

## Remaining tasks for LCLS-II Cryomodule testing

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System	Task	Group Responsible	Notes
<b>Installation / Pipe fitting / Welding PRIOR to testing</b>			
<b>Transferline</b>	Confirm/Prep both transferline sections have proper weld prep Locate and affix to floor short piece Locate and affix to floor "L" piece Position/align both sections with ruler and level bar Cut, prep, & weld field fit joints per weld spec - w/M. Martin advice Leak check inner connections prior to SI wrap Cut/prep & weld clam shells	Cryo Installation Installation Cryo Cryo Cryo/SRF? Cryo	
<b>Warm Helium Piping</b>	Prep, mount, and weld sections of warm piping per spec & drawings	Cryo	Much of this is to be done after the cryo-can is located & grouted
<b>Trolley Installation for Cryo-Can Bellows</b>			
	Fabricate "I" beam & weld to spec Procure Trolley w/Chain fall Locate & Drill Holes Install "I" Beam & trolley Load test	Machine Shop Installation Installation Installation Installation/ ?	
<b>Cryo-Can</b>	Remove/install equipment that is too tall for cable tray/waveguide Confirm/Prep the weld joints have proper weld prep Locate Cryo-can per surveyed drill locations Confirm alignment to field fit transferline Drill, mount/level can, grout base plate Cut to fit, weld & leak check inner Helium piping Wrap SI insulation Cut to fit & weld outer clam shells	Gubeli Cryo Installation Survey/Gubeli Installation Cryo Cryo/SRF Cryo	Ensure that it can be moved into place w/o height restrictions like relief stack
<b>Clean Room Assembly</b>	Unpack & assemble Install AC power and lights	Electricians Electricians	This can be done once the cryo-Can has been moved into place
<b>Work to move, locate, and join 2 cryomodules prior to testing</b>			
<b>Movement</b>	Bolt on wheels Arrange for crane at LERF to Lower/Raise CMs Move to/from Test Lab Wheel in/out LERF Locate/position CMs	SRF Installation SRF SRF/Installation SRF/Survey	Installation crew can assist if required  This will likely be done with plumb bobs
<b>Cleanroom beam tube connection</b>	Prepare & execute center beam tube connections in clean room per procedures Insulate	SRF/Vac SRF	This is the effort to join two modules together
<b>Cryo-Can &amp; Center Bellows</b>	* these details are TBD * Affix the bellows to cart Position cryo-can bellows Secure cryo-can bellows Position center bellows Secure center bellows	Installation (?) SRF SRF	The cryo-can bellows may arrive on the end of the CM - TBD The cart enables ease of installation in the joining region  These connect the vacuum space of the two CMs together
<b>Cooldown</b>	Follow Mike Drury's procedures		