



global skyware
completing the picture

March 2018
Revision A
ASSEMBLY MANUAL
8001129-01

1.2M 122H/123H KU ANTENNA SYSTEM

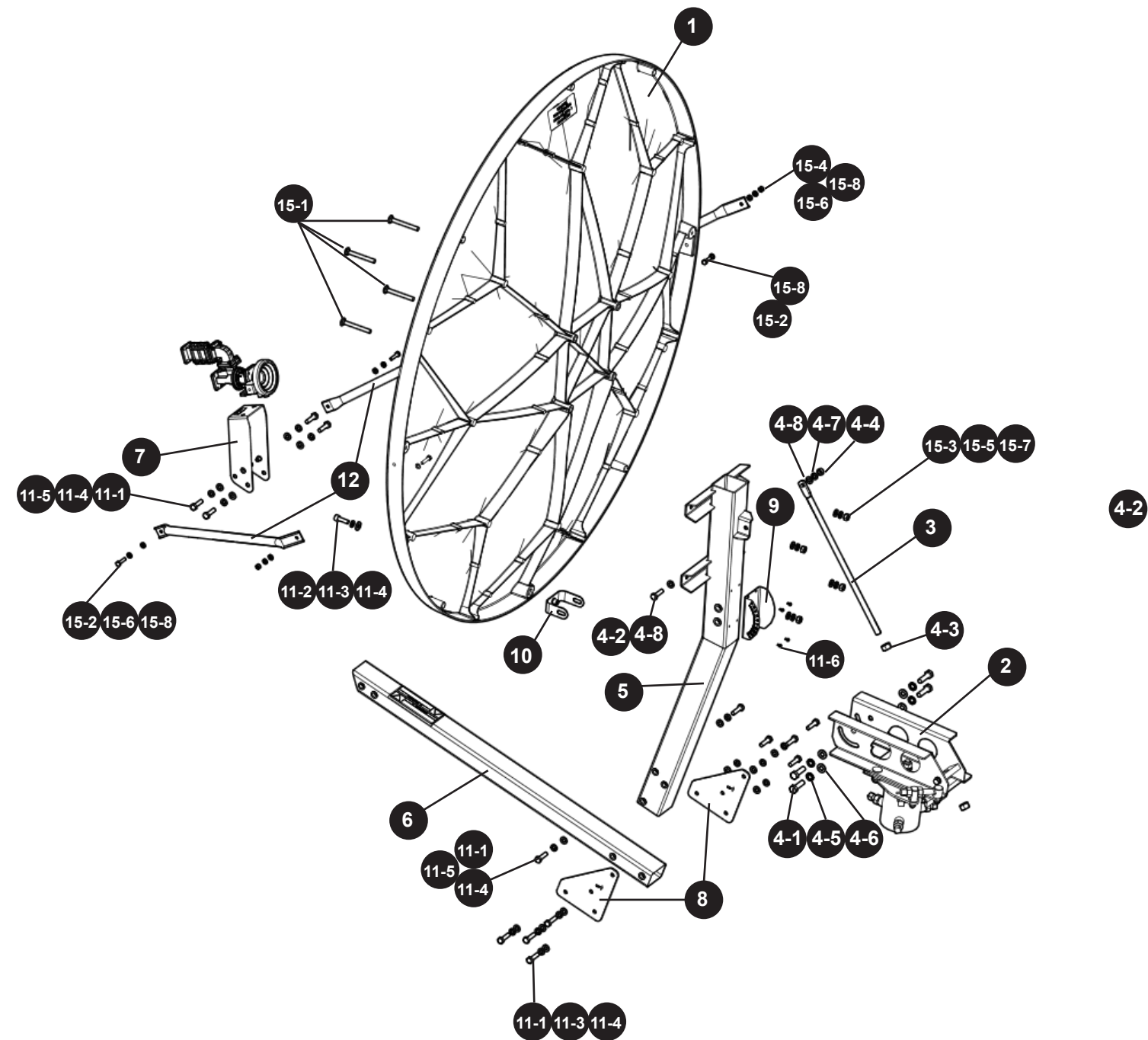
**For all 122H/123H Antennas
with Factory Assembled Az/EI Mount**

A	ORIGINAL RELEASE EC-02806	MAR 2018	R. Thompson
REV.	DESCRIPTION	DATE	APPROVED

ASSEMBLY MANUAL**1.2M 122H/123H KU ANTENNA SYSTEM****TABLE OF CONTENTS**

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
I	GENERAL INFORMATION	
1.0	PARTS LIST	1-2
1.1	TOOLS REQUIRED	3
II	ASSEMBLY INSTRUCTIONS	
2.0	ASSEMBLY AND INSTALLATION	4-7
2.1	ANTENNA ALIGNMENT PROCEDURE	8-9
2.2	GROUNDING PROCEDURE	10
III	CHARTS	
3.0	POLARIZATION CHART	11
3.1	ELEVATION CHART	12
3.2	AZIMUTH CHART	13
IV	APPENDIX A	
4.0	SITE SELECTION	14
4.1	WARNINGS	14
4.2	PERIODIC INSPECTION AND MAINTENANCE	15
4.3	WARRANTY	16

PARTS LIST



PARTS LIST

ITEM	DESCRIPTION	QTY
1	1.2M REFLECTOR	1
2	YOKE ASSEMBLY	1
3	ELEVATION ROD	1
4	MOUNT HARDWARE KIT	1
5	BACKFRAME ASSEMBLY	1
6	FEED SUPPORT ARM ASSEMBLY	1
7	BRACKET, HW XPC	1
8	BOOM SUPPORT PLATE	2
9	ELEVATION SCALE PLATE	1
10	SUPPORT BRACKET ASSEMBLY	1
11	FEED SUPPORT HARDWARE KIT	1
12	SIDE STRUT	2
13	SFL XPC HORN/OMT FILTER ASSY, LOW PROF	1
14	FEED HARDWARE BAG	1
15	REFLECTOR HARDWARE KIT	1

ITEM	DESCRIPTION	QTY
4-1	BOLT - M10 X 35	4
4-2	SET SCREW - M8 X 30	1
4-3	NUT - M12	2
4-4	NUT - HEX M8 X 1.25	1
4-5	WASHER, FLAT - M10	4
4-6	SPRING WASHER - M10	4
4-7	WASHER, LOCK - M8	1
4-8	WASHER, FLAT - M8	2

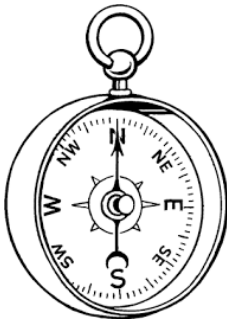
ITEM	DESCRIPTION	QTY
11-1	SET SCREW - M8 X 30	14
11-2	CAPSCREW - M8 X 25	1
11-3	WASHER, PLAIN - M8	1
11-4	WASHER, LOCK - M8	15
11-5	WASHER, FLAT - M8	14
11-6	'U' TYPE DRIVE SCREW	4

ITEM	DESCRIPTION	QTY
14-1	SCREW, HEX HD CAP M6 X 1.0 X 20MM	2
14-2	WASHER, LOCK, M6	1

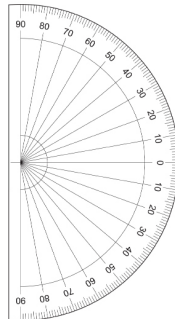
ITEM	DESCRIPTION	QTY
15-1	COACH BOLT (M8 X 70)	4
15-2	SET SCREW (M6 X 25)	4
15-3	NUT, HEX (M8 X 1.25) STL	4
15-4	NUT, (M6)	2
15-5	WASHER, LOCK, (M8)	4
15-6	SPRING WASHER, (M6)	4
15-7	FLAT WASHER, (M8)	4
15-8	PLAIN WASHER (M6)	6

1.1 TOOLS REQUIRED

Compass



Clinometer



Torque Wrench



9" Magnetic Level



3/8" Drive
Ratchet Wrench



3mm Allen Key



10mm, 13mm, 17mm Deep Socket (3/8" Drive)



10mm, 13mm, 17mm, 19mm Combination Wrench



Ball Pein Hammer



ADDITIONAL INSTALLATION MATERIALS (Not Included with Antenna)

Installation Mount (Ground Pole, King Post, Wall Mount or Roof Mount)

Grounding Rod, Clamp & Grounding Block - As required by National Electric Code or local codes.

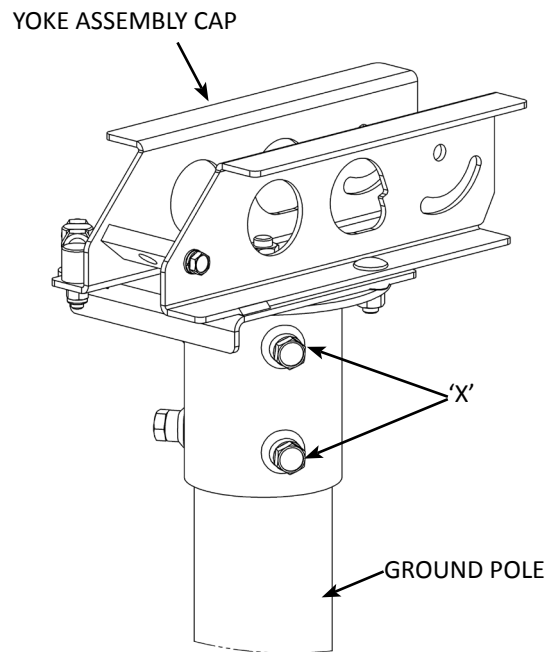
Ground Wire - #10 solid copper or #8 aluminum as required by National Electric Code or local codes (length as required).

RG-6 Coaxial Cables from antenna to indoor units.

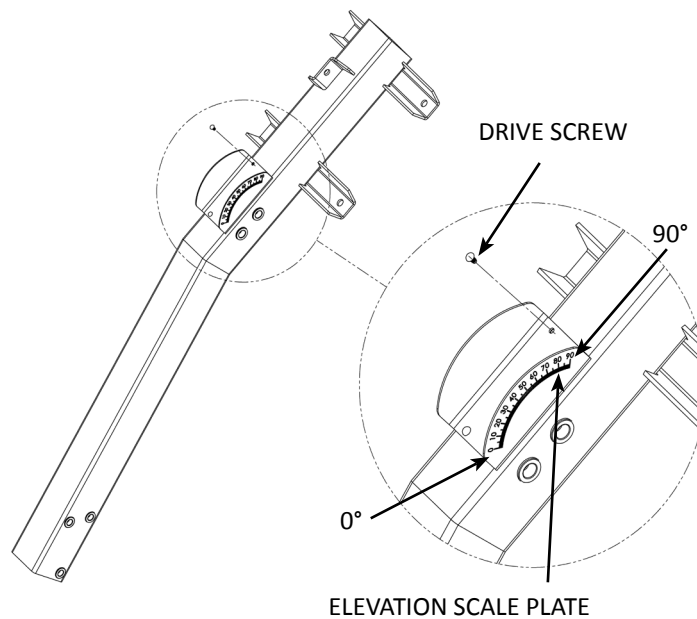
Concrete: See "Ground Pole" section for quantity

M10 or #3 Rebar: See "Ground Pole" section for quantity. Deformed steel per ASTM A615, Grade 40 or 60.

2.0 ASSEMBLY AND INSTALLATION



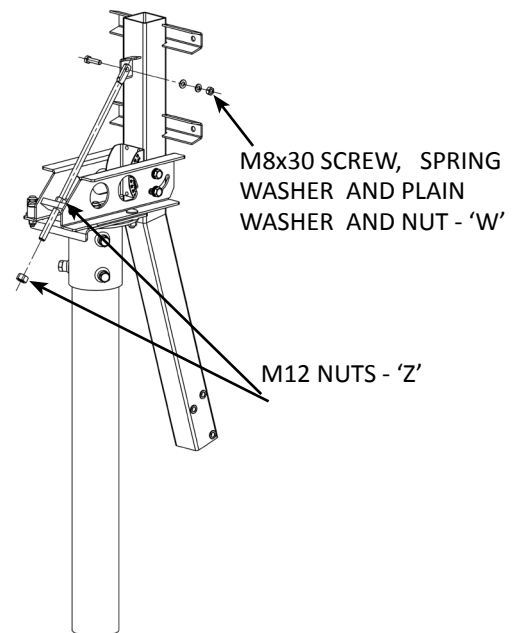
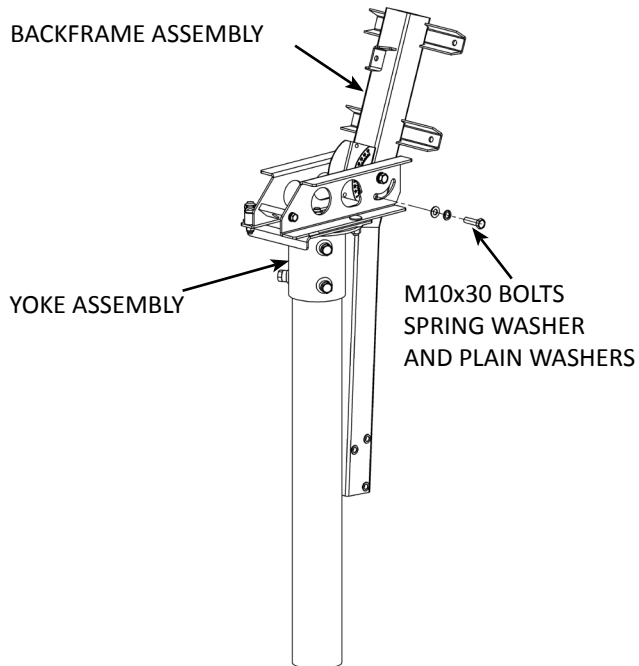
1. Unscrew locking screws 'X'. Assemble yoke cap assembly over ground pole and tighten 6x screws 'X' onto ground pole, do not tighten fully at this time



2. Assemble the elevation scale plate to the backframe assembly using qty 4 drive screws. Drive screws are in hardware kit 7580678.

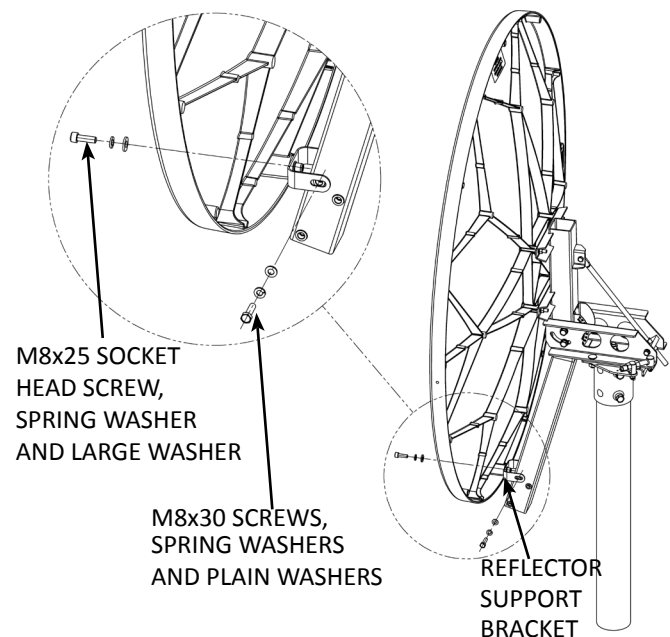
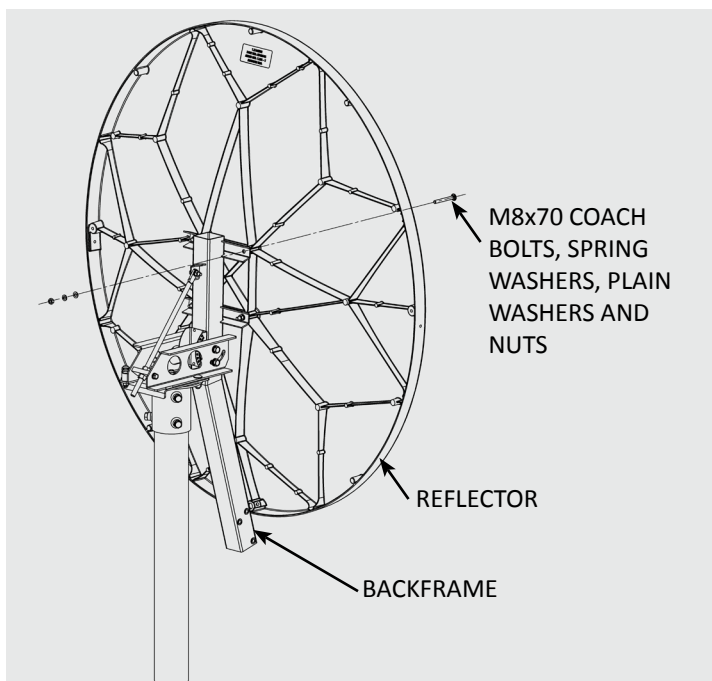
NOTE: Ensure bracket is in orientation shown before securing.

2.0 ASSEMBLY AND INSTALLATION



3. Assemble the backframe assembly to the yoke assembly using Qty 4 of M10x30 bolts, spring washers and plain washers. (Hardware Kit 7580654). Do not fully tighten at this stage

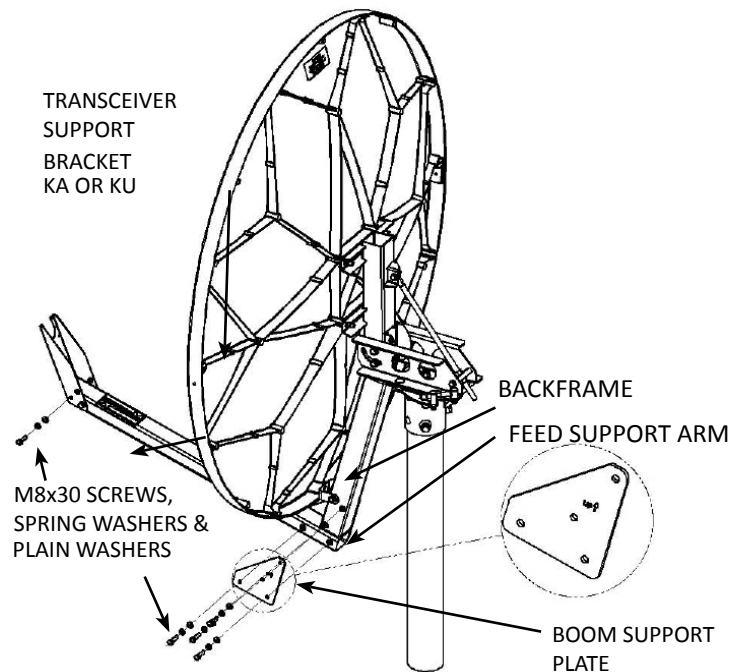
4. Assemble the elevation rod as shown using Qty 1 of M8x30 screw, spring washer, plain washer and nut and Qty 2 of M12 fine pitch nuts (Hardware Kit 7580674), torque Qty 1 of M8 nut 'W' and Qty 2 off M8 screws 'Z' to 6ft.lbs.



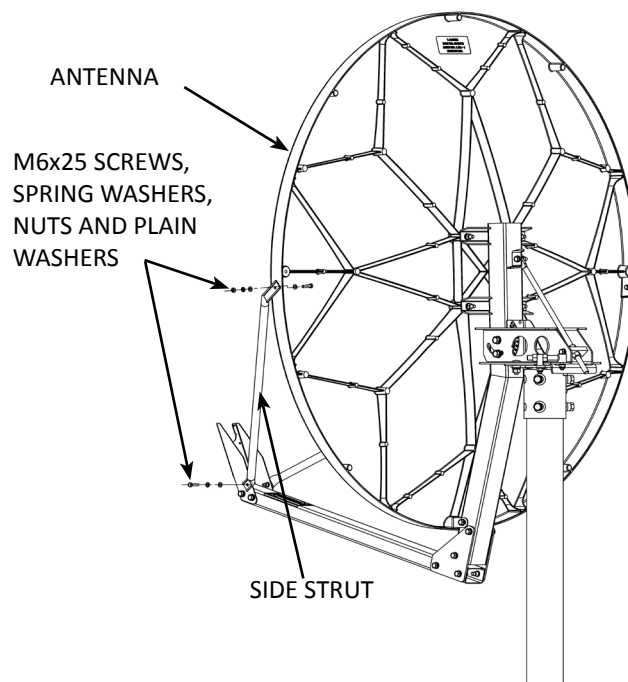
5. Assemble the reflector to the backframe using Qty 4 of M8 x70 coach bolts, spring washers, plain washers and nuts, do not fully tighten at this time.

6. Assemble the reflector support bracket using Qty 2 of M8x30 screws, spring washers and plain washers and Qty 1 of M8x25 socket head screw, spring washer and large washer (Hardware Kit 7580678), do not fully tighten at this time.

2.0 ASSEMBLY AND INSTALLATION

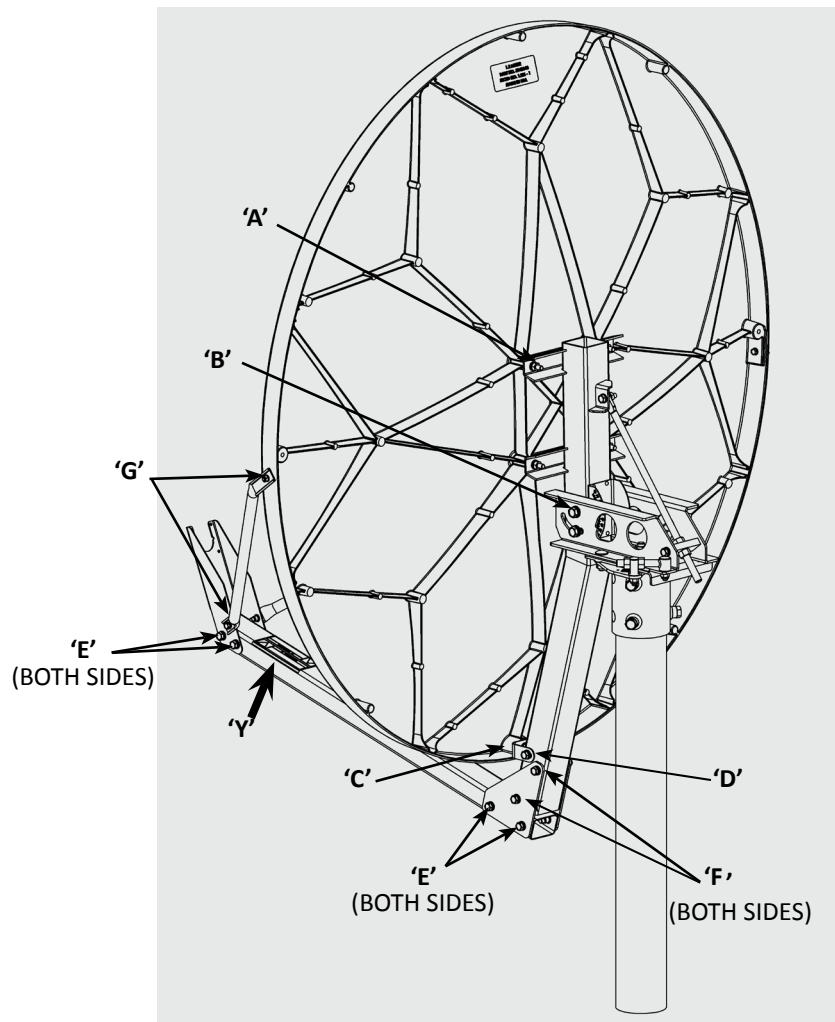


7. Assemble the feed support arm to the backframe using the Qty 2 of boom support plates. **Note: Orientation “UP” arrow on Boom Support Plate**, Qty 8 of M8x30 Screws, spring washers and plain washers (Hardware Kit 7580678), also assemble the transceiver support bracket to the feed support arm using Qty 4 of M8x30 screws, spring washers and plain washers (Hardware Kit 7580678). Do not fully tighten at this time.



8. Assemble Qty 2 of side struts to the antenna using Qty 4 of M6x25 screws, spring washers, Qty 2 of nuts and Qty 6 of plain washers (Hardware Kit 7580672), do not fully tighten at this time.

2.0 ASSEMBLY AND INSTALLATION



TORQUE FIGURES AND SEQUENCE

1. Torque Qty 4 M8 nuts 'A' to 11ftlb (15Nm)
2. Torque Qty 4 M10 screws 'B' to 6ftlb (8Nm)
3. Torque Qty 1 M8 socket head screw 'C' to 11ftlb (14.9Nm)
4. Torque Qty 2 M8 screws 'D' to 12ftlb (16Nm)
5. Torque Qty 8 M8 screws 'E' to 12ftlb (16Nm)
6. *Lift the feed support (see arrow 'Y') using sufficient force to relieve the load from the side support struts and torque Qty 4 M8 screws 'F' to 12ftlb (16Nm)*
7. Torque Qty 2 M6 nuts and Qty 2 M6 Screws 'G' to 4ftlb (5.5Nm)

FAILURE TO CARRY OUT STEP 6 AS DESCRIBED WILL RESULT IN DEGRADED ANTENNA PERFORMANCE

2.1 ANTENNA ALIGNMENT PROCEDURE

SATELLITE ALIGNMENT

Alignment with the satellite is obtained by setting polarization, elevation, and azimuth. Charts are provided in this manual to determine the values for your earth station antenna site. “ ΔL ” is the difference between the earth station antenna site longitude and the satellite longitude. Use “ ΔL ” and your earth station latitude to obtain polarization, elevation or azimuth setting.

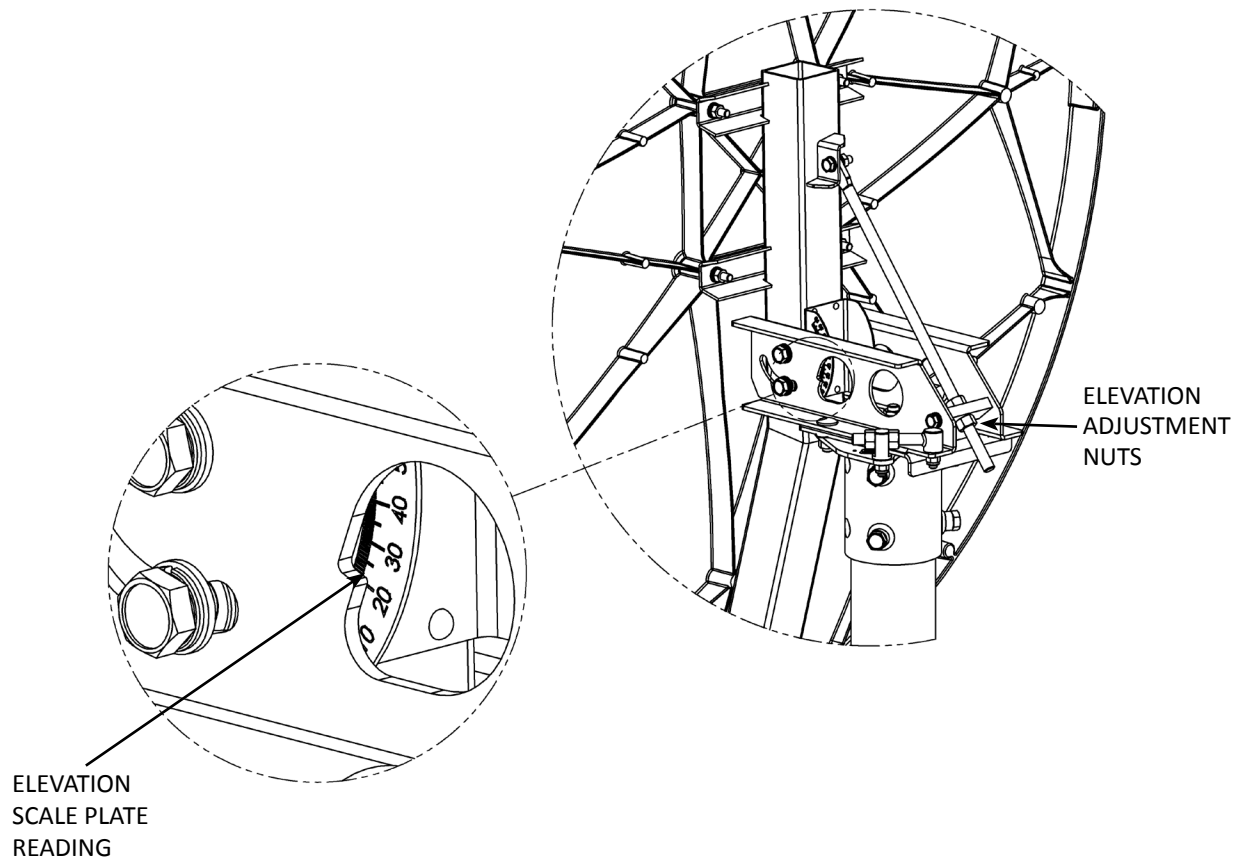
POLARIZATION OF FEED

Refer to the instructions packed with the feed assembly.

ELEVATION - INITIAL SETTING

Use chart 1 and determine your elevation setting. Rotate elevation adjustment nuts until desired elevation is indicated on the elevation scale plate, quick adjustment can be achieved by taking the weight of the antenna and spinning the adjustment nuts by hand.

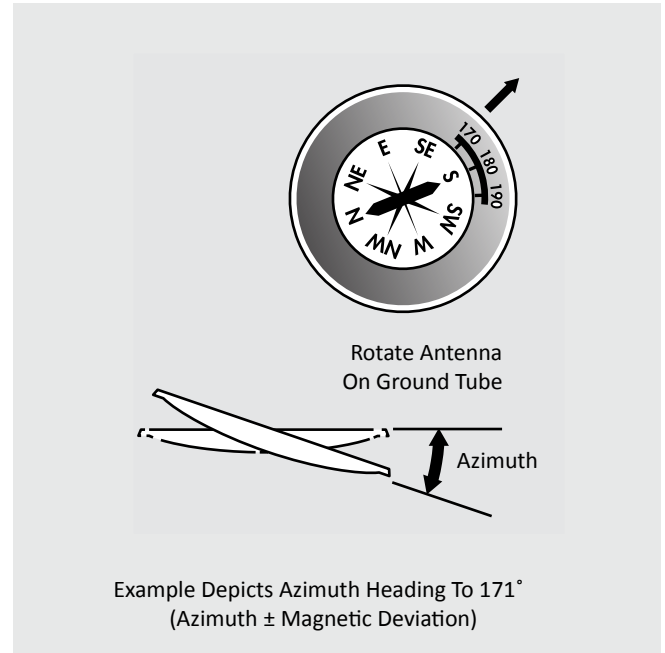
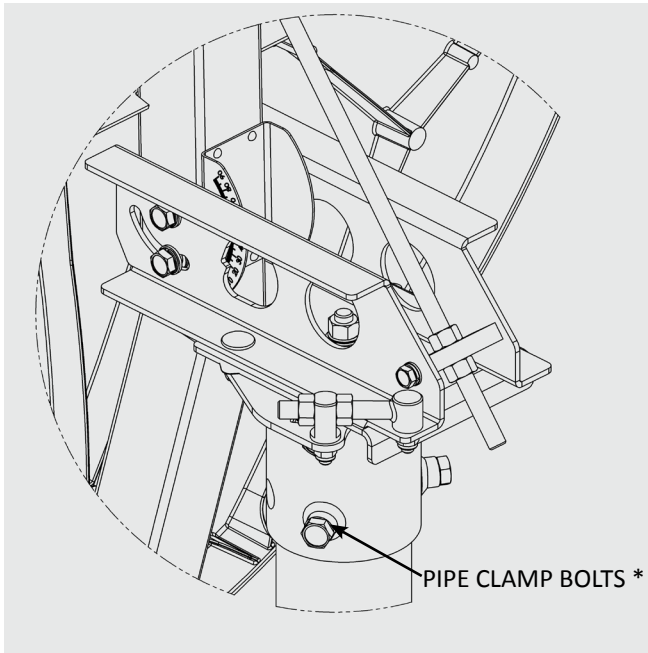
NOTE: This is an approximate setting, the optimum setting will be achieved during fine tuning.



2.1 ANTENNA ALIGNMENT PROCEDURE

Azimuth - Initial Setting

Refer to the azimuth value determined on chart 2. Values in chart must be adjusted for magnetic deviation for your location for correct compass reading. Rotate the reflector and az/el mount, on the pipe, pointing it to the compass reading for your location and satellite. Sweep in azimuth for signal. If desired signal is not located, increase or decrease elevation setting and repeat the azimuth sweep. Tighten progressively (1/8 turn each) all four pipe clamp nuts. Repeat until 30 lbft (40 Force N (Lbs) Moments Nm (Foot.Lbs)

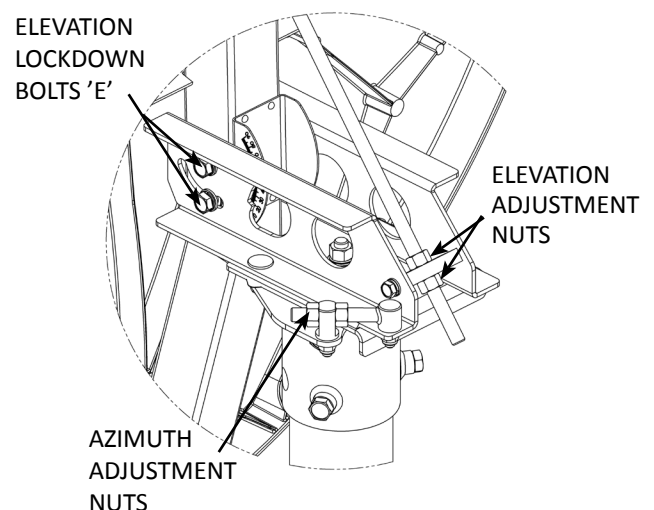
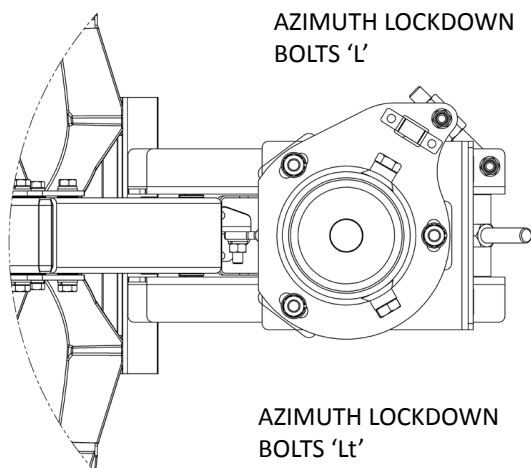


*HEX HEAD FOR 123H, SQ. HEAD W/ JAM NUT FOR 122H

Elevation and Azimuth Fine Tuning

Loosen Qty. 2 off azimuth lockdown nuts 'L' and azimuth lockdown nut 'Lt'. Torque azimuth lockdown nut 'Lt' to 6lbft (8Nm). Torque Qty. 4 off elevation lockdown nuts 'E' to 6lbft (8Nm). The Antenna is now ready for fine tuning.

Use a signal strength measuring device to obtain the most accurate alignment and maximum antenna performance. Alternate between elevation and azimuth fine tuning nuts to reach maximum signal strength, until no improvement can be detected. When fully tuned torque M10 azimuth and elevation lockdown hardware to 16ftlb (22Nm).

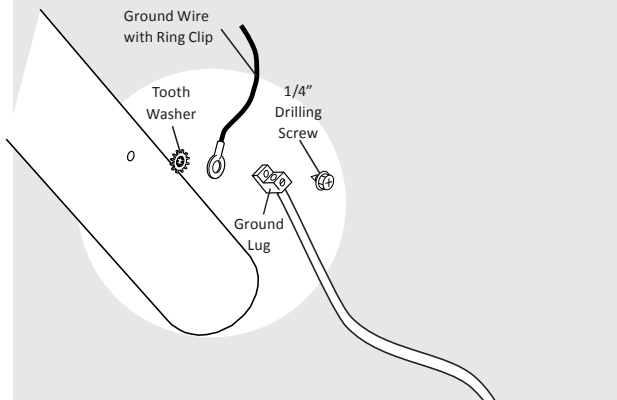


2.2 GROUNDING PROCEDURE

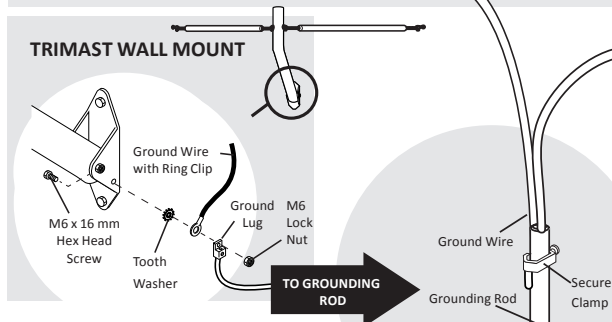
INSTALLATION POLE MOUNT

Note: Grounding wire and hardware are not supplied for pole mount, trimast wall mount or non penetrating roof mount. Installation mount and associated hardware are not supplied.

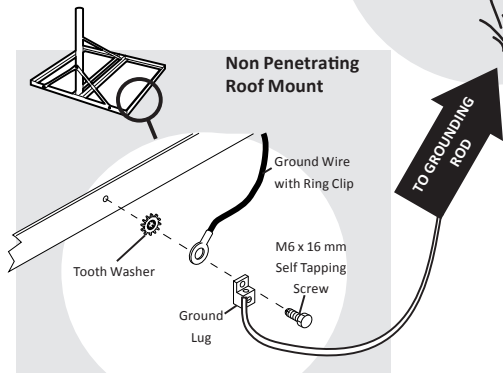
A grounding screw is provided on the azel as indicated.



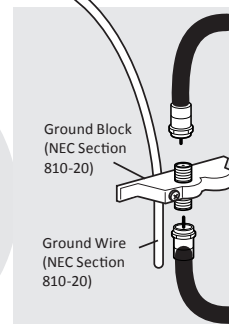
TRIMAST WALL MOUNT



Non Penetrating Roof Mount



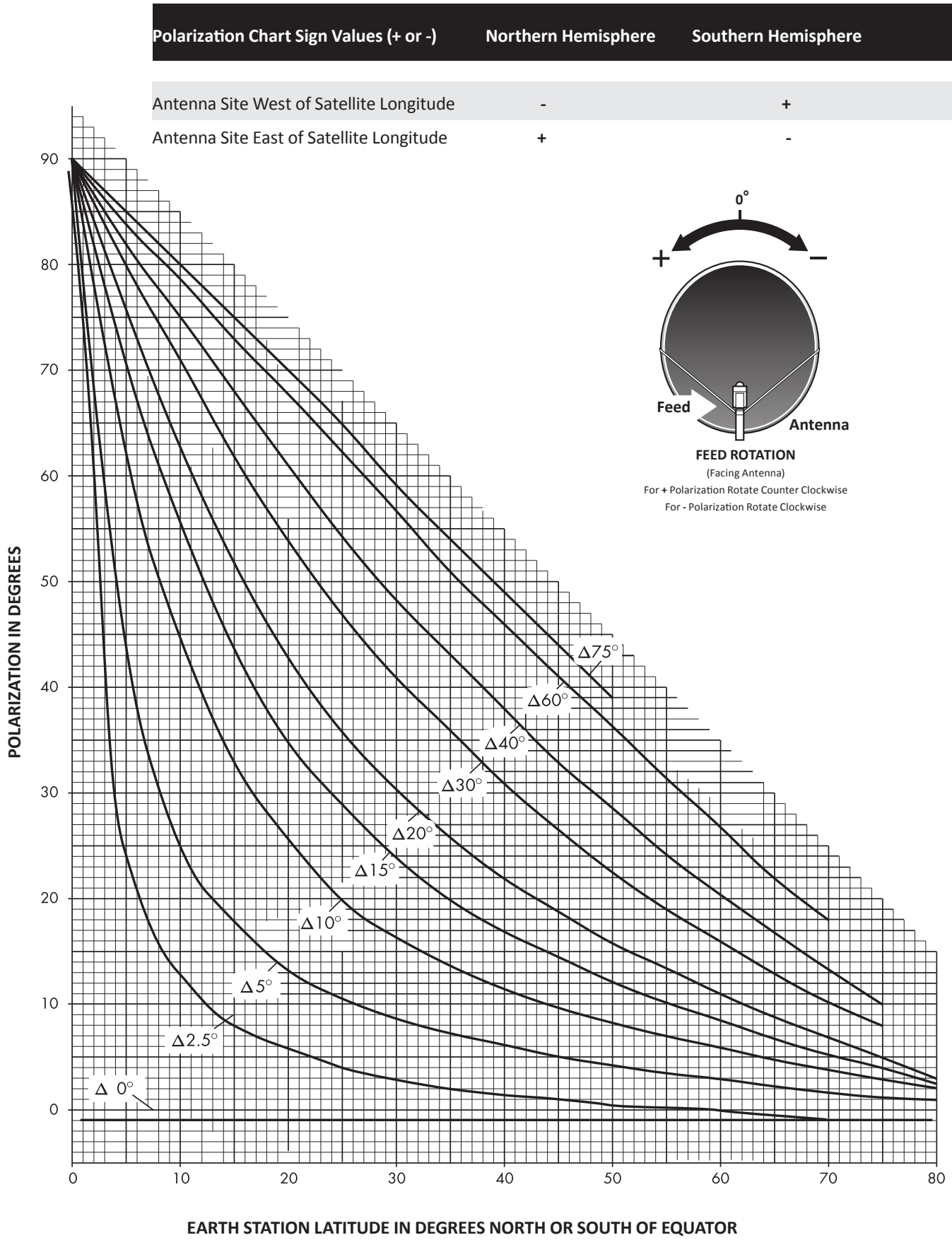
Coaxial Cables (To IDU)



Note: Ground wire, secure clamp, grounding rod, coaxial cables and ground block are not supplied.

IMPORTANT: All antenna systems must be properly grounded. Refer to NEC (National Electric Code) Article 810, 820 and local building codes for specific requirements. Typical grounding methods are shown as examples. Tighten all hardware securely to assure good continuity.

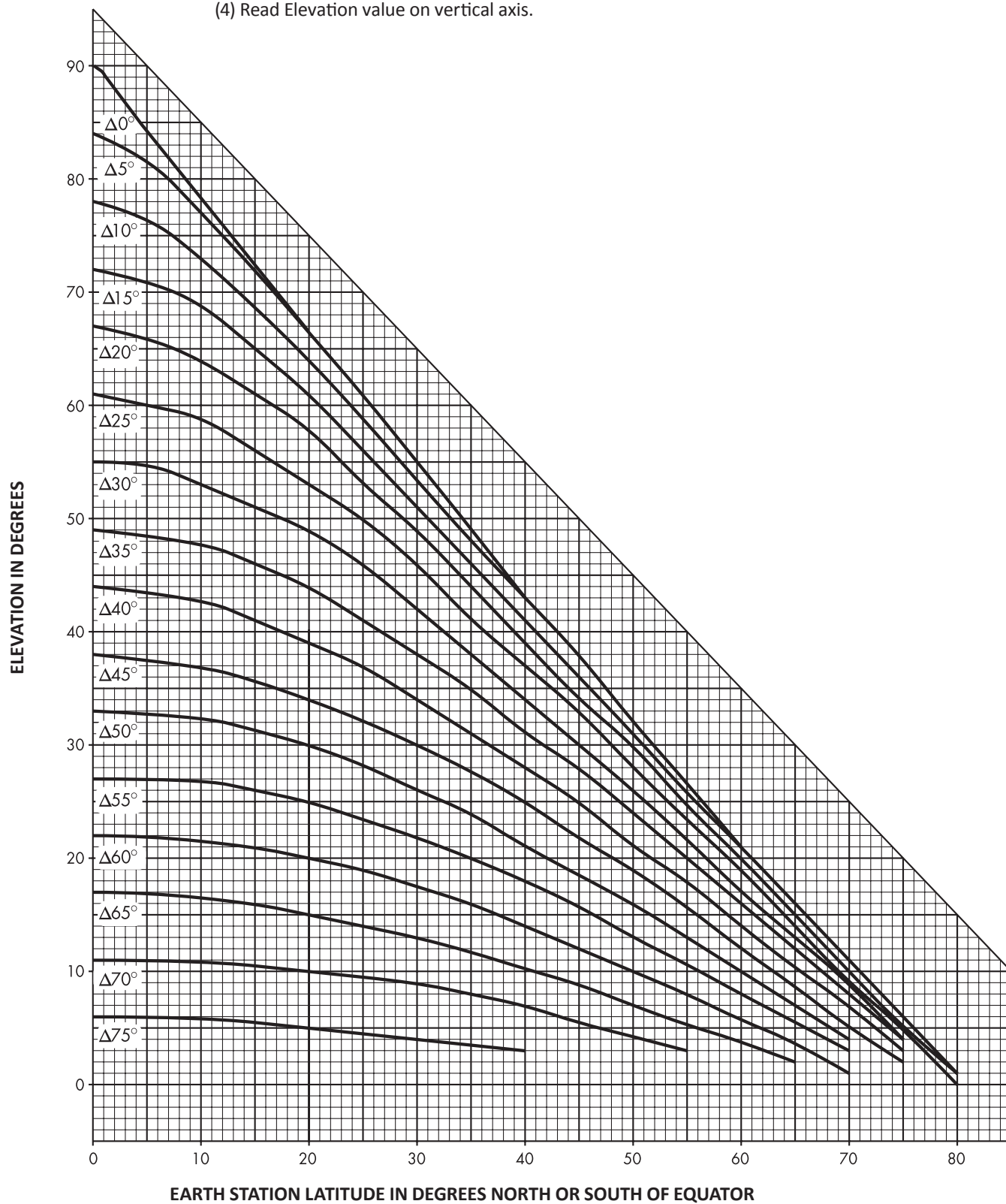
3.0 POLARIZATION CHART



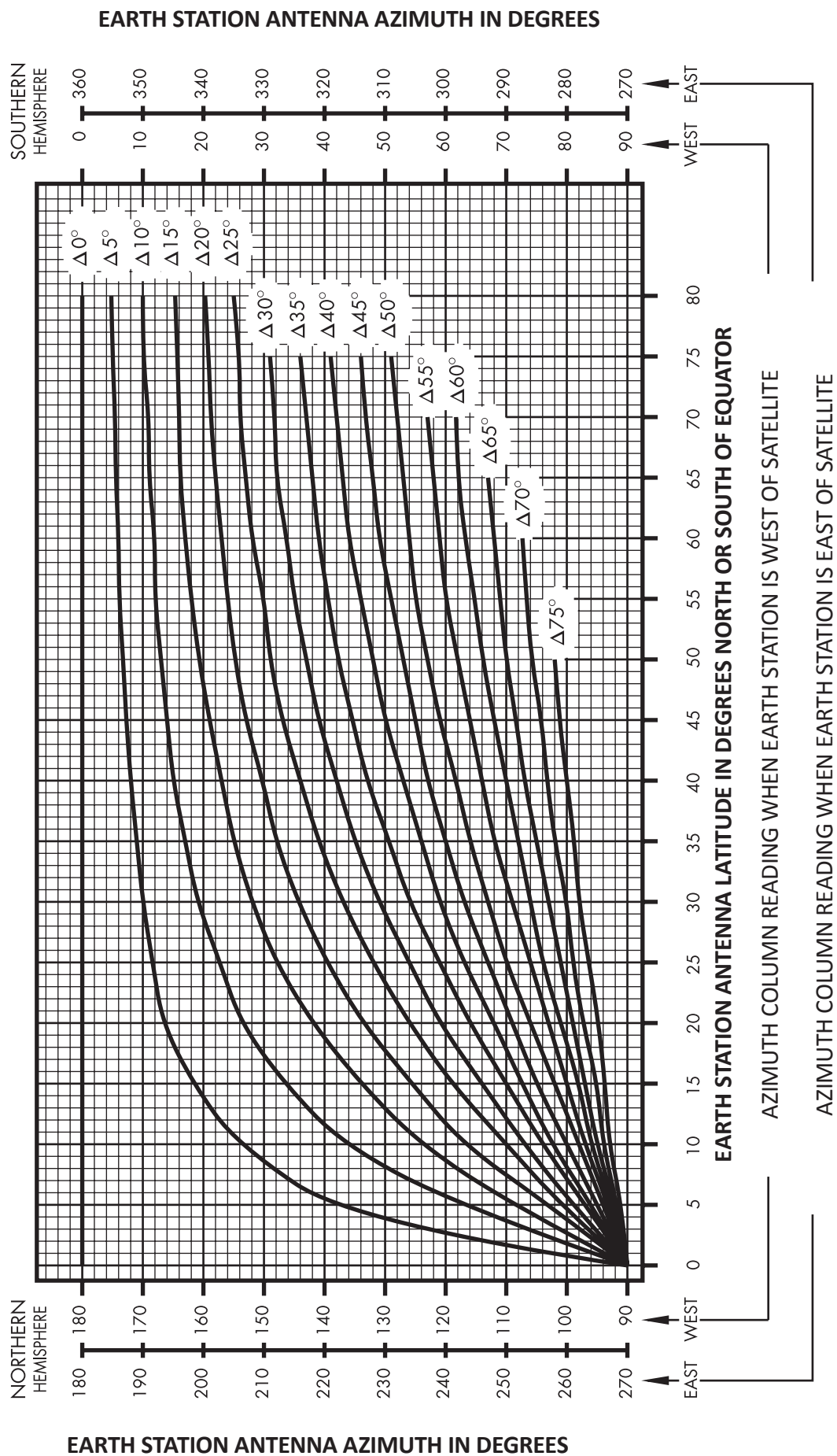
3.1 ELEVATION CHART

Use of Elevation Chart

- (1) Determine Δ = the difference between your site longitude and the satellite longitude.
- (2) Find your latitude on horizontal axis.
- (3) Follow your latitude up until you intersect the curve for your Δ .
- (4) Read Elevation value on vertical axis.



3.2 AZIMUTH CHART



4.0 SITE SELECTION

The first and most important consideration when choosing a prospective antenna site is whether or not the area can provide an acceptable “look angle” at the satellites. A site with a clear, unobstructed view is preferred. Also consider obstruction that may occur in the future such as the growth of trees. Your antenna site must be selected in advance so that you will be able to receive the strongest signal available. To avoid obstructions, etc., conduct an on-site survey with a portable antenna. The satellite antenna can be installed on a ground pole, wall/roof mount, or non-penetrating roof mount with 2.88” or 3.50” outside diameter mast. The chosen mount type should be assembled and in place before installing the antenna. Refer to instructions packed with mount for its proper installation. The mast pipe must be vertical and plumb to insure ease of alignment.

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.

Before any 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.

Because soils vary widely in composition and load capacity, consult a local professional engineer to determine the appropriate foundation design and installation procedure. A suggested foundation design with conditions noted is included in this manual for reference purposes only.

4.1 WARNINGS

LAW: Installation and installer must meet local codes and ordinances regarding safety! Installation of this product should be performed only by a professional installer and is not recommended for consumer Do-It-Yourself installations.

DANGER: WATCH FOR WIRES! Installation of this product near power lines is extremely dangerous and must never be attempted. Installation of this product near power lines can result in death or serious injury! For your own safety, you must follow these important safety rules. Failure to follow these rules could result in death or serious injury

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. Stay at least 6 meters (20 feet) away from all power lines.
3. Do not install antenna or mast assembly on a windy day.
4. If you start to drop antenna or mast assembly, move away from it and let it fall.
5. 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.
6. Make sure that the mast assembly is properly grounded.

WARNING: Assembling dish antennas on windy days is extremely dangerous and must never be attempted. Due to the surface area of the reflector, even slight winds create strong forces. For example, this antenna facing a wind of 32 km/h (20 mph) can undergo forces of 269 N (60 lb). **BE PREPARED TO SAFELY HANDLE THESE FORCES AT UNEXPECTED MOMENTS. ATTEMPTING TO ASSEMBLE, MOVE OR MOUNT A DISH ON WINDY DAYS COULD RESULT IN DEATH OR SERIOUS INJURY.** Global Skyware is not responsible or liable for damage or injury resulting from antenna installations.

WARNING: Antennas improperly installed or installed to an inadequate structure are very susceptible to wind damage. This damage can be very serious or even life threatening. The owner and installer assumes full responsibility that the installation is structurally sound to support all loads (weight, wind and ice) and properly sealed against leaks. Skyware Global will not accept liability for any damage caused by a satellite system due to the many unknown variable applications.

4.2 PERIODIC INSPECTION & MAINTENANCE

To ensure peak performance of the antenna system and to maintain validity of the warranty, the user should perform a periodic inspection every 6 months or following any severe weather event, As a minimum the following items should be inspected.

1. Installation Mount

Check for loose hardware - tighten if necessary.
Check integrity of anchor bolts or hardware securing mount to the building or foundations
Check ballast of Non-Penetrating Roof Mounts - cracked or broken blocks must be replaced.
Check hardware and structural members for signs of corrosion - repair or replace as needed

2. Antenna Back Structure or Az/El Mount

Check for loose hardware - tighten if necessary.
Check for signs of structural damage such as bending or cracking
Check hardware and structural members for signs of corrosion - repair or replace as needed

3. Reflector

Check integrity of bolts securing reflector to back structure or az/el mount. Tighten any loose hardware.
Check for signs of damage such as cracking. Inspect reflector face for impact damage.
Check hardware for signs of corrosion - repair or replace as needed.

4. Feed Support Structure

Check for loose hardware - tighten if necessary.
Check for signs of structural damage such as bending. Check hardware and structural members for signs of corrosion - repair or replace as needed

5. Feed & RF Components

Check for loose hardware - tighten if necessary.
Check hardware for signs of corrosion - repair or replace as needed.
Check feed lens or window for damage or signs of leaking.
Check waveguide connections between feed and RF electronics

6. Electrical

Check for loose cables and connectors - tighten if necessary
Check for tight grounding connections
Check cables for weathering or cracks

4.3 WARRANTY

Global Skyware
VERY SMALL APERTURE TERMINAL (VSAT) PRODUCTS
TWELVE (12) MONTH LIMITED WARRANTY

Seller warrants that all Global Skyware manufactured VSAT products are transferred rightfully and with good title; that they are free from any lawful security interest or other lien or encumbrance unknown to Buyer. Seller also warrants that for a period of twelve (12) months from the date of shipment from Seller's factory, all its VSAT products shall be free from defects in material and workmanship which arise under proper and normal use and service. Buyer's exclusive remedy hereunder is limited to Seller's correction (either at its plant or at such other place as may be agreed upon between Seller and Buyer) of any such defects by repair or replacement at no cost to Buyer, except for the costs of any transportation in connection with the return of the defective VSAT products to be replaced or repaired, and the costs to remove and/or reinstall the products, which shall be borne by Buyer. The limited warranty period shall not be extended beyond its original term with respect to any part or parts repaired or replaced by seller hereunder.

This warranty shall not apply to VSAT products which (i) have been repaired or altered in any way so as to affect stability or durability, (ii) have been subject to misuse, negligence or accident, (iii) have been damaged by severe weather conditions such as excessive wind, ice, storms, lightning, or other natural occurrences beyond Seller's control; (iv) have presented damages, defects or nonconformances caused by improper shipping, handling or storage, and (v) have not been installed, operated or maintained in accordance with Seller's instructions.

Buyer shall present any claims along with the defective VSAT product(s) to Seller immediately upon failure. Non-compliance with any part of this warranty procedure may invalidate this warranty in whole or in part.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, OTHER THAN AS SPECIFICALLY STATED ABOVE. EXPRESSLY EXCLUDED ARE ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING SHALL CONSTITUTE ALL OF SELLER'S LIABILITY (EXCEPT AS TO PATENT INFRINGEMENT) WITH RESPECT TO THE VSAT PRODUCTS. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY LOSS OF PROFITS OR REVENUE, LOSS OF USE, INTERRUPTION OF BUSINESS, OR INDIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND AS A RESULT OF THE USE OF THE PRODUCTS MANUFACTURED BY SELLER, WHETHER USED IN ACCORDANCE WITH THE INSTRUCTIONS OR NOT. UNDER NO CIRCUMSTANCES SHALL SELLER'S LIABILITY TO BUYER EXCEED THE ACTUAL SALES PRICE OF THE VSAT PRODUCTS HEREUNDER.

In some jurisdictions, Buyer may have other rights under certain statutes that may imply non-excludable warranties. No representative is authorized to assume for Seller any other liability in connection with the VSAT products.



DO NOT DISCARD CONTENTS

The product in this packaging was placed in the market after August 13, 2005. Its components must not be discarded with normal municipal or household waste.

Contact your local waste disposal agency for recovery, recycling, or disposal instructions.