

## Assembly Instructions for CASSI Mount

This is the supplemental assembly instructions for the AZ/EL CASSI mount supplied with the Small Radio Telescope kit. The mount comes partially assembled and wired but requires some user assembly. [Documentation](#) describing the rest of the installation of the SRT can be found on the website. A special complied version of the [software](#) has been produced with appropriate defaults for the new mount.

The CASSI mount comes on a pallet containing the main motor gearbox assembly, a screw jack linear actuator for the elevation axis and left and right dish ring riser arms located in a separate box on the pallet. The main gearbox weighs over 120 lbs and needs 2-3 people to lift onto the mast. The mast needs to be made of 3 inch schedule 40 steel pipe and extend at least four feet above the ground for the 7.5 foot dish. See separate [documentation](#) for constructing the pier and mast assembly.



The flat end (door) of the gear box nominally points north but the exact orientation depends on the setting of the internal limit switch and the Az software limit set up in the SRT.CAT file located in the directory containing the java code for the SRT system. The software and controller are not needed for initial assembly of the mount but will be needed to attach the feed horn and receiver.

Once the motor gearbox is on the mast locate and mount the elevation linear actuator and attach it to the lifter arm extending up from the cradle which forms the elevation axis. The linear actuator is preconfigured and should not be activated or have its end rod rotated by hand as this sets one of the limit switches and can damage the unit if done incorrectly (see manufacturer instructions in the box). The gearmotor at the end of the actuator should point up when attached to the lifter arm.



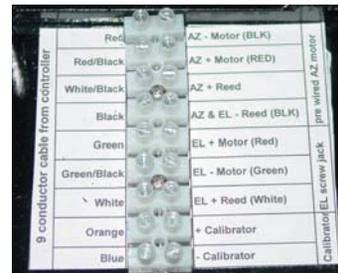
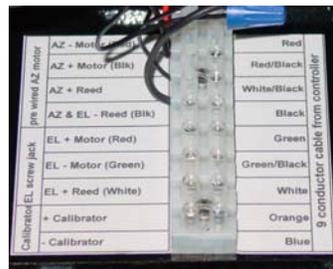
Locate the two riser arms shipped in the actuator box located on the pallet. The “T” shaped arm should be mounted on the same end of the cradle where the lifter arm is located. Attach the arms by removing the two 3/4 inch nuts and sandwich the arms between the two washers. A small amount of grease can be applied to aid in movement and prevent rust. Only hand tighten the nuts for now. The second nuts are used as locking nuts to prevent loosening.



Locate the dish mounting ring which is part of the dish shipment and attach it to the riser arms. The ring should attach in only one orientation. Once the ring is attached to the riser arms you can tighten the elevation nuts short of binding the movement of the ring. The end rod of the elevation linear actuator can now be attached to a small tab on the mounting ring. The ring should be in a horizontal position (dish looking at zenith). The sections of the dish should now be assembled and the completed dish lifted up and positioned on the mounting ring. Attach using bolts provided.

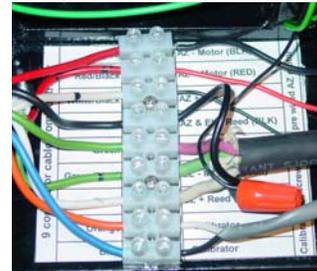


There are two versions of the mount which differ in how the 9 conductor and elevation actuator cables are routed to the screw down blocks inside the gearbox. See the appropriate figure. Locate the 9 conductor cable which connects the



controller to the antenna mount. Remove about 3 inches of the outer insulating jacket and strip and solder the ends of each of the conductors about 3/8 inch. Route the 9 conductor cable up through the bottom of the mount and attach the ends to the screw down block according to the wiring diagram.

The Az motor and reed sensor should already be connected to their associated side of the screw down block. Strip about 2 inches of the outer jacket of the linear actuator cable and strip about 3/8 inch from each of the conductors and solder all but the black conductor. Route the cable from the actuator through the right (or left) hole in the bottom of the mount and attach according to the wiring diagram. The black conductor for the cable must share a connection with the Az reed switch by including it in the wire nut connection already in place.



Finally, route the 2 conductor cable for the calibrator through the hole on the bottom of the mount and attach according to the wiring diagram. When routing the calibrator cable from the mount to the calibrator take care that it will not get hung up as the system rotates. I use electrical tape to attach it to the lifter arm exactly like the cable from the linear actuator before going to the actual calibrator.

To gain access to the dish and attach the receiver to the support legs you will need to install the software and connect the 9 conductor cable to the controller. The SRT.CAT file needs to be modified by commenting out the keyword "SIMULATE ANTENNA" by inserting an asterisk (\*) in the first column of that line. When the software is started up and the controller is on the dish should go to its zero point as defined in the SRT.CAT file which is due north at nearly zero degrees elevation. The orientation of the mount and the elevation of the dish when at these limits should agree with the first numbers associated with the AZLIMITS and ELLIMITS keywords.

