

WINEGARD®

6', 1.8m PINNACLE® ANTENNA MOUNT AND FEED SUPPORT

INSTRUCTIONS

THIS ANTENNA REQUIRES A FEEDHORN CAPABLE
OF LUMINATING AN ANTENNA WITH AN F/D OF .278.

TOOLS REQUIRED

- (1) 10" Crescent Wrench
- (1) 3/8" Wrench
- (1) Framing Square
- (1) Universal Protractor
- (1) 5/16" Wrench
- (1) 9/16" Wrench

ANTENNA SPECIFICATIONS

Reflector Diameter:	6' (1.8m) 4 sections
Surface Tolerance:	.76mm, (.030") RMS max.
Hole Size:	1.98mm, (.078") 36% open
Frequency Range:	Ku-band 10.9-12.7GHz
Gain:	C-Band 4.0GHz - 36.4dB Ku-band 11.2GHz-44.0dB 11.9GHz-44.5dB 12.7GHz-45.0dB
Half Power Beamwidth:	2.8 deg.
F/D Ratio:	0.278
Cross Polarization:	20dB Down
Side Lobes:	20dB Down
Feed Type:	Prime Focus
Depth:	41.15cm (16.2")
Focal Length:	50.8cm (20.0")
Gauge:	1.27mm (.050") Perforated Aluminum
Operating Temperature:	-40° C to +60° C (-40° F to +140° F)

Winegard Company
3000 Kirkwood St., Burlington, IA 52601

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INSTRUCTIONS

Inspect for damage and make sure all parts are accounted for.

PARTS LIST

CARTON 1 CK-6016/6020

4 Reflector Segments	2745113
4 Rim Splices	3720191
1 Buttonhook	
1 Buttonhook Support	
1 Clamp Plate	
1 Stabilizer Plate	
1 Muffler Clamp Assembly	2162020
4 Reflector Mounting Brackets	
4 Screws, Cap 3/8"-24x1.25"	2160319
4 Nuts, Hex, 3/8-24 Keps	2160284
8 Washers, Flat 3/8"	2160029
4 Screws, Hex hd Cap 1/4"-20x7/8"	2160240
4 Washers, Split Lock 1/4" SS	2160031
4 Nuts, Hex 1/4"-20 SS	2160221
4 Washers, Flat 1/4" SS	7800245
76 Aluminum Washers	1140302
44 Bolts #10-32x5/8"	2160173
52 Nylok Hex Nuts #10-32	2160219
1 4oz. Can Smoked Chrome	2680002

Carton 2 MT-4638/4639

1 Mount Assembly	
4 Screw, #10x1/2"SHWH	2160194
1 Plastic Housing, LNB Cover	2200055
1 Housing End Cover	2200056

WINEGARD MOUNT DISCLAIMER:

NOTE: To insure maximum safety, Winegard recommends no roof or wall installation be attempted without a professional engineer's structural analysis. Local zoning and/or building codes and insurance companies may require architect or structural engineer approval prior to installation. It is the purchaser's responsibility to verify that the above steps are taken.

SITE SELECTION

Your Winegard EARTH STATION ANTENNA is designed to capture the very weak signals being transmitted by geostationary satellites over 22,000 miles away. The large surface of the dish must precisely reflect and focus the radio waves to the feedhorn and LNB. Because the microwave signal is extremely weak, the antenna system must be as efficient as possible. Proper site selection and installation are essential to the proper operation and enjoyment of your Earth Station.

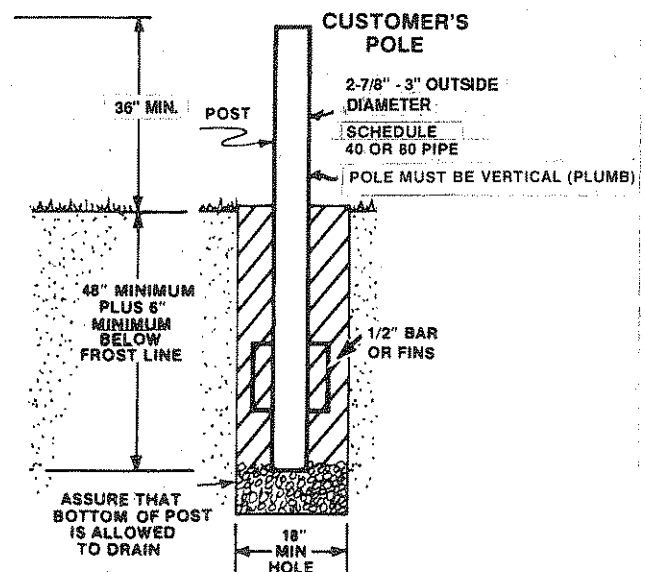
Any obstructions between your antenna and the satellite will degrade the signal level and, subsequently, your picture quality. Objects such as trees, buildings, utility poles, bushes, etc. will interfere with the microwave signal if they are in a direct line between the reflecting surface of the dish and the satellite.

A site for the antenna should be selected that offers an unrestricted view of the entire satellite belt. Take into account future tree growth and future use of the area immediately in front of the anticipated dish position.

SITE PREPARATION

Because of the large surface area of the reflector, the load transmitted to the base can be very great in moderate to severe winds. The local area around the antenna site will determine the type of support structure necessary. In a heavily treed area or low area with hills surrounding, the wind will not usually be as severe as that in an open area, hilltop location or top-of-building site.

CAUTION: The installation shown here is adequate in some areas. However, the Winegard Company recommends that a registered professional engineer be consulted to secure a soil analysis at the antenna site to determine the bearing strength of the soil.



INSTRUCTIONS

MOUNT INSTALLATION

STEP 1. Remove mount assembly from carton and slide base over pole. Orient so pivot beam is in an approximate North/South position. **TIGHTEN AZIMUTH LOCKING BOLTS ENOUGH TO SECURE MOUNT FROM TURNING** while reflector is being installed. Install actuator as per instructions with that equipment.

STEP 2. Place level on locations marked with an "X" in Figure 1 and make sure mount is plumb left and right.

STEP 3. Place protractor squarely on pivot beam assembly and set polar axis angle for your latitude. Adjust the nuts on the threaded polar axis adjustment. See Figure 1.

NOTE: Two sets of holes are provided to keep threaded rod at right angles to pivot beam assembly. Polar axis angles shown in Table 1 include slight correction to improve tracking at end of arc.

STEP 4. Use actuator to position back-up structure at right angles to pivot beam assembly. Use straight edge across the face of the ring to hold protractor. See Figure 2. Adjust declination offset for your latitude per Table 1.

FIGURE 1

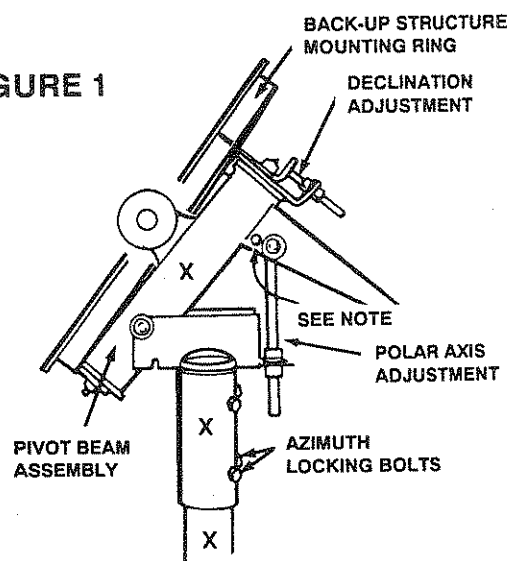


FIGURE 2

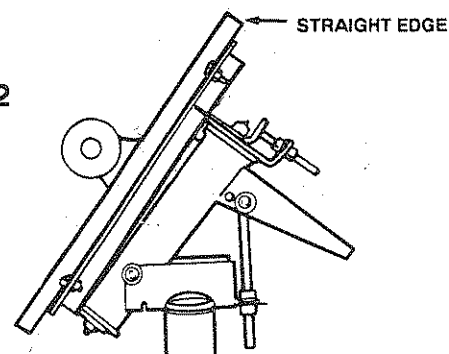


TABLE 1. DECLINATION CHART					
Latitude degrees	Declination offset angle degrees	Latitude degrees	Declination offset angle degrees	Latitude degrees	Declination offset angle degrees
17	2.55	35	4.97	53	6.88
18	2.69	36	5.09	54	6.97
19	2.84	37	5.21	55	7.05
20	2.98	38	5.33	56	7.14
21	3.12	39	5.45	57	7.22
22	3.26	40	5.56	58	7.30
23	3.40	41	5.68	59	7.37
24	3.54	42	5.79	60	7.45
25	3.68	43	5.90	61	7.52
26	3.81	44	6.00	62	7.59
27	3.95	45	6.11	63	7.66
28	4.08	46	6.21	64	7.72
29	4.21	47	6.31	65	7.78
30	4.34	48	6.41	66	7.84
31	4.47	49	6.51	67	7.90
32	4.60	50	6.61	68	7.96
33	4.72	51	6.70	69	8.01
34	4.85	52	6.79	70	8.06

REFLECTOR ASSEMBLY

STEP 1. Place two reflector segments face down on level surface with center supported about 18" off surface. (Fig. 1)

STEP 2. Insert 4#10x5/8" bolts in outer holes in rib. Use flat washers on each side of rib. Tighten two bolts, making sure front surface of reflector is smooth at rib joint while tightening. See hardware detail. See Figures 2 & 3.

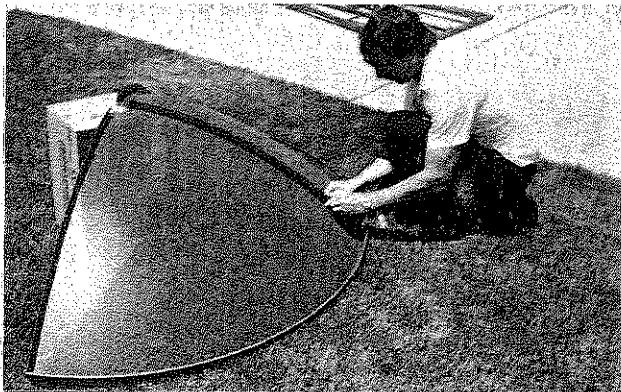


FIGURE 1

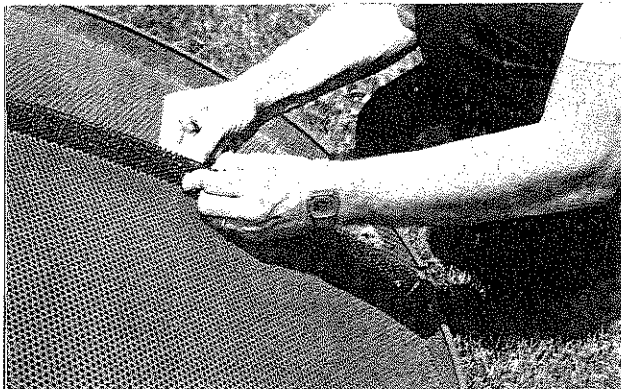


FIGURE 2

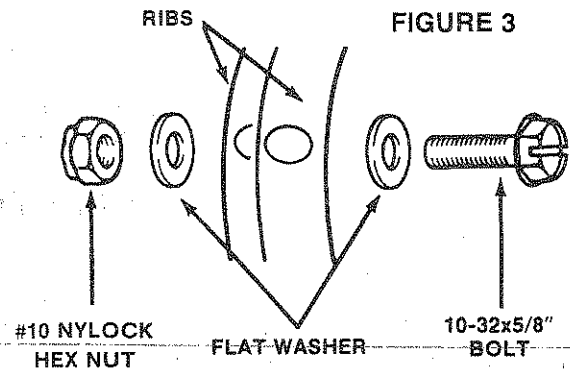


FIGURE 3

STEP 3. Attach rim splice with 4#10x5/8" bolts as shown. Use flat washers on inside of rim only. Rim splice is curved to fit rim. Tighten all four bolts. See Figures 4, 5 & 6.

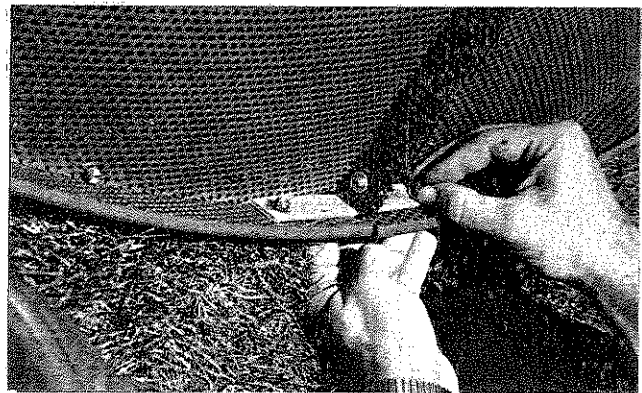


FIGURE 4

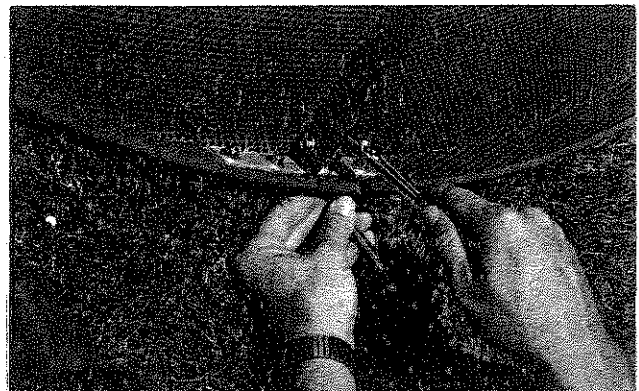
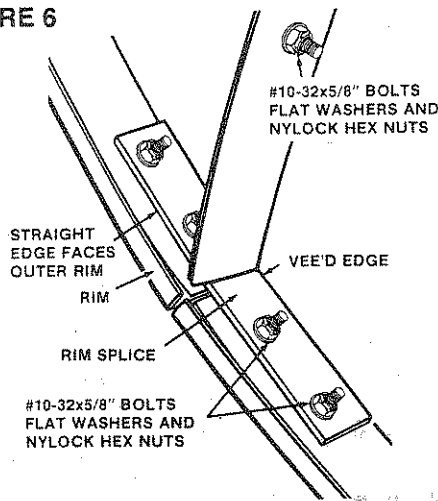


FIGURE 5

FIGURE 6



STEP 4. Tighten other two bolts inserted in Step 2. Make sure front surface of reflector is smooth at rib joint when bolts are tight. (Figure 7)

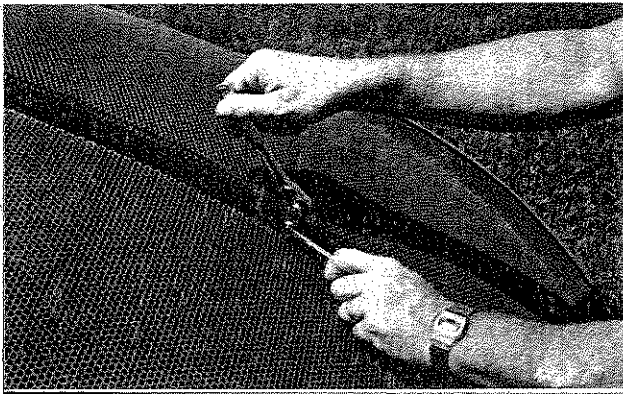


FIGURE 7

STEP 5. Attach mounting bracket to rib at second and third bolt hole from center of reflector. Do Not Tighten bolts. (Figure 8)

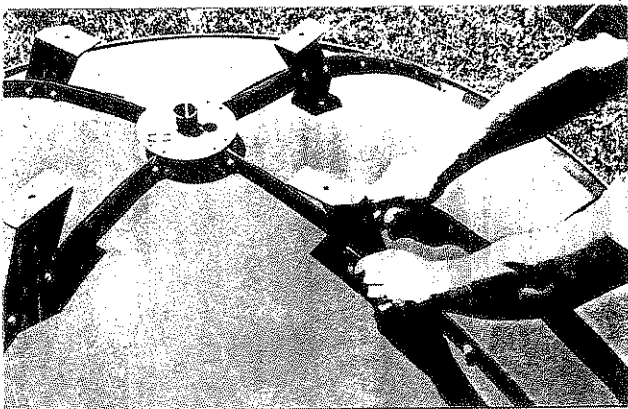


FIGURE 8

STEP 6. Repeat Steps 1 thru 5 for other two reflector segments. Join two halves of reflector together as described in Steps 2 thru 5. (Figure 9)

NOTE: All mounting brackets should be installed in the same way and bolts left loose. Surface of reflector should be smooth at rib joints with rim splice bolts and four outer rib bolts fully tightened.

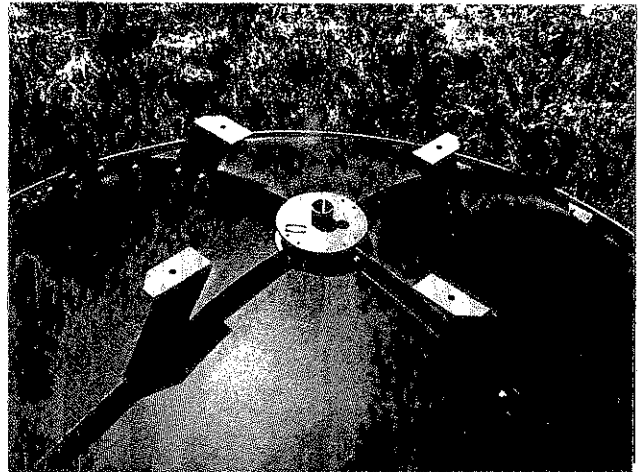


FIGURE 9

STEP 7. Stand reflector against mount and attach mounting brackets to mount frame with (4) 3/8-24x1.25" bolts (flat washers both sides) and nuts with keps washers.

STEP 8. Tighten all four 3/8" bolts, then tighten all 8 bolts holding brackets to ribs of reflector.

STEP 9. Install feed support in front of reflector. Bolt clamp plate to rear side with 8 #10-32 locking type nuts. Tighten fully. (Figure 10, 11)

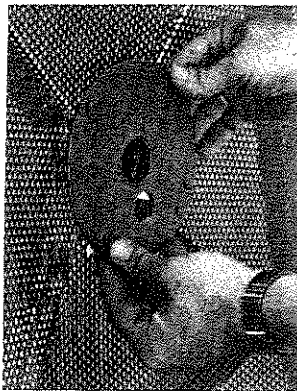


FIGURE 10

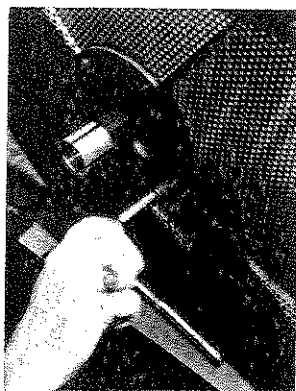


FIGURE 11

STEP 10. Place stabilizer plate over feed support and attach to ribs of reflector with 4 #10-32 x 5/8" bolts flat washers and locking type nuts. Tighten nuts. (Figure12)

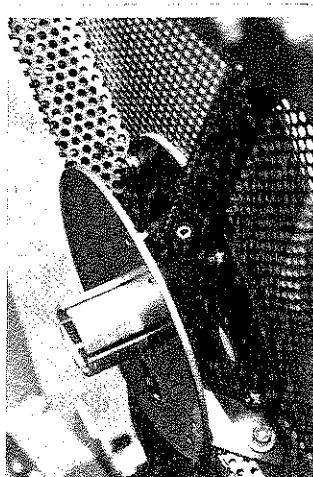


FIGURE 12

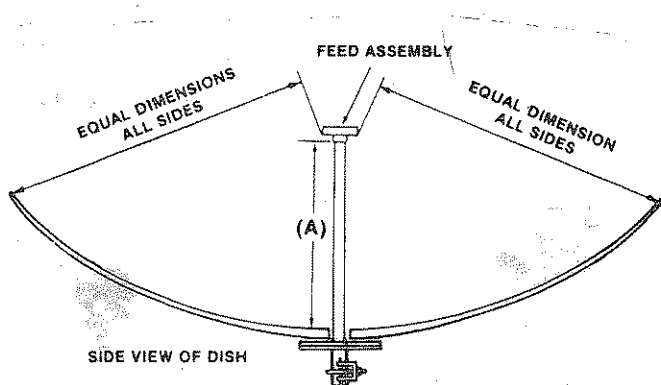


FIGURE 13

STEP 11. Slide feed assembly into feed support in center of reflector. Orient as shown and set distance between feed support and front of feedhorn at focal length and tighten U-bolt clamp on rear of dish. (Figure 14)

STEP 12. Ensure that buttonhook assembly is centered. See Figure 13. Push buttonhook assembly slightly as required to center.



FIGURE 14

STEP 13. FOCAL LENGTH: The focal length of the CK-6020 is 20". This distance should be set between the focal point reference of the feedhorn and the front surface of the support plate of the buttonhook. Focal length adjustment is accomplished by loosening the U-bolt holding the buttonhook assembly in support assembly of antenna and sliding it in or out as necessary. See Figure 15.

*** FOCAL LENGTH**

FEEDHORN	*DISTANCE
Polorotor™ I	19-3/4"
Polorotor I with Gold Ring	19-3/4"
CK-6020 Reflector (Other feeds)	20"

NOTE: THESE DISTANCES ARE APPROXIMATE. EACH INSTALLATION SHOULD BE OPTIMIZED BY ADJUSTING THE FOCAL LENGTH IN OR OUT FOR BEST PICTURE.

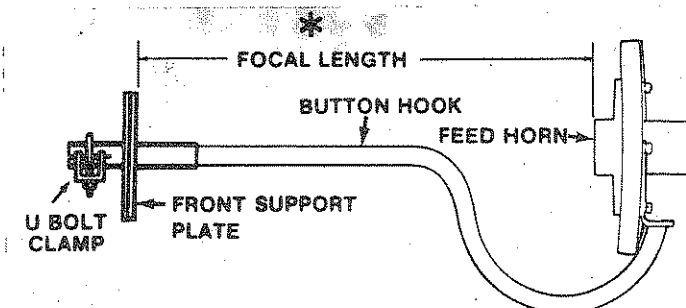


FIGURE 15

NOTE: The following illustrations show the Chaparral Polarotor® I attached to Winegard's buttonhook.

STEP 1. Attach the front portion of the feed housing to the feedhorn as shown in Fig.16 with 1/4"-20x7/8" bolts. Where a wind kit is required, place the angle brackets between the housing and the feedhorn. Tighten both bolts. See Fig.17.

WE RECOMMEND A WK-0010 (WIND KIT) BE USED WITH KU-BAND FEED ASSEMBLIES ON THIS REFLECTOR.

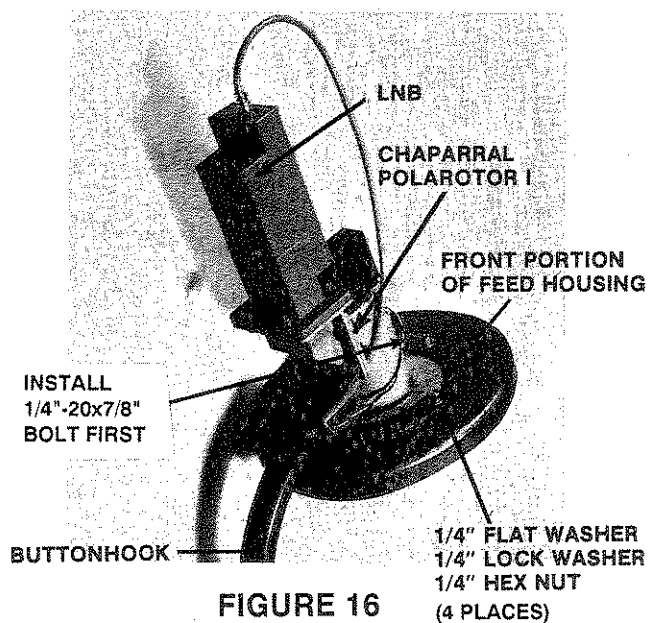


FIGURE 16

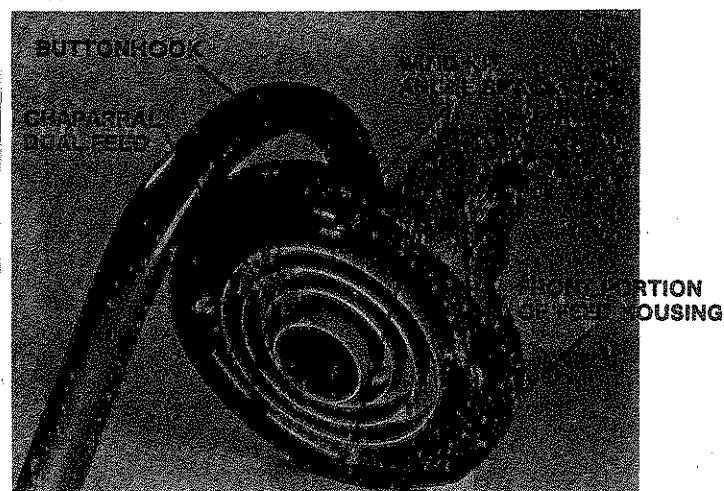
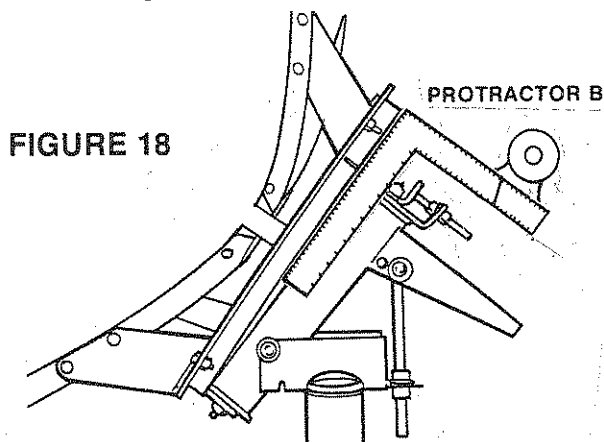


FIGURE 17

FINAL MOUNT ADJUSTMENT

STEP 1. Adjust actuator to move antenna towards Satcom F3. Use framing square as shown in Figure 18 to check elevation angle while making this adjustment. Check elevation angle after each adjustment. Be sure to keep long leg of framing square perpendicular (vertical) when checking elevation angle. (See Figure 19 for elevation angles).



NOTE: Elevation angles are given to Satcom F3 in Figure 19. Try to estimate angle to nearest degree. Exact Print-outs of elevation angles of all satellites for your area are available on request from the Winegard Company. If requested, we must know the latitude & longitude of your location. Your local airport or surveyor can give you this information.

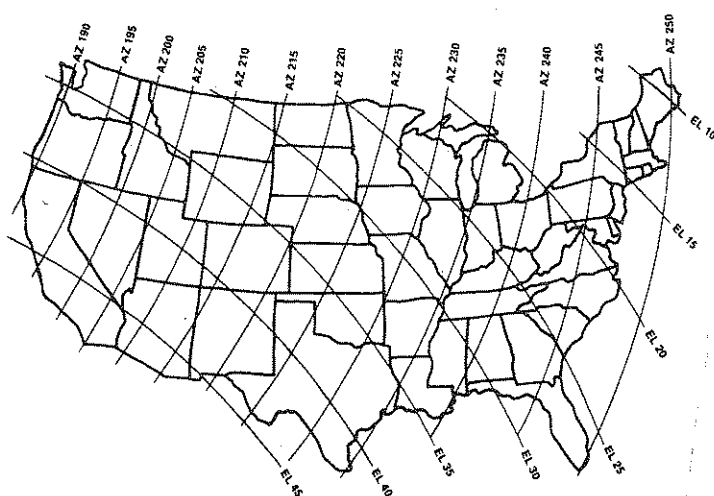


FIGURE 19

Finding the Satellite (Satcom F3)

STEP 2. Loosen azimuth locking bolts (Figure 20) enough to allow antenna to rotate. Rotate antenna and mount slowly so Pivot Beam passes thru a line with true North. Receiver should be in SCAN mode. When picture flashes on TV screen, remove receiver from scan mode and rotate antenna for best picture.

FINE TUNING

Once you have pinpointed a signal, the final polar tracking adjustments must be made. Refer to your Satellite Antenna Bearing Data or a list of the satellites and their services and choose the most Eastward and the most Westward satellites you wish to receive.

If when you move the antenna between the Eastern and Western satellites it is necessary to make a fine adjustment in the Polar Axis Angle, the pivot beam is not perfectly aligned with true North. To correct this situation, aim the antenna at the most Western satellite, tune the receiver to a channel that is easily identified and adjust the actuator and the adjustment on the polar axis angle for the best picture. Make a reference mark on the pivot beam assembly above the polar axis adjustment and measure the distance between the mark and the mount base as shown in Figure 20.

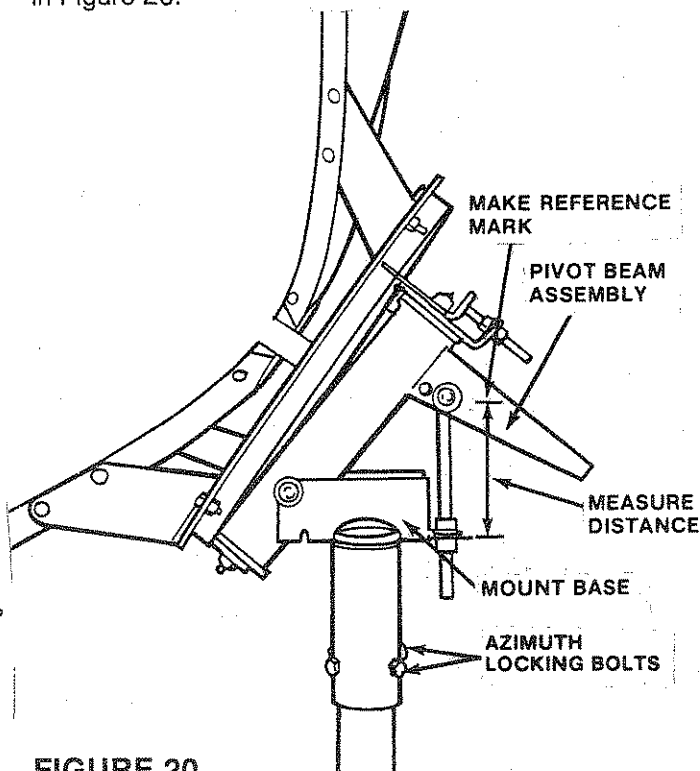


FIGURE 20

Turn the antenna to the most Eastern satellite and again adjust the polar axis adjustment for best picture. Measure the distance between the mark and the mount base. Divide the difference between the two measurements and add it to the smaller of the distances. Set the polar axis adjustment at this distance. Loosen the azimuth locking bolts and carefully rotate the whole antenna and mount until the best picture is restored on TV. Tighten locking bolts securely and check tracking alignment. Tighten azimuth locking bolts to 40 Ft. Lbs.

FINAL ADJUSTMENTS

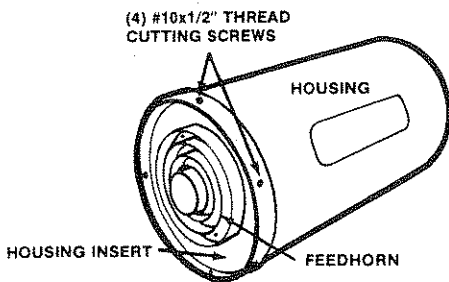
Once you have achieved true tracking on the polar arc, focal distance and feed centering should be checked. The length and focal point are approximations and may vary from one reflector to the next. Refer to Step 12, & 13 page 6.

NOTE: Use the meter output terminals of the receiver or a TV set while making these adjustments.

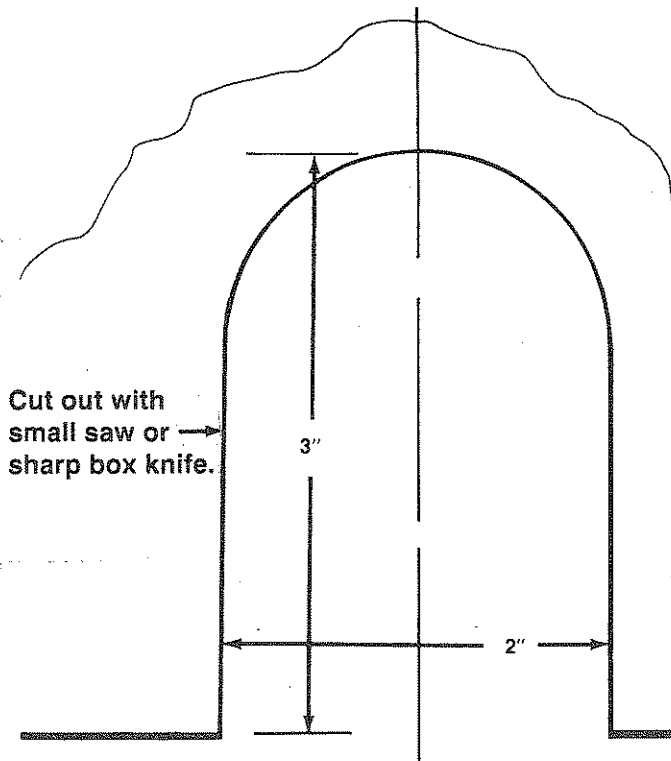
Attach feed cover (housing) as shown.

STEP 1. Using template below cut feed cover for buttonhook.

STEP 2. Attach feed cover as shown.



Cut-Out Template for Feed Support Cover



Center seam bottom of cover. Make sure printing on side of cover is right side-up.

MOPPING UP

At this point, you should have a fully operative Earth Station. By adjustment of only the polar jack, you should be able to change from satellite to satellite. If you have purchased an antenna actuator, you should install it now, per the manufacturer's instructions.

Once all adjustments have been made, re-check all hardware to ascertain that all connections are tightened properly. Route all cable and secure it in a manner to prevent any strain on the connectors and connections. Route all connecting cable between dish and receiver in a safe and secure manner. Burial of the cable is suggested for the most secure installation. Use PVC or conduit to protect cabling or use special direct burial cable.

HELPFUL HINTS

ICE AND SNOW are reflective at microwave frequencies and will effectively alter the front reflective surface of the dish. They also add weight to the reflector and will usually degrade the picture quality. It is suggested the ice and snow be removed as soon as practical and not be allowed to accumulate to any great degree.

FEEDHORN AND LNB - The feedhorn and LNB opening must remain clear. Many types of insects (wasps, spiders, etc.) look at the feedhorn and LNB wave guide as the ultimate in modern housing. Remember that any obstruction to the microwave energy will degrade the picture, and if picture degradation is noticed, do not fail to check the LNB.

WINEGARD®

SATELLITE (TVRO) DEVICES - FIVE YEAR LIMITED WARRANTY

WINEGARD COMPANY warrants this satellite antenna and mount to be free of defects in material and workmanship for a period of five (5) years from the date of purchase.

This warranty is effective only if the satellite antenna and mount is returned, "prepaid" to Winegard Company in Burlington, Iowa and proof of the date of purchase is supplied with the return of the product. The product must be returned under a "Return Authorization" number obtained by calling 319-754-0600. All returned products must have a "Return Authorization" number attached to each component.

This limited warranty does not apply if the satellite antenna is damaged, deteriorates or fails because of: improper or inadequate installation or failure of supporting hardware not supplied by the manufacturer; Neglect, accident or misuse; Modifications of the product as originally manufactured; Installation of the satellite antenna on a mount other than that manufactured by Winegard Company, or use of the mount with an antenna not manufactured by Winegard Company; Any act of nature, including, but not limited to, damage from winds in excess of hurricane force.

This limited warranty does not apply to the labor necessary to install, package, prepare and ship said satellite antenna and/or mount or freight to and from Winegard Company, and is applicable only to the original purchaser. The manufacturer, at its option, reserves the right to either repair or replace a satellite antenna or mount which it deems to be defective.

The repair or replacement of the satellite antenna and/or mount, at the option of the manufacturer, is your exclusive remedy under this limited warranty. WINEGARD COMPANY will not be liable for incidental or consequential damages, so the above limitations or exclusions may not apply to you. Further, warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WINEGARD COMPANY WILL NOT ASSUME ANY LIABILITIES FOR ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, MADE BY ANY OTHER PERSON.

WARRANTY SERVICE PROCEDURE

FOR ANTENNA AND MOUNT WARRANTIES AND FOR CLAIM OR
SERVICE INFORMATION CONTACT YOUR WINEGARD DISTRIBUTOR.

NOTICE TO CUSTOMER

THE COMMUNICATIONS POLICY ACT OF 1984 PERMITS THE USE OF THIS DEVICE BY AN INDIVIDUAL TO PRIVATELY VIEW SATELLITE PROGRAMMING WHICH IS NOT ENCRYPTED, PROVIDING EITHER A MARKETING SYSTEM TO AUTHORIZE THE VIEWING HAS NOT BEEN ESTABLISHED, OR SUCH A SYSTEM HAS BEEN ESTABLISHED AND THE INDIVIDUAL RECEIVING SUCH PROGRAMMING HAS OBTAINED AUTHORIZATION FOR VIEWING.

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WINEGARD®

Clearly the World's Best®