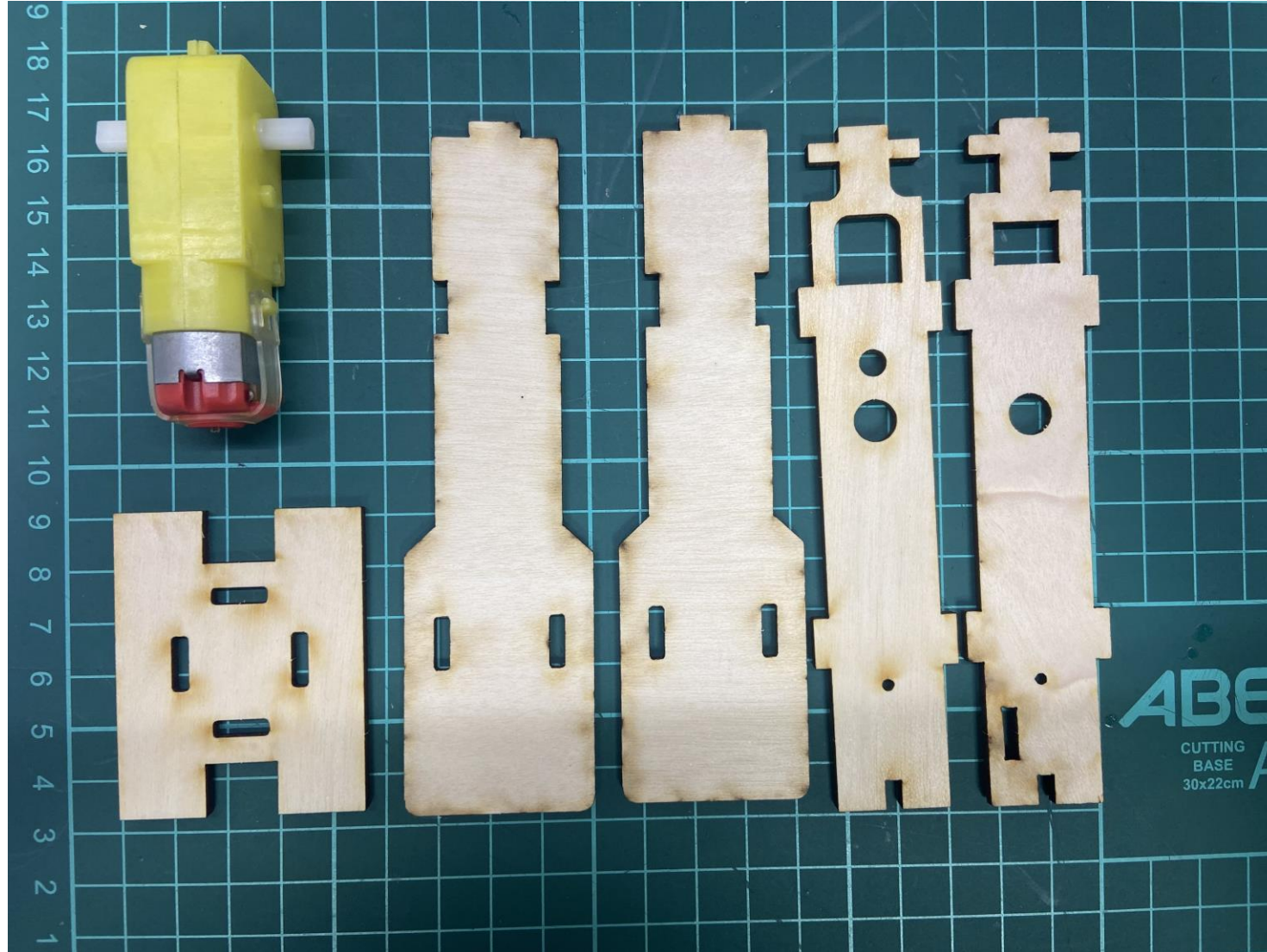


材料清點

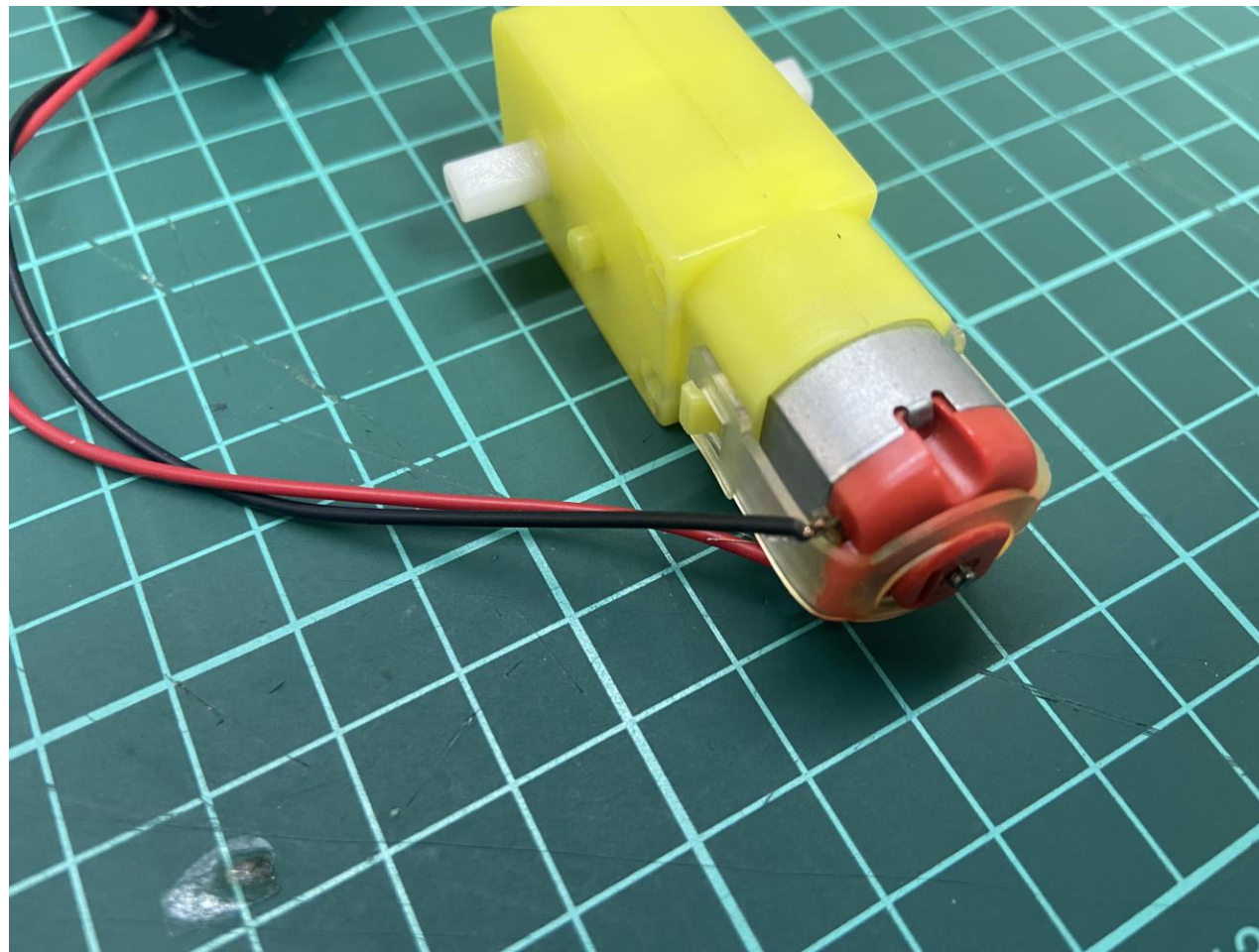
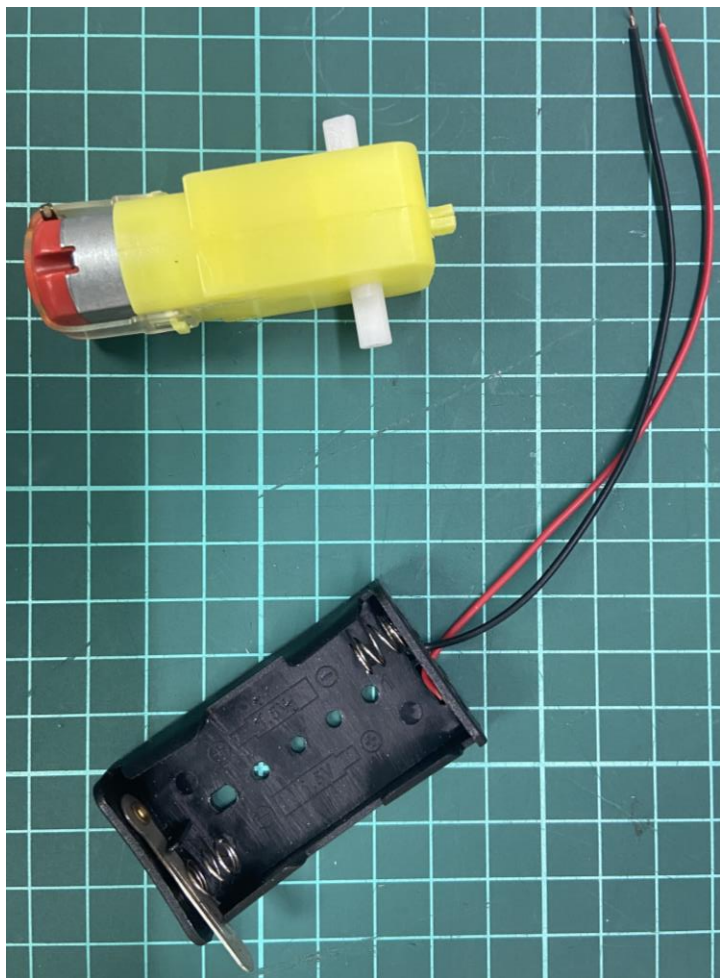
- 雷射木板 2 片
- 電池盒 1 個
- TT馬達 1 顆
- 50mm鋼軸 1 根
- 橘色軸套 10 + 1 顆
- 鉚釘 6 + 1 根



本體組裝

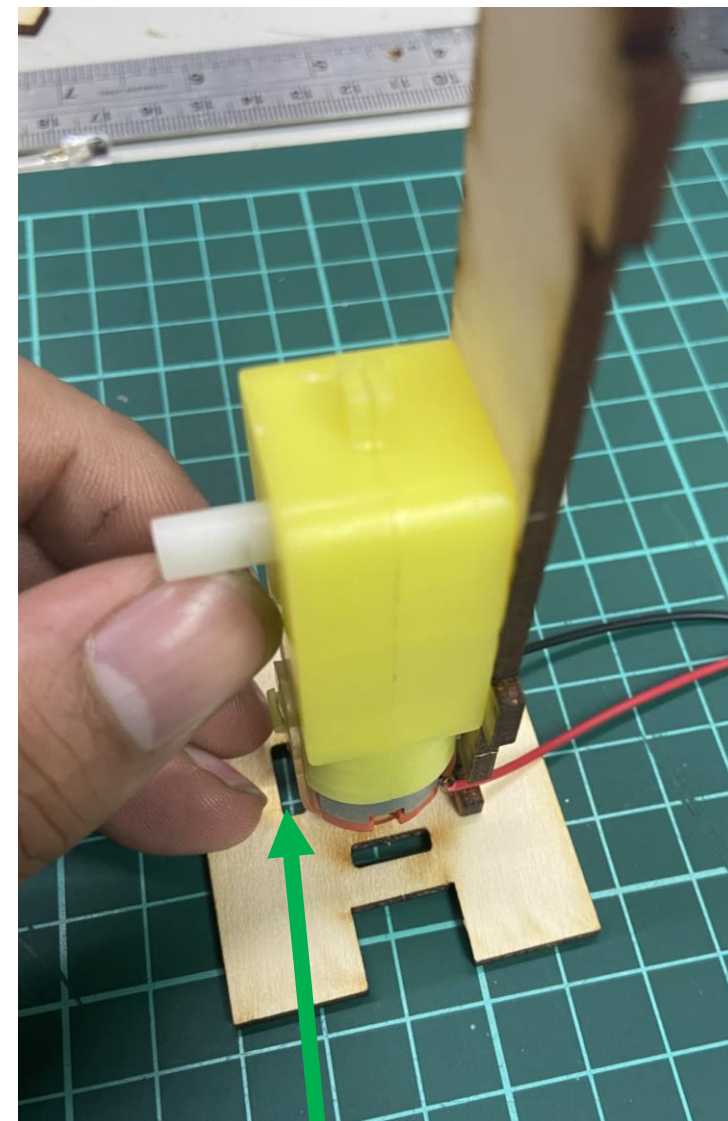
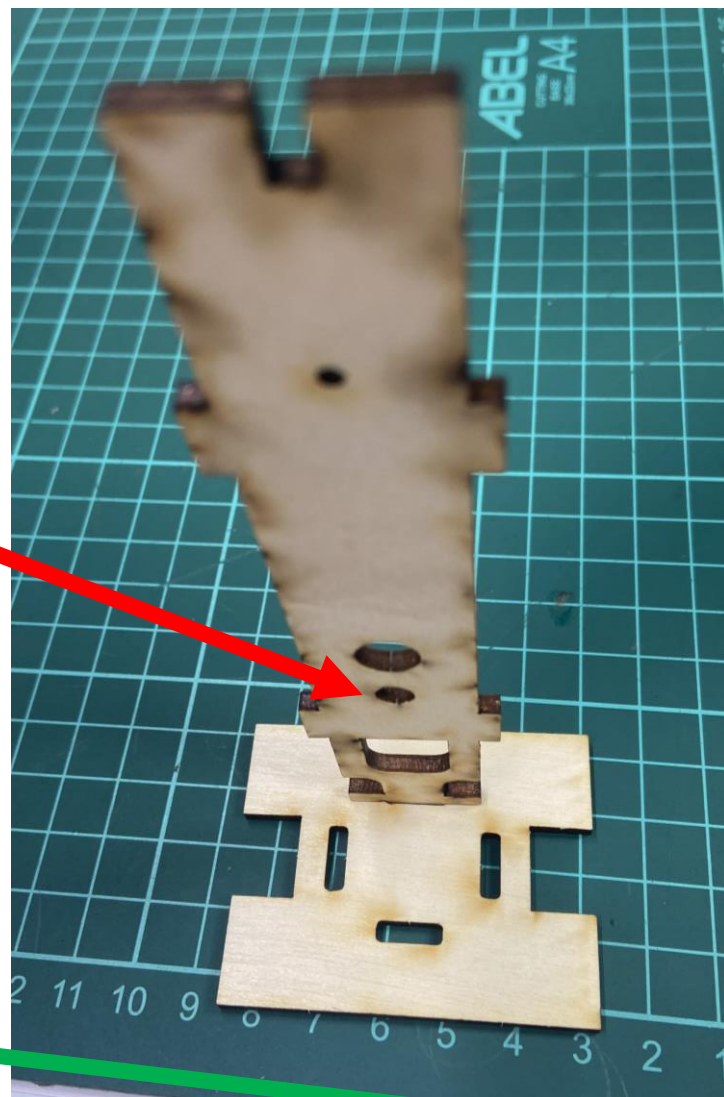
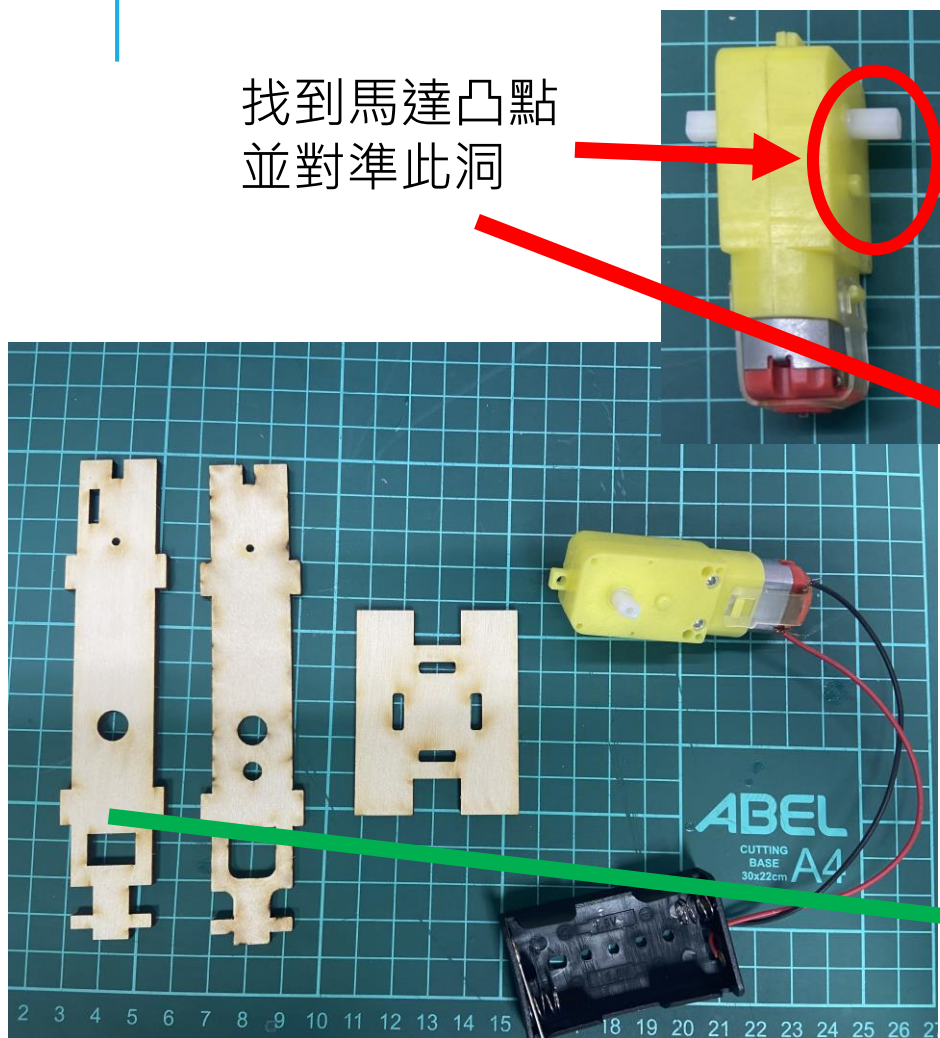


本體組裝 - 馬達接電池盒並測試



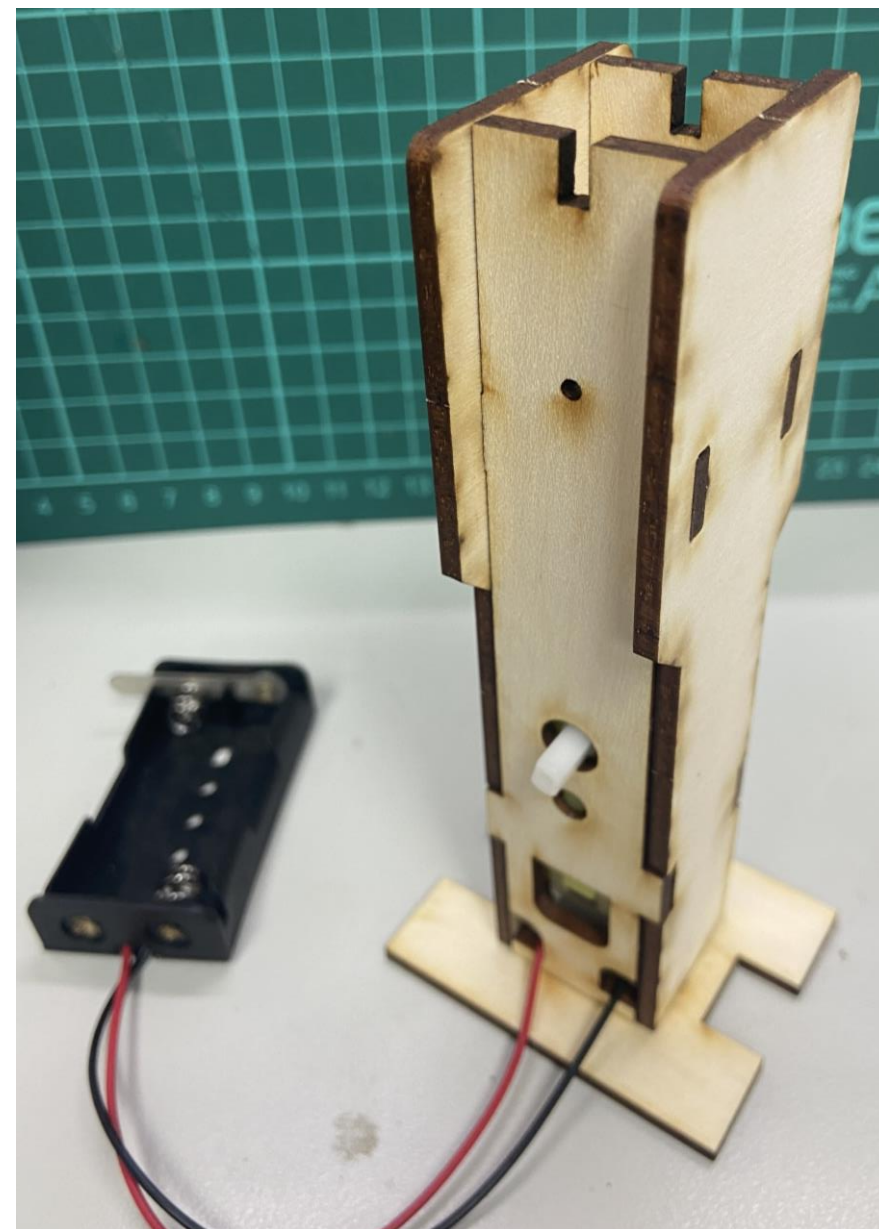
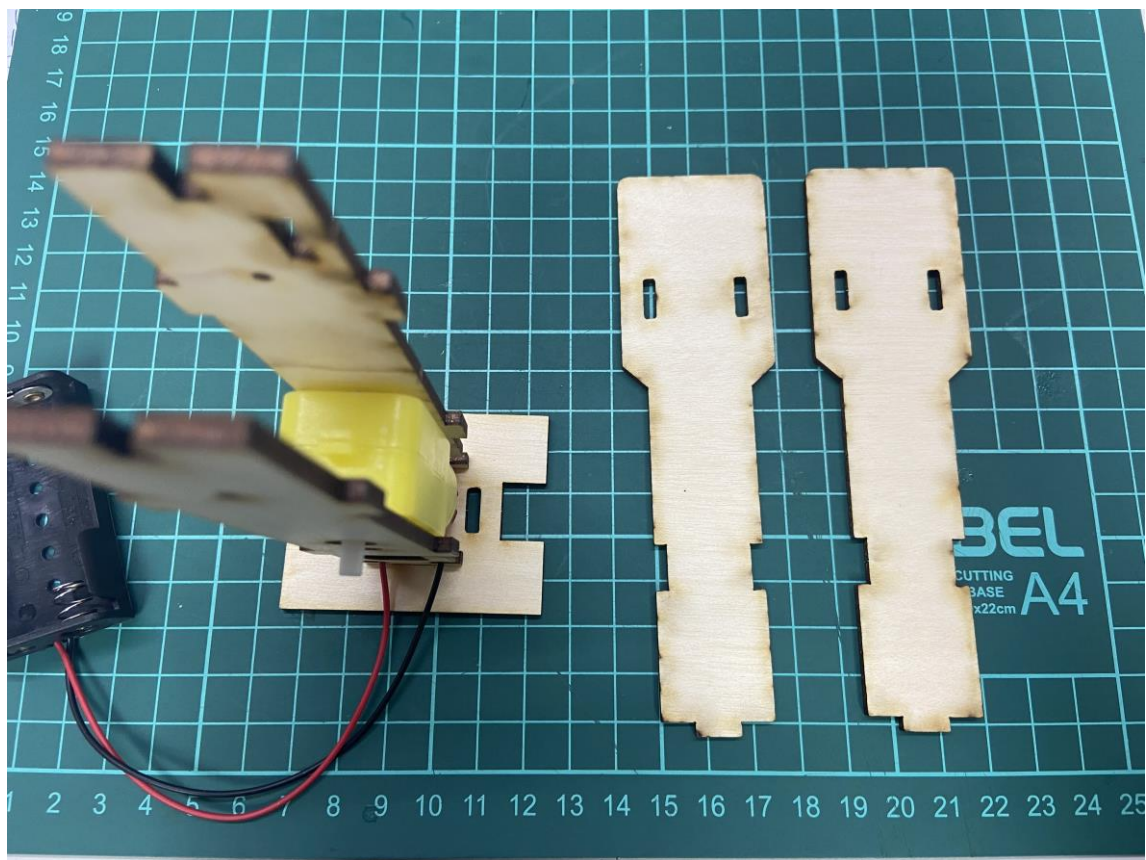
本體組裝

找到馬達凸點
並對準此洞



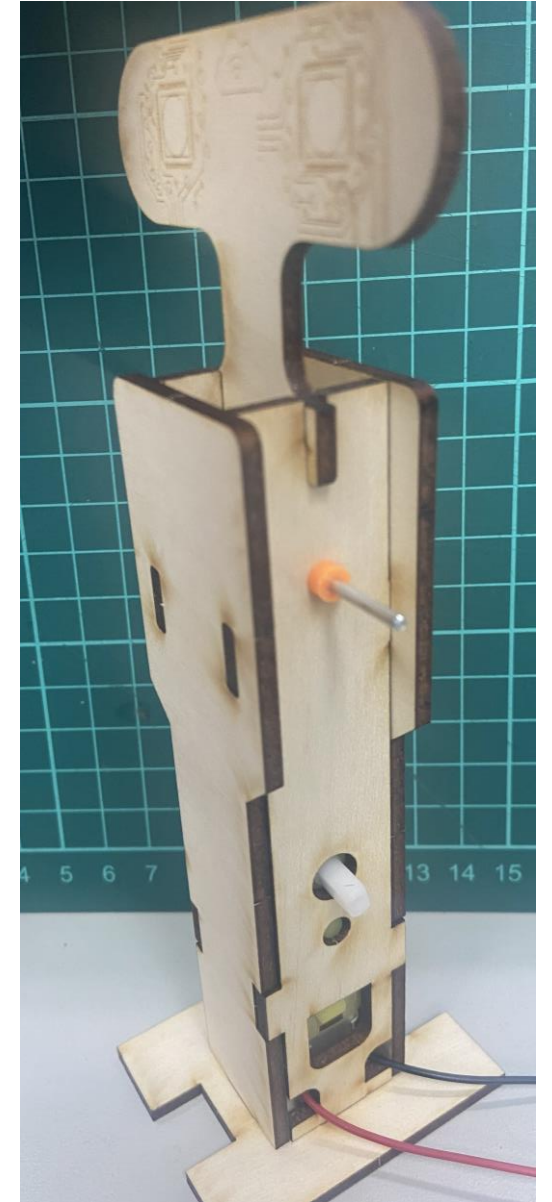
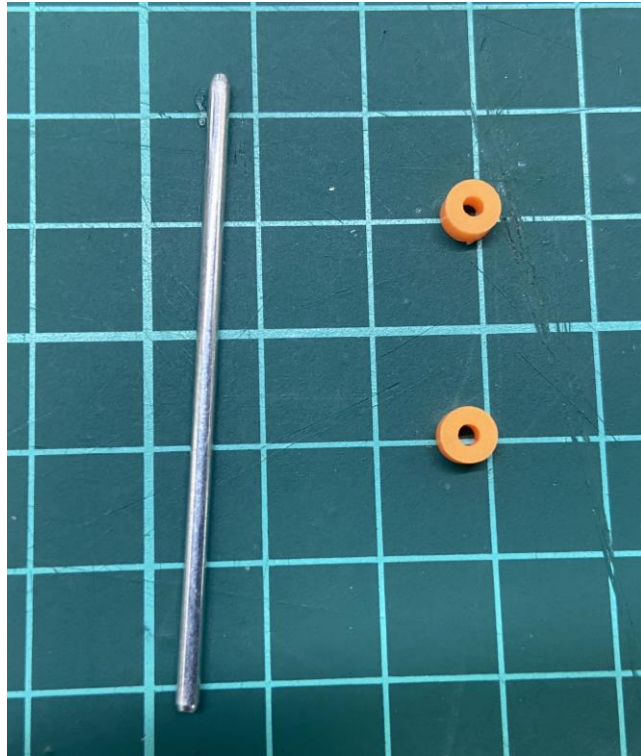
安裝好後再蓋另一片

本體組裝

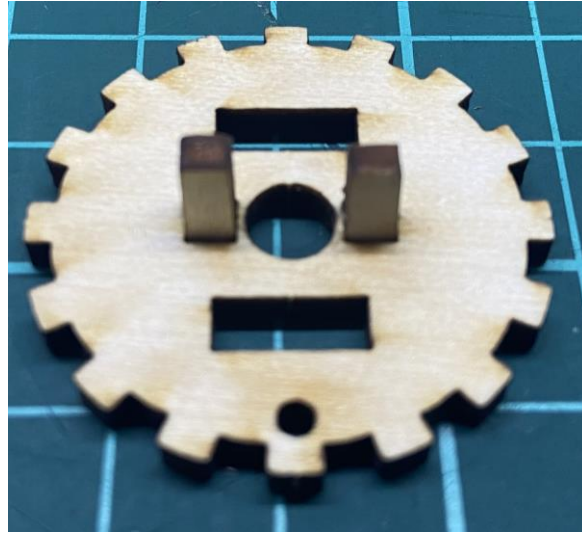
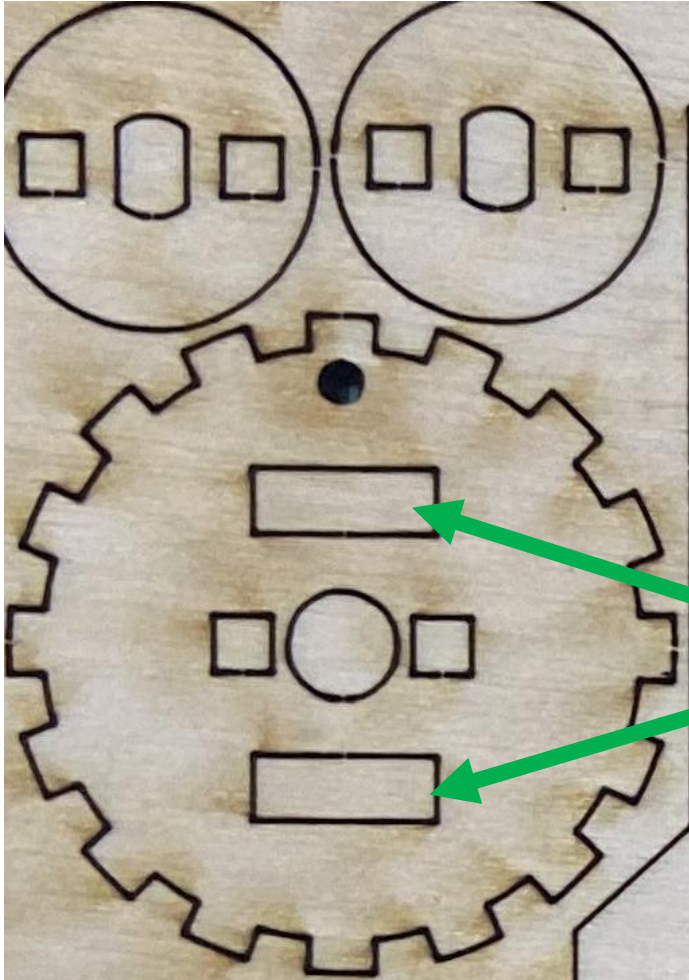


本體組裝

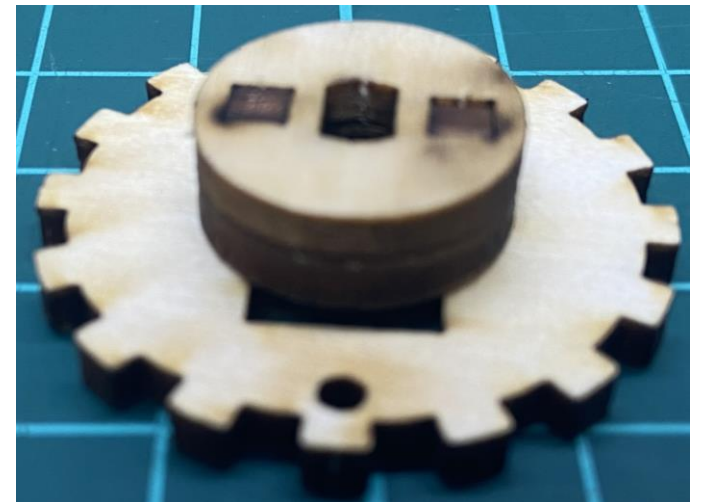
插手的洞這邊鋼軸只要凸出一點點



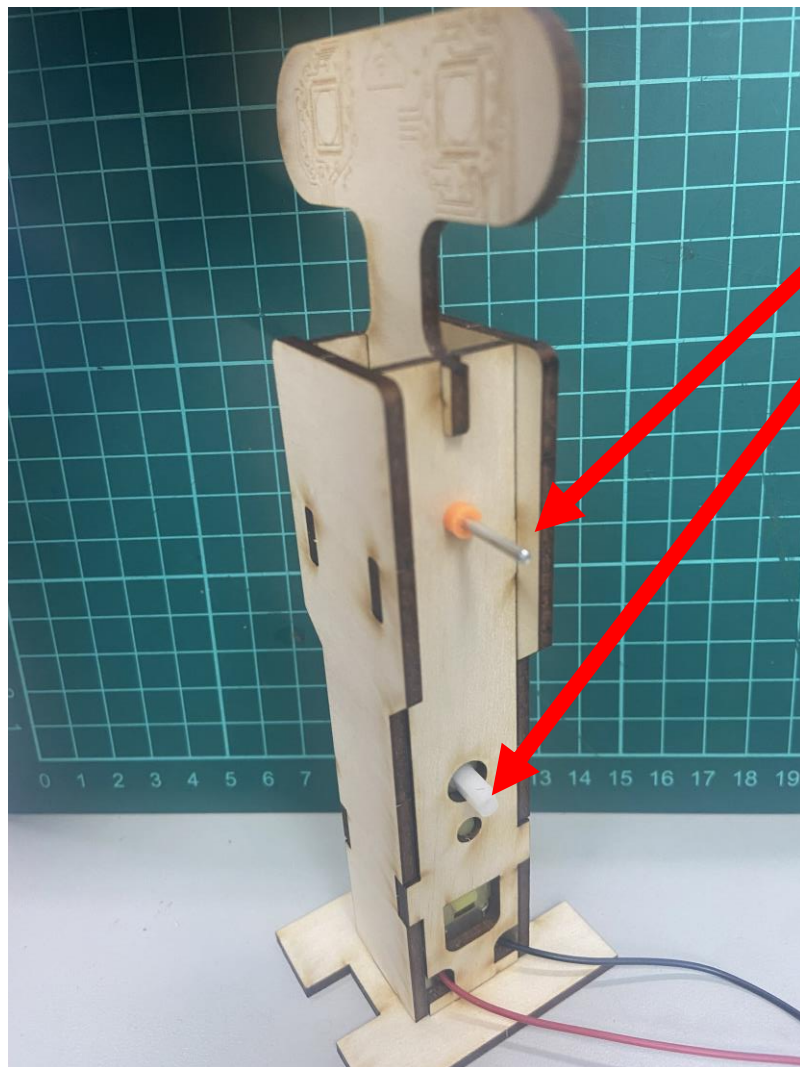
本體組裝-齒輪零件



要用的，不能丟掉!!!
要用的，不能丟掉!!!
要用的，不能丟掉!!!

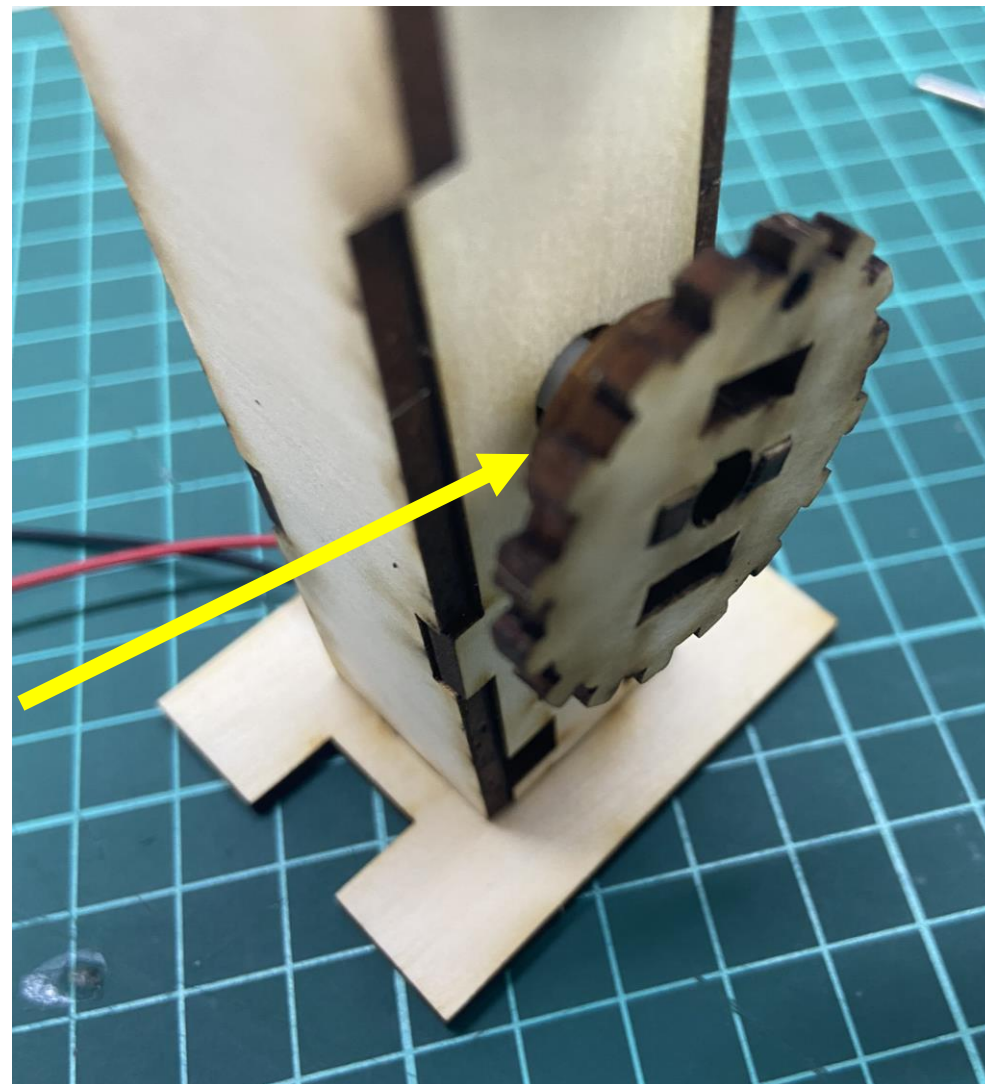


本體組裝-齒輪安裝



插手另一端：
→有凸出長鋼軸
→有兩個馬達孔

插入齒輪，插入
一層木片深即可

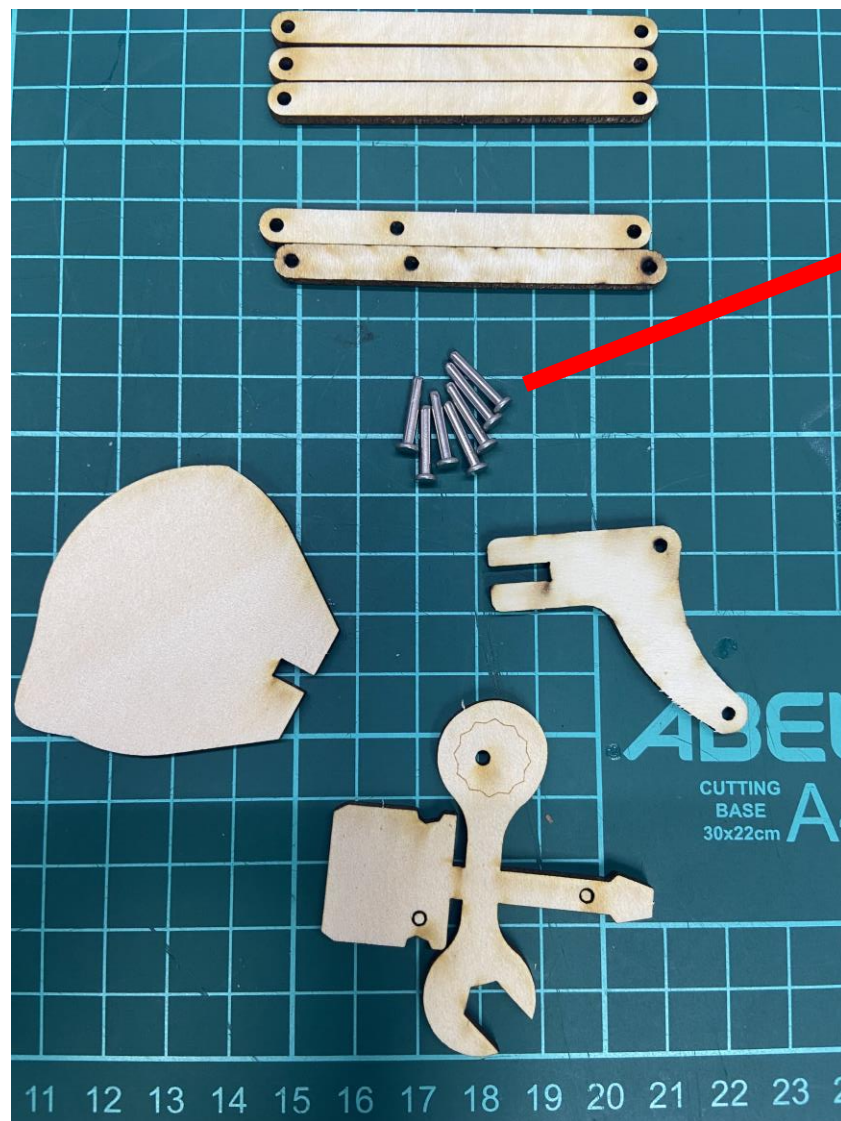


關節手部組裝

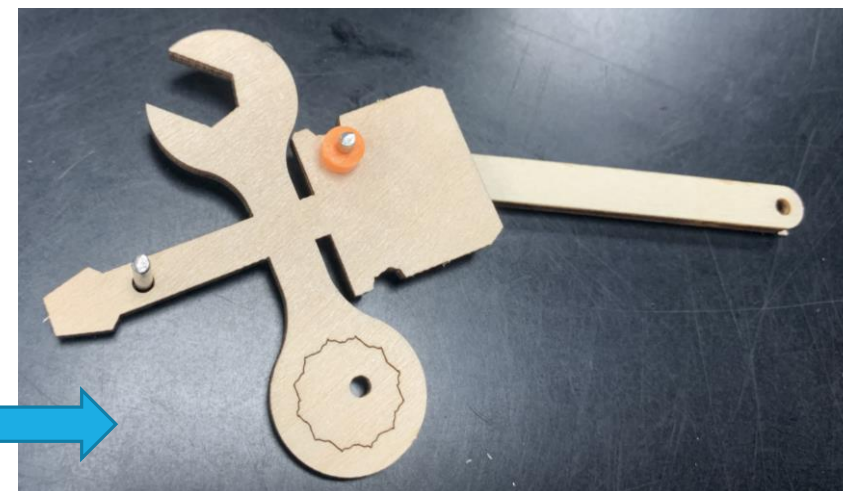
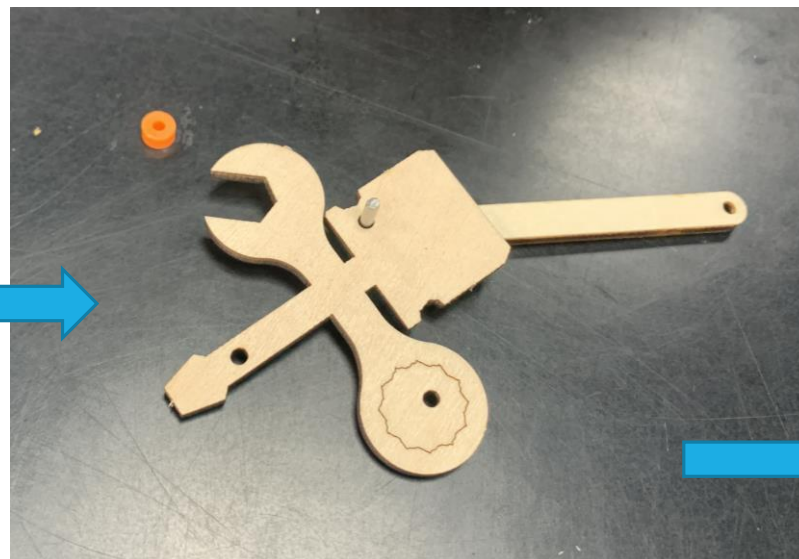
→橘色軸套 9+1顆

→鉚釘 6+1根
(+1為備用)

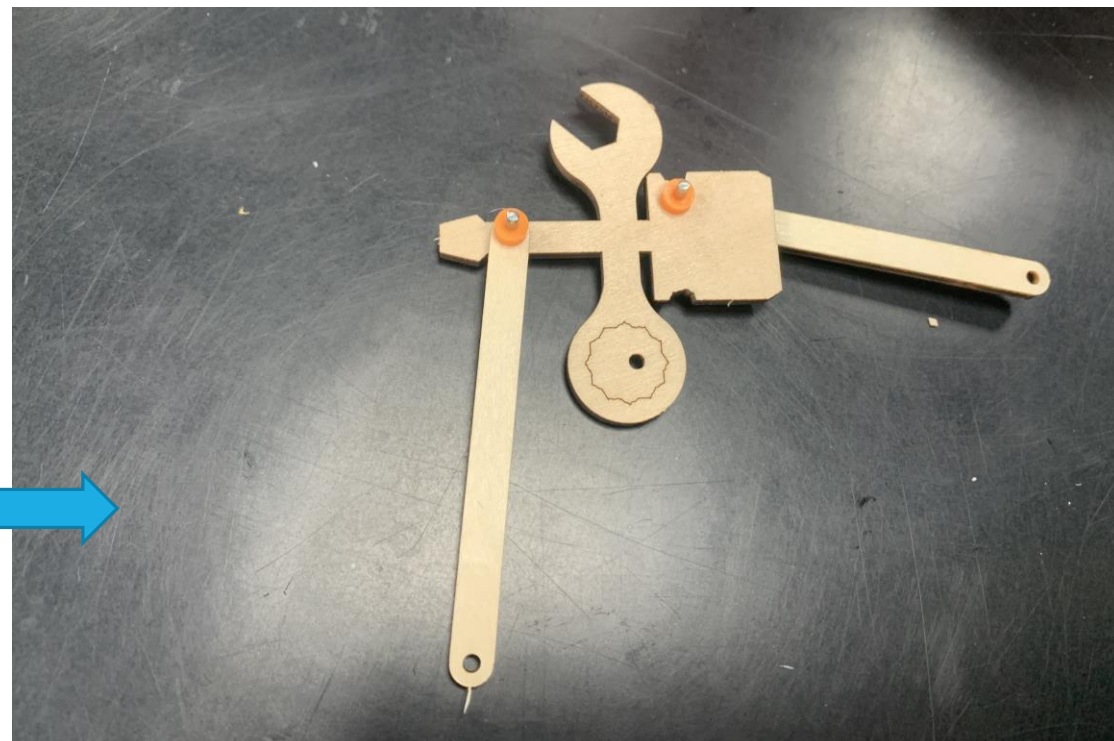
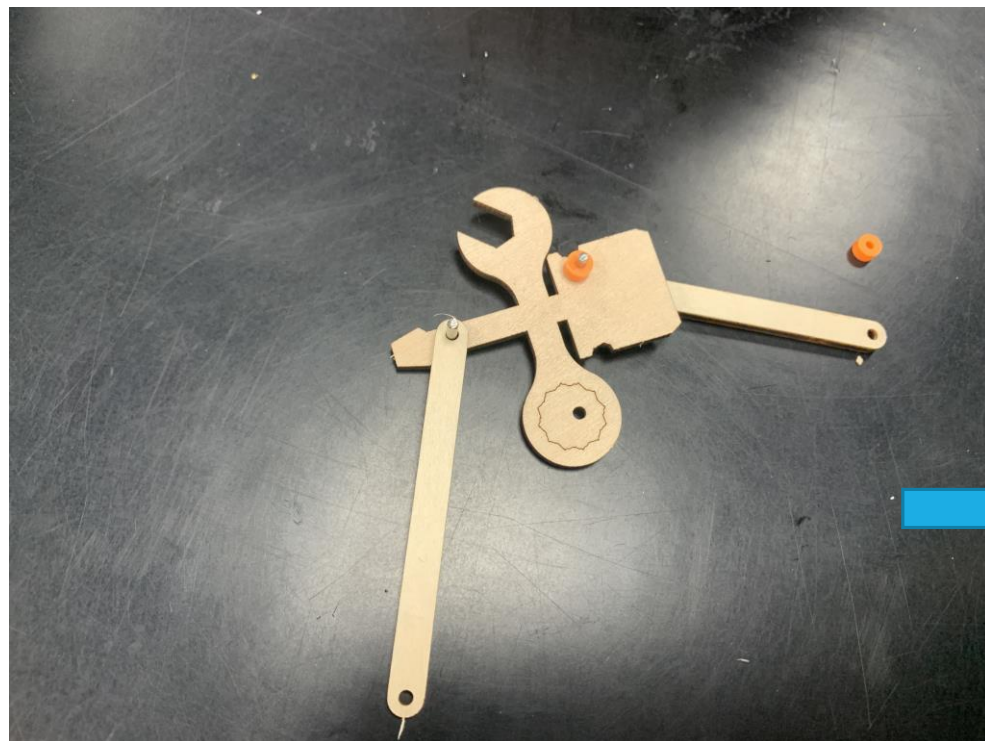
鉚釘從後方穿入後套上軸套



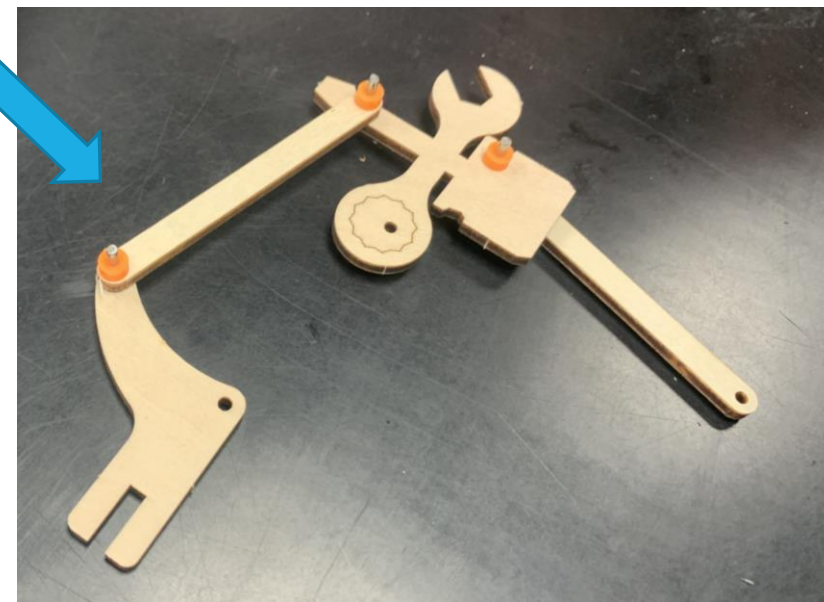
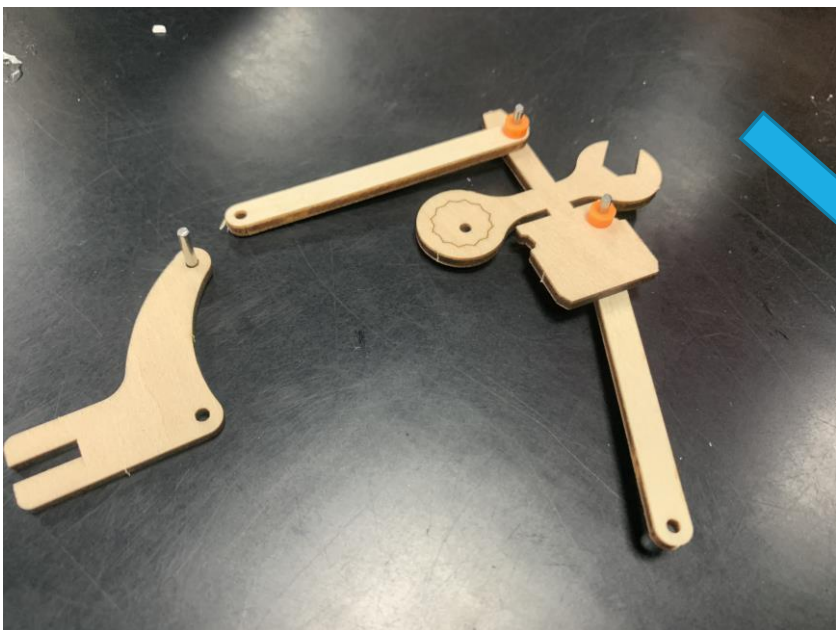
關節手部組裝細部分解 1



關節手部組裝細部分解 2



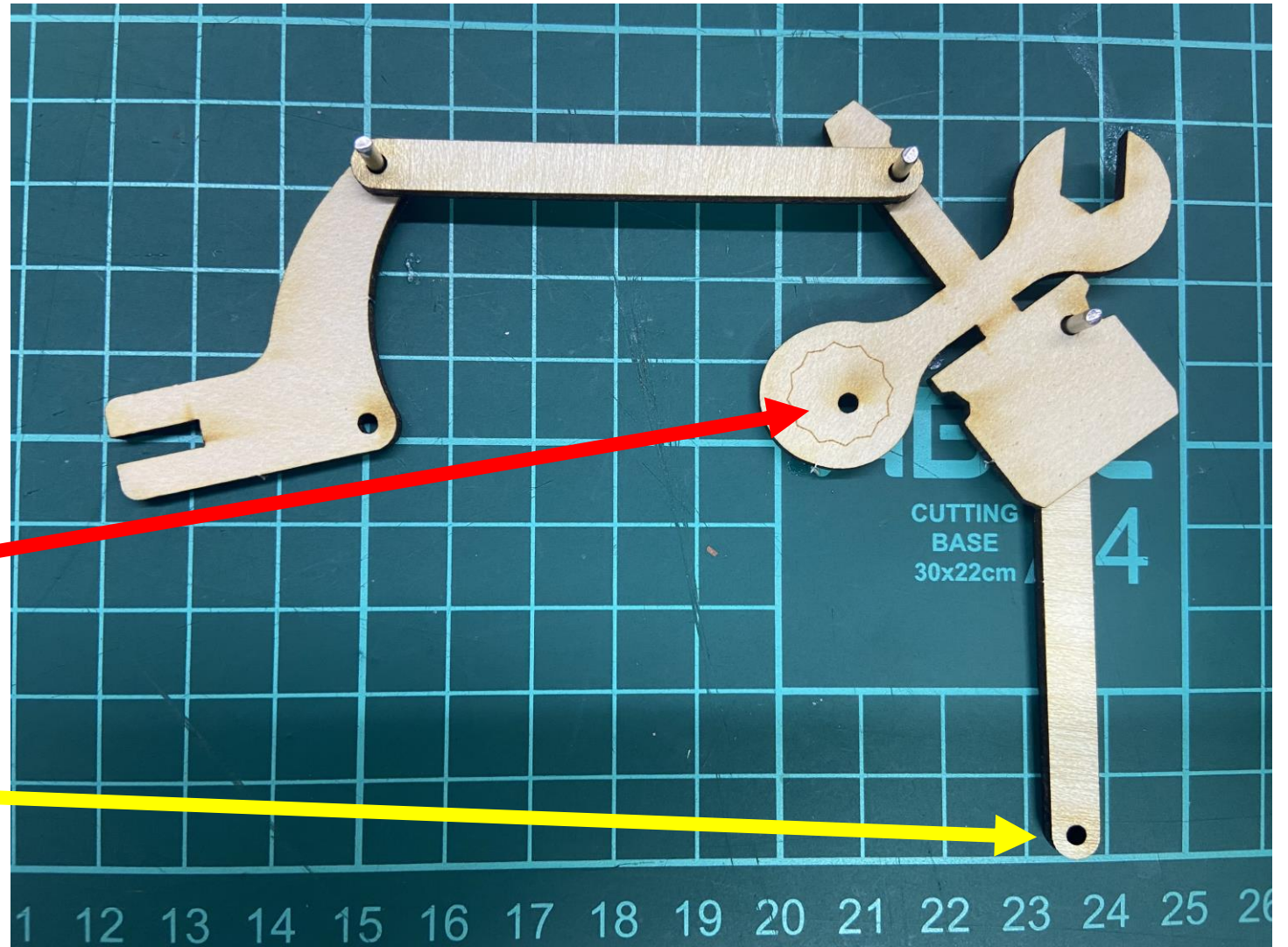
關節手部組裝細部分解 3



手部關節 - 孔洞分析

此**扳手洞**等一下要裝在**鋼軸**上

此孔等一下要裝在**齒輪**上

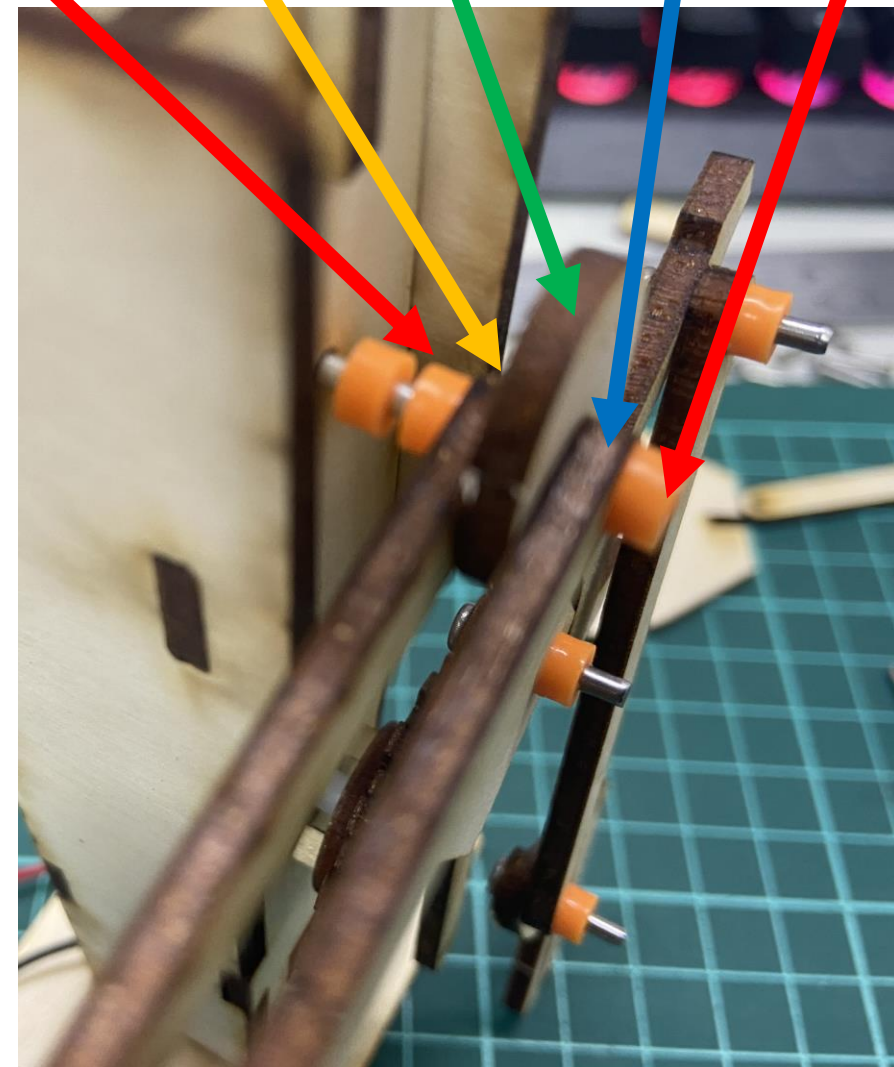
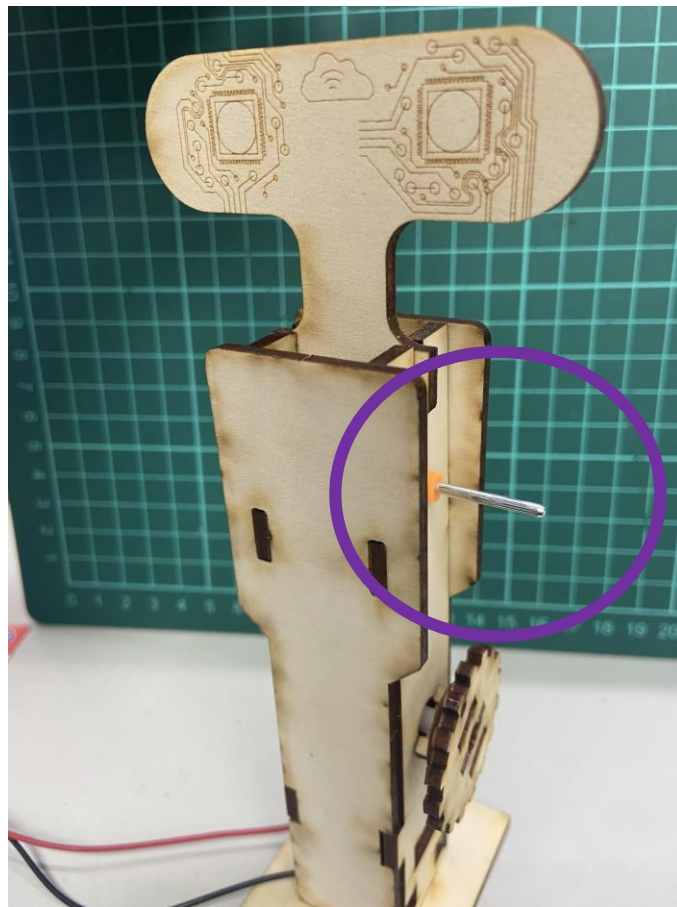
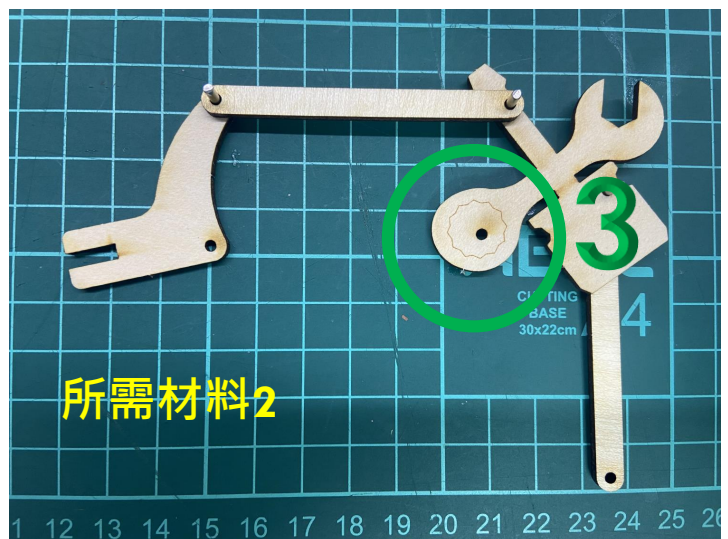
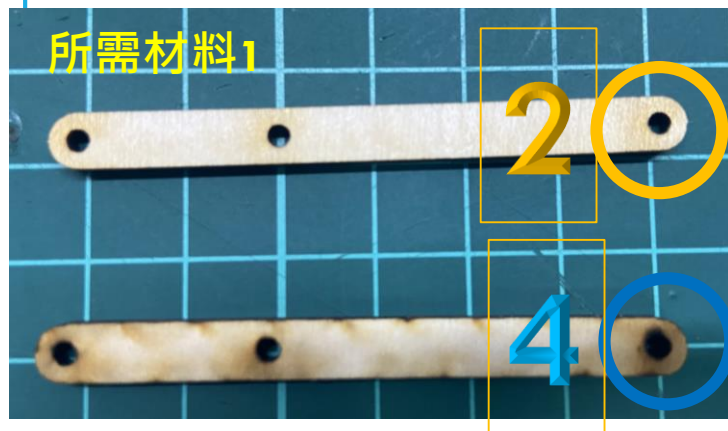


手部安裝

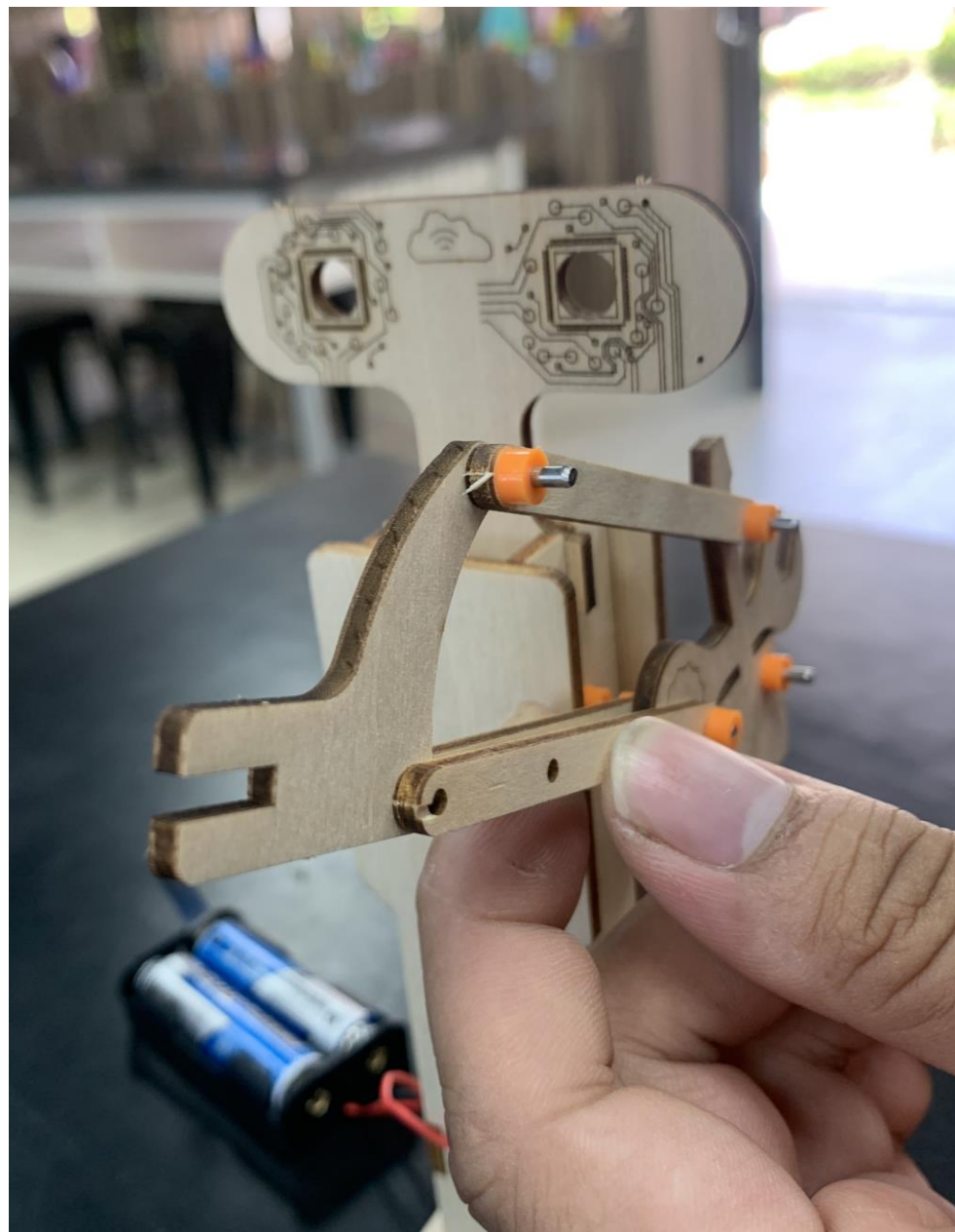
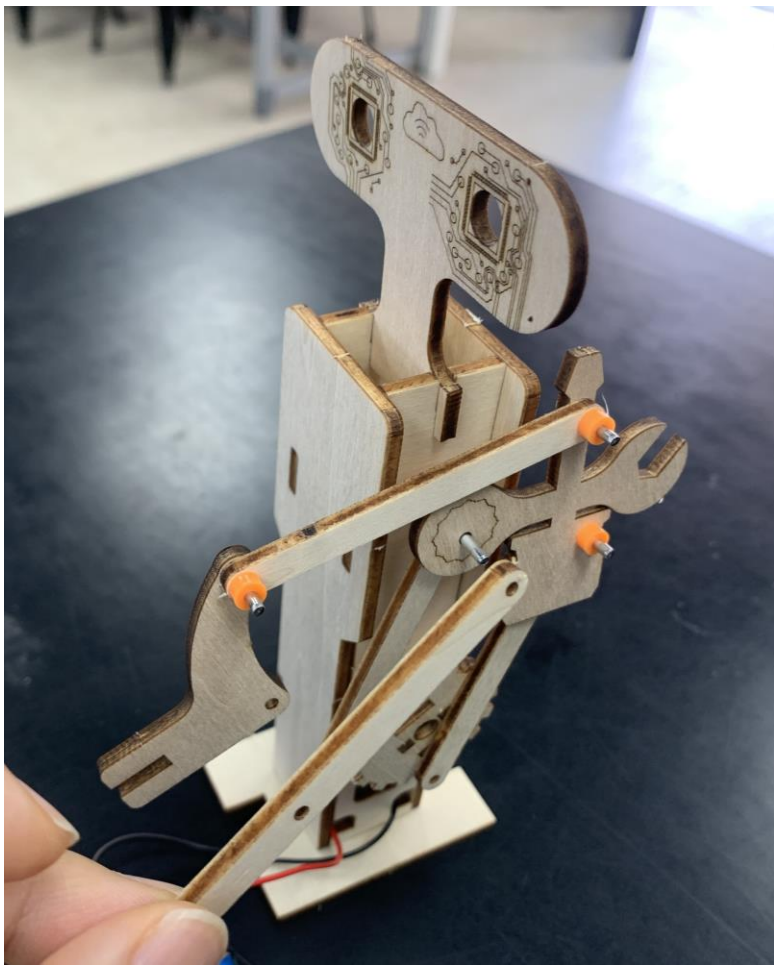
以下動作請全部看螢幕

請依照順序穿入：

- 1.軸套 2.連桿 3.扳手洞 4.連桿 5.軸套

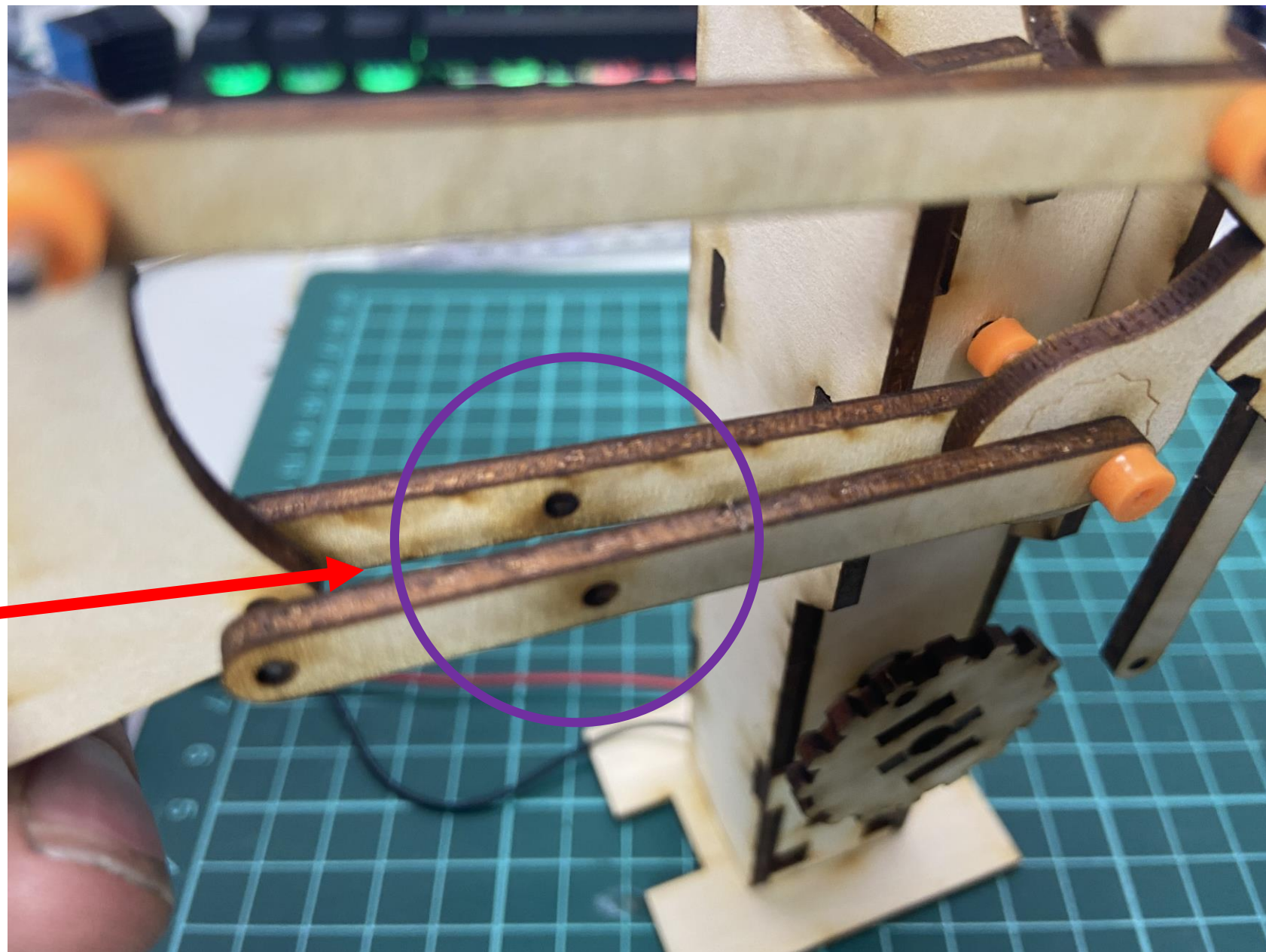


手部安裝動作 3分解

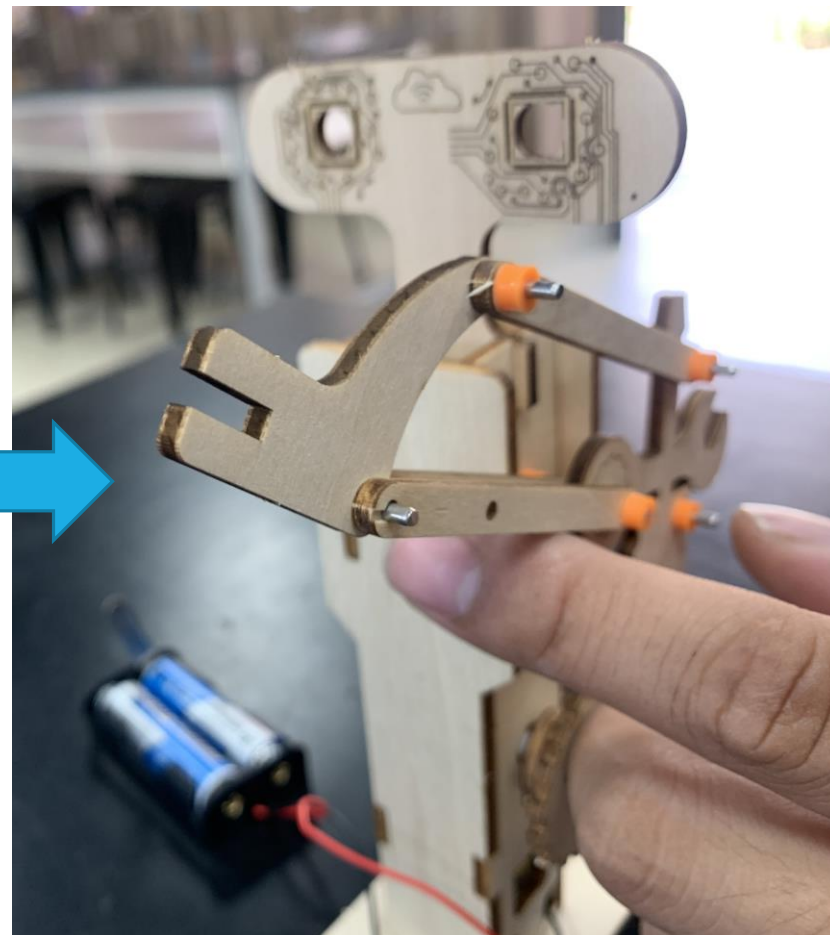
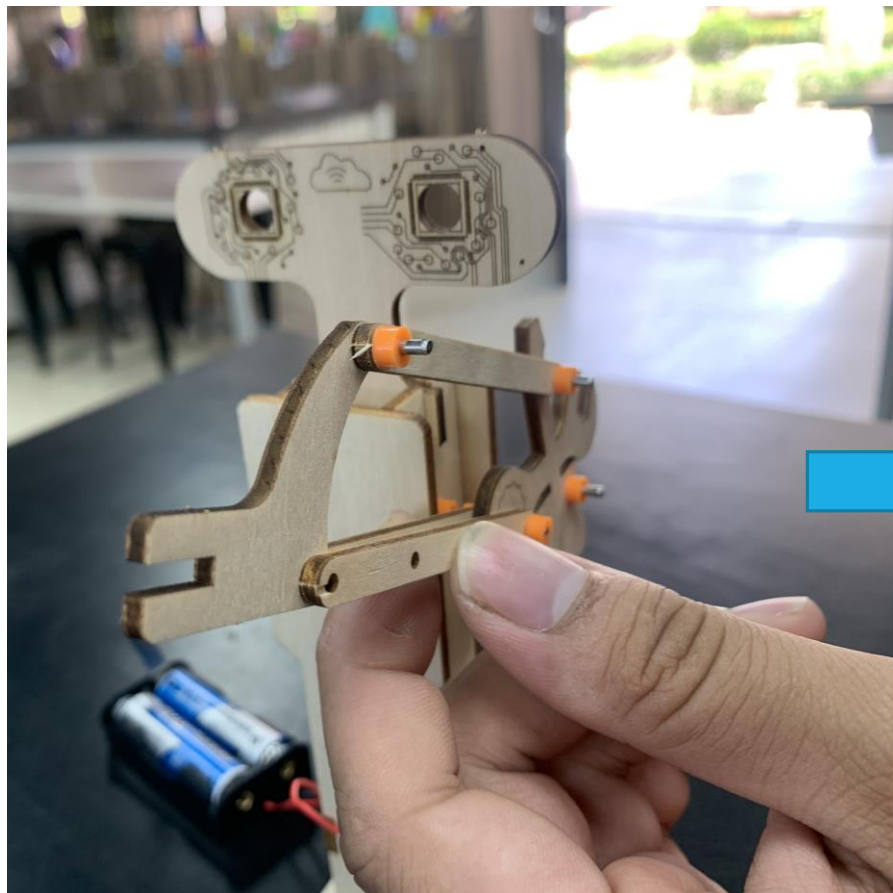


手部關節

此連桿的洞要比較靠近手部！！！！



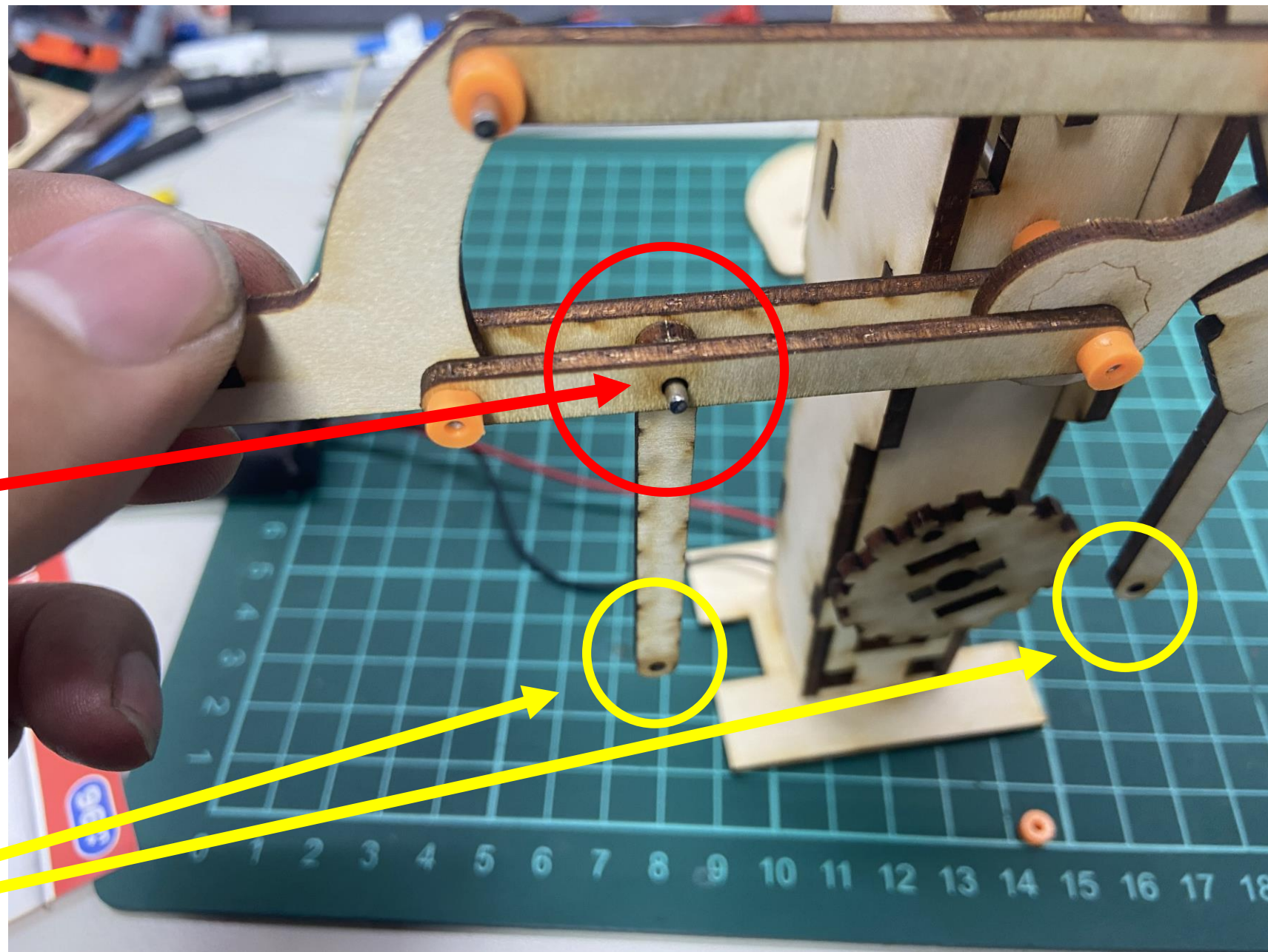
手部關節細部分解動作 1



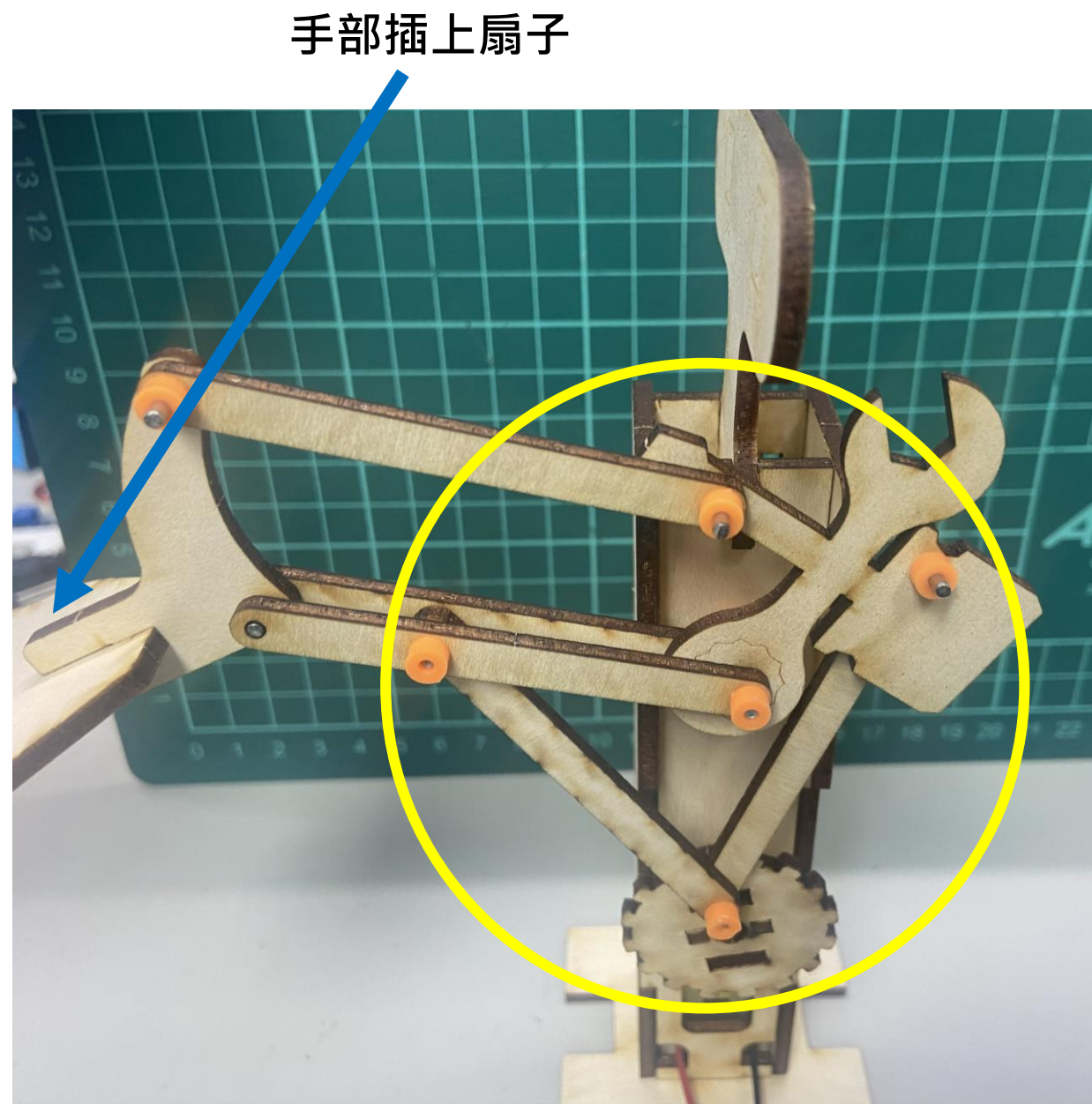
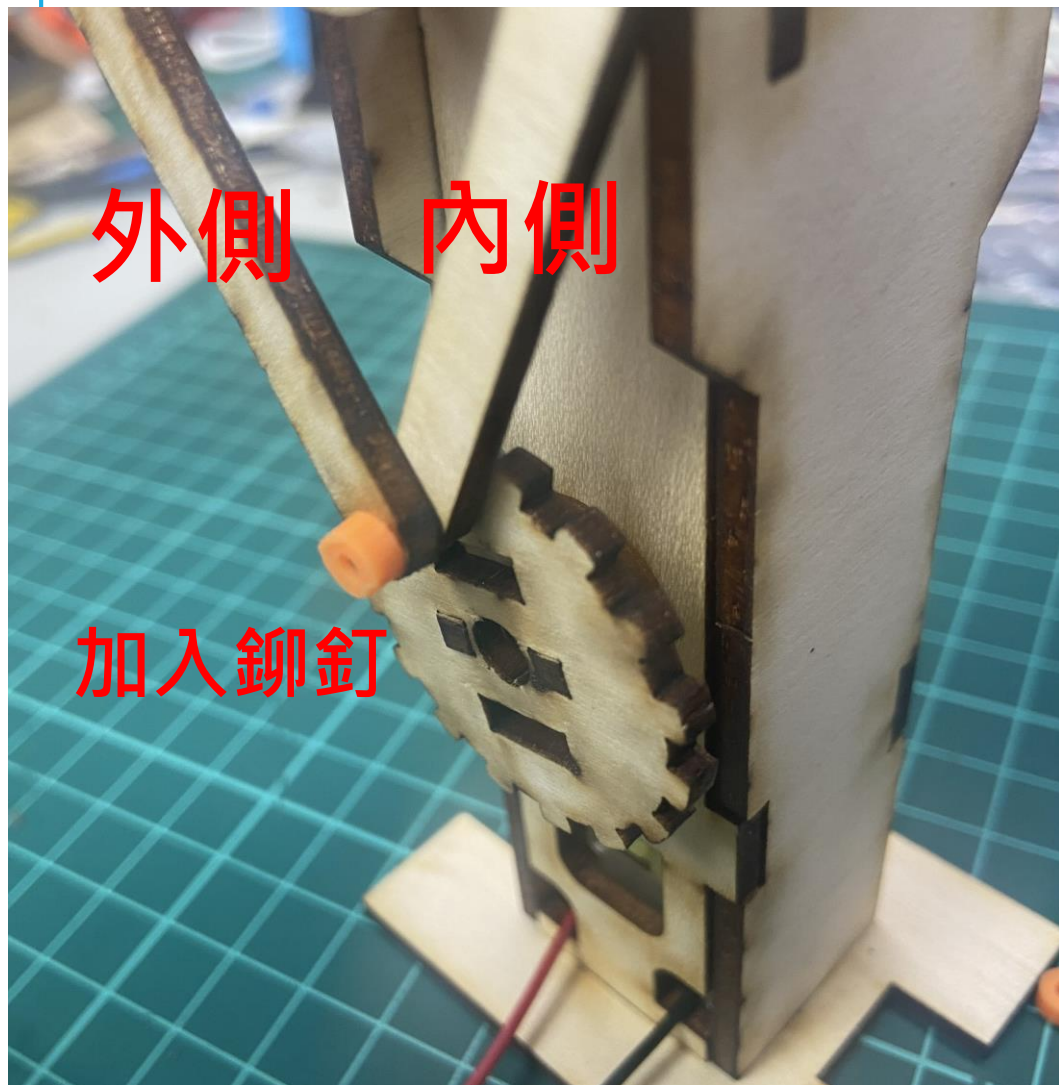
手部關節

穿入鉚釘與最後一根連桿！
再套上軸套

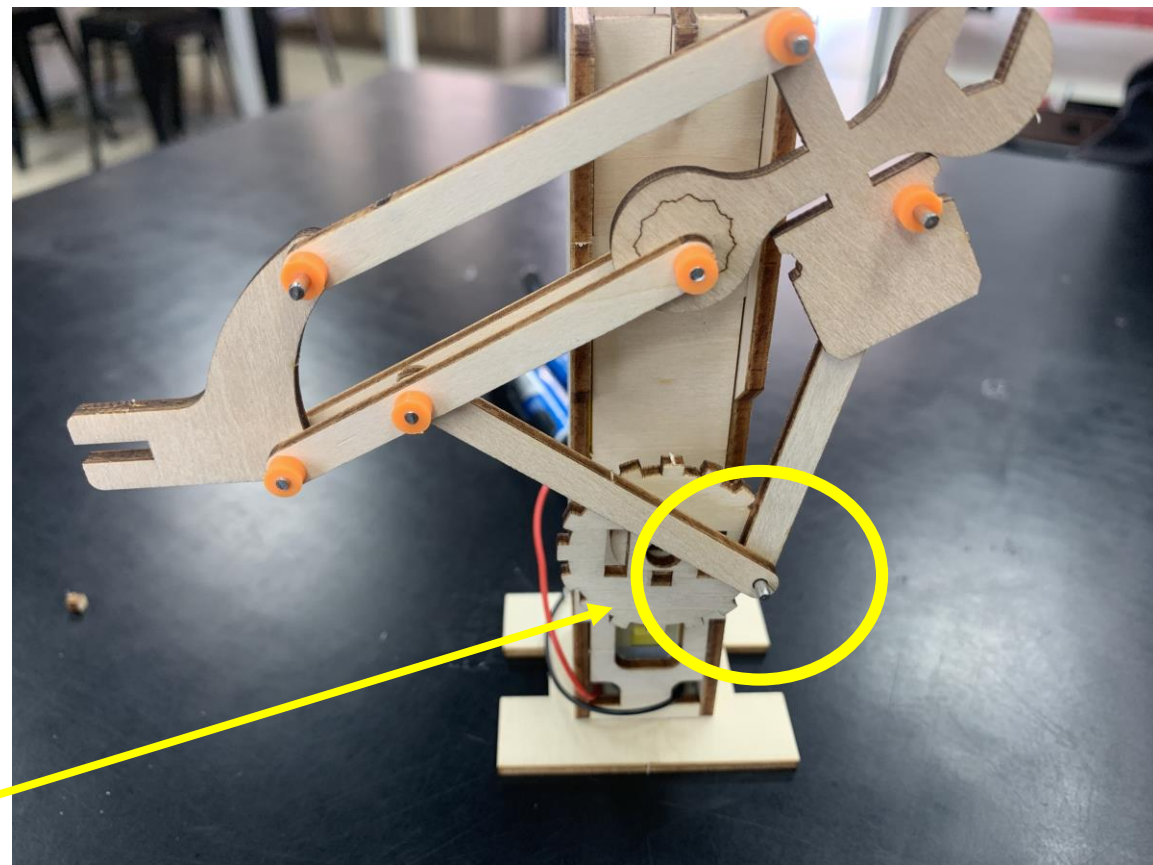
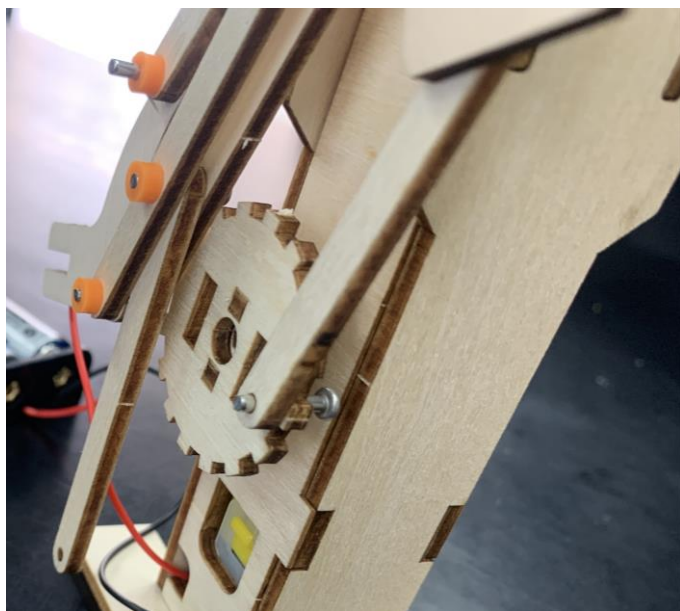
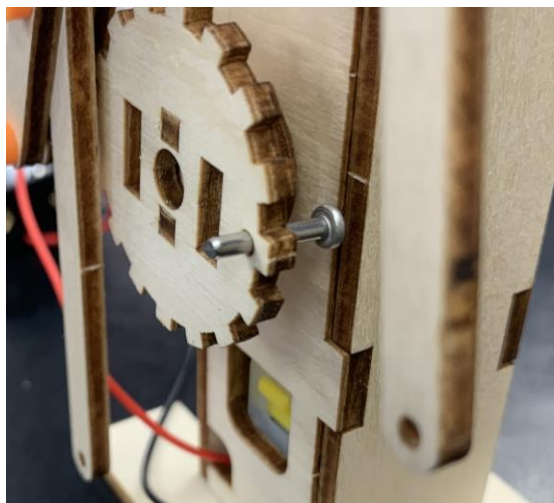
下垂的兩個連桿即將
與齒輪連接



手部關節

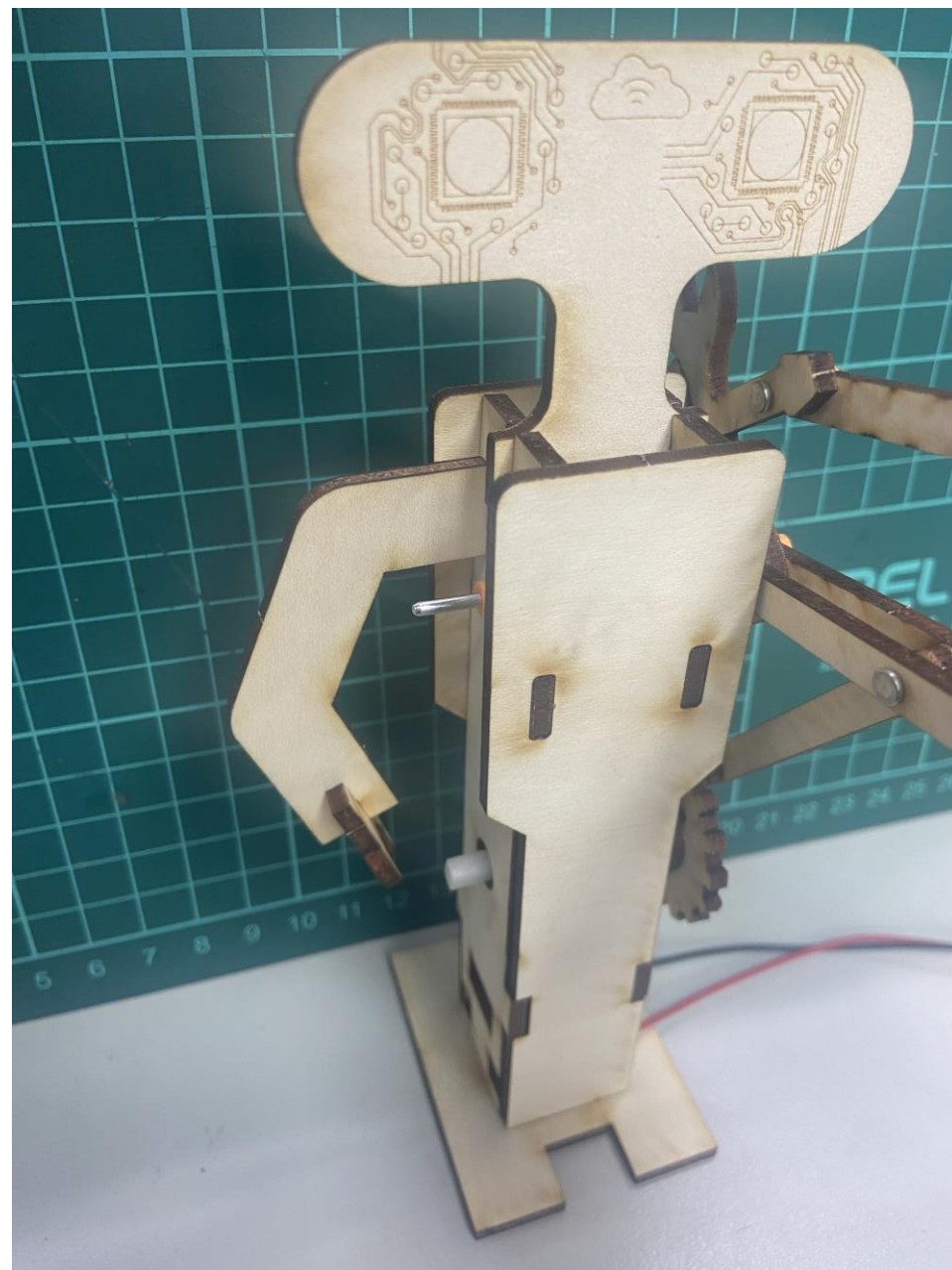


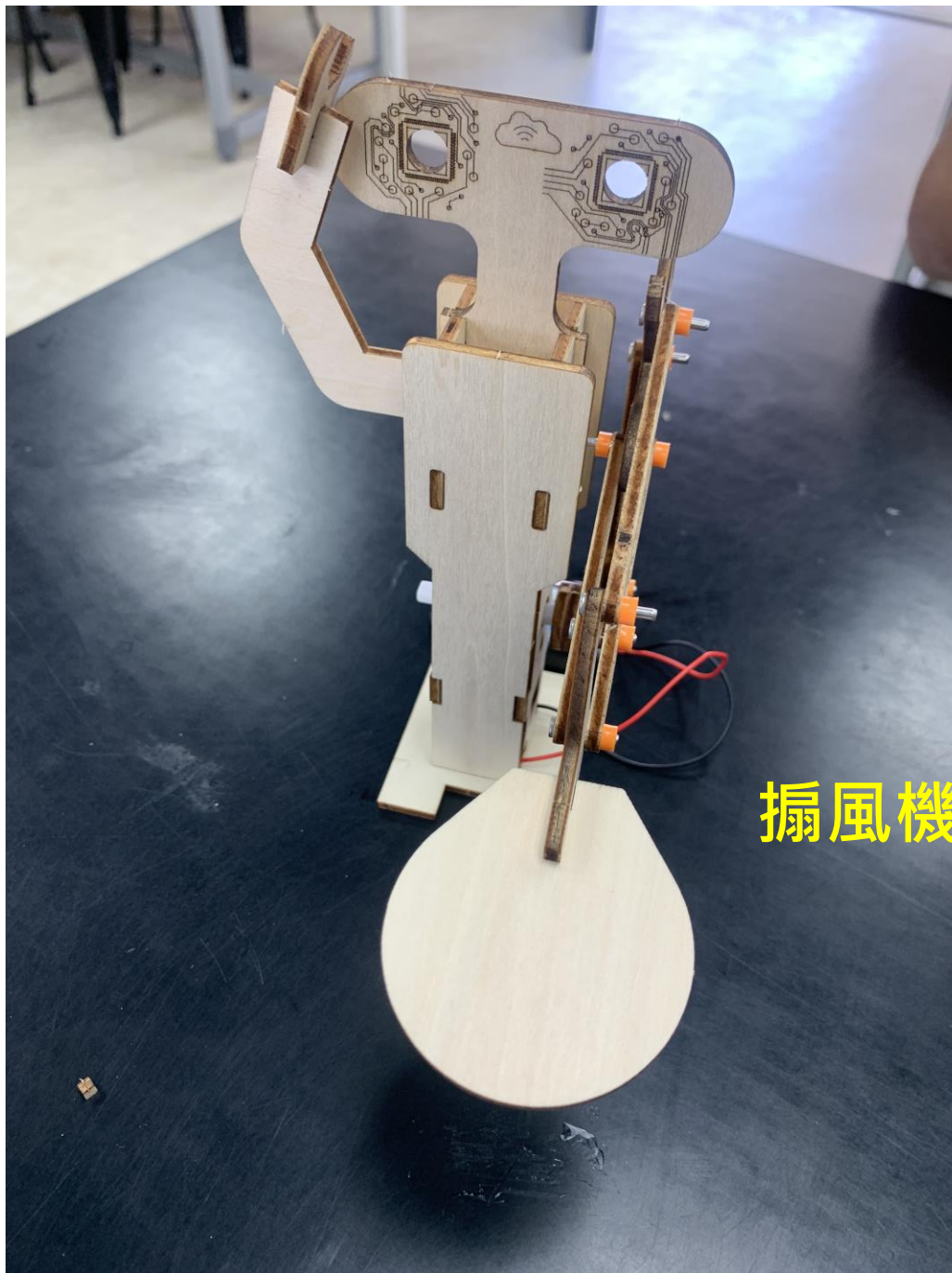
手部關節細部分解動作 2



最後套上軸套

右手安裝





搨風機机器人完成

