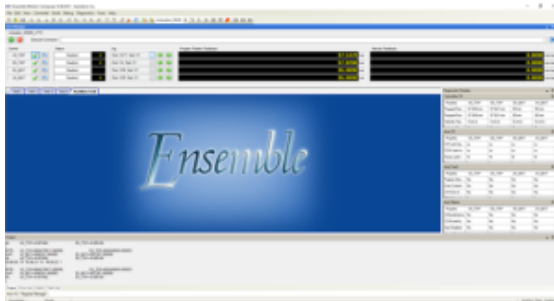


LCLSII Strongback Magnet mountings Aug 2022

Steps:

- Bottom motors need to be leveled before mounting the strong bac, confirm with Georg
- Cable trays should be mounted on the strong bacs before the strong bacs goes back on
- Mount and hand tighten bottom strong bac. It needs to be torqued but can't be done fully in the warehouse due to it being hot. Needs to go to building 84
- Put the consolidation chassis for the limit switches
- Move some of the motors
 - axis starts US UP axis 0
 - DS UP axis 1/ CW gap open/ CCW gap close
 - DS Down axis 2/ CCW gap open/ CW gap close
 - US Down axis 3
 - There are 24 limit switches
 - 2 absolute rotary encoders on the top motors, and two linear absolute encoders on the gap, used to control the bottom jaw.
- Cables:
 - Top cable tray gets encoder, potentiometer and top vacuum chamber switches cables
 - Bottom gets bottom vacuum chamber switches cables
- After strong bac is mounted, reroute the cables
- Cory to mount the Estop and tilt switches after
- We moved the top motors to test the springs with Diego
 - MOVEABS @1 85 @1F 0.4 (until we reached about 30 mm)
 - 0.4 mm/s for big movements, 0.2 mm/s for smaller, and 0.1mm/s for very small movements
 - Then we jogged the motor in 1mm increments in the negative dir, at speed 0.1 mm/s
- Georg told us where the two top motors need to be
- Lower the bottom jaw close or at the bottom limit switch to allow for top jaw installation
 - MOVEABS @1 95 @1F 0.4



- After the top strong bac is mounted and torqued, Cory adds the tilt switches and they are calibrated with either Alex or Gibreel.
- The vacuum chamber switches bracket need to be swapped (since magnets are longer)
- Gap encoders go on next with the encoder bracket, then potentiometer on the top strong bac (Down stream), then the arm goes on the bottom strong bac. Make sure spring on encoder connected to the arm is aligned properly.
- Mount the half gap encoders
- Mount the US absolute encoder and the vacuum chamber limit switches
- Ensemble steps:
 - Check emergency stops are active
 - Check limit switches are active
 - Move the centerline
 - Close the gap up to 50 mm
 - MOVEABS @0 25 @0F 0.2 @1 25 @1F 0.2 @2 50 @2F 0.4 @3 50 @4F 0.4

Prep Actions:

- Make sure cables are clear of the strong bac before mounting, they need to be on top higher than the mounting point with the strongback.
- Mount cable trays before the strong bac goes on
- Connect to the controller, retrieve and save parameter file
- Reprogram controller to use relative encoder on bottom motors
- Remember to set top motor encoder offset from original parameter file