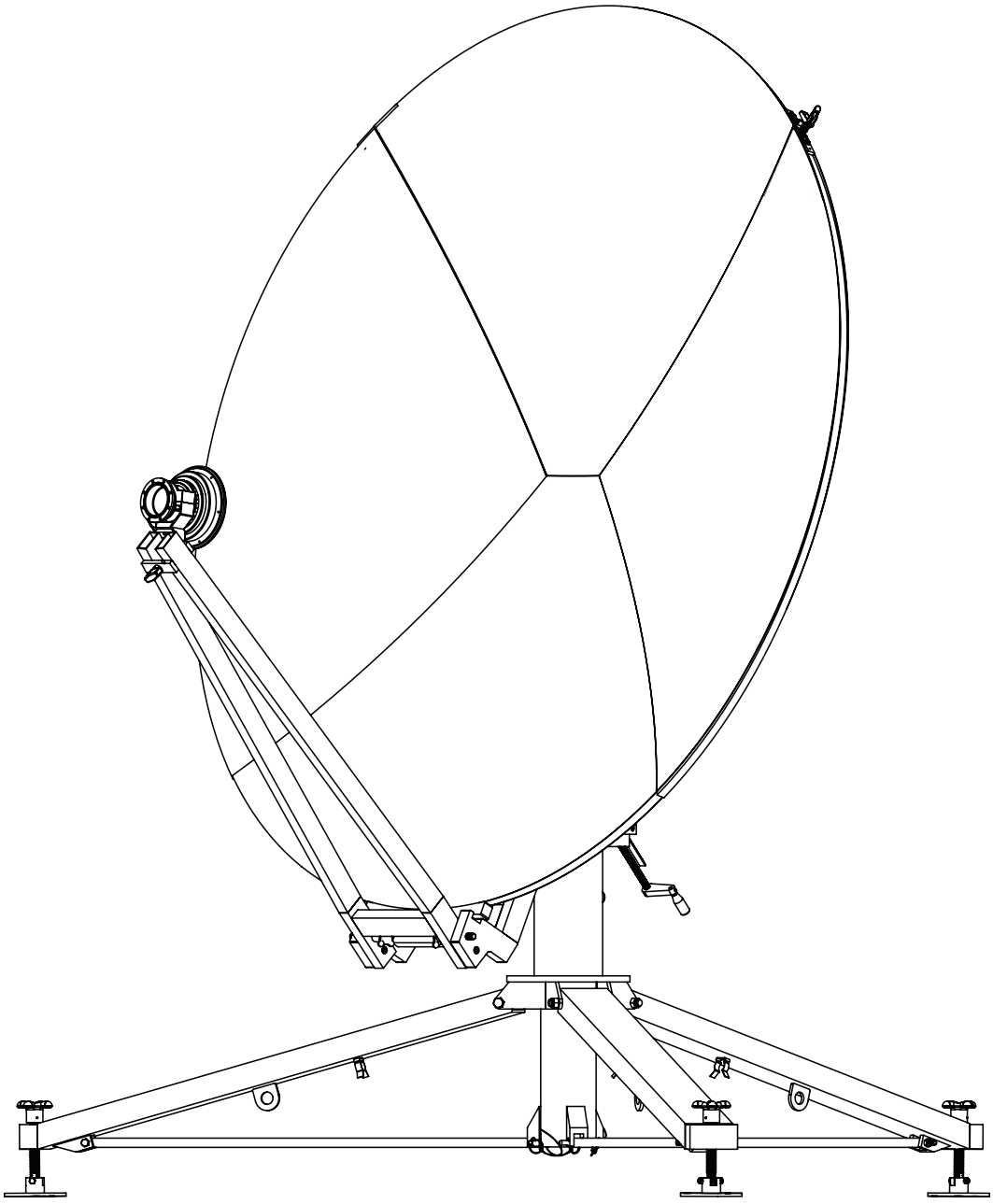
CHALLENGER COMMUNICATIONS

# 1.8m Quick-Deploy Antenna System

## Assembly Manual



www.ChallengerCommunications.com

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.

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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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## Introduction

Thank you for purchasing your Challenger Communications product. We trust you will find this to be a well designed product that will provide 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 page two for future reference and read the waranty information.

### 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.

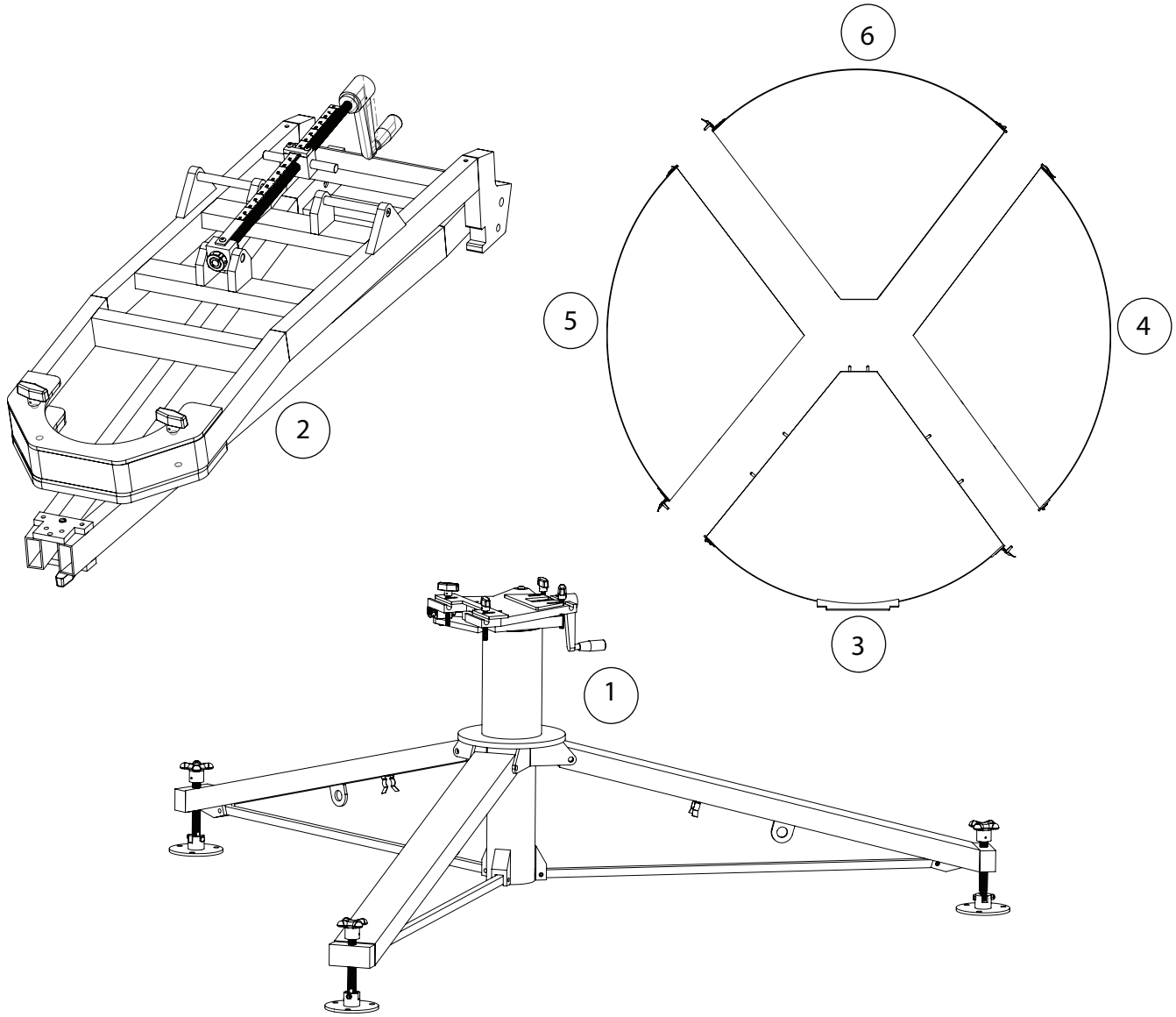
When selecting “look angle,” be sure to observe and take readings approximately 10 deg to the left and right, above and below your selected “look angle.”

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.

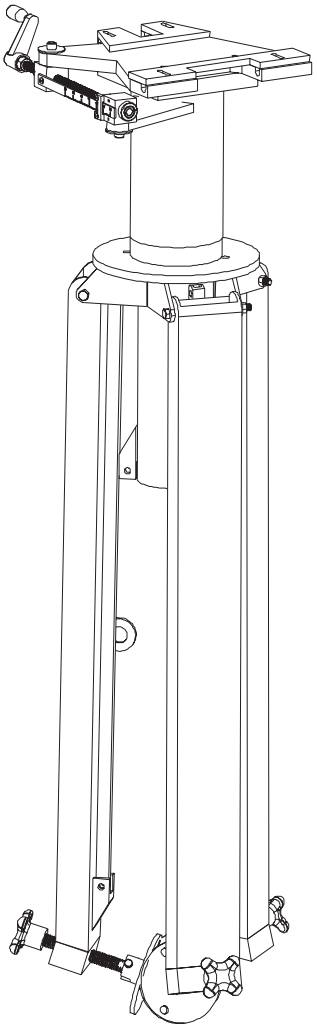
Before digging is done, information regarding the possibility of underground telephone lines, power lines, storm drains, etc., in the excavation area should be obtained from the appropriate agency.

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.

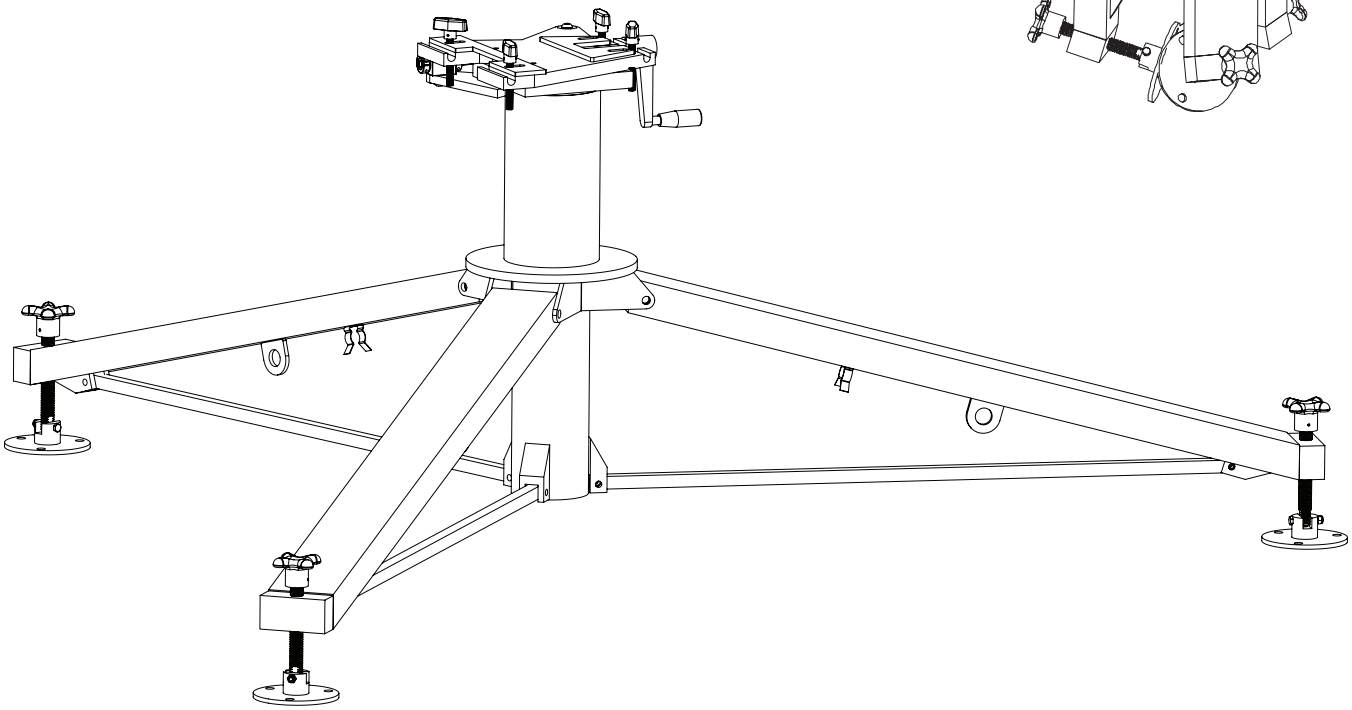
| ITEM NUMBER | PART NUMBER | DESCRIPITION | QTY |
|---|---|---|---|
| 1 | CHA-180-MNT | 1.8m Quick-Deploy Tripod Mount | 1 |
| 2 | CHA-180-BKST | 1.8m Quick-Deploy Back Structure w/Elevation Adjustment | 1 |
| 3 | CHA-180-A021 | 1.8 QD Panel #3 Assembly | 1 |
| 4 | CHA-180-A020 | 1.8 QD Panel #2 Assembly | 1 |
| 5 | CHA-180-A022 | 1.8 QD Panel #4 Assembly | 1 |
| 6 | CHA-180-A019 | 1.8 QD Panel #1 Assembly | 1 |



UNBOX AND UNFOLD TRIPOD ASSEMBLY AND LOCK
LEG SUPPORTS WITH ATTACHED QUICK RELEASE PINS.



LEVEL TRIPOD ASSEMBLY BY ADUSTING FOOT ASSEMBLIES
LOCATED AT THE END OF EACH LEG.
CHECK FOR LEVEL USING THE ATTACHED BUBBLE LEVEL
LOCATED ON TOP OF THE TRIPOD ASSEMBLY.

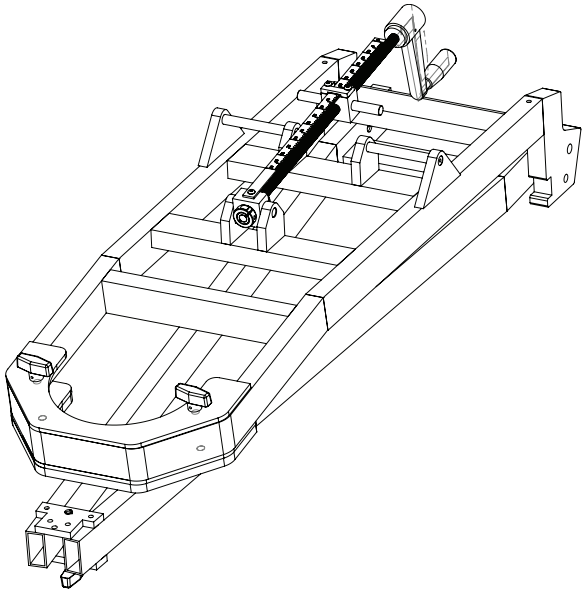


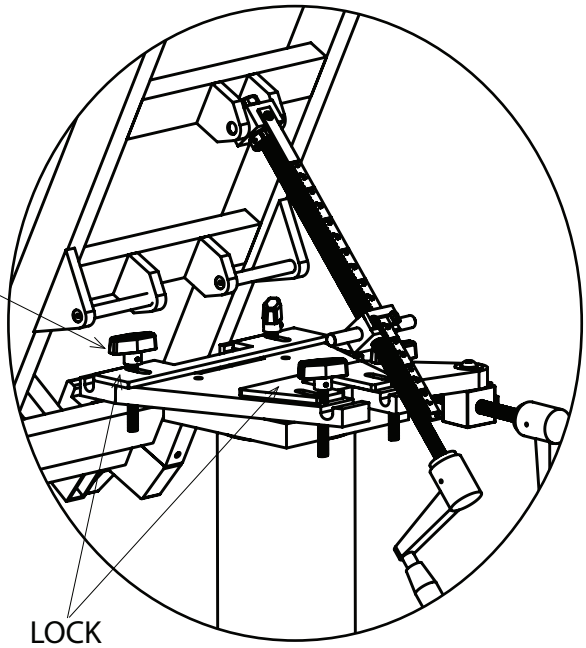
UNFOLD BACK STRUCTURE / FEED BOOM ASSEMBLY.

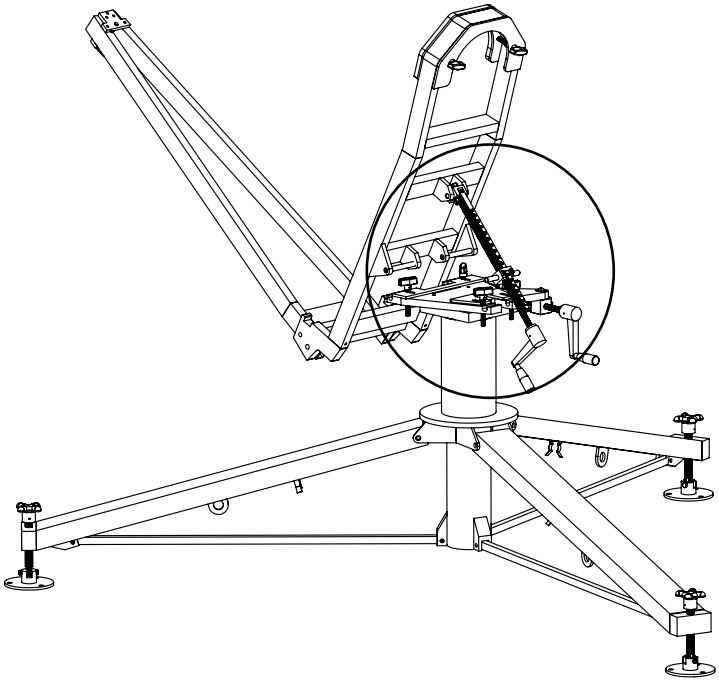
ATTACH BACK STRUCTURE AND ELELVATION ASSEMBLY TO THE TOP PIVOT PLATE AS PICTURED.

SLIDE LOCK PLATE OVER PIVOTS PINS AND SECURE WITH THREADED KNOBS.

LOCK FEED BOOM IN TO PLACE WITH ATTACHED THREADED KNOBS.





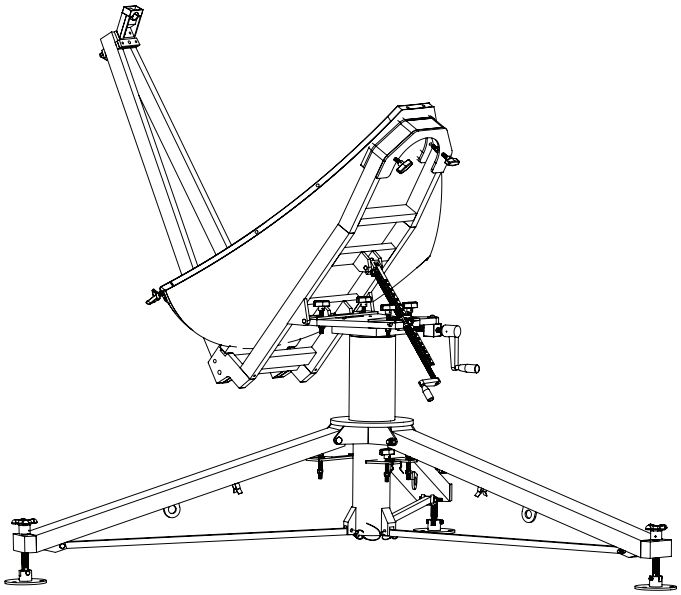



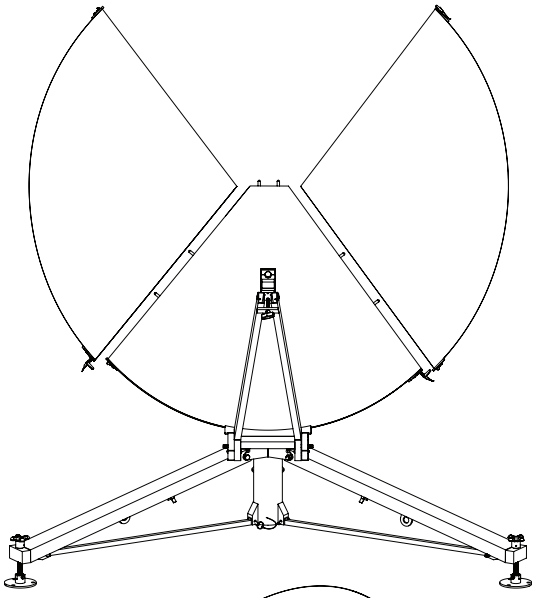
ATTACH LOWER PANEL AS PICTURED
AND SECURE IT WITH THREADED KNOBS.

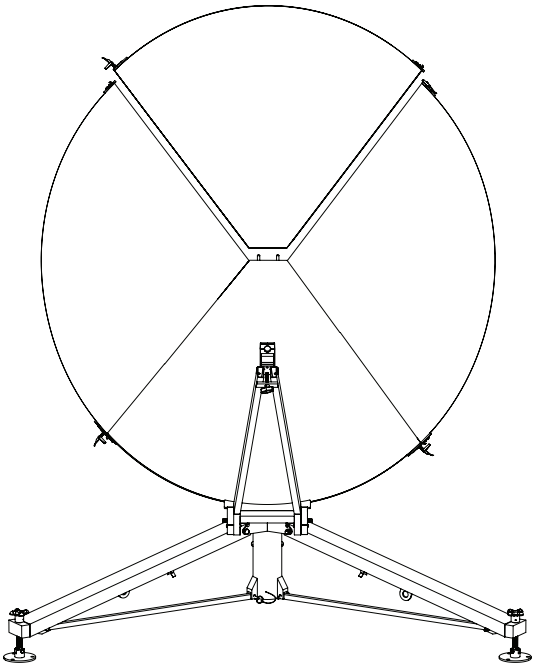
ATTACH SIDE PANELS AS PICTURED.
MAKE SURE PANEL FITS TIGHTLY
ON DOWEL PINS.

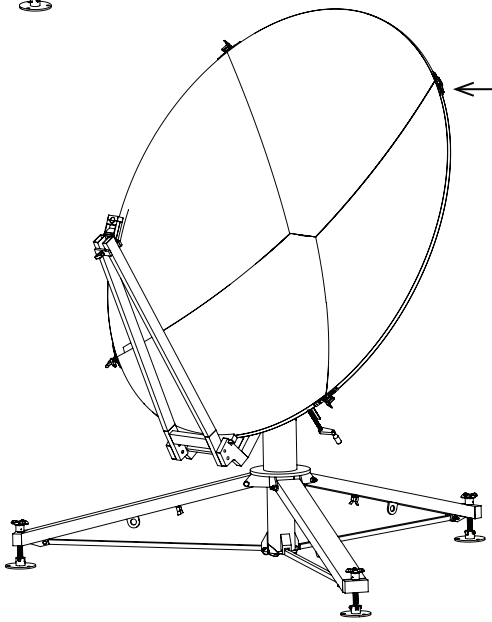
ATTACH TOP PANEL AS PICTURED.
MAKE SURE THAT THIS PANEL FITS
TIGHTLY ON DOWEL PINS.

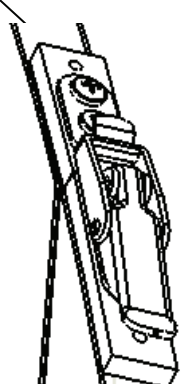
SECURE PANELS TOGETHER WITH
5 ATTACHED LATCHES AS PICTURED.





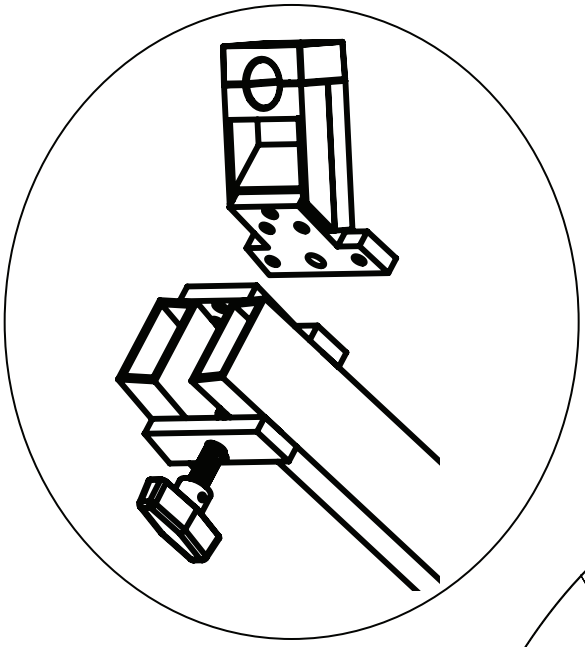


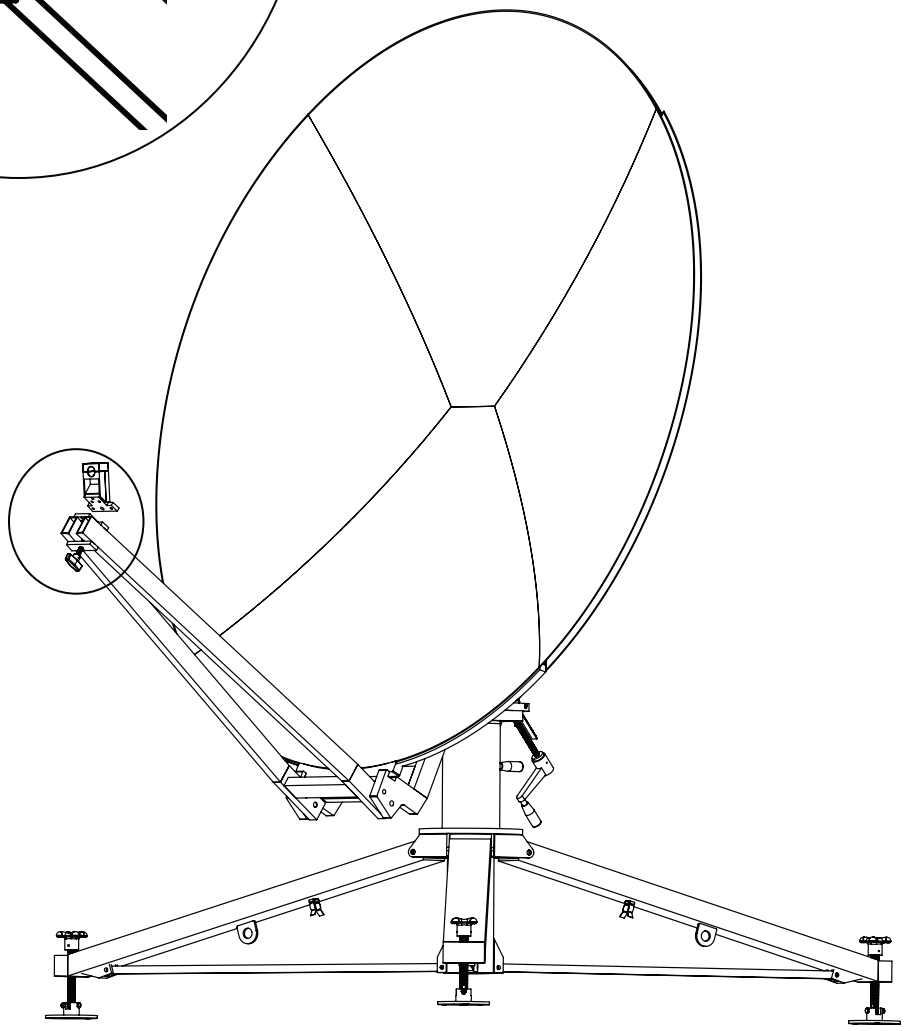


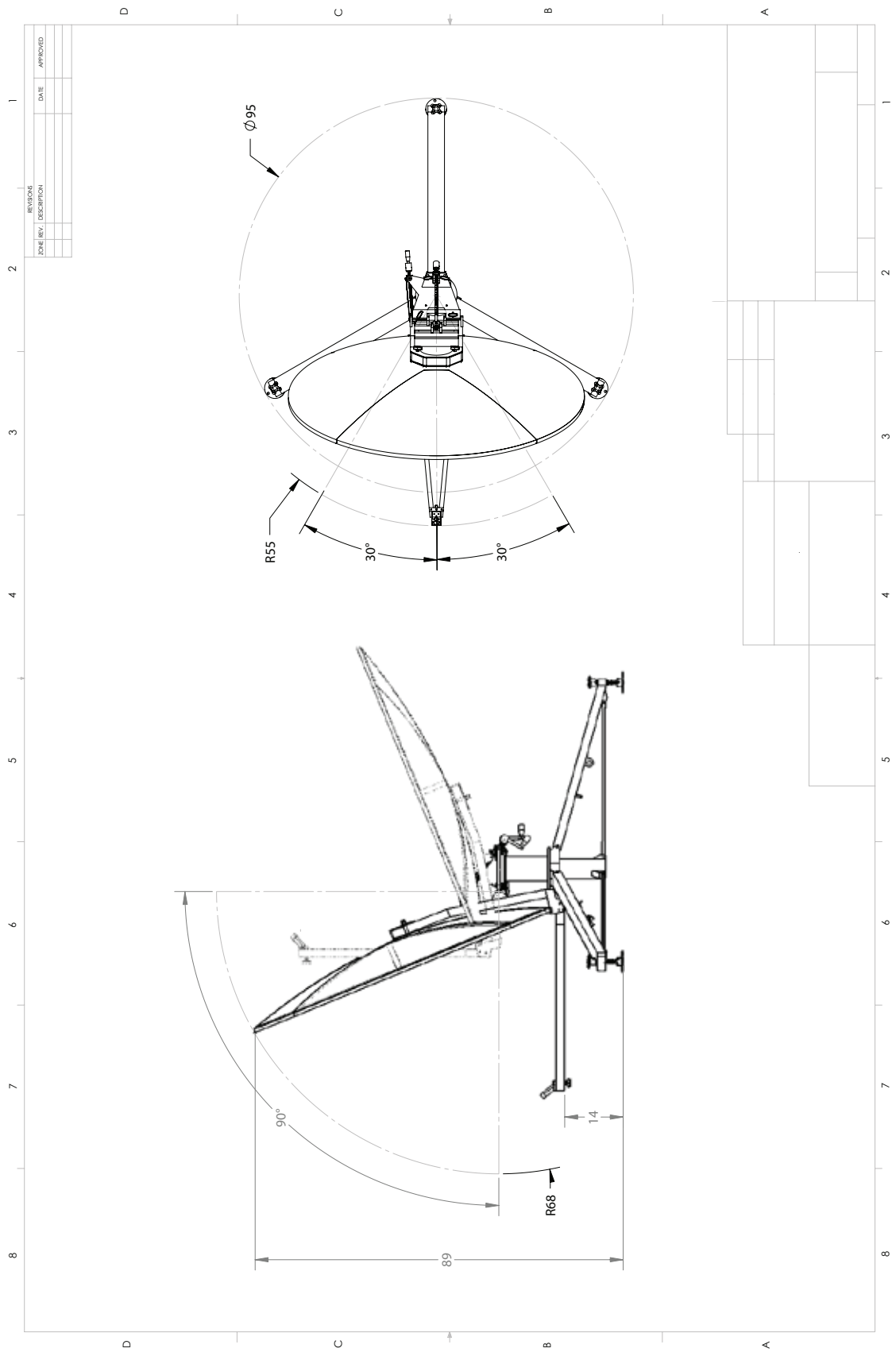


ACTUAL SIZE,
SHAPE AND DESIGN
OF CLASPS MAY VARY OR
CHANGE WITHOUT NOTIFICATION.

ATTACH FEED PLATE ASSEMBLY
TO FEED BOOM AS PICTURED AND
SECURE IT WITH THREADED KNOB.





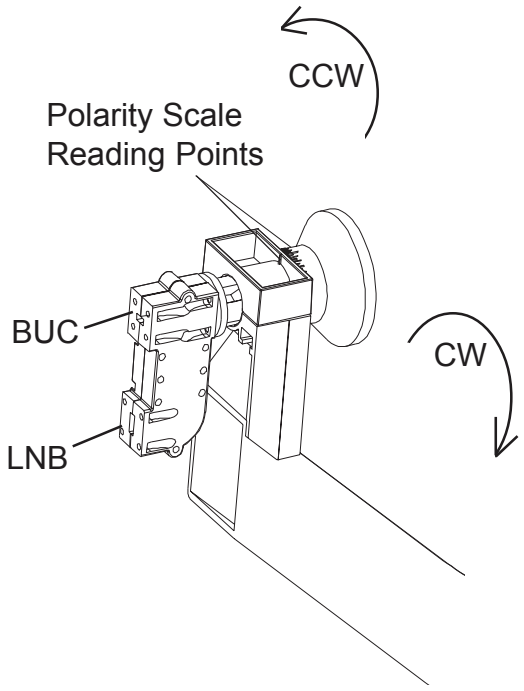

ZONE REV.
DESCRIPTION
DATE
APPROVED
REVISIONS
Ø95
R55
30°
30°
90°
14
R68
89

**Feed Adjustment (Polarity tuning)**

1. Adjust the Feed to the appropriate skew angle using the provided scale reference.

NOTE: Refer to the chart on back for polarization angle. Elevation and polarity are both dependent on site azimuth and the difference between satellite and site longitude.

NOTE: Some satellites have a slant angle with respect to the satellite belt angle. Contact the satellite operator for details.

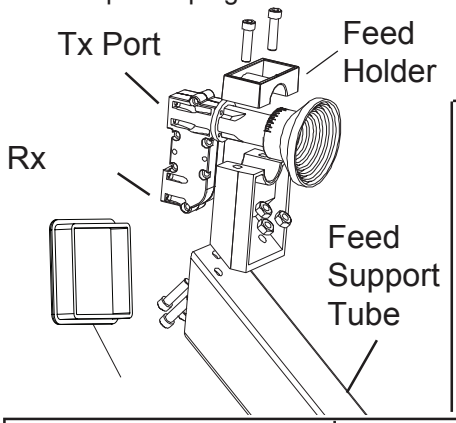


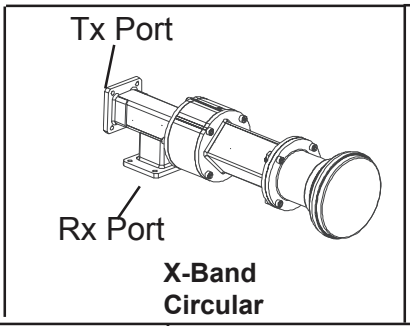

## Feed Rotation Chart

| Install site west of satellite | Install site East of satellite | |
|---|---|---|
| CW | CCW | Northern Hemisphere |
| CCW | CW | Southern Hemisphere |

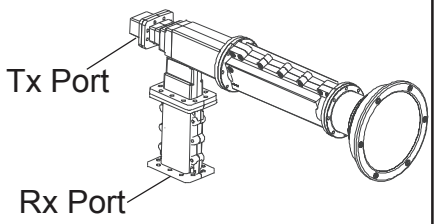
**Feed Assembly**

1. Attach the relevant Feed Assembly.
2. Insert the Feed Assembly into the Feed holder and assemble to the Feed Support Tube using the hardware illustrated below.
3. Insert plastic plug into end of feed support tube.

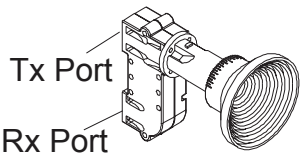


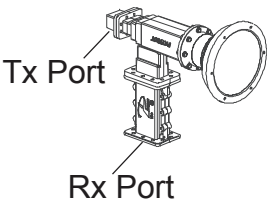

**X-Band Circular**



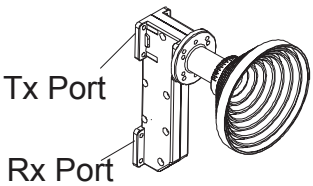

**C-Band Circular**



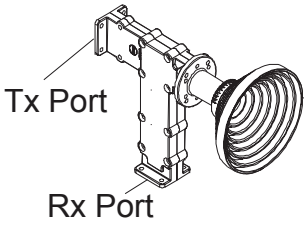

**KA-Band Linear Tx/Rx**



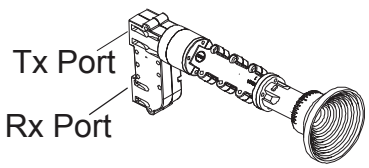

**C-Band Linear**



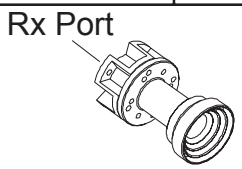

**Ku Band Tx/Rx**



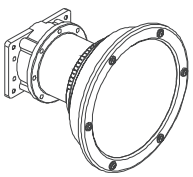

**Ku-Band Co-Pol Tx/Rx**



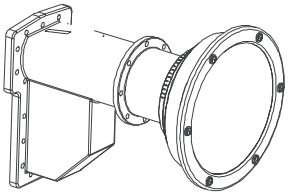

**KA-Band Circular Tx/Rx**




**Ku Band Rx**



**C-Band Rx**



**C-Band Dual Rx**

# Polarization Chart

Delta Longitude = |LONG$_{sat}$ - LONG$_{site}$|