

**1.2m/1.5m**  
**PTX Offset Antenna**

**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***

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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	Reflector	1	7	Hardware pack	1
2	Back ring	1			
3*	Pre-assembled mount (1.5M only)	1			
4	Feed support- DBS	1			
5	Feed support- Standard(option)	1			
6	Feed support side strut	2			

\*NOTE: Mount may not be pre-assembled in which case you would receive-

3-1	Back Angle Supports	2
3-2	Pipe Adapter	1

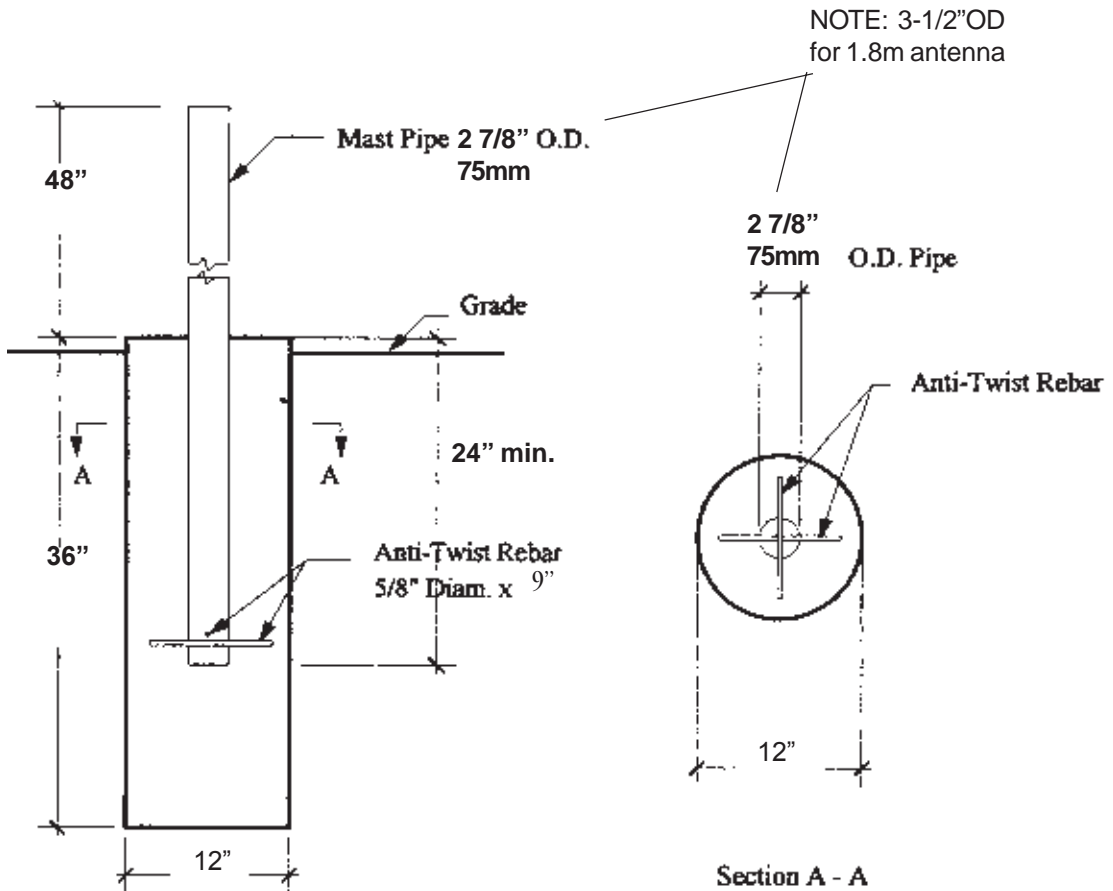
## Tools Required

2- Adjustable wrenches (8-12")	1- level
1- metric socket set through 17mm	1- tape measure
1- Combination wrench set through 17mm	
1- Phillips screwdriver	

## Other

1- Pre-installed Inground Mast (not included)-	2-7/8" OD(75mm) for 1.2m, 1.5m
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## In-Ground Mast Foundation

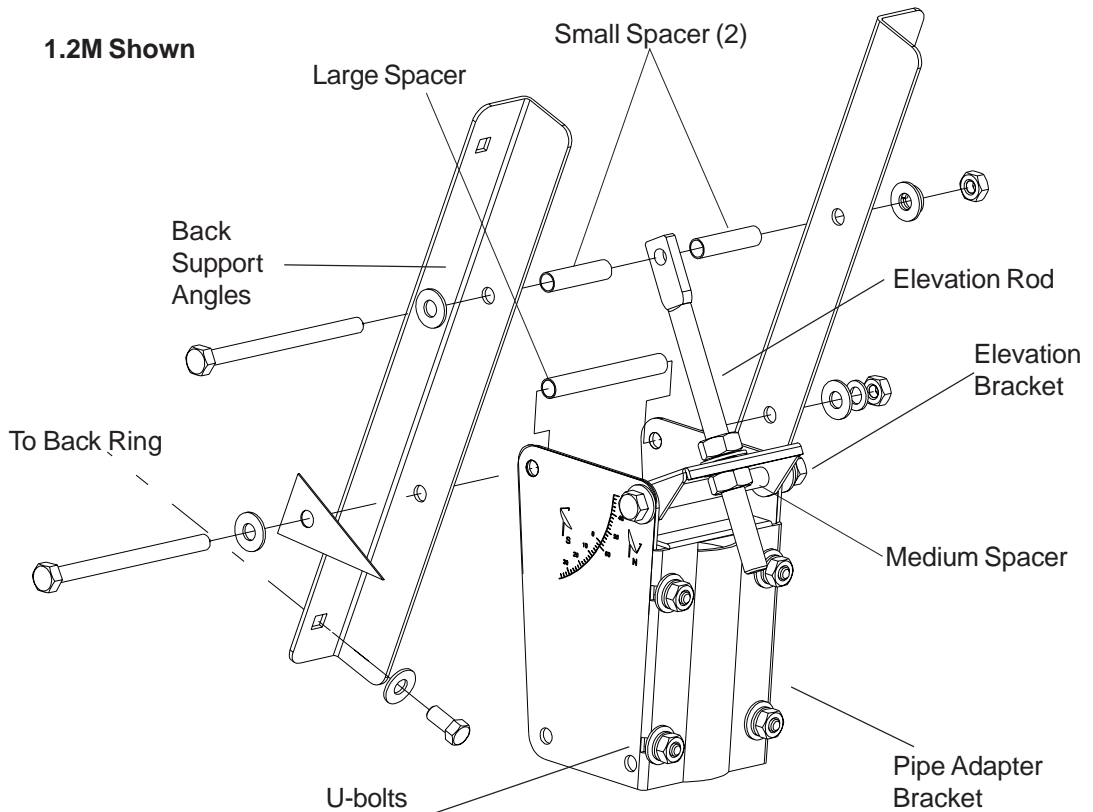


### Foundation Requirements & Specifications:

- Steel Mast: 2-1/2" Schedule 40, L=72"; **2-7/8" O.D. 75mm**  
3" Schedule 40, L=84"; **3-1/2" O.D. 90mm**
- 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

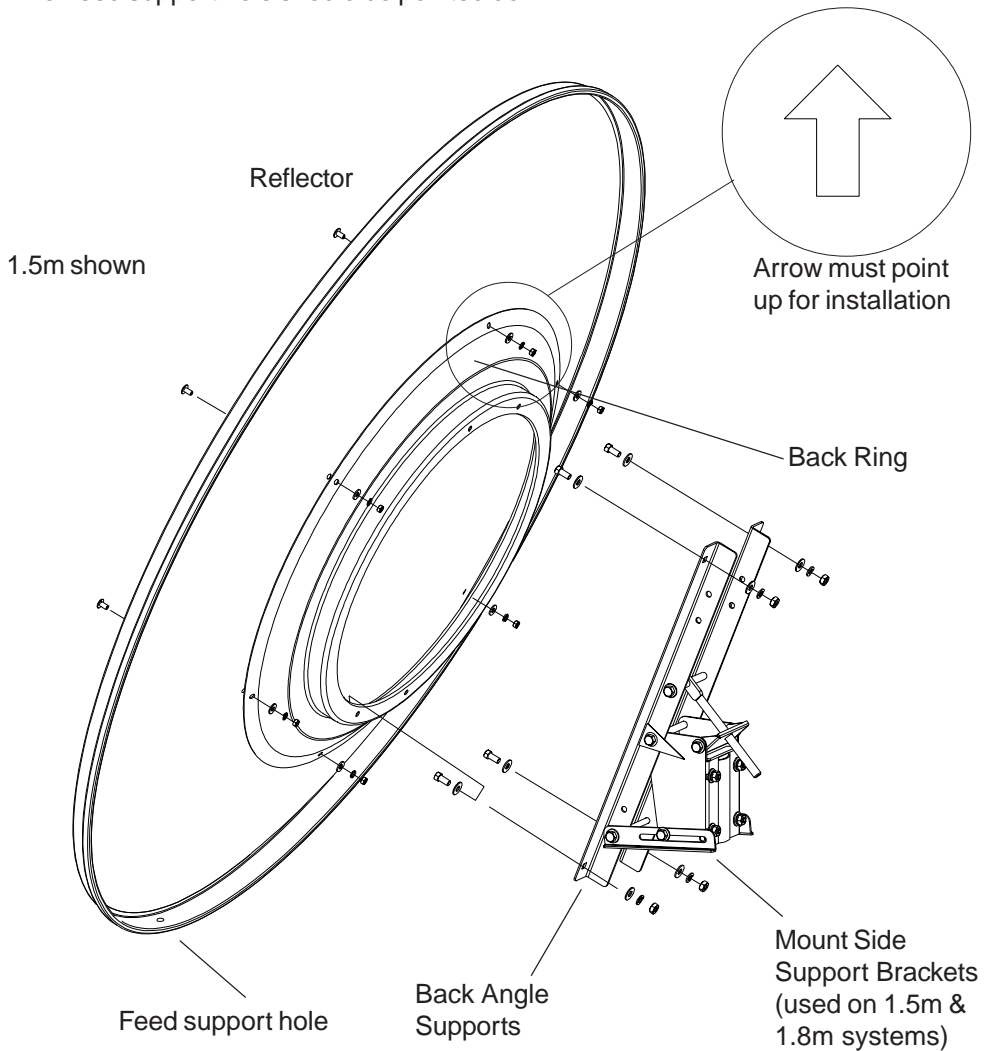
1. Insert the two U-bolts into the Pipe adapter bracket and add the nuts and washers as shown below.
2. Attach the 2 Support Angles to the Pipe adapter using the Spacers and M10x140 bolts, lockwashers/washers(2 per), and nuts as shown.
3. Thread one nut and washer onto the Elevation Rod about half way up and slide the Elevation Rod through the Elevation Bracket and thread the 2nd washer and nut onto the Rod. Add it to the assembly as shown.
4. Place the pre-assembled mount onto the 2-7/8" mast pipe prepared for the installation (not included). Finger tighten the nuts on the 2 u-bolts.



## Reflector Assembly

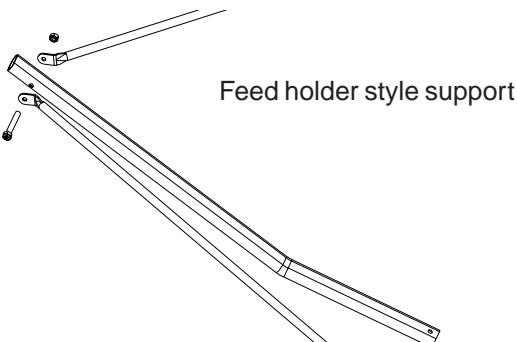
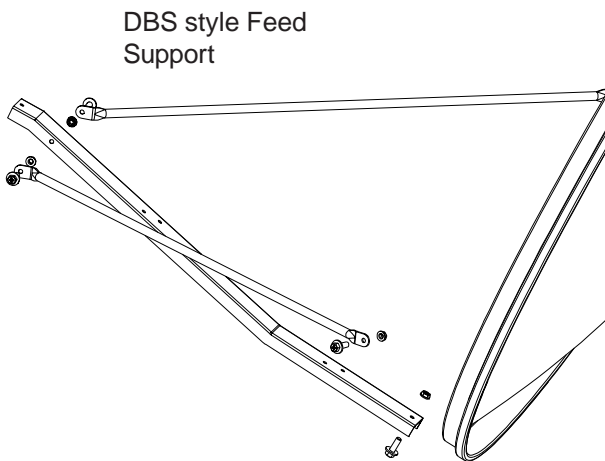
1. Assemble the reflector to the support ring using the same hardware as the two preassembled holes.
2. Assemble the Reflector/Back ring assembly to the two angle supports using the hex hardware shown.

NOTE: The Feed support hole should be pointed down.



## Reflector and Feed Support Assembly

1. Attach the two feed support struts to the reflector and Feed support using the hardware as shown.
2. Determine which type of feed will be used-  
LNBF style support,  
-or-  
Feed holder style support

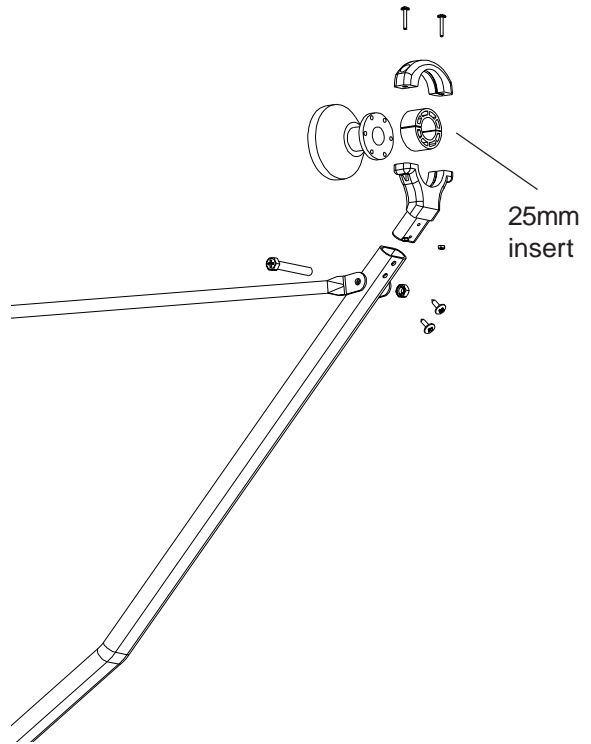


## Feed Assembly

### Standard Feed

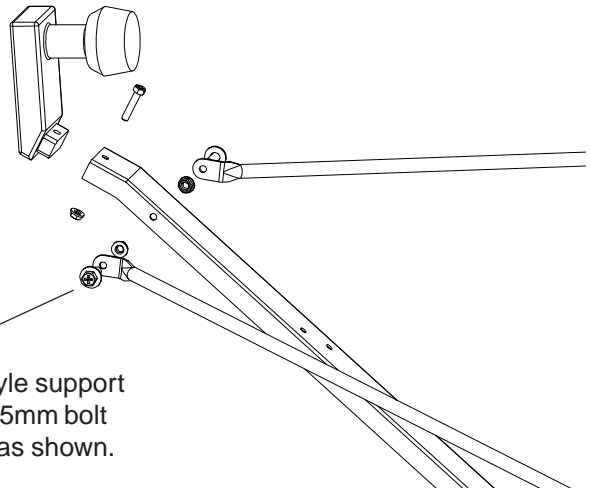
1. Clamp the feed (not supplied) into the 40mm plastic molded feed holder as shown. Add 25mm insert supplied if needed.

2. Attach the Feed/Bracket assembly to the Standard Feed Support as shown. Tighten all hardware.



### DBS Feed

1. Attach the DBS Feed (not supplied) into the DBS Feed Support as shown.



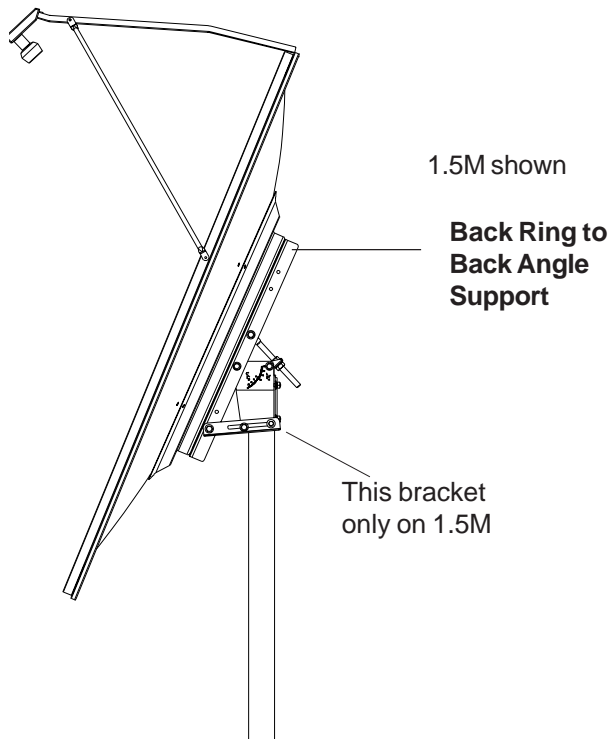
The 1.2m with a tube style support requires using the M6x55mm bolt instead of 2 short ones as shown.



The antenna assembly is now complete. To adjust the antenna toward the selected satellite you must first know its elevation angle above horizon. The reference angle for the face of the antenna will be the satellite elevation angle minus offset angle degrees (see back page). Using an inclinometer on the face of the antenna pre-adjust the desired angle using the 2 nuts of the threaded elevation rod. Tighten the Az-EI pipe bracket u-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.*

**NOTE: The elevation look angle range reaches down to approx. 22 degrees above horizon. If the antenna needs to “look” lower than this the antenna can be re-assembled in the inverted as shown by repositioning the 4 bolts attaching the Back Ring to the Back Angle Supports. To adjust Elevation angle the reference angle for the face of the dish will be the satellite elevation angle plus the offset angle degrees.**



**NOTES:**



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## Specifications

### **Electrical**

	<b>1.2m</b>	<b>1.5m</b>
Gain Ku- 11.7Ghz dBi	42.5	44.4
Efficiency	70%	70%
3dB Beamwidth	.97°	.97°
Avg 1st Side Lobe	-23dB	-23dB
Cross Polarization	>30dB	>30dB
VSWR (max)	1.3:1	1.3:1

### **Mechanical**

	<b>1.2m</b>	<b>1.5m</b>
Antenna Size	1.2m	1.5m
Offset Angle degrees	27.7	28.8
F/D	.5	.5
Operational Wind	40mph	
Survival Wind	100mph	
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 (O.D.)	2-7/8"	2-7/8"
	75mm	75mm



## **ANTENNA SYSTEMS**

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