



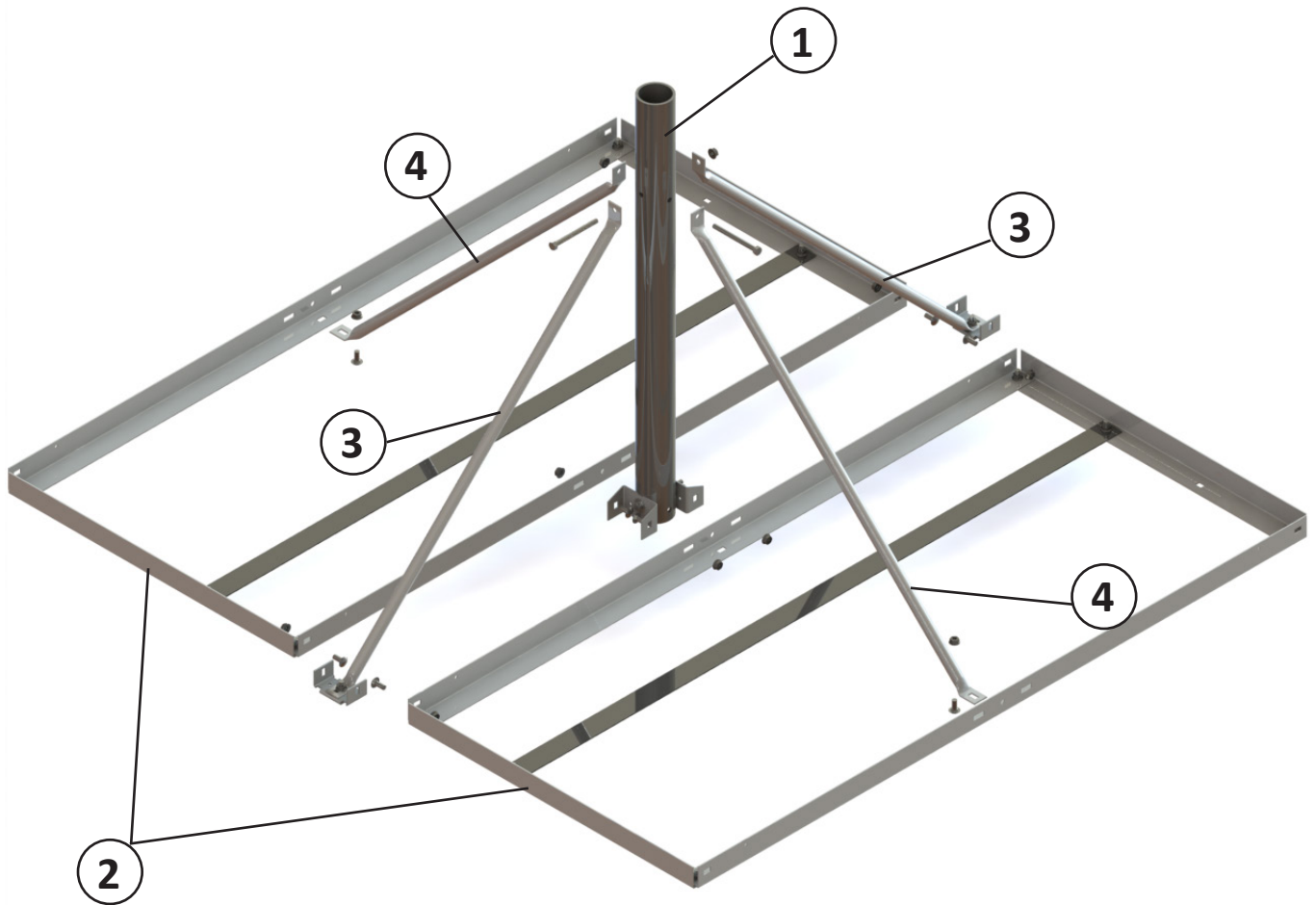
April 2016
Revision B
ASSEMBLY MANUAL
8001088-01

Rev.	Description	Date	Approved	EC
B	Updated Images for bracket change	7/12/16	RT	EC-02518
A	Initial Release	4/7/16	RT	EC-02066

ASSEMBLY MANUAL**4' x 4' Non-Penetrating Mount Ka-Band****TABLE OF CONTENTS**

SECTION	TITLE	PAGE
I	GENERAL INFORMATION	
1.0	PARTS LIST	1
1.1	TOOLS REQUIRED	2
II	ASSEMBLY INSTRUCTIONS	
2.0	ASSEMBLY	3-6
2.1	BALLAST REQUIREMENT TABLES	7-8
	<i>1.0M OR SMALLER ANTENNA</i>	
2.1.1	EXPOSURE B - 30 FT. ABOVE GROUND	7
2.1.2	EXPOSURE B - 50 FT. ABOVE GROUND	7
2.1.3	EXPOSURE C - 30 FT. ABOVE GROUND	7
2.1.4	EXPOSURE C - 50 FT. ABOVE GROUND	7
	<i>1.2M ANTENNA</i>	
2.1.5	EXPOSURE B - 30 FT. ABOVE GROUND	8
2.1.6	EXPOSURE B - 50 FT. ABOVE GROUND	8
2.1.7	EXPOSURE C - 30 FT. ABOVE GROUND	8
2.1.8	EXPOSURE C - 50 FT. ABOVE GROUND	8
2.2	BALLAST REQUIREMENT INFORMATION	9
	2.2.1-2.2.5 BALLAST REQUIREMENT INFORMATION	9
III	APPENDIX A	
3.0	SITE SELECTION	10
3.1	WARNINGS	10
3.2	PERIODIC INSPECTION AND MAINTENANCE	11
3.3	WARRANTY	12

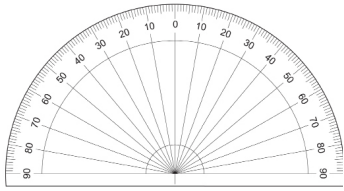
1.0 PARTS LIST



ITEM	DESCRIPTION	QTY
1	MAST PRE-ASSEMBLED WITH SUPPORT BRACKETS	1
2	BASE FRAMES - 2 HALVES PRE-ASSEMBLED	2
3	BRACES - 2 PRE-ASSEMBLED WITH SUPPORT BRACKETS	2
4	BRACES - SINGLE BRACES	2
5	HARDWARE BAG AND INSTRUCTIONS	1

ITEM	DESCRIPTION	QTY
6	5/16" SERRATED FLANGE NUT	12
7	5/16" X 3.5" HEX BOLT	2
8	5/16" X .75" ROUND HEAD SQUARE NECK BOLT	10
9	TERMINAL LUG	1
10	M8 EXTERNAL/INTERNAL LOCK WASHER	1
11	1/4" X .75" SELF TAPPING SCREW	1

1.1 TOOLS REQUIRED



CLINOMETER



TORQUE WRENCH



LEVEL



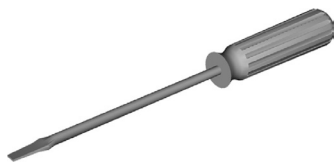
3/8" DRIVE RATCHET WRENCH



1/2" SOCKET



1/2" COMBINATION WRENCH



FLAT HEAD SCREWDRIVER

ADDITIONAL INSTALLATION MATERIALS:

- Grounding Rod, Clamp and Grounding Block - As required by National Electrical Code or local codes.
- Ground Wire - #10 solid copper or #8 aluminum as required by National Electrical Code or local codes (length required).
- RG-6 Coaxial Cables from antenna to indoor unit(s).
- Concrete Blocks: Cored (16in. x 8in. x 8in.-Nominal) or cap/solid (16in. x 8in. x 4in.-Nominal).

2.0 ASSEMBLY

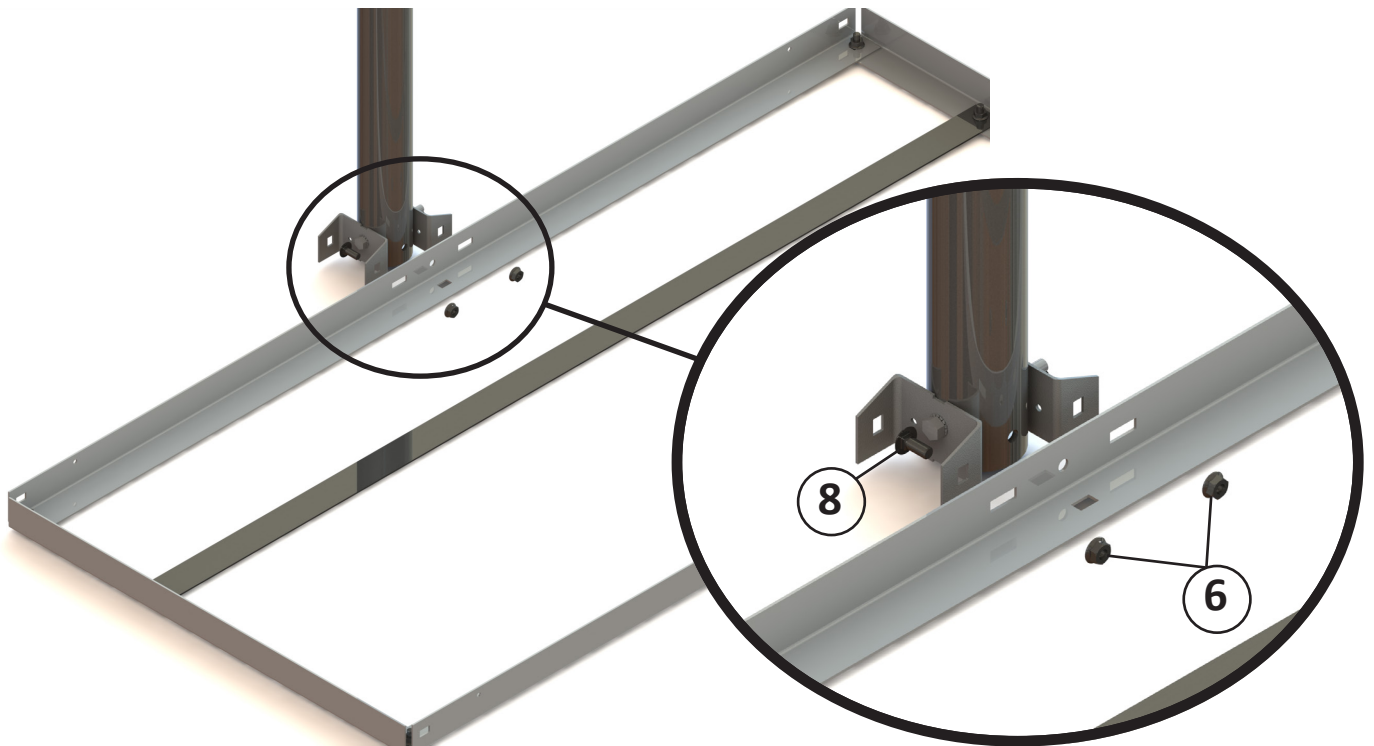
Step 1 - Prepare Surface

Clear roof of all debris, gravel or other loose material. If supplied, place rubber mats on roof. Assemble the Non-penetrating Roof Mount on top of the rubber mats.

Step 2 - Assemble Base Frames to Mast

Attach first base frame half (item 2) to mast assembly (item 1) using two 5/16" x .75" RHSN bolts (item 8) and two serrated flange nuts (item 6).

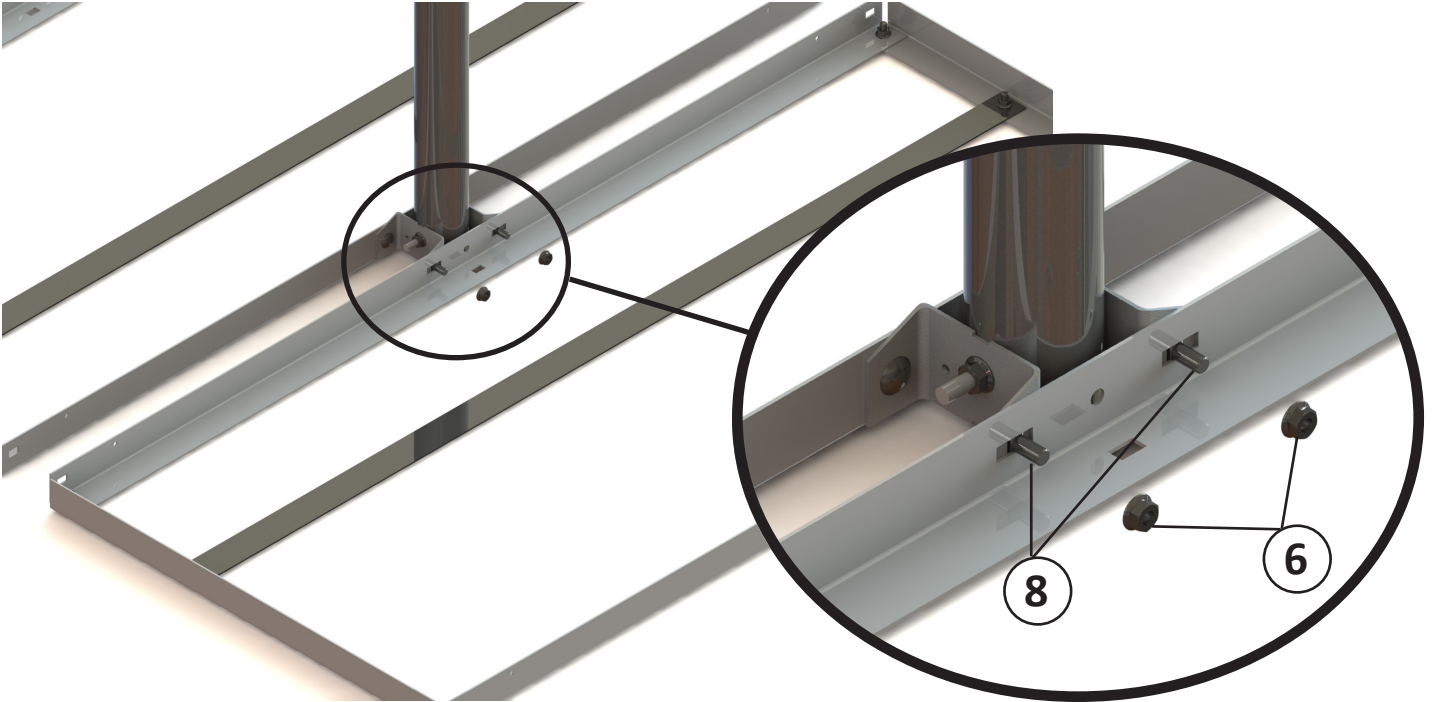
Note: Do not tighten bolts until all parts have been assembled.



2.0 ASSEMBLY

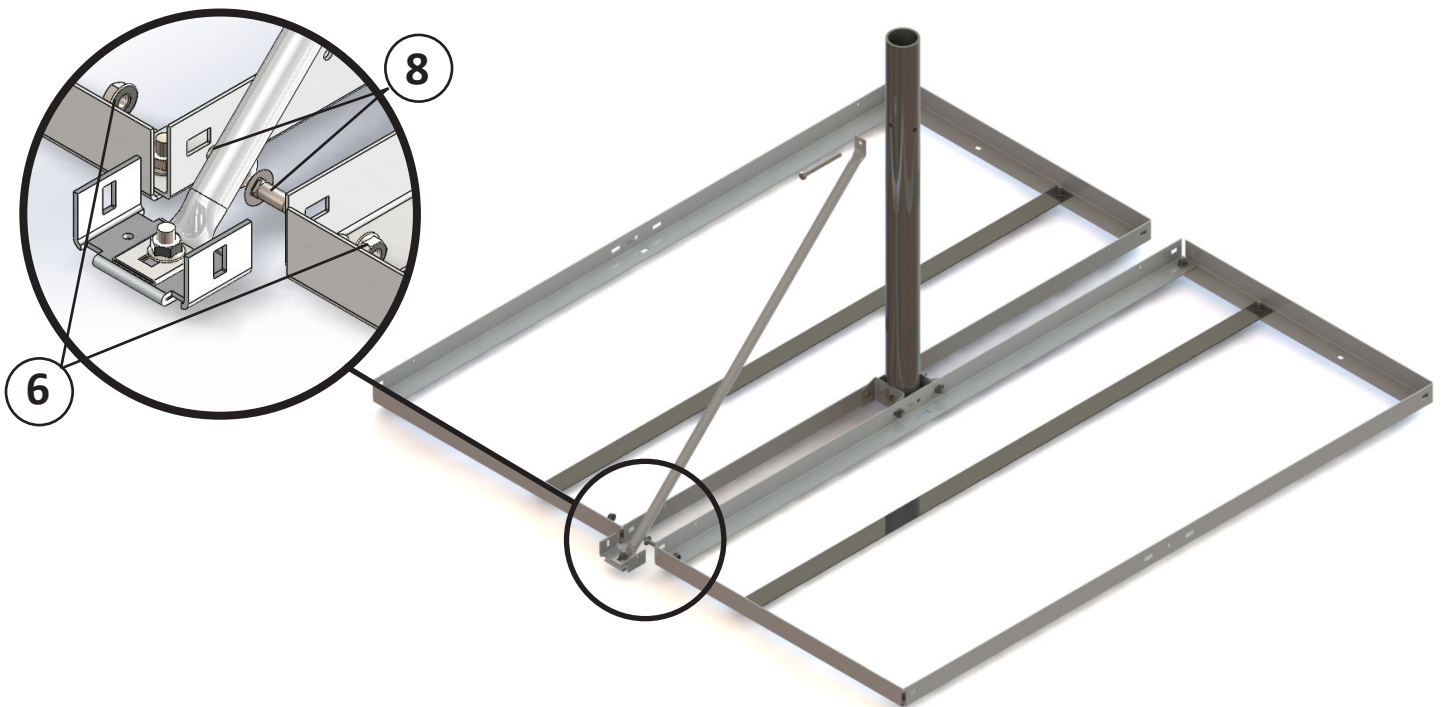
Step 3 - Assemble Base Frames to Mast

Attach second base frame half (item 2) to mast/base assembly from Step 1 above using two 5/16" x .75" RHSN bolts (item 8) and two serrated flange nuts (item 6).



Step 4 - Assemble Brace Assembly to Base Frame

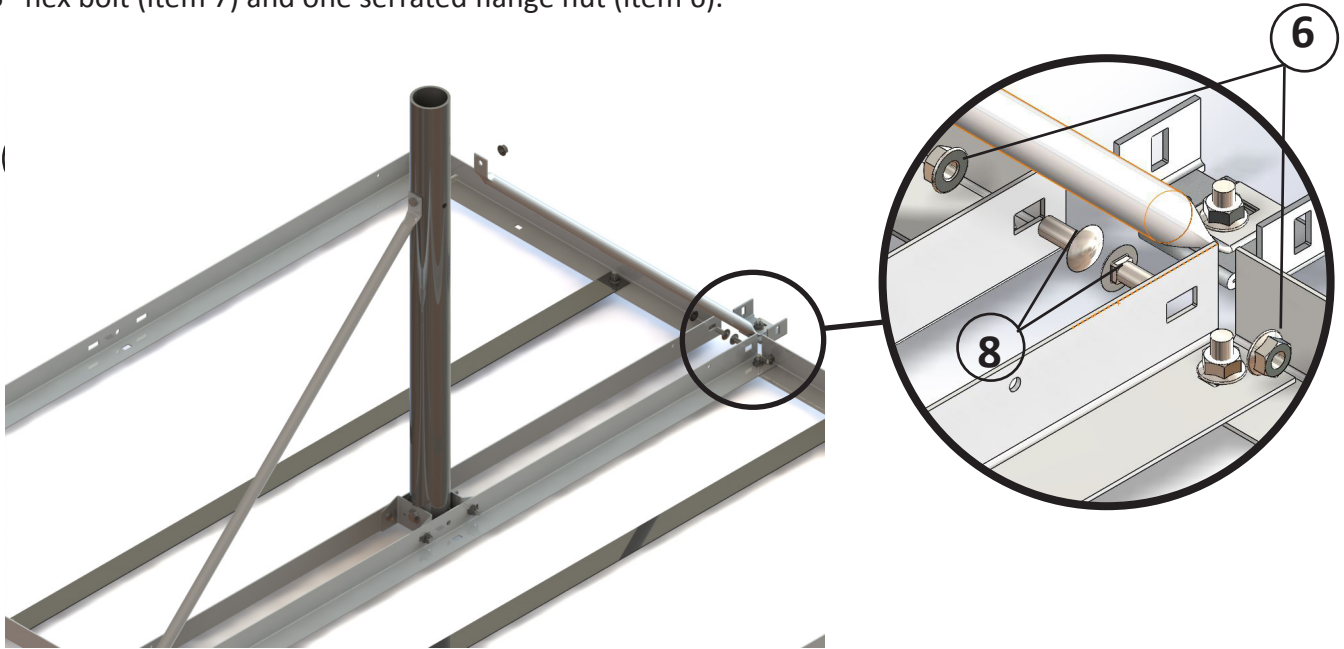
Attach first brace assembly (item 3) to base frame assembly using two 5/16" x .75" RHSN bolts (item 8) and two serrated flange nuts (item 6).



2.0 ASSEMBLY

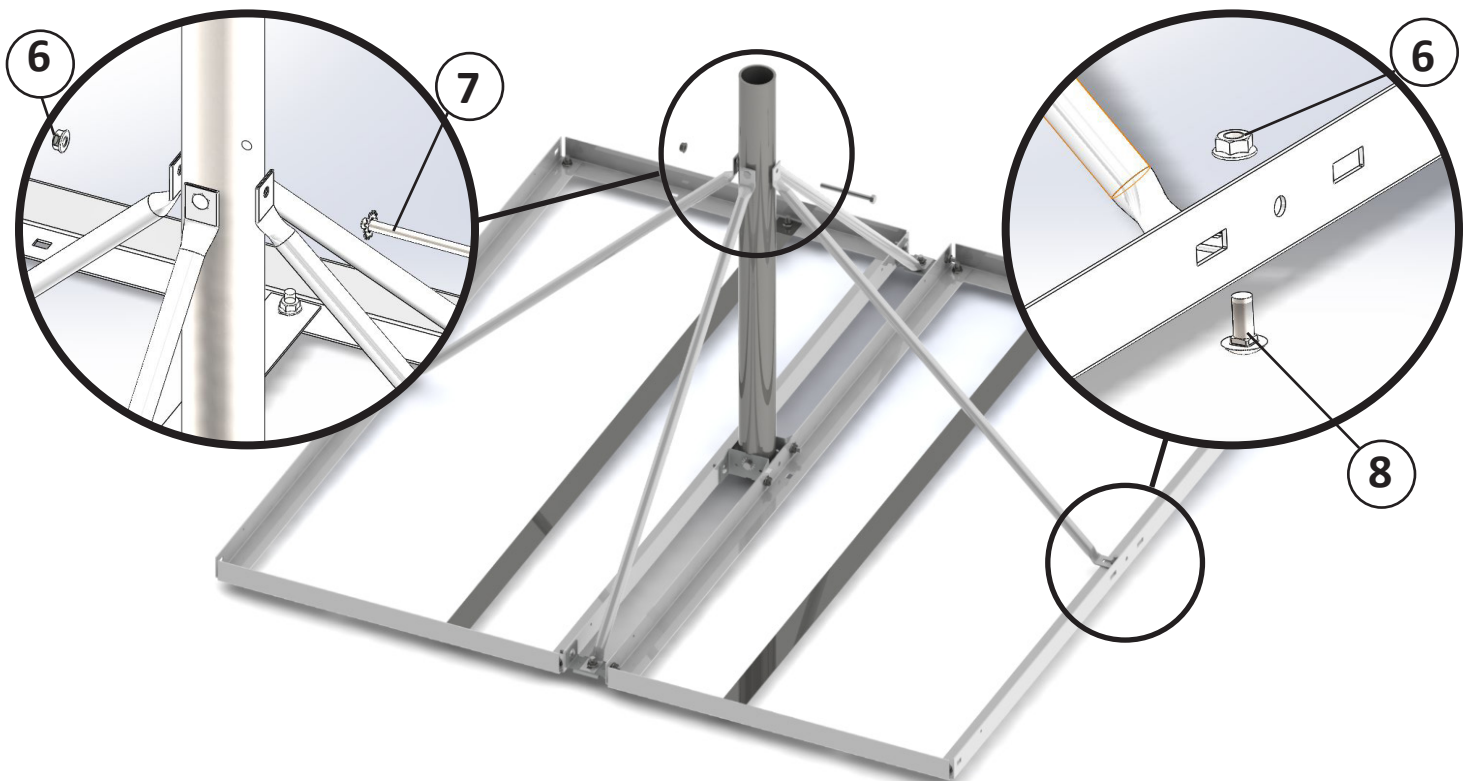
Step 5 - Assemble Brace Assembly to Base Frame

Attach second brace assembly (item 3) to base frame assembly using two 5/16" x .75" RHSN bolts (item 8) and two serrated flange nuts (item 6). Assemble braces (item 3) to mast (item 1) using one 5/16" x 3.5" hex bolt (item 7) and one serrated flange nut (item 6).



Step 6 - Assemble Braces to Mast

Attach braces (item 4) to frame using using two 5/16" x .75" RHSN bolts (item 8) and two serrated flange nuts (item 6). Assemble braces (item 4) to mast (item 1) using one 5/16" x 3.5" hex bolt (item 7) and one serrated flange nut (item 6). Tighten all hardware to 12 ft-lb of torque.



2.0 ASSEMBLY

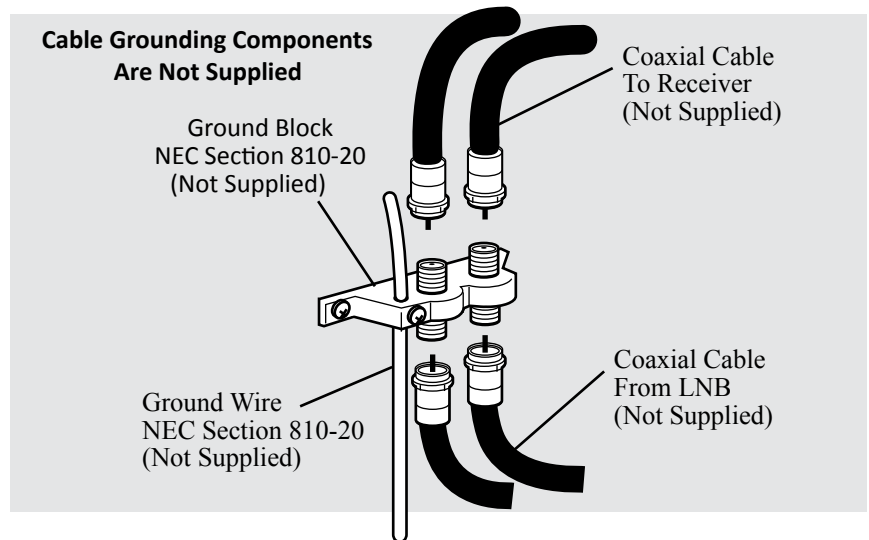
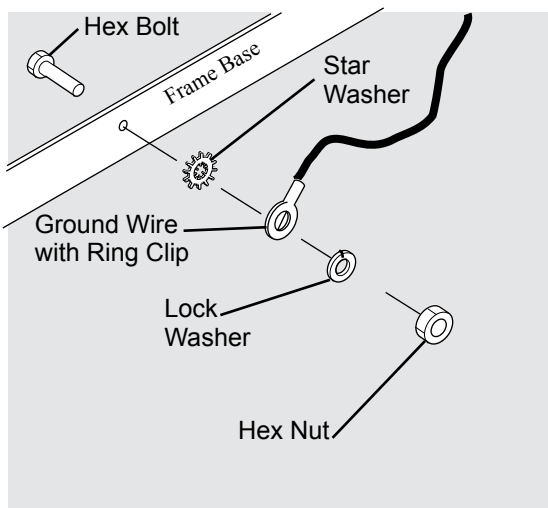
Step 7 - Assemble Antenna, Antenna and Feed

Assemble and install antenna, antenna mount and feed assembly per instructions provided with those products.

Step 8 - Assemble Grounding Hardware to Mount Assembly

Note: All installations to conform with latest issue of National Electrical Code and Local Codes.

These instructions depict typical grounding methods for the ground pole and feed cables. Clamps that provide a solid connection between ground wire and ground source should be used. Tighten and torque all hardware.



2.1 BALLAST REQUIREMENT TABLES

BALLAST REQUIREMENT TABLES

EXPOSURE:

1. Exposure B is urban or suburban areas, wooded areas, or other terrain with numerous, closely spaced obstructions having the size of single family dwellings or larger. Obstructions must extend 1500 feet in all directions from the antenna.
2. Exposure C is open terrain with widely scattered obstructions having heights generally less than 30 feet. Includes flat open country and grass lands.

BALLAST:

1. Ballast tables are based on an overturning design with a 1.25 safety factor. Values shown provide sliding resistance to the wind speed shown with a 1.0 safety factor when used with a rubber friction pad (coefficient of friction = .64).
2. Recommended ballast material is concrete cap block, nominal dimensions of 4 x 8 x 16 inches. These blocks will weigh between 25 and 30 lbs each, depending on local variation. Average weight of blocks should be determined for correct ballast amount.
3. Minimum ballast required is 4 blocks placed at the 4 corners of the base frame. Place ballast equally on base frame working inward. If more than 18 blocks are needed, begin a second layer on top of the first.

TABLE 2.1.1 - 1.0M OR SMALLER CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE B - 30 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	188	245	311	383	464	598
STATIC ROOF LOAD (LB./FT.2)	11.7	15.3	19.4	24	29	37.4

TABLE 2.1.2 - 1.0M OR SMALLER CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE B - 50 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	220	289	366	452	545	705
STATIC ROOF LOAD (LB./FT.2)	13.8	18	22.9	28.2	34.1	44

TABLE 2.1.3 - 1.0M OR SMALLER CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE C - 30 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	305	398	505	622	753	972
STATIC ROOF LOAD (LB./FT.2)	19	24.9	31.5	38.9	47.1	60.7

TABLE 2.1.4 - 1.0M OR SMALLER CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE C - 50 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	341	445	564	695	842	1088
STATIC ROOF LOAD (LB./FT.2)	21.3	27.8	35.3	43.5	52.6	68

***Total Ballast includes weight of non-pen mount (30 lbs.) and antenna.**

2.1 BALLAST REQUIREMENT TABLES

TABLE 2.1.5 - 1.2M CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE B - 30 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	344	438	555	685	829	1068
STATIC ROOF LOAD (LB./FT.2)	21.5	27.4	34.7	42.8	51.8	66.8

TABLE 2.1.6 - 1.2M CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE B - 50 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	395	518	656	809	977	1262
STATIC ROOF LOAD (LB./FT.2)	24.7	32.4	41	50.6	61.1	78.9

TABLE 2.1.7 - 1.2M CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE C - 30 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	546	714	904	1114	1350	1742
STATIC ROOF LOAD (LB./FT.2)	34.1	44.6	56.5	69.6	84.3	108.9

TABLE 2.1.8 - 1.2M CIRCULAR VSAT ANTENNA
BALLAST REQUIREMENTS - EXPOSURE C - 50 FT. ABOVE GROUND

WIND SPEED (M.P.H.)	70	80	90	100	110	125
TOTAL BALLAST (LBS.)*	608	794	1006	1241	1502	1940
STATIC ROOF LOAD (LB./FT.2)	38	49.6	62.9	77.6	93.9	121.2

***Total Ballast includes weight of non-pen mount (30 lbs.) and antenna.**

2.2 BALLAST REQUIREMENT INFORMATION

2.2.1 - Ballast requirements are provided to assist in determining the applicability of the NPMM for an antenna installation. The ballast data should not be relied upon without competent local professional examination and verification of its accuracy and suitability for a specific site or application.

2.2.2 - Specific antenna types may require more strength and ballast requirements and must be investigated for each installation. The load carrying requirements of the supporting surface, the mast, the antenna and the antenna's connection to the mast must also be investigated for each installation.

2.2.3 - Roof pads are recommended to prevent damage to roof membranes. Pads should be placed under all ballast and under the mast pipe. When roof pads are utilized, the minimum coefficient of friction between the ballast tray and roof pad or between the roof pads and the supporting surface must be used to calculate the wind speeds resulting in sliding.

2.2.4 - When adhesive, sealant or pads are utilized, they must be compatible with the supporting surface. They must also be durable and have adequate strength. Precautions should also be taken to insure that damage to the supporting surface will not occur upon wind loading. Adhesives and sealants must be capable of resisting shear; otherwise, they may act as a lubricant and decrease the effective coefficient of friction between the ballast and the supporting structure.

2.2.5 - The installation, roof materials and supporting structure must be capable of withstanding all loads imposed by the antenna system. Supporting structure, anchors and/or safety cables must be sufficient to resist the reactions from the antenna system. The installation must meet all applicable, local, state and federal requirements.

Due to the many variables involved, Skyware Global does not accept responsibility for verifying the applicability of the NPMM for specific installation.

3.0 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 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.

3.1 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.** Skyware Global 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.

3.2 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.

3.3 WARRANTY

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

Seller warrants that all Skyware Global 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.