

VD FC Module-Assembly Workshop Report

November 5, 2024

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Workshop Fundamentals

- Had an all-day VD FC module assembly workshop on Sat. Nov. 2 with 10 members taking part
 - First time for many group members
- Goals of the workshop
 - Learn the VD FC module assembly and QC procedure
 - Hands-on training of the module assembly procedure and complete the procedure documentation
 - Exercise and document the module QC procedure sufficient for draft implementation to the QC iPad app
 - Make an informed decision on the assembly table height

Lessons learned - module assembly 1

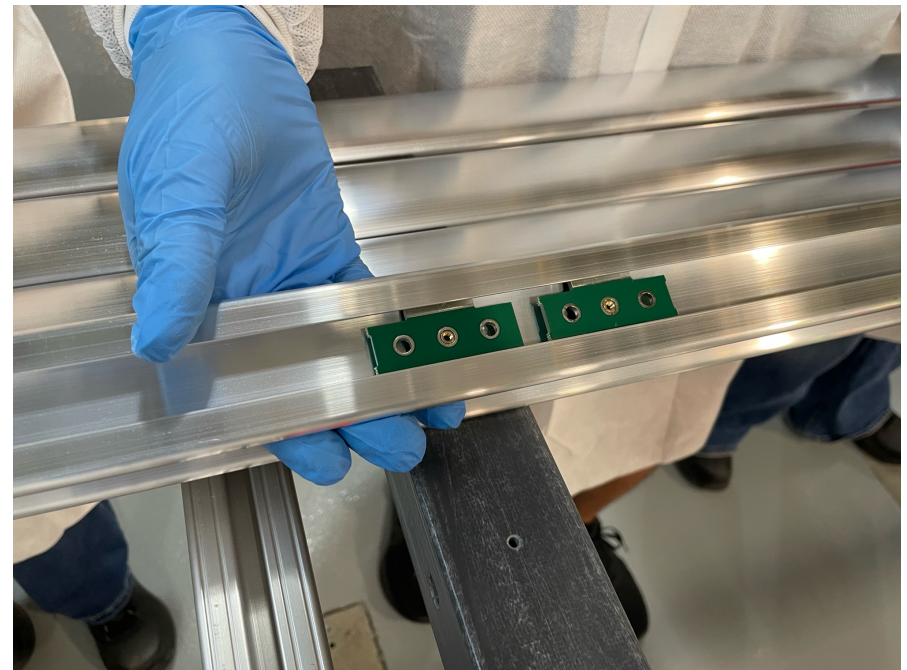
- Minimum 2 members work as a team, 3rd may be helpful
- Set up the assembly table with the various alignment tools
 - Profile alignment teeth mounted on the assembly table
 - We only had one side mounted → made it quite difficult to get the screws in



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 - Preassembled and ultrasonic cleaned screws save time substantially
 - L-bracket for profile end alignment
 - Box beam end alignment plates
 - Would be very helpful to have a profile lock down tools with the proper spacing enforcement gadget → helping keeping the profiles in place
- Two people take a profile carefully, check the surface quality from either ends with about 1m overlap and apply the anti-oxidation coat
- Insert the combination of 1 non-locking and 2 locking slip-nuts from either ends and position them into the roughly the correct location → the same person does the same insertion (parts for each follow the person on a cart)



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- One person stand in between the box beams and help position the profile in the correct location on the box beams → this may not be needed if we have the profile alignment teeth either side
- Once all profiles are placed, lock them in place with the lock down tool (if exist)



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Lessons learned - module assembly 2

- Two members go under the table on a creeper or on a chair and start inserting and tightening the screws using the torque screw drive set to 30cN-cm
 - A bag of preassembled screws was with each person
 - A pair of safety glasses are necessary for protection



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Lessons learned – The assembly table height

- We started with the short 85cm table first but haven't had a chance to try the taller table ~55"
- By the end of the workshop, ~4 students were able to progress rather quickly
- Members had to lay on a creeper → once the comfortable angle of the creeper is set, most the members feel fine
 - Two felt the back strained
 - Over 50% felt the arms get tired rather quickly
 - Took some time for members to find the proper angle to aim the light to see the screw hole



Lessons learned – The assembly table height

- Took a while to switch to a taller table ~55” but just had enough time to set up the new table
- We plan on trying this height throughout the week this week
- Some students rolled around underneath on a chair with the hardhat just to see how they feel → they seem to like the sitting down position



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