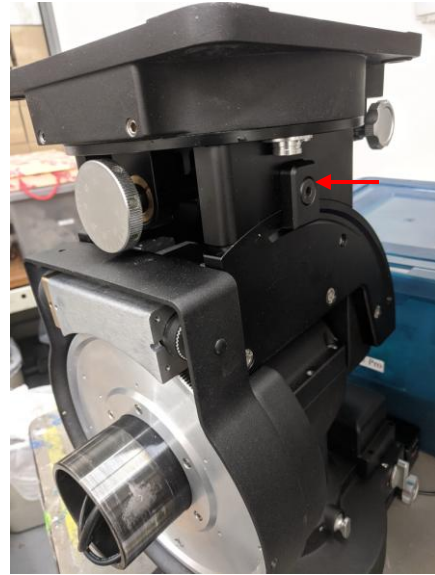
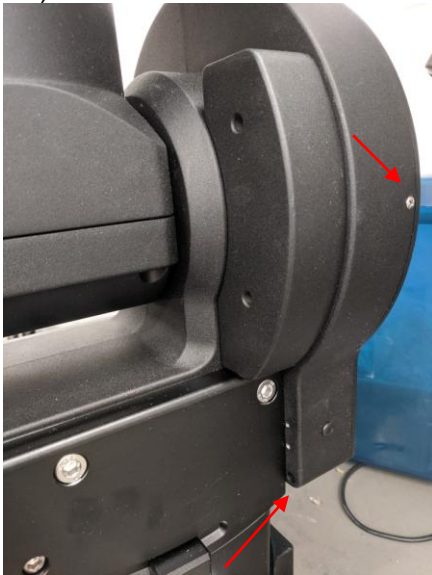


CEM120 RA Worm Replacement

1. Disengage the RA gear switch and lock the RA axle locking knob.
2. Remove a screw and two setting screws, then remove the CW nose.

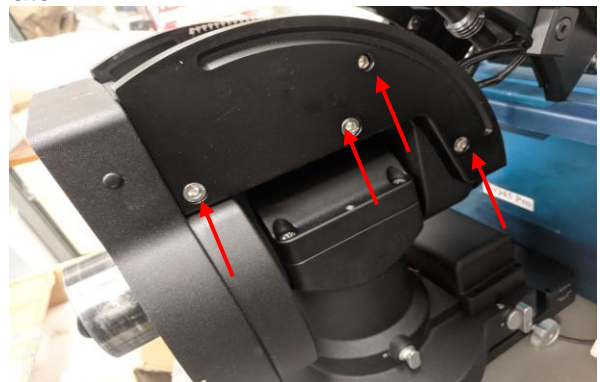


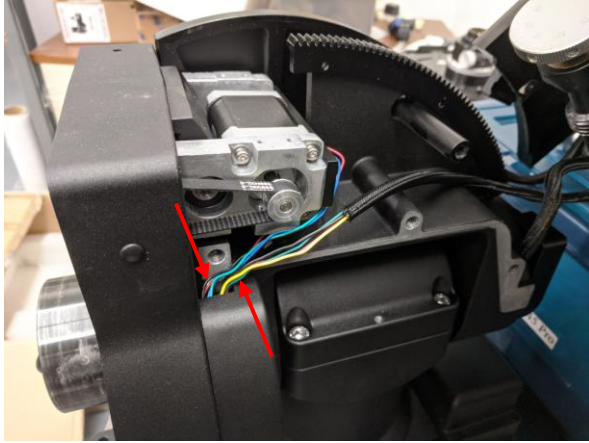
3. Remove four screws (two on left side and two on right side) and then remove the front cover.



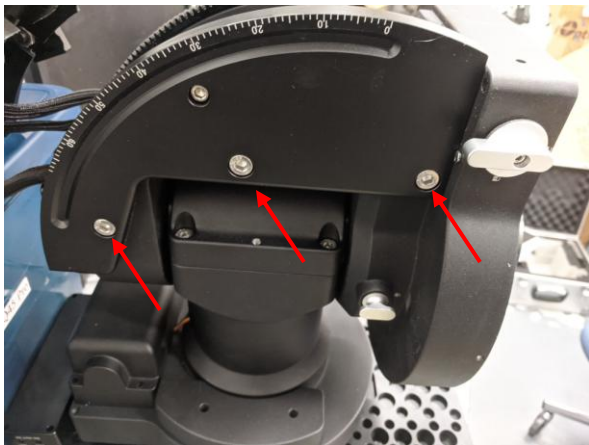
4. Take the mount upside down and loose two locking screws (one on left side and another on right side), and then take the mount base out off the frame and put the base on a box or other object with an appropriate height nearby. Please pay more attention the connection wires between the base and the mount frame.

5. Remove four screws and take off the panel and pay more attention to the connection wire arrangement. All of them should be put in a notch in the other side of the panel when assembling later.

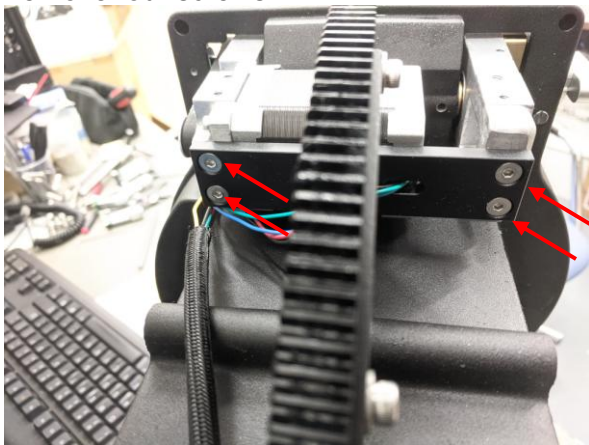




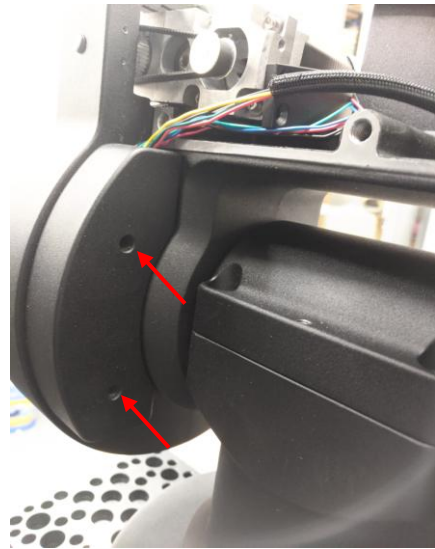
6. Remove three screws on the other side and take off another panel with scale.



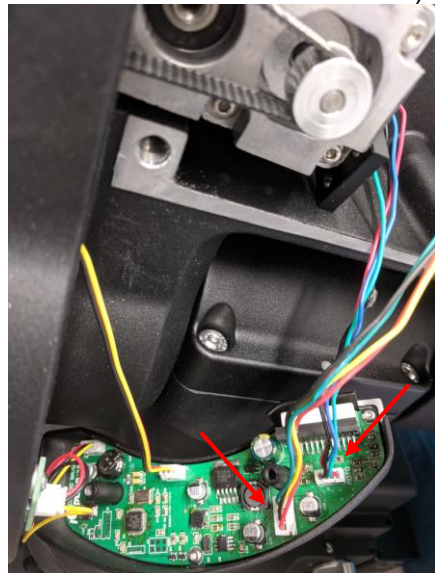
7. Remove four screws.



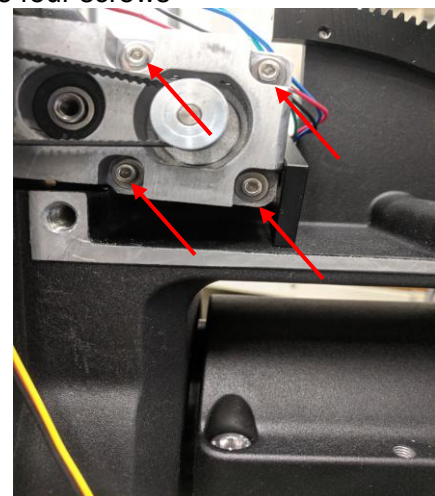
8. Remove two screws.



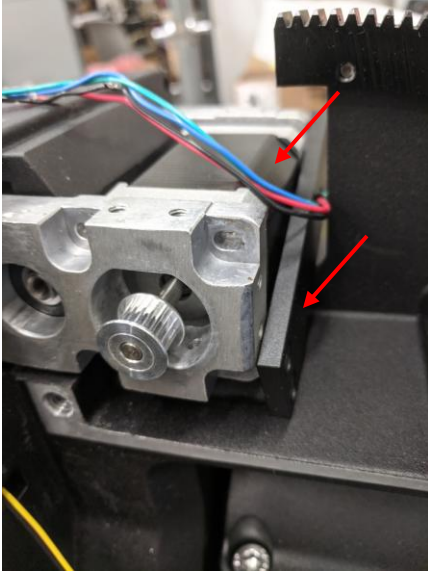
9. Remove the RA module which RA board is inside. Disconnect two connection wire bundles. (One is to motor and another is to main board)



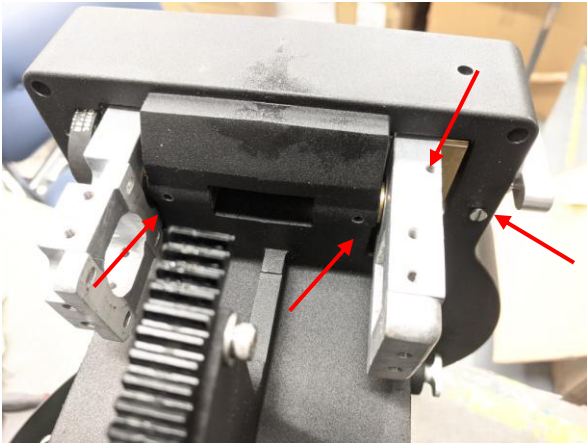
10. Remove four screws



11. Remove RA motor and its protection bar



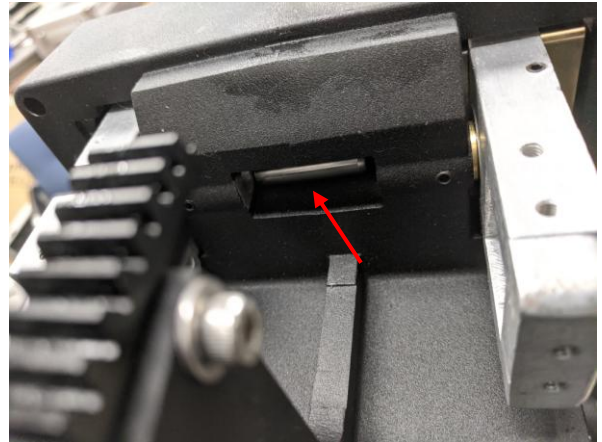
12. Loosen three setting screws. Remove the latch for RA gear switch knob.



13. Loosen the brown end cap and then push the axle.

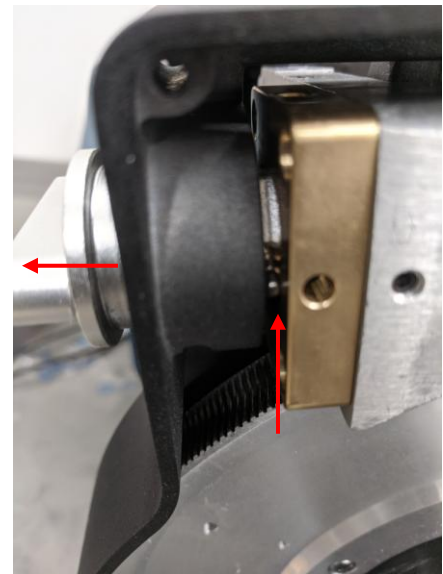


14. Take out the axle

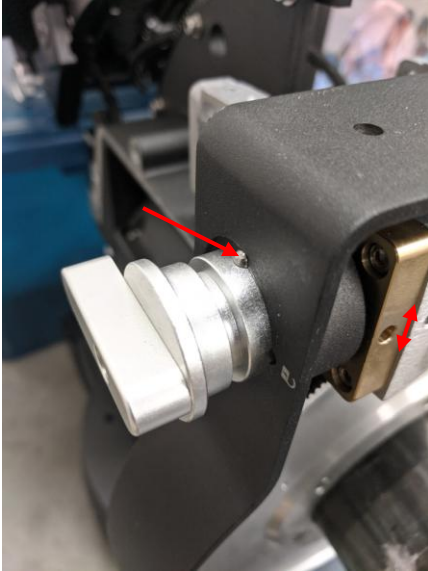


15. Push the second axle from another side and take it out, too.

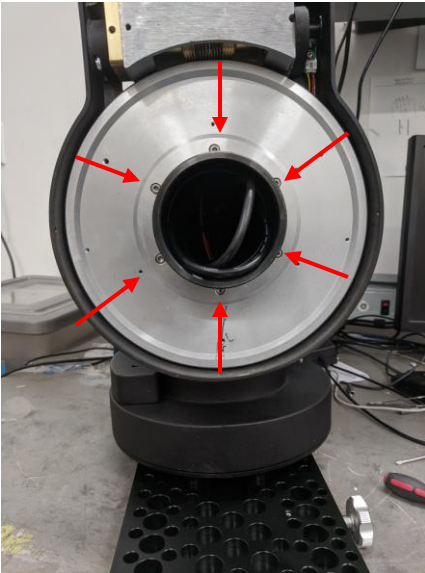
16. Make sure that the gear switch is in disengage position. Pull out the gear switch knob slowly before a metal post comes out to stop it from being pulled out any further.



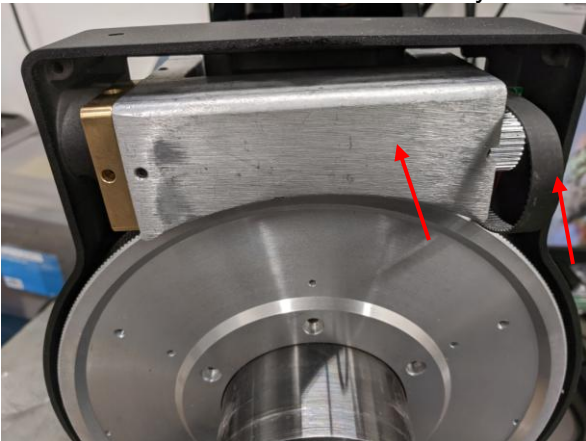
17. Use a flat screwdriver to push the metal post down and carefully pull out the gear switch knob further. Please pay more attention to the small ball while pulling out the gear switch knob. If necessary, move RA worm assembly up and down slowly while pulling out the gear switch knob further.



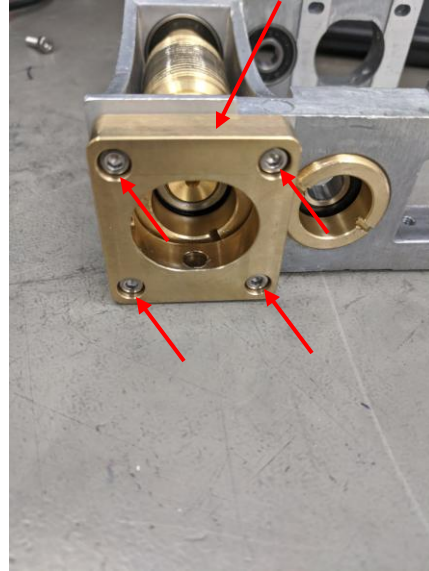
18. Remove six screws and pull out RA ring gear until it does not block RA worm assembly to be pulled out. Please mark the orientation of the RA ring gear first before pull it out.



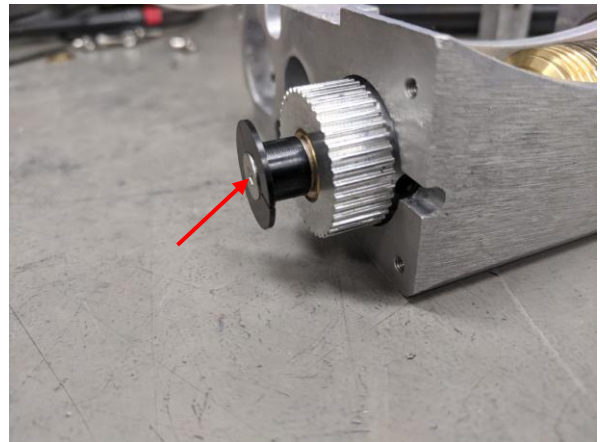
19. Pull out the whole RA worm assembly with belt.



20. Remove four screws and remove the brown support part. Please mark its orientation before remove it



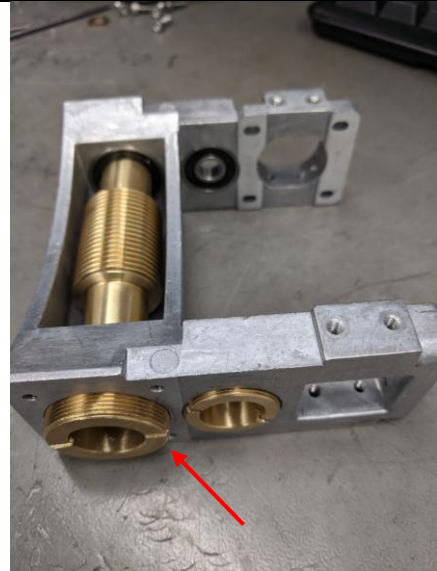
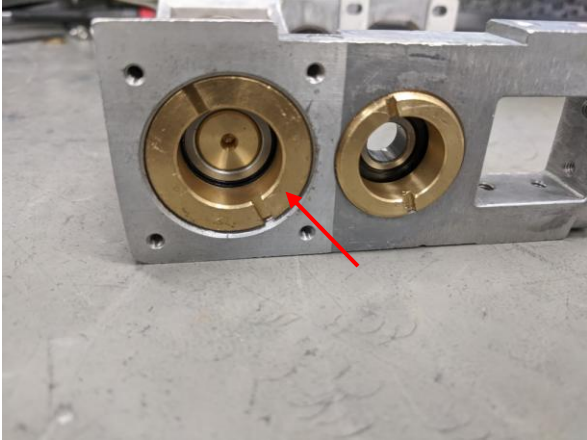
21. Remove the screw and then remove the encode wheel and its washer.



22. Loose two setting screws and remove the pulley.



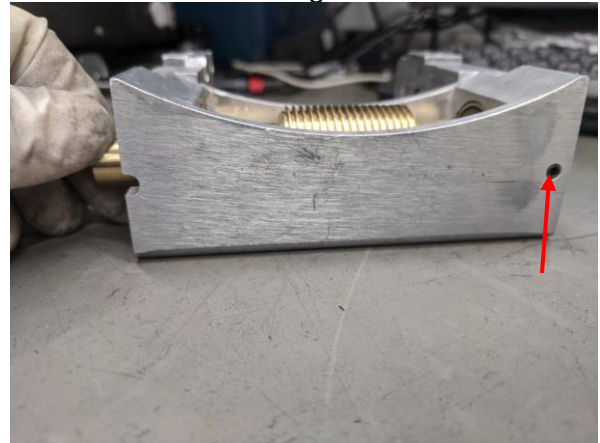
23. Remove the brown end cap and pull out the old RA worm and its two bearings.



24. Check two bearings and put new worm into RA worm housing. Then install the brown end cap.



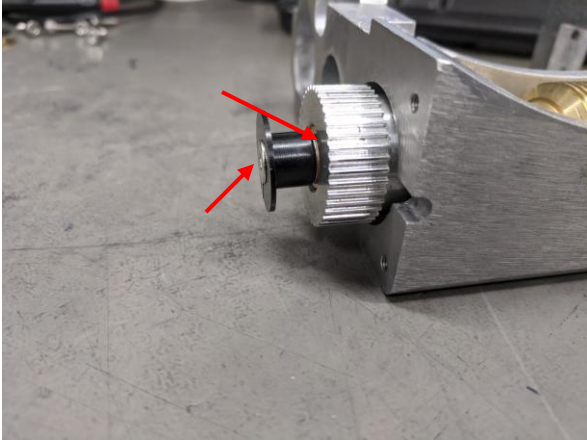
25. Adjust the brown end cap to make sure if RA worm can be rotated freely without any free play. Then fasten the setting screw



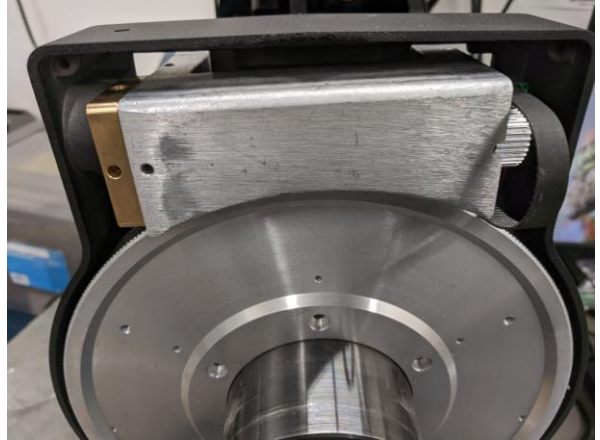
26. Install the pulley and fasten its setting screw.



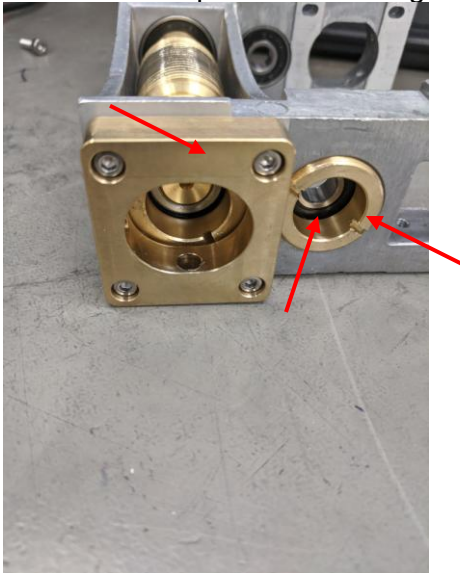
27. Install the encoder wheel. Please do not forget its washer.



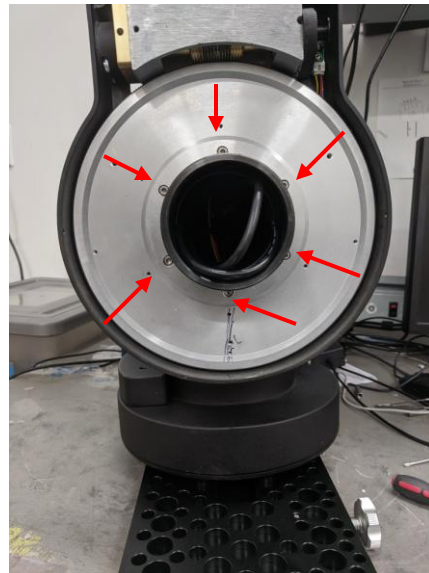
30. Insert the whole RA worm assembly with the belt into the mount frame



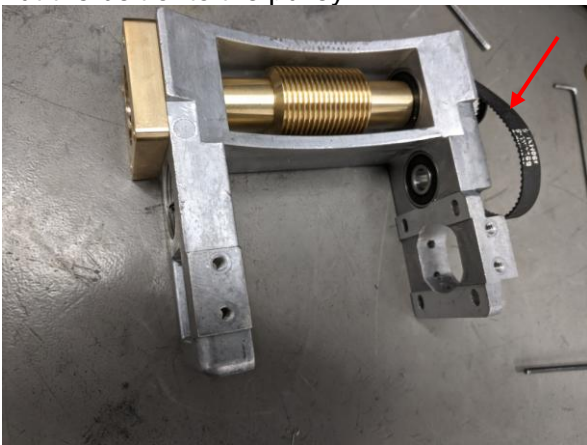
28. Install the brown support part and pay more attention to its orientation. Moreover, take out the smaller brown end cap and the bearing behind it.



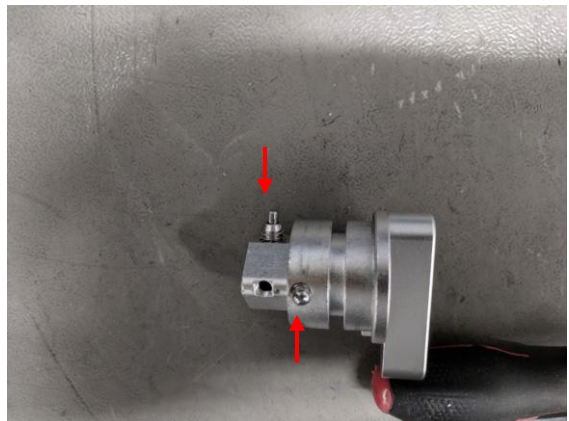
31. Install RA ring gear. Please pay more attention to its orientation. Fasten six screws.



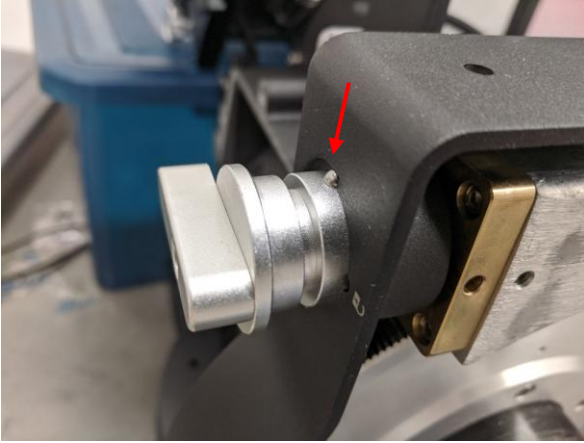
29. Put the belt onto the pulley.



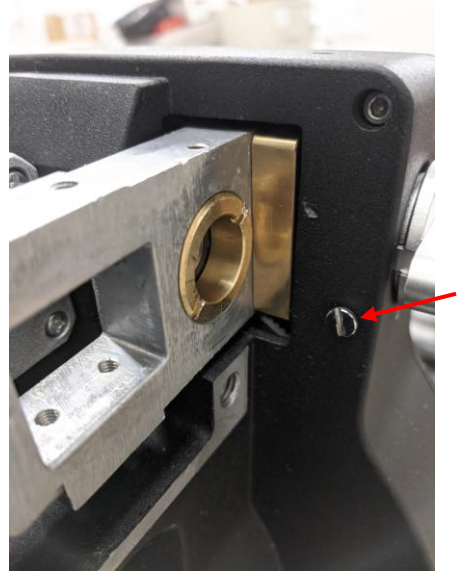
32. Next, Install RA gear switch knob. Remember there is a spring under the small metal post. Similarly, there is also a spring which supports the small ball. Please pay more attention to the small ball.



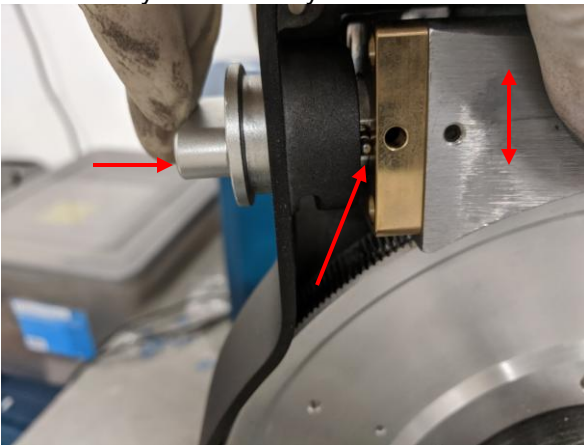
33. Push gear switch knob before the metal post comes out to stops it to be pushed any further. Pay more attention to the small ball.



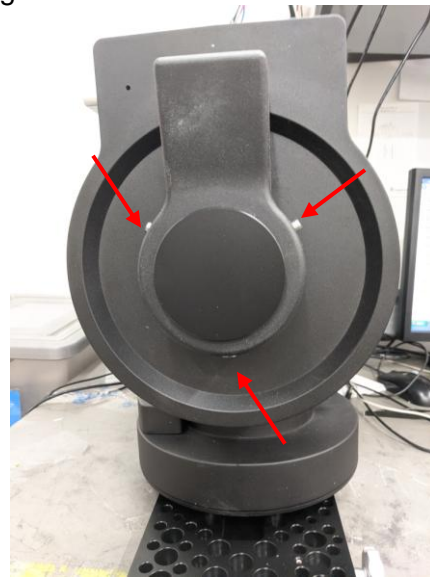
36. Install latch for RA gear switch knob.



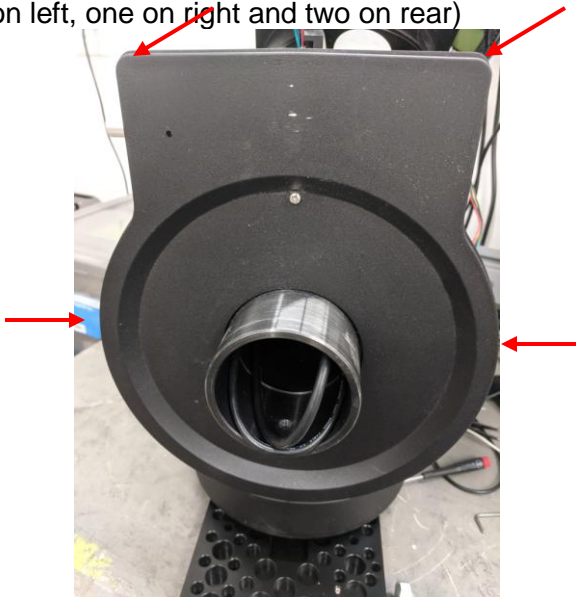
34. Use a flat screw driver to push the metal post down and carefully push the gear switch knob further while moving RA worm assembly up and down slowly if necessary.



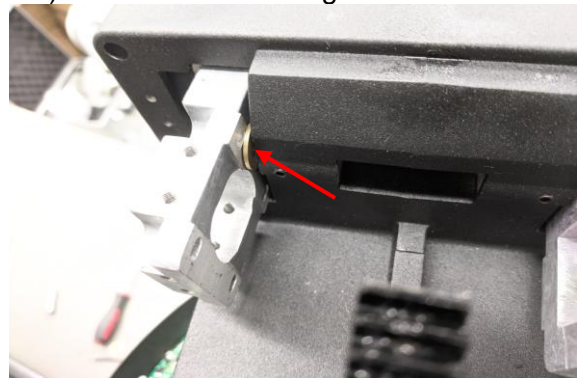
37. Install CW nose by installing one screw and two setting screws.



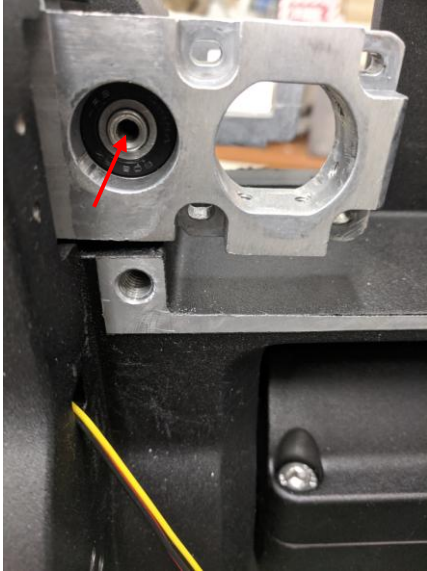
35. Install front cover by installing four screws (one on left, one on right and two on rear)



38. Insert a brown washer between mount frame and a bearing inside RA worm housing frame (left side) and make sure it align with each other.



39. Install the axle into the bearing and push it to an appropriate position.



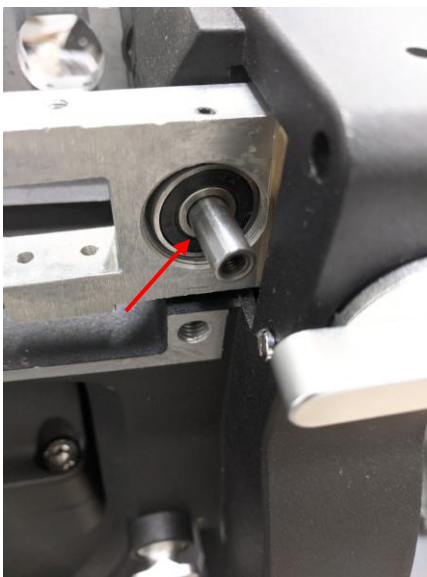
42. Install the brown end cap and tighten it. Push the axle to an appropriate position.



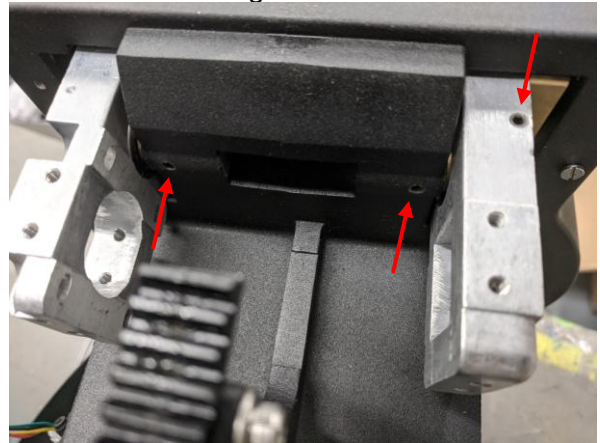
40. Insert another axle into another bearing and a washer.



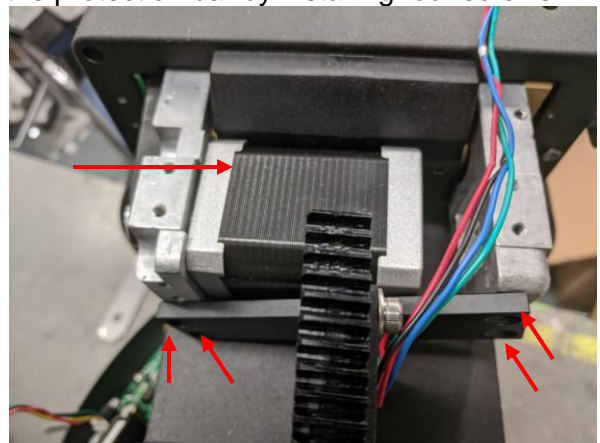
41. Make the worm housing frame (right side) align with mount frame. Then insert the axle with bearing and washer into the hole and the hole in mount frame..



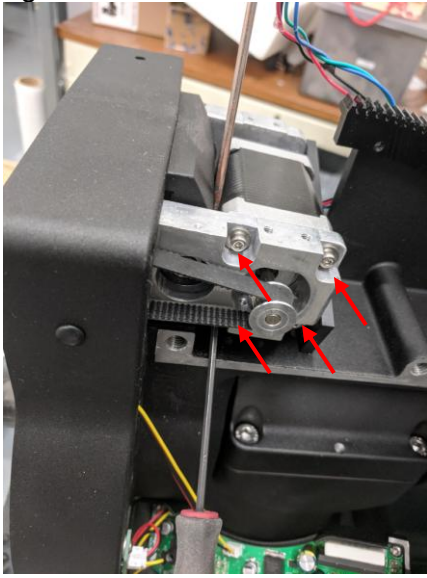
43. Fasten three setting screws.



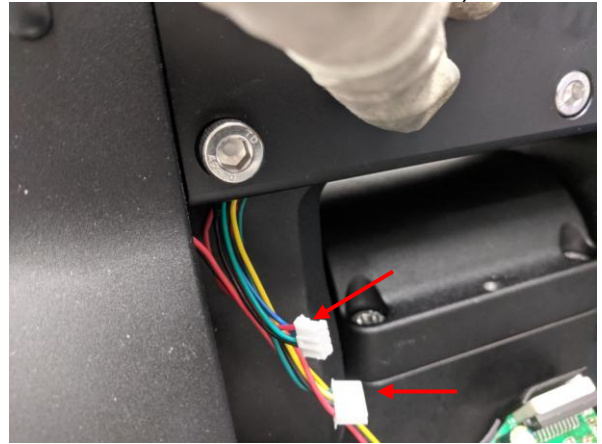
44. Put back RA motor and its protection bar. Install the protection bar by installing four screws.



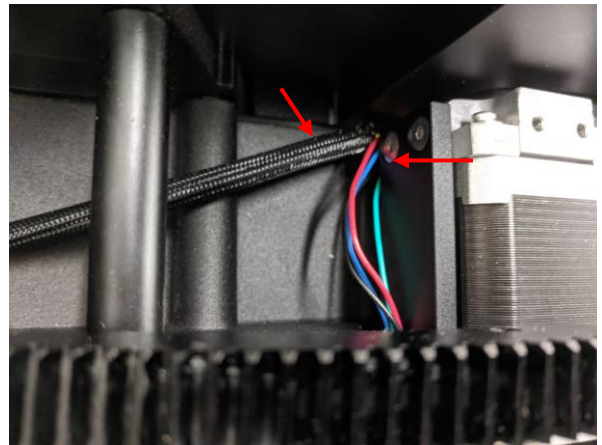
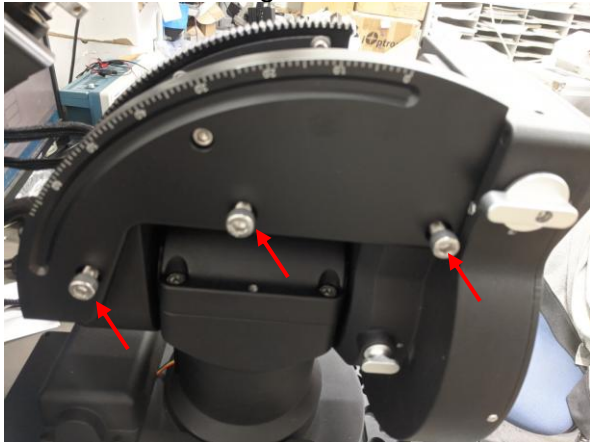
45. To make the belt tight, use a small flat screwdriver to lift the motor a little bit while fastening four screws.



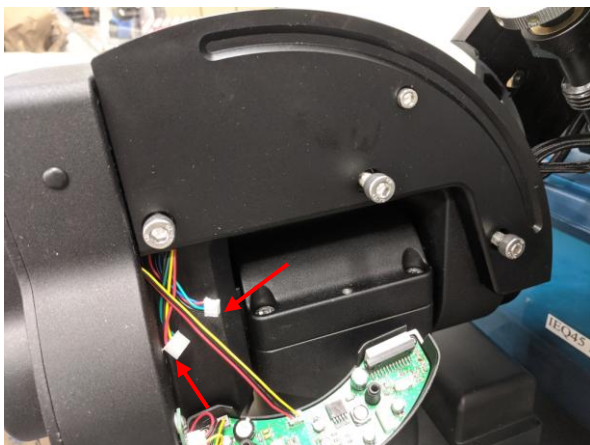
48. Hold and push hard the panel while making sure if the two sets of connection wires can move freely inside and outside of the panel. If any of connection wires cannot move freely, please go to Step 47 and rearrange connection wires and put them all in the notch. At last, connect two connection wire bundles to RA board. (One is to motor and another is to main board)



46. Put back the panel with scale by installing three screws and fastening them all.



47. Put back another panel while pay more attention to arrange the connection wires well. The two sets of connection wires must be put in the notch which is in the other side of the panel.



49. Put back the base, make the locking nut in a correct orientation and fasten it. Do the same on the other side.

