

3.1m Commercial Antenna
Az-El Fixed Mount

**INSTALLATION &
ASSEMBLY INSTRUCTIONS**

PATRIOT_®

LIMITED TWELVE (12) MONTH WARRANTY

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

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

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In no event shall PATRIOT ANTENNA 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.

PATRIOT ANTENNA has the right to void the warranty when the antenna is installed by someone other than a certified installer.

Product Serial Number- _____

Date Purchased- _____

Patriot Antenna Systems

704 North Clark Street

Albion, MI 49224 USA

Tel: (517)629-5990

Fax: (517)629-6690

E-mail: info@sepatriot.com

Thank you for purchasing your Patriot 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	No.	Description	Qty
1	3.1m Radial Beams	8	11	Radial Beam pack	1
2	3.1m Petals	8	12	Hub to Mount pack	1
3	3.1m Ourboard Skirts	8	13	Reflector & Feed pack	1
4	3.1m Hub Assembly	1	14	Extra Hardware pack	1
5	Az-EI Mount Assembly	1			
6	Upper Pivot Block Assembly	1		*We include 1 can of matching touch-up paint for your convenience.	
7	Elevation Adjustmen Rod	1			
8	3.1m Feed Struts	4			
9	C-Band Feed plate	1			
10	Feed Cover	1			

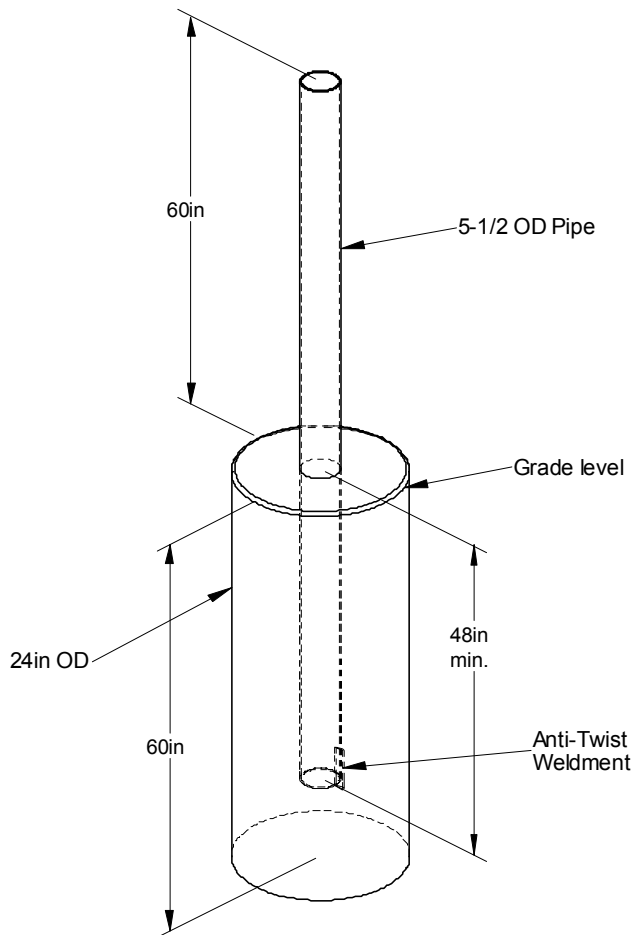
Tools Required

- | | |
|--|---|
| 2- Adjustable wrenches (12" or larger) | 1- 8' step ladder |
| 1- Drive Socket set (through 3/4") | 1- allen socket set |
| 2- 15/16" combination wrenches | 1- level |
| 1- Combination wrench set through 3/4" | 1- tape measure |
| 2- pocket aprons for hardware, tools | 1- Cordless Drill with
5/32" Allen Head attachment |

Other

- 1- Pre-installed 51/2" OD Inground Mast (not included)

In-Ground Mast Foundation

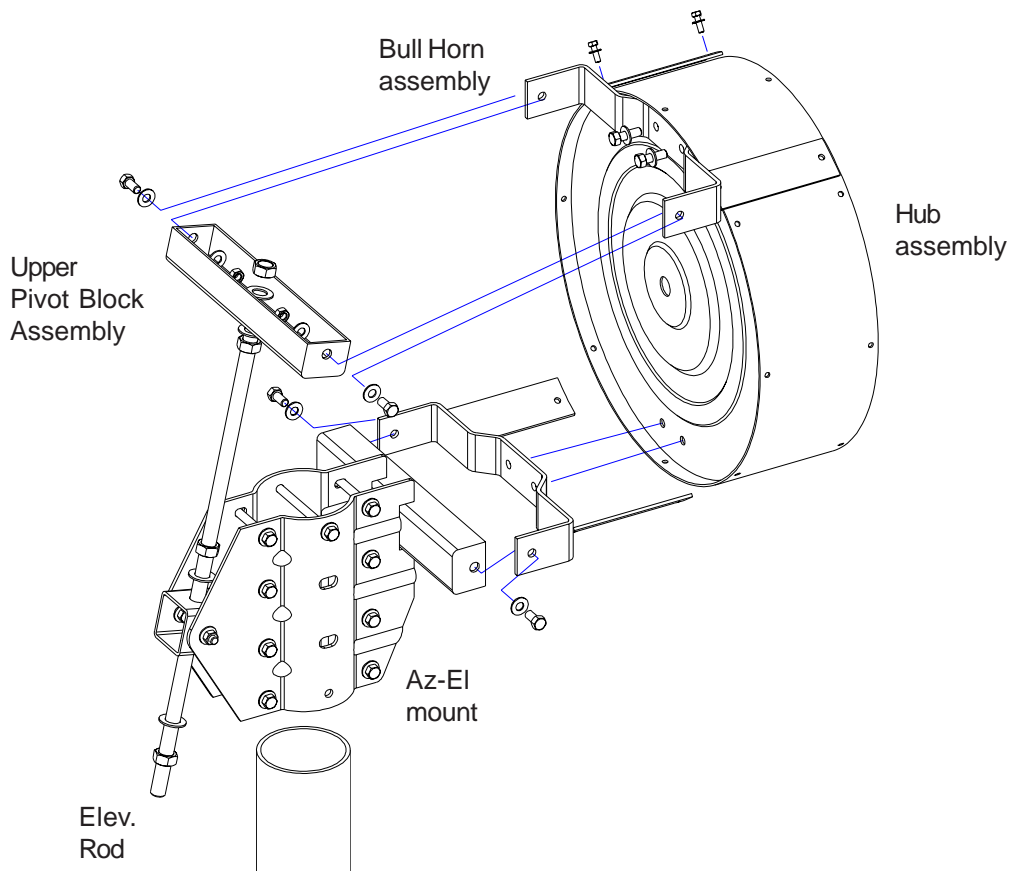


Foundation Requirements & Specifications:

- Steel Mast: 5" Schedule 80, L=120"; 5 1/2" O.D.
- Concrete: 3000 psi at 28 days, poured against undisturbed soil
(Allow concrete 24 hour set time before installation of antenna)
- Soil Bearing Capacity > 2000 psf.
- Ground the Antenna to meet applicable local Codes.

Mount Assembly

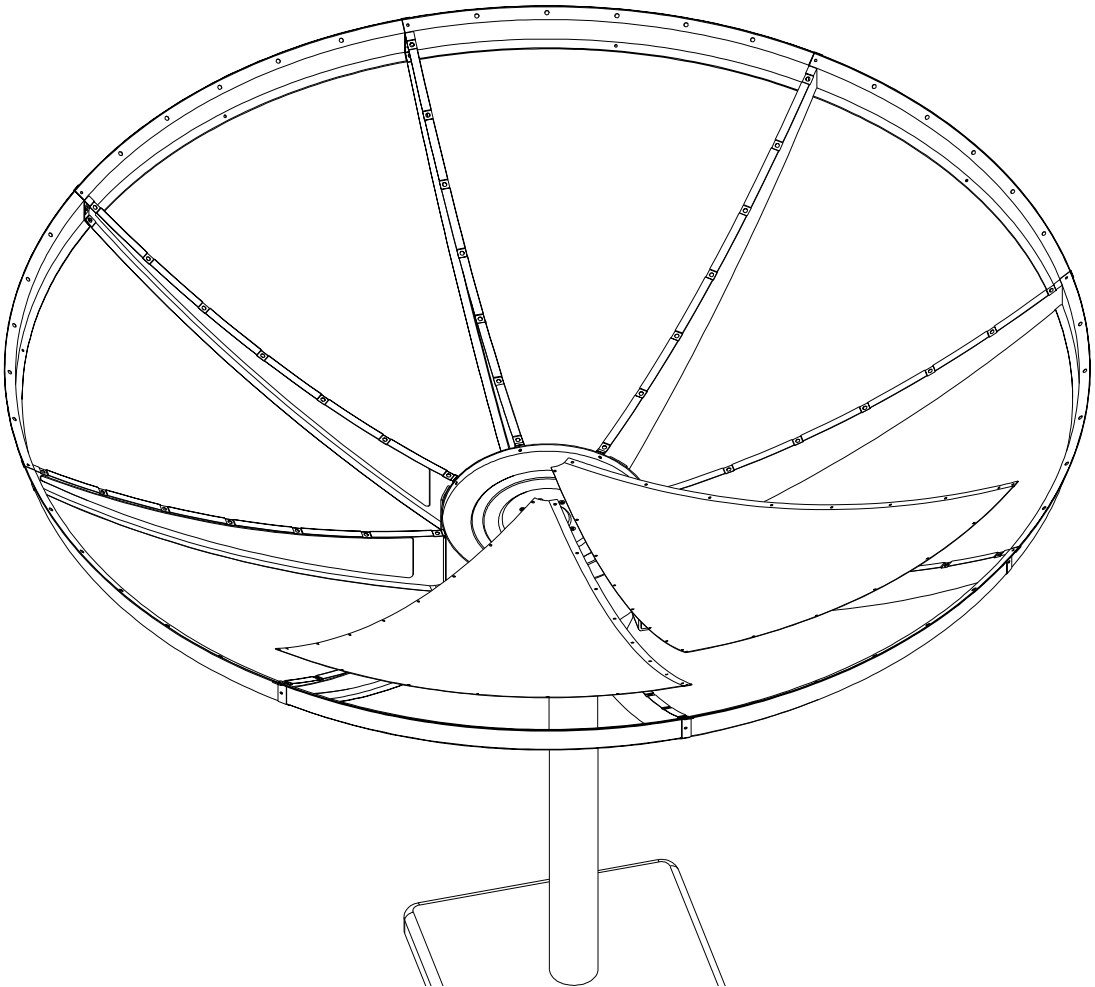
1. Place the pre-assembled Az-EI mount on top of the 5 1/2" OD pipe, leaving the bolts loose.
2. Add 3/4" nuts and washers from the **Hub to Mount** hardware pack to the Threaded Elevation Rod as shown. Insert the rod into the Anchor Block pre-assembled on the Az-EI pole mount.
3. Assemble the Bull Horn assemblies into the back of the Hub as shown using the provided hardware from the Hub to Mount pack. Tighten this hardware.
4. With a helper place the Hub assembly in the on to the Az-EI mount as shown. Insert bolts and washers to hold the hub assembly to the mount cross bar. Assemble the Threaded Elevation Rod to the hub extension as shown using pre-installed 1/2" hardware.



8. Install Antenna Panels noting overlay of joining edge. Join 2 panels to one Radial Beam using 1/4" Allen Bolts from the Reflector and Feed pack. Work out from the hub (note edge overlay should be even) Tighten the hardware into each J-clip after all hardware is in place.

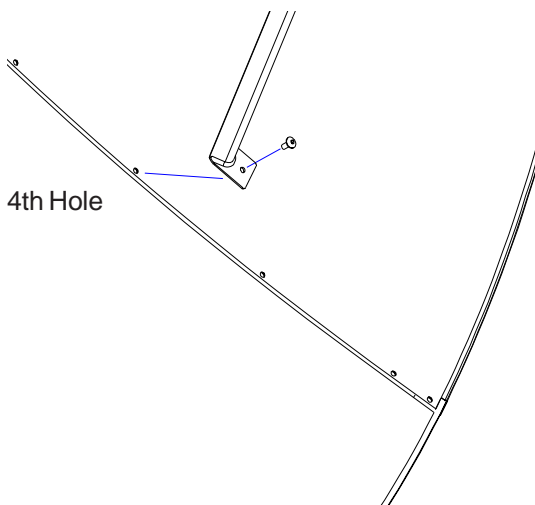
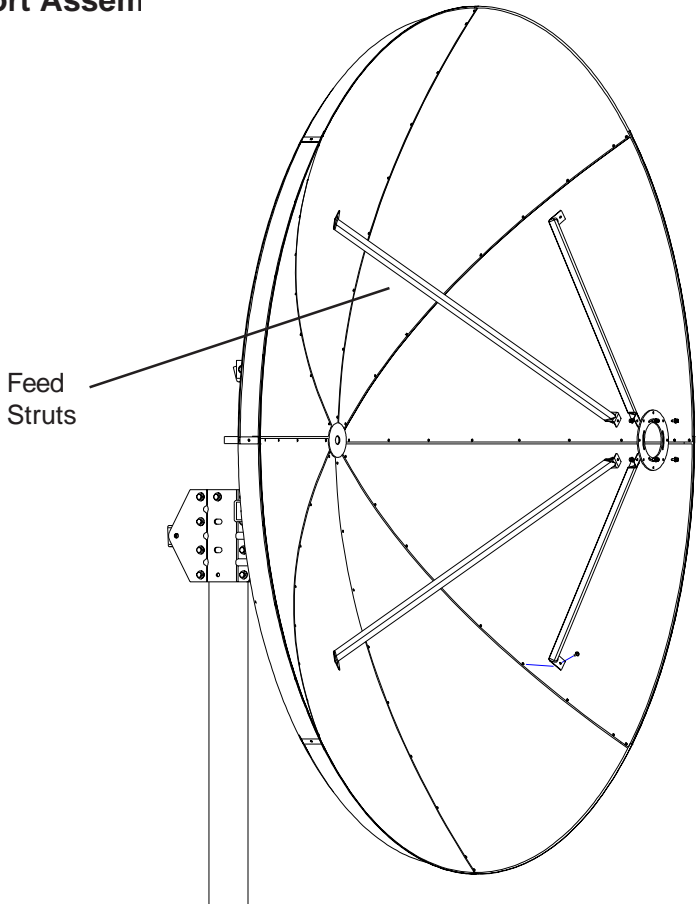
9. Install 48- 1/4" Allen bolts with flange nuts to Antenna Panel perimeter edge and Outboard Skirts tightening them as they are installed.

10. Tighten all Reflector hardware at this time.

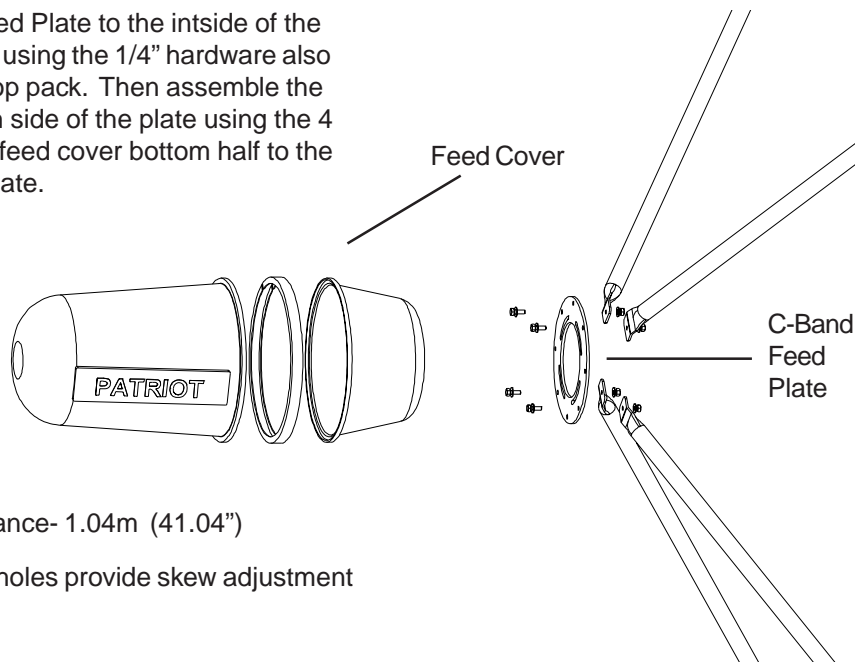


Reflector and Feed Support Assem

10. Feed Struts are to be installed as shown by using the fourth bolt from the edge of the reflector . Install the 4 struts 90 degrees apart using every other panel.



11. Assemble the Feed Plate to the inside of the Feed Struts as shown using the 1/4" hardware also from the Feed Strut Top pack. Then assemble the feed scalar to the dish side of the plate using the 4 slotted holes with the feed cover bottom half to the opposite side of the plate.



12. Check Focal Distance- 1.04m (41.04")

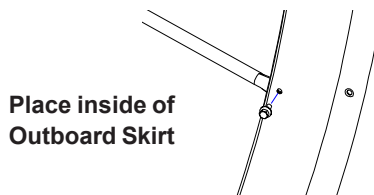
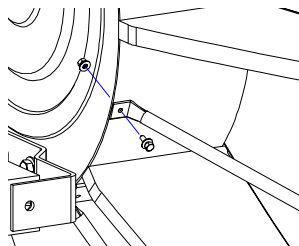
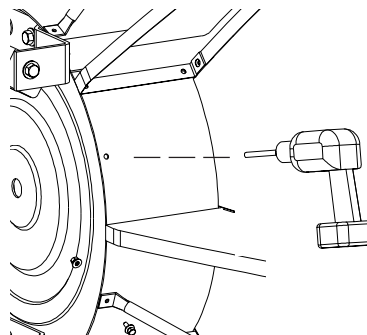
NOTE: The 4 slotted holes provide skew adjustment setting.

(Optional 3.1m Wind Kit)

Install the Wind Kit Struts to the back of the Reflector using the supplied 1/4" hardware as shown below.

1. If you received a unit without a pre-drilled hub assembly, the needed holes will need to be drilled with a hand drill. Using a 5/16" drill, drill the 8 holes needed along the back rim of the hub. The holes should be equally spaced between the Radial Beam holes, and aligned in the same bolt circle.

2. Install the Wind Kit Struts to the back of the Reflector using the supplied 1/4" hardware as shown below.



Place inside of Outboard Skirt

The antenna assembly is now complete. 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 using the 2 nuts of the threaded rod on each side of the lower pivot block on back of the mount. Tighten the Az-El pipe head bolts only enough to allow rotation of the mount on the ground pipe. 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.

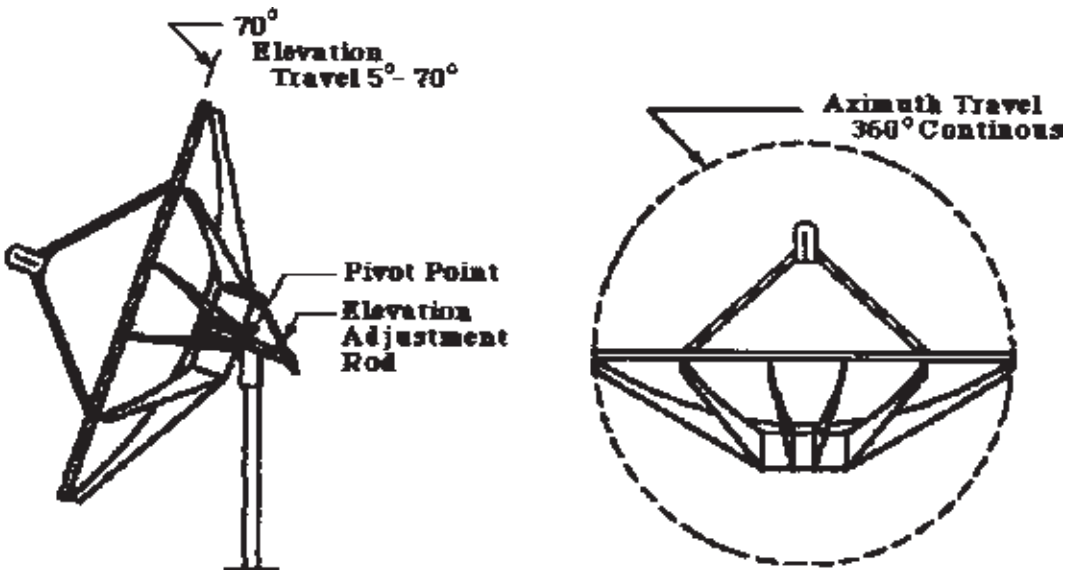
Windload Information

Windload Imposed at 125 mph

Force on Front of Dish - 4,297 lbs.

Force on Back of Dish- 2,027 lbs.

Overturning moment- 23,630 ft. lbs.





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Specifications

Electrical

Gain Midband
 Efficiency
 3dB Beamwidth
 Avg 1st Side Lobe
 Cross Polarization
 VSWR (max)

C-Band

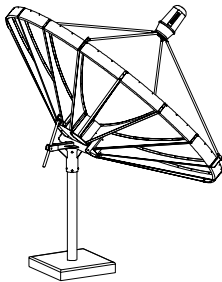
40.4 dBi
 66%
 1.72Deg
 -30dB
 >35dB
 1.25:1

Ku-Band

49.6 dBi
 61%
 .55Deg
 -23dB
 >35dB
 1.25:1

Mechanical

Antenna Size	3.1m (10')
Focal Distance	1.04m (41.04")
F/D	.336
Operational Wind	50mph
Survival Wind	125mph (see wind spec. pg. 10)
Operational Temp	-20 to 140 F
Rain	Operational = 1/2in./hr Survival = 3in./hr
Ice	1 in. Radial -or- 1/2 in. + 60mph wind
Pole Size	5 1/2" OD
Shipping Weight	320 lbs.



ANTENNA SYSTEMS

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