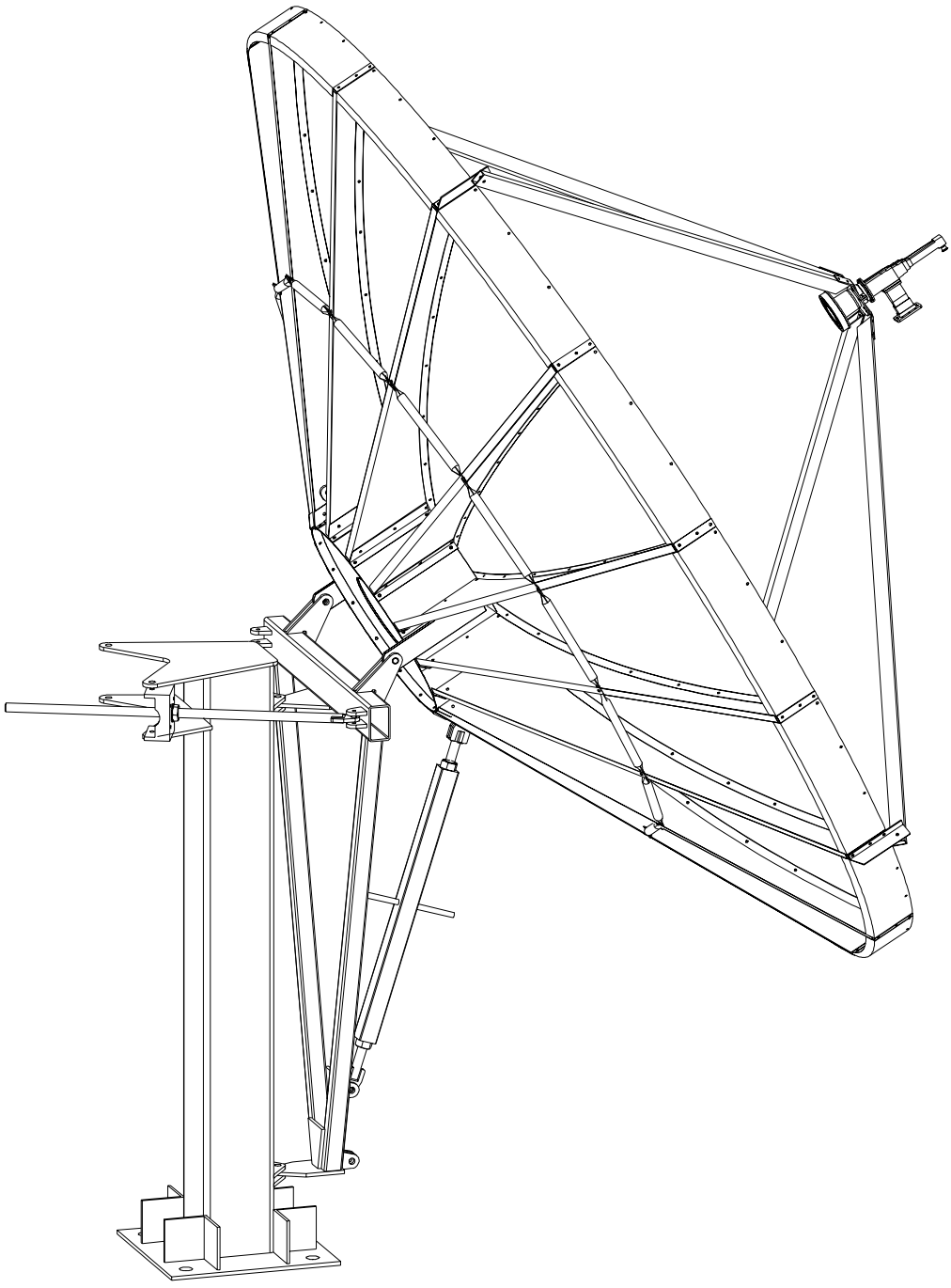
3.8m Prime Focus Antenna System
King Post Mount Assembly & Installation Manual



LIMITED TWELVE (12) MONTH WARRANTY

This CHALLENGER COMMUNICATIONS, LLC ("CHALLENGER") equipment is warranted to be free from defects in material and workmanship under normal use and service. CHALLENGER shall repair or replace defective equipment, at no charge, or at its option, refund the purchase price, if the equipment is returned to CHALLENGER not more than twelve (12) months after shipment. Removal or reinstallation of equipment and its transportation shall not be at cost of CHALLENGER except CHALLENGER shall return repaired or replaced equipment freight prepaid.

This Warranty shall not apply to equipment which has been repaired or altered in any way so as to affect its stability or durability, or which has been subject to misuse, negligence or accident. This Warranty does not cover equipment which has been impaired by severe weather conditions such as excessive wind, ice, storms, lightning, or other natural occurrences over which CHALLENGER has no control, and this Warranty shall not apply to equipment which has been operated or installed other than in accordance with the instructions furnished by CHALLENGER.

Claimants under this Warranty shall present their claims along with the defective equipment to CHALLENGER immediately upon failure. Noncompliance with any part of this claim procedure may invalidate this warranty in whole or in part.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER AGREEMENTS AND WARRANTIES, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. CHALLENGER DOES NOT AUTHORIZE ANY PERSON TO ASSUME FOR IT THE OBLIGATIONS CONTAINED IN THIS WARRANTY AND CHALLENGER COMMUNICATIONS NEITHER ASSUMES NOR AUTHORIZES ANY REPRESENTATIVE OR OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE EQUIPMENT DELIVERED OR PROVIDED.

IN NO EVENT SHALL CHALLENGER BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS, OR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

In no event shall CHALLENGER be liable for damages in an amount greater than the purchase price of the equipment.

Some states do not allow limitations on how long an implied warranty lasts, or allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

CHALLENGER has the right to void the warranty when the antenna is installed by someone other then a certified installer.

Product Serial Number: _____

Date Purchased: _____

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IMPORTANT!!!

INSTALLATION OF THIS PRODUCT SHOULD BE PERFORMED ONLY BY A PROFESSIONAL INSTALLER AND IS NOT RECOMMENDED FOR CONSUMER D.I.Y. (DO-IT-YOURSELF) INSTALLATIONS.

WATCH FOR WIRES!

Installation of this product near power lines is dangerous. For your own safety, follow these important safety rules.

1. Perform as many functions as possible on the ground.

2. Watch out for overhead power lines. Check the distance to the power lines before starting installation. We recommend you stay a minimum of 6 meters (20 feet) from all power lines.

3. Do not use metal ladders.

4. Do not install antenna or mast assembly on a windy day.

5. If you start to drop antenna or mast assembly, get away from it and let if fall.

6. If any part of the antenna or mast assembly comes in contact with a power line, call your local power company. DO NOT TRY TO REMOVE IT YOURSELF! They will remove it safely.

7. Make sure that the mast assembly is properly grounded.

WARNING

Assembling dish antennas on windy days can be dangerous. Because of the antenna surface, even slight winds create strong forces. For example, a 1.0m antenna facing a wind of 32 km/h (20 mph) can undergo forces of 269 N (60 lbs.). Be prepared to safely handle these forces at unexpected moments. Do not attempt to assemble, move or mount dish on windy days or serious, even fatal accidents may occur. CHALLENGER is not responsible or liable for damage or injury resulting from antenna installations.

RECOMMENDATION

CHALLENGER COMMUNICATIONS highly recommends the application of anti-seize wax on all antenna and mount hardware upon installation.

Introduction

Thank you for purchasing your Challenger Communications product. We trust that you will find this to be a well designed product that will proved many years of reliable service. Please read this manual thoroughly before beginning assembly. For best results in the assembly process, perform each step in the same sequence as listed in this manual. Record the serial number of the unit on to page two for future referance and read the warranty information. The serial number plate can be found on the hub.

Unpacking and Inspection

Shipping cartons should be unpacked and contents checked for damaged or missing parts. Should there be any parts that are damaged or missing, please contact technical support for replacement.

Site Selection

The main objective of conducting a site survey utilizing a compass and inclinometer is to choose a mounting location on the ground that will give you the greatest amount of swing for azimuth and elevation for present as well as future use. A thorough pre-installation site survey is strongly recommended because it can alert you to any “look angle,” soil, wind or other problems.

The first and most important consideration when choosing a prospective antenna site is whether or not the area can provide an acceptable “look angle” to the satellite. A site with a clear, unobstructed view facing south, southeast is required. Your antenna site must be selected in advance so that you will be able to receive the strongest signal available. Also consider obstructions that may occur in the future such as the growth of trees.

It is important to conduct an on-site survey with a portable antenna or with a compass and clinometer to avoid interference, obstructions, etc.

When selecting “look angle,” be sure to observe and take readings approximately 10 deg to the left and right, above and below your selected “look angle.”

Before Ground Pole Installation, the soil type should be checked because soil conditions vary widely in composition and load bearing capacity. A soil check will help you to determine the type
and size of foundation required to provide a stable base for the antenna.

Before digging is done, information regarding the possibility of underground telephone lines, power lines, storm drains, etc., in the excavation area should be obtained from the appropriate agency.

As with any other type of construction, a local building permit may be required before installing an antenna. It is the property owner’s responsibility to obtain any and all permits. Ground mounts are certified for 125 mph wind survival.

Thank you for purchasing your Challenger Commercial Antenna. We trust that you will find this to be a well designed product that will provide many years of reliable service. This manual will help you to know the tools and proper installation of the product. Please check, read and understand the content of this manual before beginning your antenna installation.

Identify and verify that all parts have been received by comparing packaged contents with the Hardware List below.

Record the serial number of the unit on page 2 for future reference and read the warranty information. The serial number can be found on the antenna hub.

Hardware Table

No.	Description	Qty
1	3.8m Hub	1
2	Hub Angles	16
3	3.8m Radial Beams	16
4	3.8m Petals	16
5	3.8m Outboard Skirts	16
6	Center Cover with back brace	1
7	3.8m Feed Struts	4
8	3.8m Outboard Feed Angles	4
9	Back Braces	16
10	Threaded Rod (az. lockdown)	1
11	King Post Assembly	1
12	Turnbuckle Assembly	1
13	*TxRx Feed Assembly	1

No.	Description	Qty
14	Hub angle to Hub pack	1
15	Radial Beam to Hub pack	1
16	Petal to Radial Beam pack	1
17	Ouboard Skirt pack	1
18	Feed Strut Bottom pack	1
19	Feed Strut Top pack	1
20	Center Cover pack	1
21	Extra Hardware pack	1
22	Rect. Feed Strut pack (used for multi-beam applications or for Motorized feed)	1
24	Base Plate Washers	4

* TxRx Feed Assembly (optional)

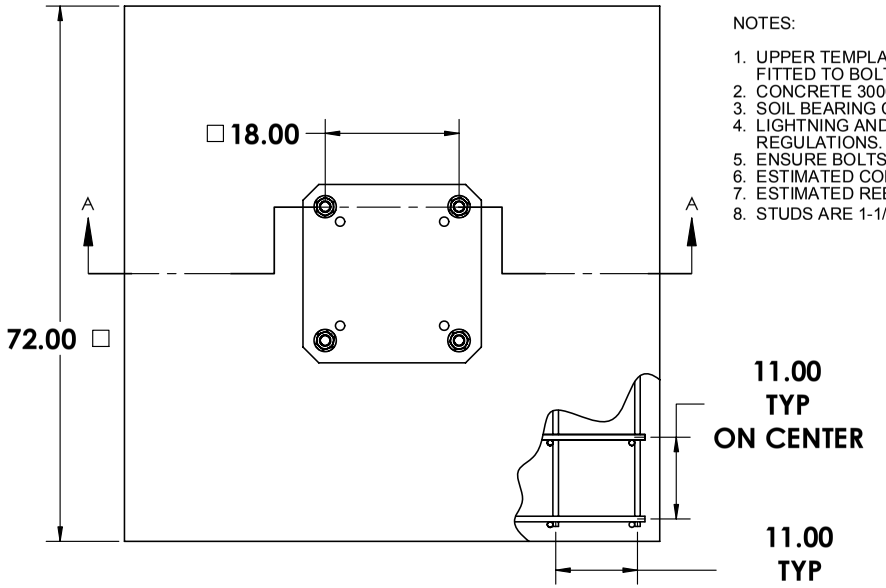
*We include 1 can of matching touch-up paint for your convenience.

Tools Required

2– Adjustable wrenches (12" or larger)
1– Drive Socket set (through 3/4")
1– Combination wrench set through 1-1/4"
1- 2" combination wrench
3- 5/16" tapered alignment tool or equal
1- 8' step ladder
1- allen socket set
1- level
1- tape measure
2- pocket aprons for hardware, tools

Other

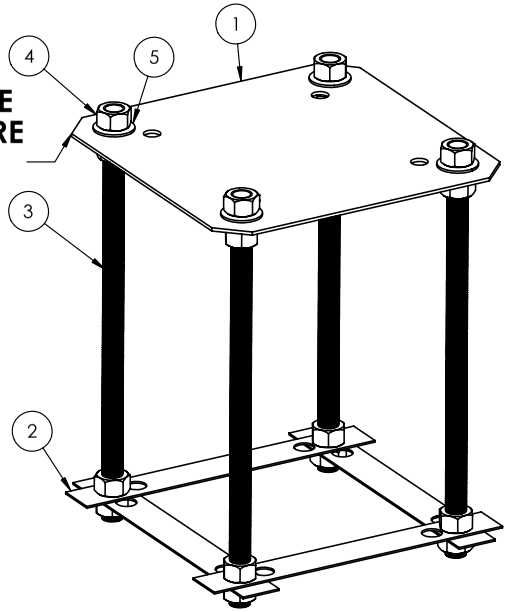
1- Pre-installed cement foundation with anchor studs. (not included)
1- Feed Cover (Sold seperately)

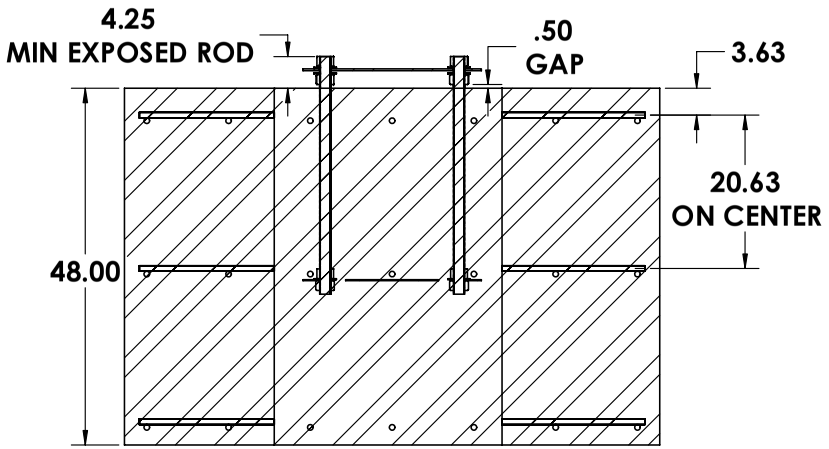


NOTES:

1. UPPER TEMPLATE REMOVED WHEN MOUNT IS FITTED TO BOLTS
2. CONCRETE 3000 PSI MINIMUM- VIBRATED
3. SOIL BEARING CAPACITY- 2000 PSF
4. LIGHTNING AND GROUNDING AS PER LOCAL REGULATIONS.
5. ENSURE BOLTS ARE VERTICAL.
6. ESTIMATED CONCRETE- 5.33 CUBIC YARDS
7. ESTIMATED REBAR- 392FT OF #5
8. STUDS ARE 1-1/2" DIAMETER

CARDBOARD TEMPLATE TO BE REMOVED BEFORE KINGPOST IS SET

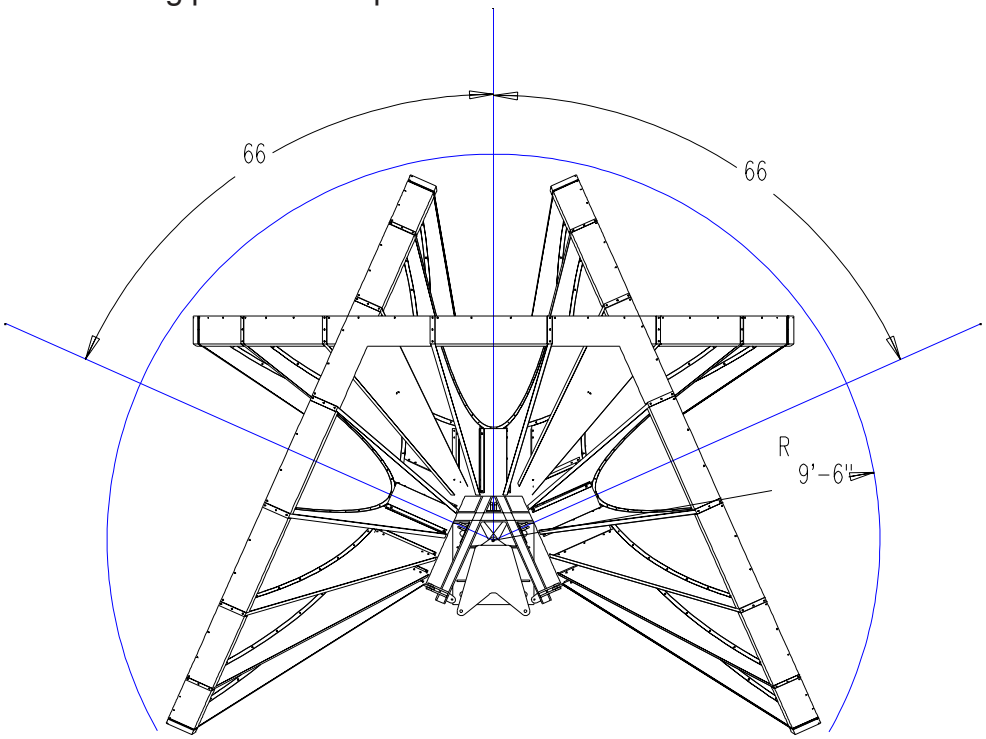


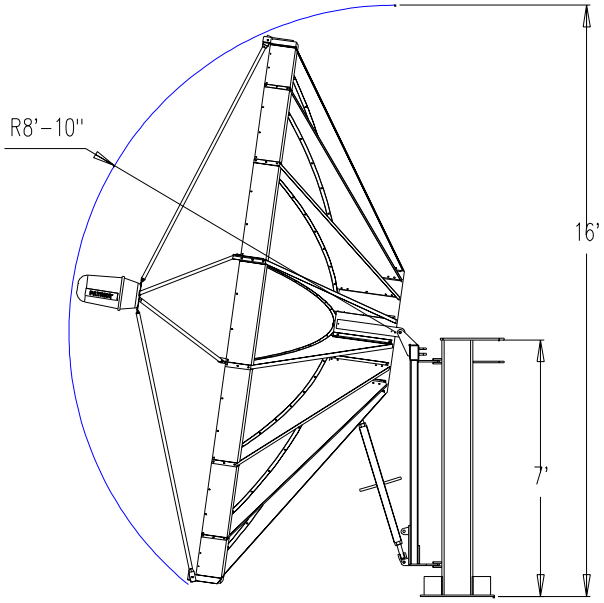


SECTION A-A

Note:

The AzEl Fixed King Post mount is designed to have a total arc coverage of 132 degrees. The pad bolts must be placed in the concrete to allow coverage of the desired portion of the satellite arc. Please consult a satellite chart, software program or a qualified consultant for compass setting to point the king post bolt template.





*Dual Axis Motorized King Post has approximately 116 degree of travel depending on the actuators used.

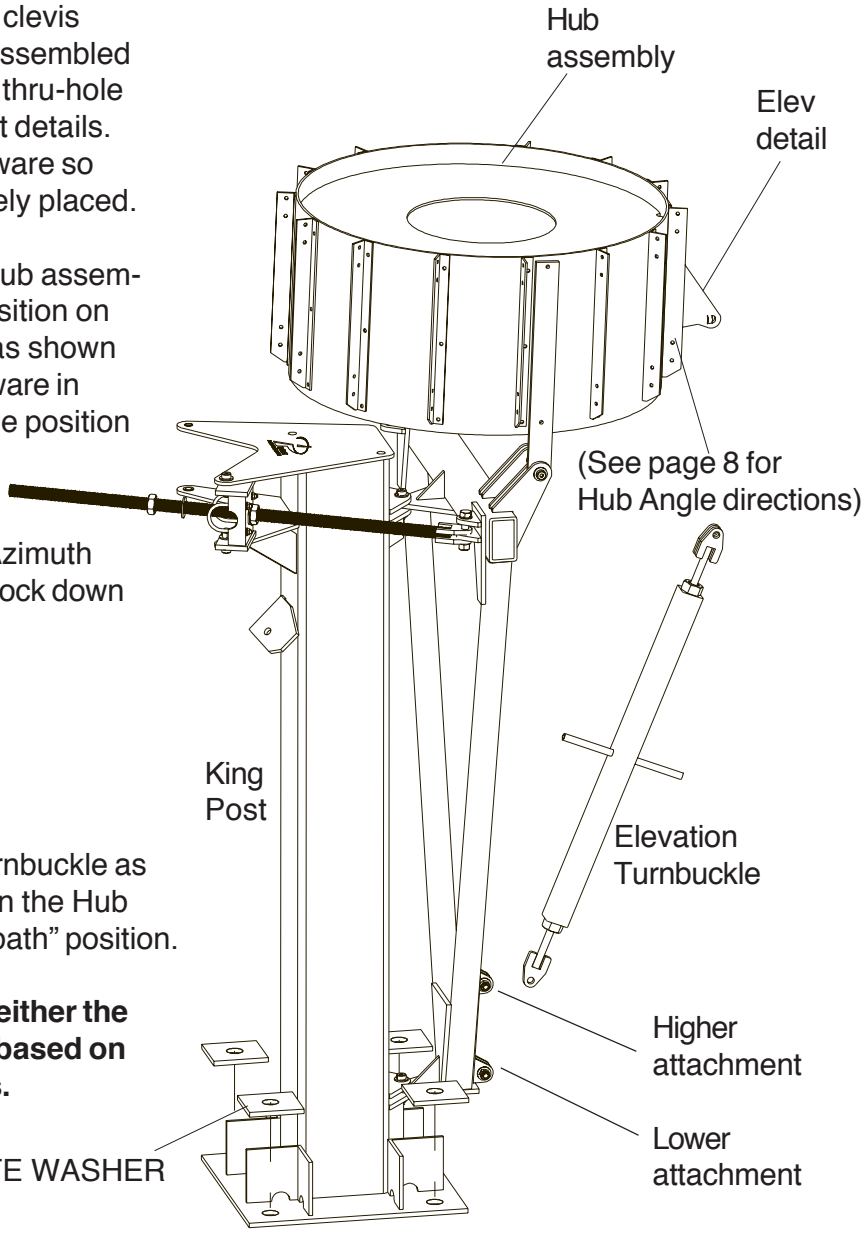
Mount Assembly- Fixed

1. With one set of nuts and washers in place on the pre-installed foundation studs, place the King Post assembly onto the foundation sliding the bottom plate on to the threaded studs pointing the “A-frame” assembly of the mount in the desired direction- south in the northern hemisphere, north in the southern hemisphere. (see Note on page 4 regarding stud installation).

Tighten the nuts so that the square tube mast is relatively plumb. (Make sure to use base plate washers as pictured below.)

2. Assemble the Azimuth Lock down threaded rod to the main post clevis double nutting it with the pre-assembled washers and nuts. Attach the thru-hole end to the A-frame attachment details. Snug the Lock down bar hardware so the Hub assembly can be safely placed.

3. With 2 helpers, place the Hub assembly in the zenith (bird bath) position on top of the King Post A-frame as shown using the preassembled hardware in place on the A-frame. (Note the position of the Elevation detail!)



4. Assemble the elevation Turnbuckle as shown, and adjust it to position the Hub assembly in the upward “bird bath” position.

NOTE: Attach turnbuckle to either the higher or lower attachment based on your elevation requirements.

Mount Assembly-Motorized

1. With one set of nuts and washers in place on the foundation studs, place King Post assembly onto the foundation sliding the bottom plate on to the threaded studs pointing the "A-frame" assembly of the mount in the desired direction- south in the northern hemisphere, north in the sourthern hemisphere, plus the degree of rotation needed to track the arc. Tighten the nuts so that the square tube mast is relatively plumb.

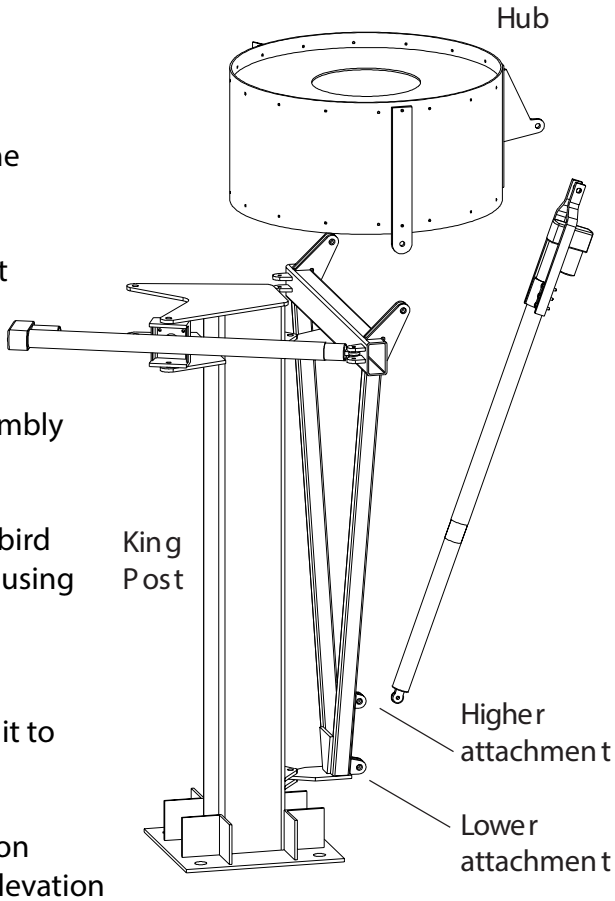
2. Assemble the azimuth actuator to the main post and A-frame locking it into a steady position so the Hub assembly can be safely placed.

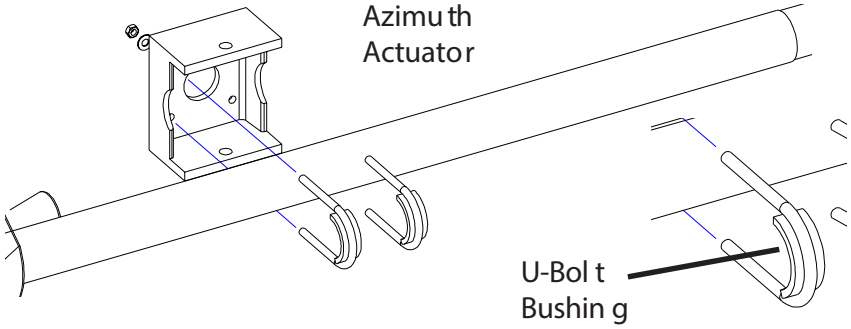
3. With 2 helpers, place the Hub assembly in the zenith (bird bath) position on top of the King Post A-frame as shown using the preassembled hardware in place on the A-frame.
NOTE the position of the elevation detail.

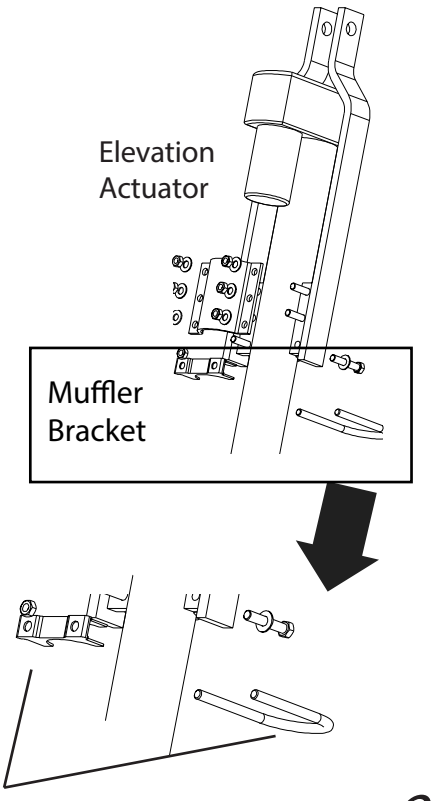
4. Assemble the elevation actuator as shown and adjust it to position the Hub assembly in the zenith position.

5. Make sure muffler bracket is installed beneath elevation actuator clamp. Failure to do so may result in actuator/elevation bracket damage.

NOTE: Actuators may come with a reducer busing in the clevis end. This will have to be removed prior to assembly.
Inside diameber should be 3/4 inch.





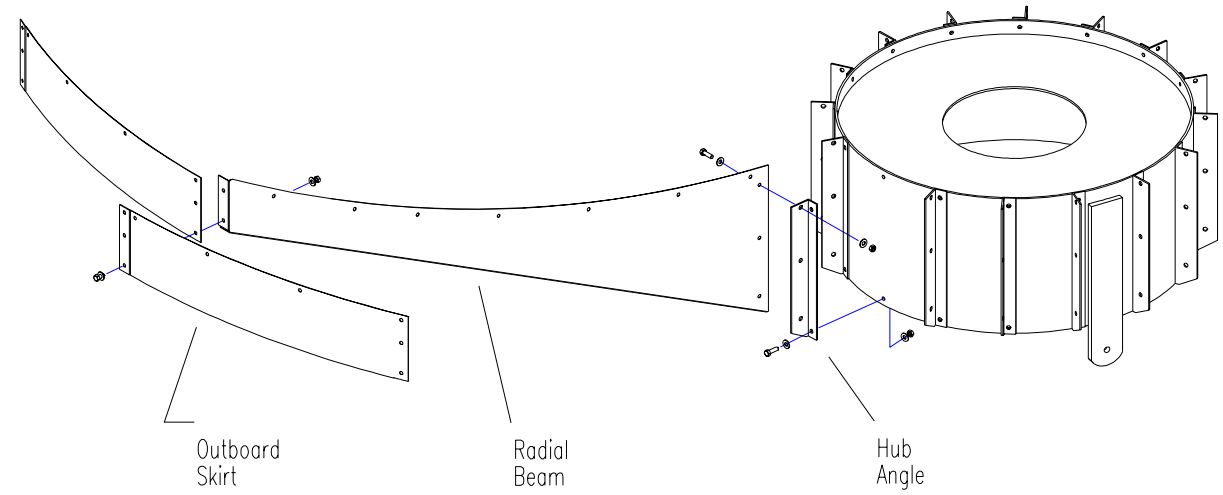


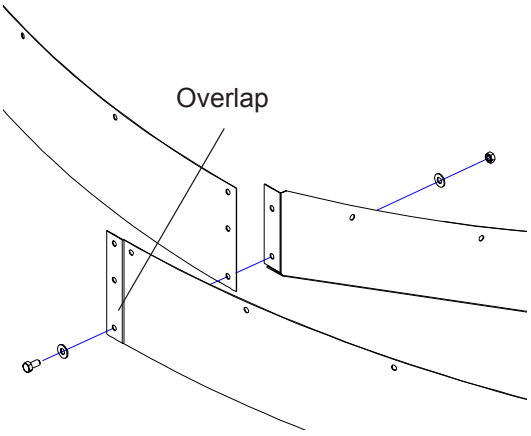
Muffler Bracket Close-up

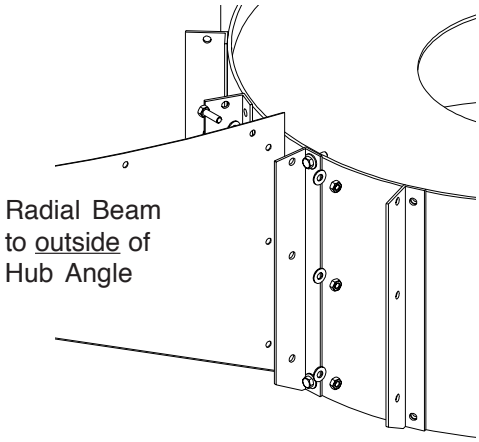
Reflector Assembly

1. Install the Radial Beams to the Hub Angles which are pre-installed to the hub, using hardware labeled- **Radial Beam to Hub** Use 3 bolts, 6 washers, and 3 nuts per. Tighten this hardware as it is installed.
NOTE: Be sure to place the Radial Beam on the outside of the Hub angle as shown.

2. Now install all of the Outboard Skirts on the end of the Radial Beams (bent edge down) **using hardware labeled Outboard Skirt**. Leave this hardware loose.
NOTE: One end has formed an "overlap." Place this end on the outside.



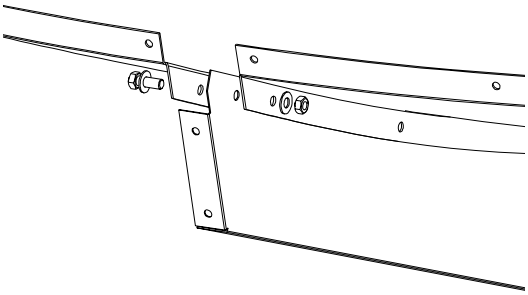


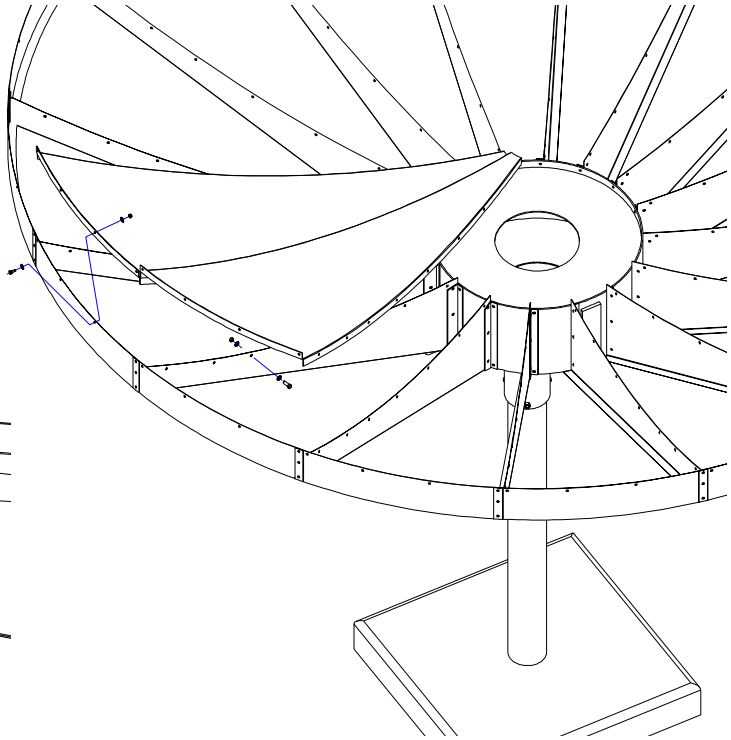


3. Set in two Panels into the Radial Beams. **The Radial Beams must be between the flanges of both Panels (see drawing below)** using three tapered alignment tools (not included). Insert an alignment tool in the second hole from the Hub. Insert the second alignment tool in the 5th hole from the Hub. Next use the third alignment tool to make sure the Panel Flanges that are laying inside of the Hub are even, this will help in the alignment of the holes on the Radial Beams and Panels. Now you are ready to put the 3/8" bolt into the first hole which is known as the **Master Gauge Hole. Carefully draw it thru both the Radial Beams and The Panel without compromising the hole.** This is very crucial to have a good parabolic shape. Next insert the alignment tool that was in the second hole from the Hub into the the third hole from the Hub and insert a 3/8" bolt through the second hole and put on a washer and nut. Hand tighten. Continue installing the remaining Panels using this method. Leave all hardware loose at this time.

Petal

NOTE:
Radial Beam between
panel flanges!





Tightening Procedure- Important!

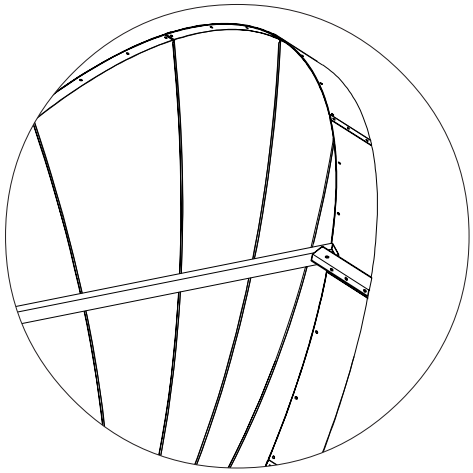
4. Starting at the Hub, tighten all hardware by working outward, one circular row at a time.

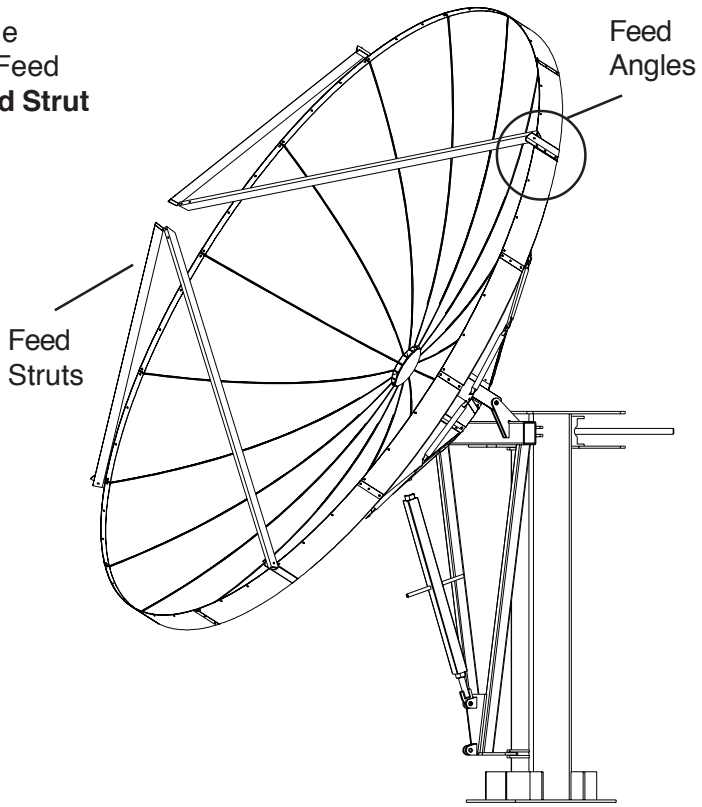
5. When all petals are tight, put in the remaining hardware from the **Outboard Skirt** pack. At every 4th Radial Beam/Outboard Skirt junction include an Outboard Feed Angle as you assemble using hardware kit labeled- **Feed Strut Bottom**. Tighten hardware as you intall it.

NOTE: The 3 holes in Outboard Feed Angle should be aligned with the 3 holes in Outboard Skirt. See view on page 8.

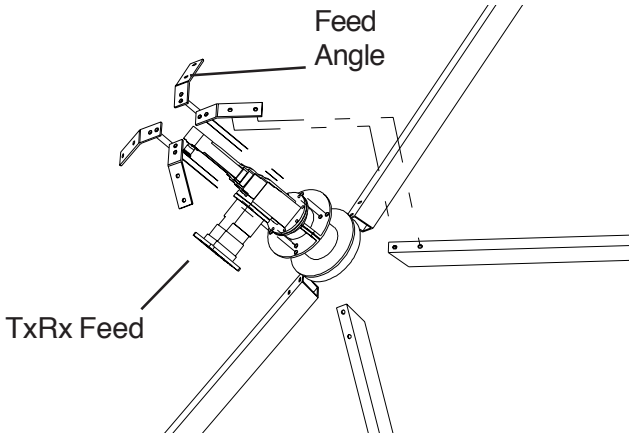
Feed Support Assembly- Standard

1. Place the Feed Struts in place with the straight end assembled to the Outboard Feed Angles at the edge of the dish. Use **Feed Strut Top** pack hardware.





2. Assemble the Feed Scaler to the angle brackets as shown using 1/4" hardware. Then assemble the feed scalar to the Feed Struts using 5/16 hardware.

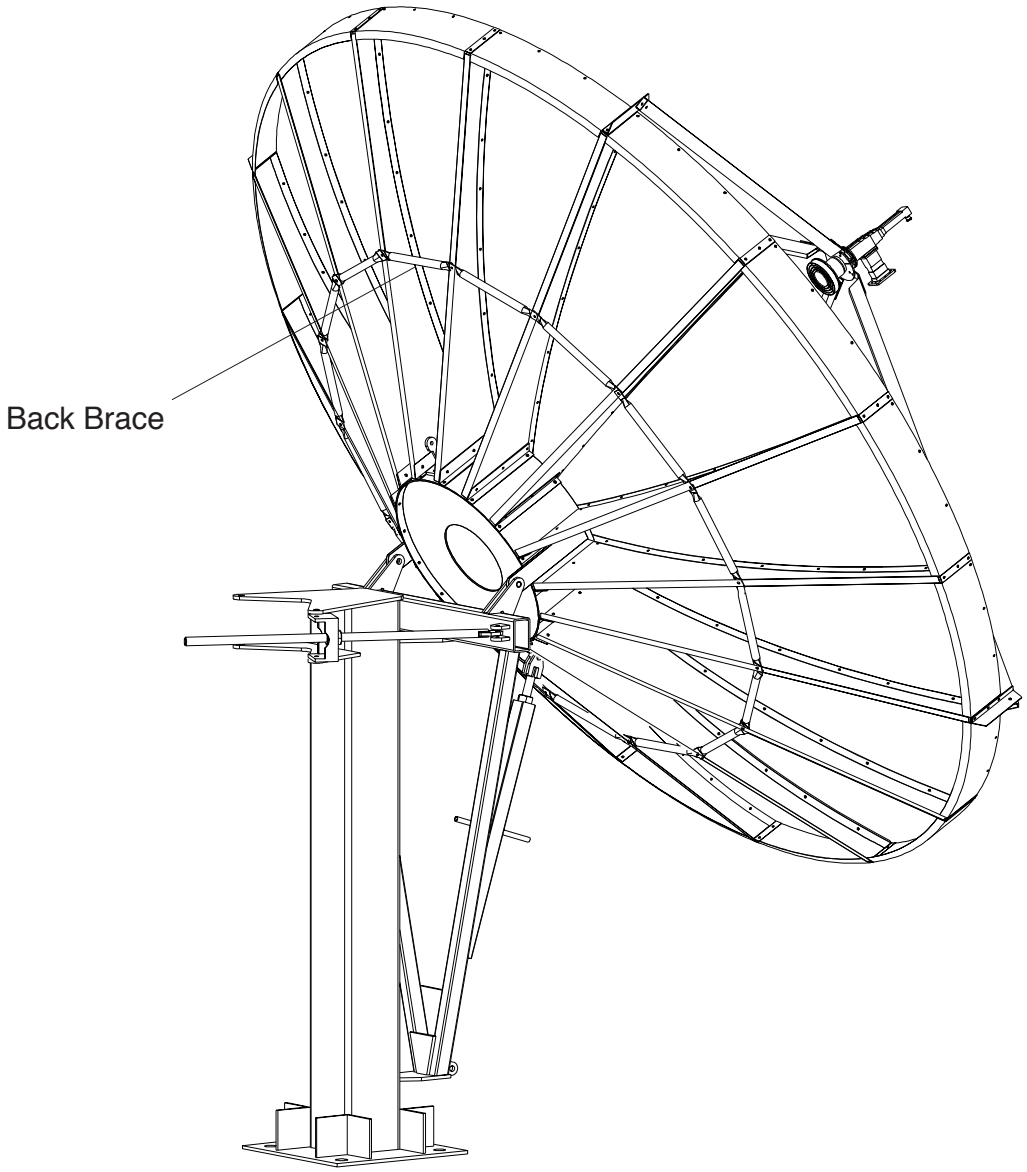


3. Check Focal Distance- 1.57m (62.625")

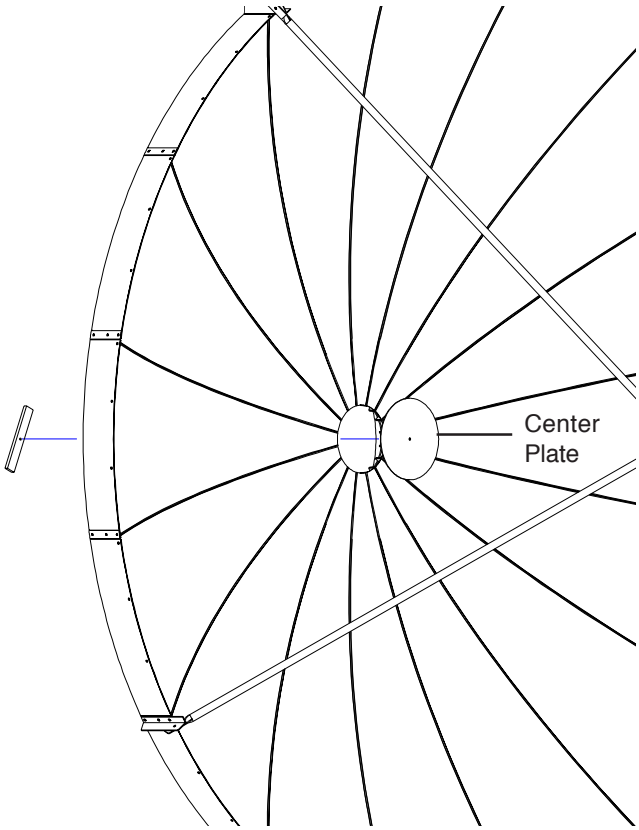
NOTE: The 4 slotted holes provide skew adjustment setting.

Back Brace Assembly
(High Wind)

1. Assemble the Back Braces to the back of the Radial Beams as shown.
Use 5/16” hardware from the Back Brace pack: 1 bolt, 2 washers, 1 nut per.



With a helper, place the center plate in place in the center of the opening of the panels using hardware from **Center Plate** pack. From behind, place the back brace through the hub center across the hub opening. Tighten the nut on the bolt being **careful not to overtighten** which could crush the petals.
NOTE: If you need to climb into the dish be sure to place your feet along the Radial Beams and not into the center areas of a panel!



The antenna assembly is now complete. Now lower the antenna out of the “bird bath” position. To adjust the antenna toward the selected satellite you must first know its elevation angle above horizon. This will be the reference angle for the face of the antenna. Using an inclinometer on the face of the antenna, pre-adjust the desired angle. Knowing the azimuth angle of the satellite from due south, roughly aim the antenna in that direction. With the LNB connected to the proper sight-in equipment the antenna can be accurately adjusted to the satellite signal. Tighten all hardware.

Installation is complete.