

Continental Satellite Systems

Clackamas, Oregon 97015

12'

(3.7 meter)

Antenna Assembly

Instructions

Revised Edition

©1984

silverlineTM

Patent
Pending

INTRODUCTION

Congratulations. Your purchase of this Silverline antenna will open the door to a whole new world of television enjoyment. To assure a trouble-free assembly, please read through this entire manual completely before beginning. You need to familiarize yourself with the terms and concepts involved in the antenna assembly.

TERMS & CONCEPTS

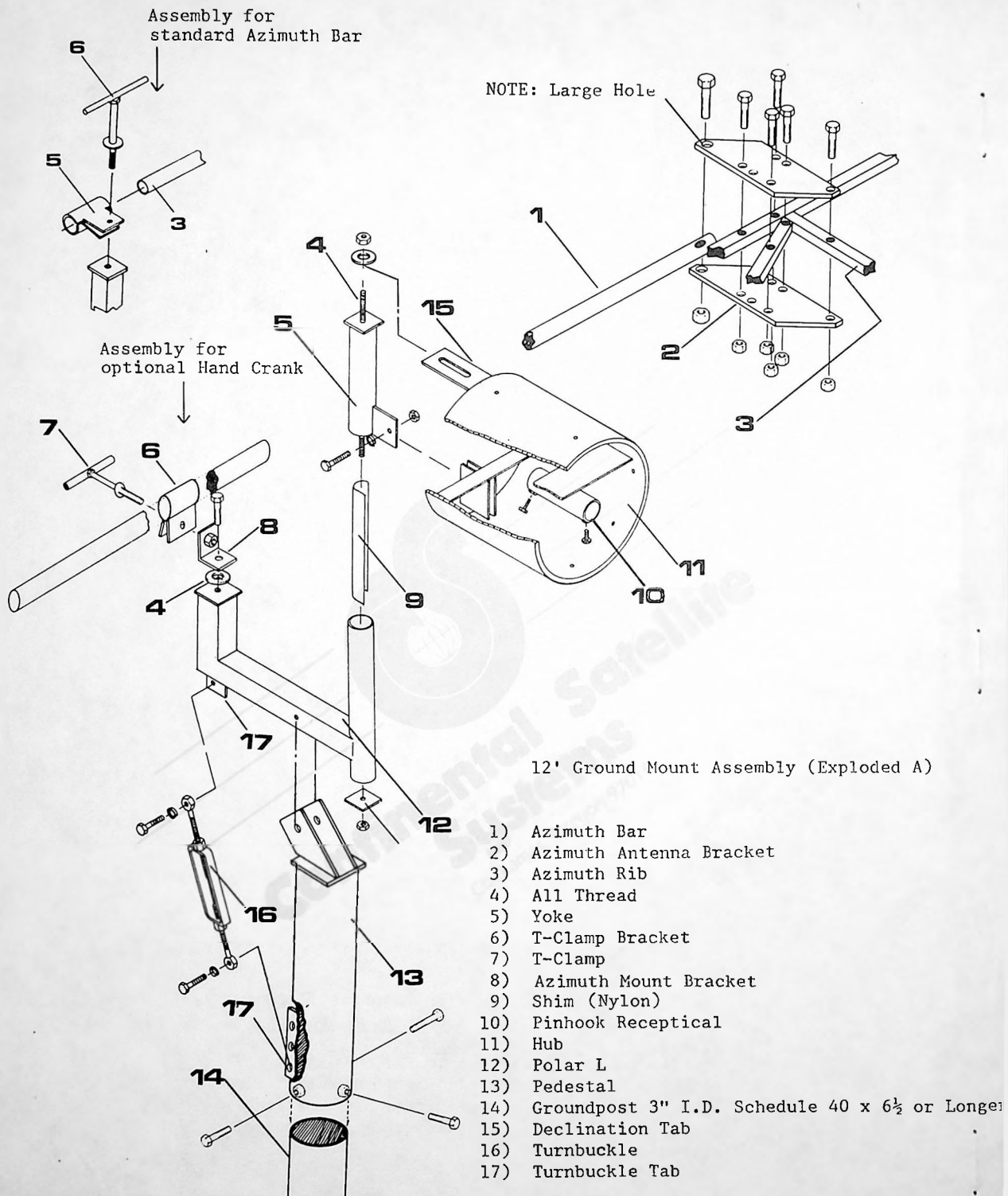
1. HUB: the hub is a steel cylinder that is the center of the dish.
2. RIBS: The aluminum ribs are the framework that create the parabolic curve. The antenna has eight ribs.
3. AZIMUTH RIB: This is one of the eight ribs of the antenna. This has 5 additional pre-drilled holes about $1\frac{1}{2}$ ' from the base. It also has an additional support welded to the trusses at the base of the rib.
4. RINGS: There are five rings on the completed antenna. Each ring is made from 8 ring sections. The 3 largest rings are welded structural rings.
5. SCREEN: The screen is radar mesh. There are two sizes, 8 pieces of each size.
6. FLASHING: There are eight pieces of flashing made of flat bar aluminum.
7. PINHOOK: The pinhook is made from round tubular aluminum and has several bends in it.
8. PINHOOK SUPPORTS: They are 4 short pieces of flat bar aluminum with a bend on one end and a hole in the other.
9. POLAR L: The polar L is a welded steel construction that is the connection between the dish and pedestal. The polar L is used to set the declination.
10. PEDESTAL: It is the welded steel part that slips over the ground post.
11. TURNBUCKLE: It is a steel $5/8$ threaded assembly with $5/8$ nuts welded to both ends.
12. SHIM: The shim is a $6\ 1/4 \times 1\ 1/2$ piece of high density plastic.
13. LUBRICANT: It is an aid when sliding hub onto polar "L". It should be of vaseline type.
14. INCLINOMETER: This is a tool used to determine the angle of the dish. They are available through building supply stores.
15. FINGERTIGHT: Refers to the pressure you put on any given set of bolts and nuts. Only tighten as hard as you can with bare fingers.
16. CLIPS: They are stainless steel short lengths of wire with a pre-bent hook on one end.
17. AZIMUTH BAR: A 5' long aluminum tube used in tracking the satellites.

TOOLS AND SUPPLIES

- 1 - $\frac{1}{2}$ " wrench
- 2 - $\frac{7}{16}$ " wrenches
- 2 - 8" crescent wrenches
- 1 - electric drill
- 1 - $\frac{9}{32}$ " drill bit
- 1 - $\frac{1}{8}$ " drill bit
- 1 - pop rivet tool
- 1 - inclinometer
- $3\frac{1}{2}$ to 4 - bags premix concrete
- 1 - piece 3" I.D. schedule 40 pipe x $6\frac{1}{2}$ ' or longer
- 1 - lubricant
- 1 - shovel
- 1 - tape measure
- 1 - screwdriver

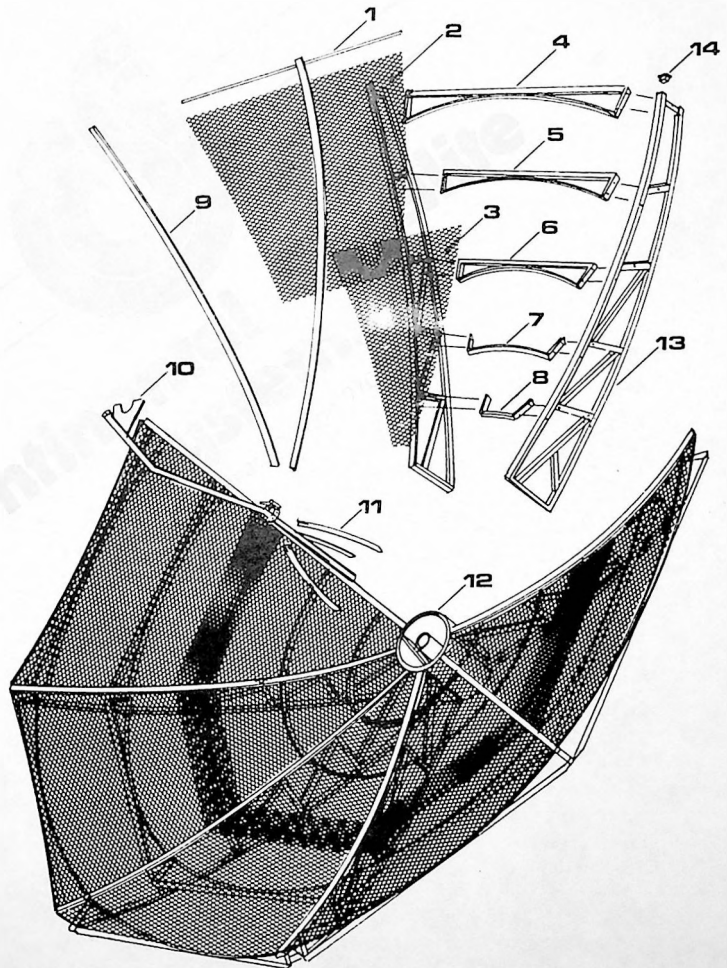
.....WARNING.....

Addition of a hand crank or motorized actuator requires a special Azimuth Antenna Bracket and a special Azimuth Mount Bracket to avoid damage to the antenna. FAILURE TO USE SPECIAL MOUNTING HARDWARE WILL RESULT IN IMPROPER INSTALLATION AND VOID WARRANTY. For further information contact your local distributor or Continental Satellite Systems.



12' Dish (Exploded View)B)

- 1) Trim
- 2) Outer Screen
- 3) Inner Screen
- 4) #5 Structural Ring
- 5) #4 Structural Ring
- 6) #3 Structural Ring
- 7) #2 Ring
- 8) #1 Ring
- 9) Flashing
- 10) Pinhook
- 11) Pinhook Supports
- 12) Hub
- 13) Azimuth Rib
- 14) End Cap



STEP ONE POST INSTALLATION

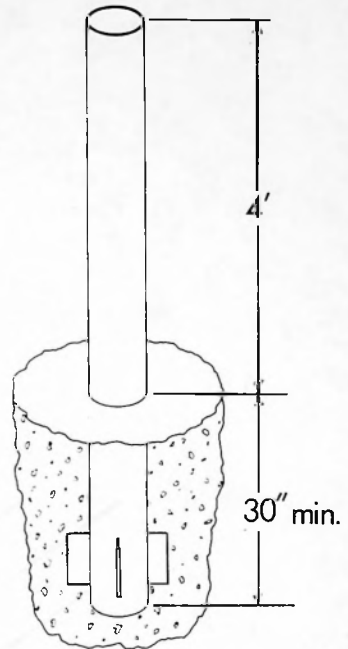
The post installation should be completed 24 hours prior to mounting the dish. This allows ample time for the concrete to set.

Opposite is a diagram showing a ground post installation.

The hole for the post is 30 to 36" deep. It is at least 18" in diameter. You will use $3\frac{1}{2}$ to 4 bags of concrete. These instructions are based on a stable soil foundation. If the soil is prone to be muddy or sandy, you may want to enlarge the foundation.

When you set the post, be sure it is set PLUMB. To do this you will need to use an inclinometer.

NOTE: High wind installation a 7' to 7.5' pipe with 36" to 42" in ground is necessary.

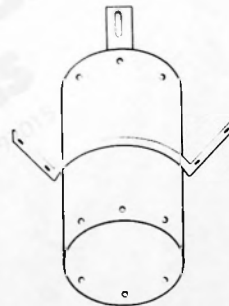


STEP TWO UNPACKING & PARTS VERIFICATION

Unpack antenna parts. Using the picture on pages 4 & 5 and the antenna parts check list found in the box, identify the antenna parts.

STEP THREE BEND #1 RINGS

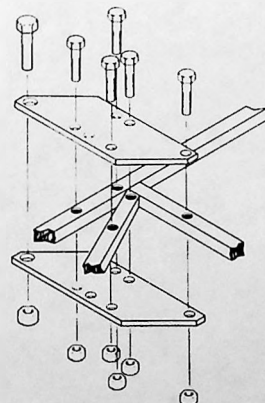
1. Hold on to each end of a #1 ring section. Make a slight bend in the section, by bending it around the hub. See illustration. Bend all the #1 ring sections in this manner.



STEP FOUR ATTACHING AZIMUTH BRACKET

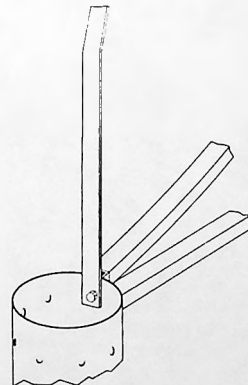
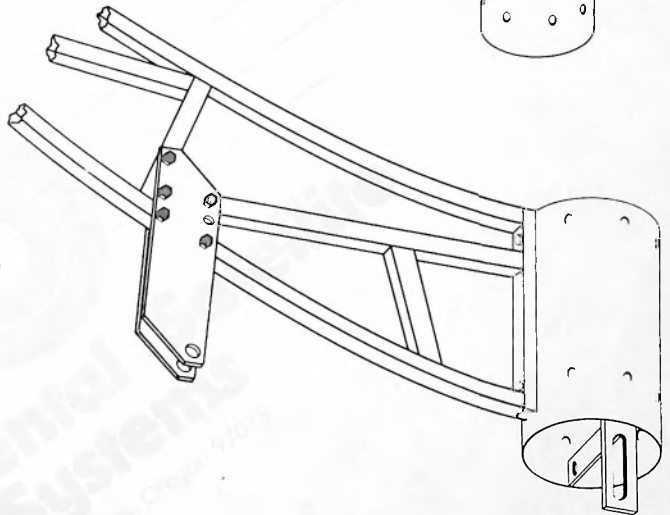
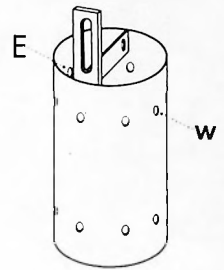
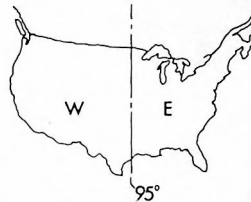
1. Remove banding from rib bundle
One of the ribs has (5) pre-drilled holes on the lower rail of the rib, this is your azimuth rib. Attach the azimuth rib bracket to the azimuth rib as shown in illustration, using the (5) bolts supplied.

NOTE: This is the special azimuth bracket required for hand cranks or motorized actuators.



STEP FIVE BOLTING RIBS TO HUB

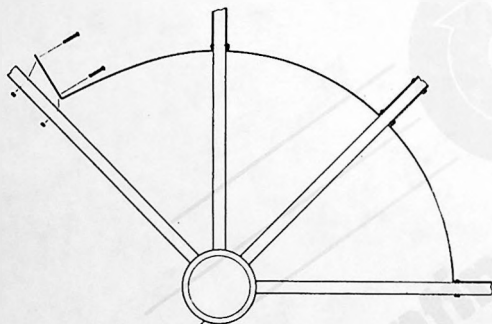
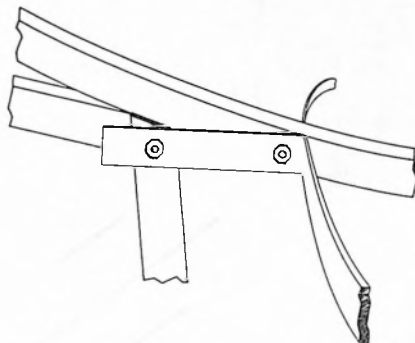
1. Determine if your location is east or west of 95° longitude. This may be accomplished by finding your location on a map, calling your local airport or contacting your local planning department.
2. Place the hub on the ground with the slotted tab skyward.
3. IF YOU ARE: East of 95° count three holes to the right from the slotted tab. Mark this hole. (See Illustration)
4. Turn the hub over with the slotted tab on the ground. Bolt (finger-tight) the azimuth rib (use $1 \times 5/16$ bolts) to the hub at the marked location. (See Illustration)
5. Locate the pinhook supports. When bolting the next rib to the hub, place a pinhook support on the inside of the hub. The bolt passes through the rib, the hub, and the pinhook support. Tighten finger-tight. (See Illustration)
6. The remaining pinhook supports are installed alternately with the remaining ribs. Bolt these finger-tight.



STEP SIX ASSEMBLING THE RINGS

1. Locate the smallest set of ring sections, these make the ring closest to the hub, referred to as the #1 ring. You have prebent these.

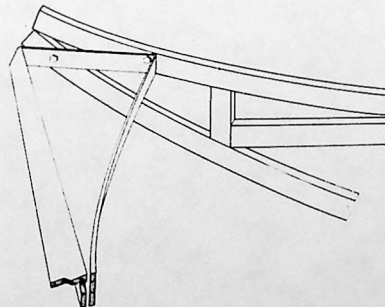
2. The #1 ring sections bolt between each of the 8 ribs at the bolt holes closest to the hub. When bolting the ring sections to the ribs, note that each bolt passes through a ring section, the rib, and the next ring section. All of the rings are attached in this manner.
(See Illustration)



3. Begin with two ring sections. Bolt them to the rib as described above, (using $1\frac{1}{2} \times \frac{1}{4}$ bolts, 7/16 wrench). The loose end of one of these ring sections is eased into position with the second rib, creating a slight even curve. Bolt this ring section. Follow this process until you complete the ring.
(See Illustration)

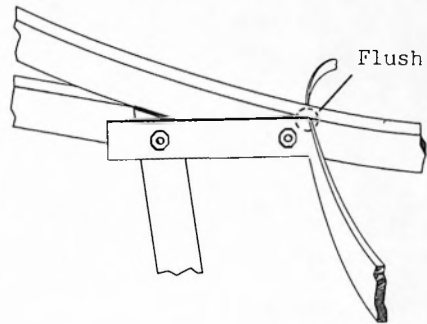
4. Bolt the #2 rings.

5. The #3 through 5 rings are the welded structural rings. The ring sections are bolted in with the angle at the top.
(See Illustration)

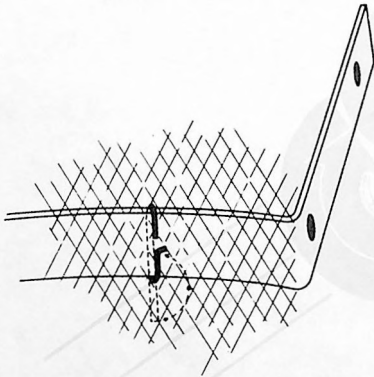


STEP SEVEN TIGHTEN

1. Tighten the bolts holding the ribs to the hub.
2. All the ring sections must be flush with the top of the rib at the point where they bolt together. Beginning with the #1 ring, check each joint. If the ring section and rib are not flush, tap lightly on the ring section until it is flush. (See Illustration) Tighten that bolt. When all the #1 rings are flush and tightened, follow the same procedures with all the #2 rings then all the #3, 4, and 5 rings.



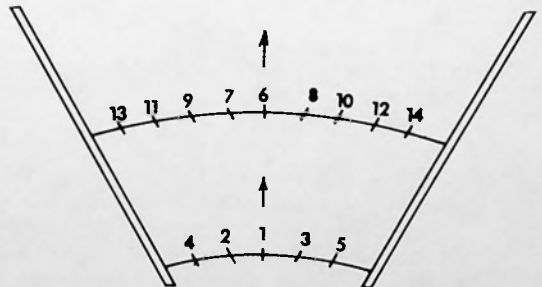
STEP EIGHT INSTALL THE SCREEN



1. Start with the small pieces of mesh. Position a mesh section so that the edges are approximately centered on top of the two ribs, and the outermost edge of the screen is approximately 2" past the second ring.
2. Using the clips: Drop the straight end of a clip through a diamond in the mesh, directly over a ring. The hooked end of a clip catches the mesh and the top edge of the ring section. Using pliers, the straight end of the clip is bent around the bottom of the ring. (See Illustration)

3. Start at the #1 ring. The first clip is placed near the center. The remaining clips are placed approximately 4" apart as in the illustration. Note the sequence.
NOTE: In extremely high wind areas place clips closer together.

4. Complete the installation of the small mesh sections.
5. Follow the same procedure for installing the large mesh. The screen should be approximately 1" past the outermost ring to allow the silver trim to be attached to the screen.



STEP NINE FLASHING

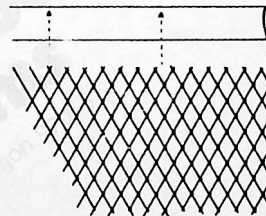
1. The flashing is installed one section at a time. It is placed on the screen seam over the rib on each of the eight ribs.
2. There are 1/8" holes in the flashing. With an 1/8" drill bit, drill through the flashing into the rib at these hole sites. Using the pop rivets provided, secure the flashing to the rib.

STEP TEN PINHOOK

1. Following manufacturers instructions install the feedhorn onto the pinhook.
2. Slip the hose clamp on to the pinhook.
3. Slip the pinhook into the receptacle in the center of the hub. This distance, the focal length is 54".
4. Measure from the feedhorn center opening to the top edge of the hub.
5. Secure the pinhook at this exact height by tightening the 3 bolts in the pinhook receptacle.
6. Lift the hose clamp up and pull the pinhook supports to the pinhook. Slide the clamp over them and tighten.

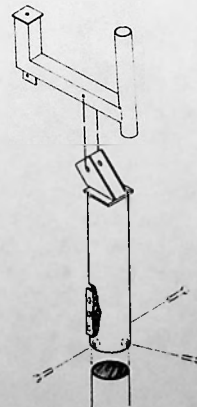
STEP ELEVEN TRIM AND END CAPS

1. Slip the black plastic end caps onto the ends of each rib. (See Illustration)
2. Slip the trim over the edge of the antenna mesh. (Note, by placing the trim in warm water, it will become more pliable).



STEP TWELVE GROUND MOUNT ASSEMBLY

1. Slide the pedestal over the ground post. (See Illustration)
2. There are two tabs that extend from the top of the pedestal at an angle. There is a hole in each tab. Align the hole in the body of the polar L with the holes in these two tabs. Using a 5/8 x 3 1/2 bolt, bolt the polar L to the pedestal.



STEP THIRTEEN ATTACHING TURNBUCKLE

NORTHERN HEMISPHERE

1. One end of the turnbuckle bolts to the extended tab of the polar L.
2. The opposite end bolts to the three hole tab welded to the side of the pedestal. The proper hole is selected by setting the polar L at its approximate angle. Use the following calculations to determine your polar elevation.
3. If you are north of 45°
 - A. Subtract 45 from your latitude.
 - B. Subtract this difference from 45.
 - C. This final figure is your polar elevation angle.

(Example (Sample latitude))

| | |
|----------|---------------------------|
| 47 | 45 |
| -45 | - 2 |
| <u>2</u> | <u>43</u> Polar Elevation |

 - D. This measurement is made at the tubular side of the polar L using an inclinometer. (See Illustration) (Go to step 5)
4. If you are South of 45°
 - A. Subtract your latitude from 45.
 - B. Add this difference to 45.
 - C. This final figure is your polar elevation angle.

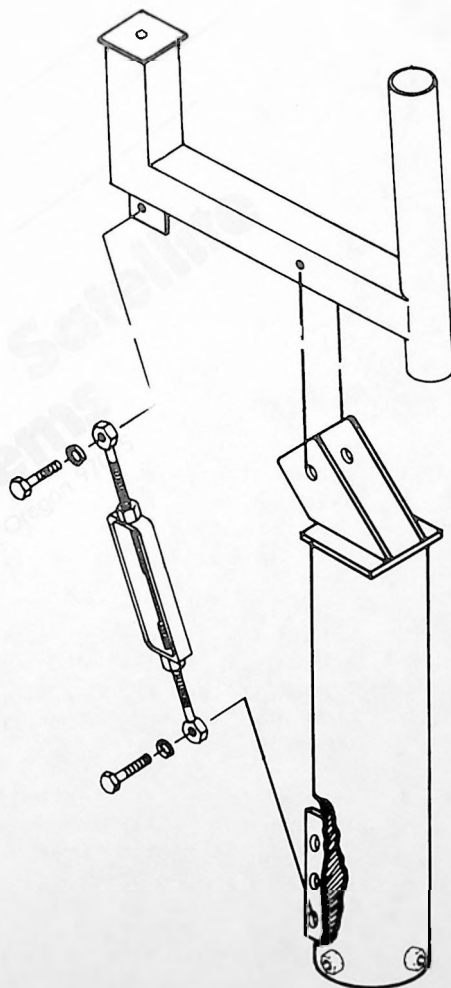
(Example)

| | |
|-----------|-----------|
| 45 | 45 |
| -31 | +14 |
| <u>14</u> | <u>59</u> |

 - D. This measurement is made at the tubular side of the polar L. (See Illustration)
5. Bolt the turnbuckle to the pedestal. The turnbuckle should be approximately halfway extended. (See Illustration)
6. NOTE: The bolts at both ends of the turnbuckle should be on the same side.

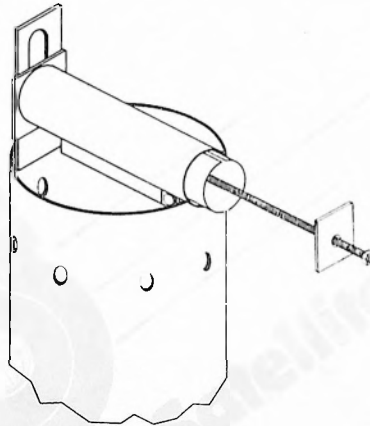
SOUTHERN HEMISPHERE

1. If you are North of 45° use step 4.
2. If you are South of 45° use step 3.



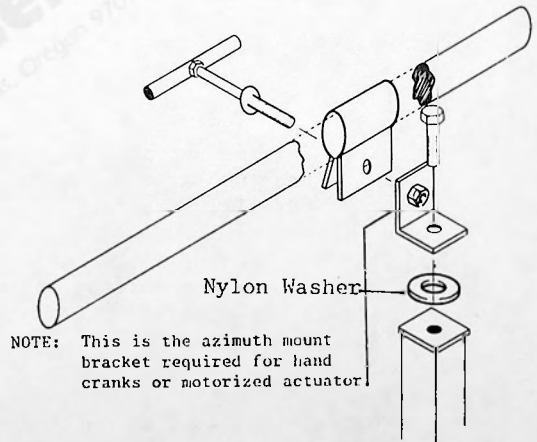
STEP FOURTEEN MOUNTING THE DISH

1. Apply lubricant to the nylon shim and smear onto the round tubular part of the polar L.
2. Remove the nut and plate from the all-threaded rod that passes through the yoke of the hub. It will be re-assembled in step 5.
3. Slip the shim, (lubricated side in) into the yoke, leaving it extended from the rim of the yoke approximately 1". (See Illustration)
NOTE: Failure to use shim will result in excessive play in antenna.
4. Slip the pre-lubricated section of the polar L inside the extended portion of the shim. Push the yoke with shim completely onto the polar L.
5. Tighten the nut on the all-threaded rod. It should be tightened snug to the yoke.



STEP FIFTEEN ATTACHING THE AZIMUTH BAR

1. Attach the angle plate to the polar L using a $\frac{1}{2} \times 1\frac{1}{2}$ bolt. This attachment is made at the pre-drilled hole that does not have a nut that is welded on.
2. Locate the T clamp and bracket assembly. The threaded end of the T clamp passes through the bracket and into the angle attached to the polar L.
3. Locate the pre-drilled hole on the azimuth bar. Slip the azimuth bar through the T-clamp bracket so that the hole in the bar is directed toward the azimuth rib bracket.
4. Using a $\frac{1}{2} \times 2$ " bolt, bolt the azimuth bar between the azimuth rib bracket plates.
5. If you are installing a motor drive or hand crank, it is suggested that an 18" throw be used.



NOTE: This is the azimuth mount bracket required for hand cranks or motorized actuator.

.....WARNING.....

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CONTINENTAL SATELLITE SYSTEMS LIMITED WARRANTY

11485 SE Hwy. 212 Clackamas, Oregon

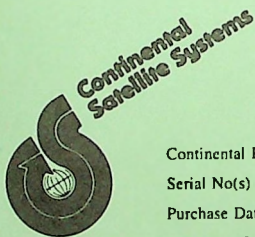
This Silverline product by CSS is warranted to be free from defects in material and workmanship for (1) one year from date of purchase. Within the period of this warranty, Continental Satellite Systems will, at its option, either repair or replace the product or parts proving defective in material or workmanship. This warranty does not apply to defects caused by negligence, misuse or accidents. CONTINENTAL SATELLITE SYSTEMS SPECIFICALLY DISCLAIMS AND DOES NOT WARRANT OR GUARANTEE THIS ANTENNA WHEN SUBJECTED TO WIND SPEEDS IN EXCESS OF (70) SEVENTY MILES PER HOUR. Any exposure to wind speeds in excess of seventy miles per hour will void any warranties herein.

This warranty extends only to the original purch-

aser, and is not transferrable. The customer shall return the product to the retail seller for service and repair at his shipping cost. The cost of removal and reinstallation of the antenna will be paid by the purchaser and will not be considered part of this warranty. Enclose documents to substantiate purchase date.

Continental Satellite neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale or shipment of our products. We reserve the right to make changes and improvements in our products without incurring any obligation to similarly alter products previously purchased. We specifically do not warrant or guarantee the availability of any signal received, or to be received by the antenna.

Continental is not responsible for Dealer or personal installations.



Please complete and mail this warranty registration immediately upon purchase. This will register your product at Continental Satellite Systems.

Continental Product No(s) _____

Serial No(s) _____

Purchase Date _____

Purchased from _____ City _____

Your name _____

Company (if applicable) _____

Title/Occupation _____

Address _____

City _____ State _____ Zip _____

Home Telephone () _____

Why did you purchase this Continental Product?

How many local TV Channels are currently available to you?

☐ Less than 2 ☐ Between 2 and 5 ☐ More than 5

What programming is of greatest interest to you?

My annual income is ☐ Under \$50,000 ☐ Over \$50,000

I am a ☐ College Graduate ☐ High School Graduate

This ☐ is ☐ is not my first Continental product purchase.

What features would you like us to add to our products? _____

Will you be using this product for ☐ Home ☐ Business

☐ Demonstration ☐ Hobbyist Activity

☐ Other use (Describe) _____

To help us serve you better, please answer these questions:
I became interested in this product through (check one)

- | | |
|---|--|
| <input type="checkbox"/> Newspaper Advtz. | <input type="checkbox"/> Electronic/TV catalog |
| <input type="checkbox"/> Magazine Advtz. | <input type="checkbox"/> Store Salesperson |
| <input type="checkbox"/> TV Advtz. | <input type="checkbox"/> Continental Dealer |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Continental Distributor |
| <input type="checkbox"/> Friends Recomen. | <input type="checkbox"/> Store Display |
| <input type="checkbox"/> Product Show | <input type="checkbox"/> Other |

My major reasons for purchasing Continental over competitive products (check all applicable)

- | | |
|--|---|
| <input type="checkbox"/> In store Demonstration | <input type="checkbox"/> Reputation for Quality |
| <input type="checkbox"/> An-On-Site Dmstr. | <input type="checkbox"/> Styling |
| <input type="checkbox"/> Magazine Reviews | <input type="checkbox"/> Price |
| <input type="checkbox"/> Friend's Recommendation | <input type="checkbox"/> Other |

I am ☐ male ☐ Female ☐ Married ☐ Single
☐ Under 21 ☐ 21-30 ☐ 41-50 ☐ Over 50

LNA (Soaner)

Micro Wave Systems Engineering INC

Model LA 4870

S/N 502113 (19 June 1985)

3700 mc 49.90 db gain 70° K

3950 mc 51.58 db gain 97° K

4200 mc 78.92 60° K

LO = 3900 mc Translating 2 X

TEMP = 24 deg. C

LNA (Original)

Deksel, INC

Santa Clara Co.

Model DXA 3157-01

S/N 3404



**Continental
Satellite Systems**

11485 S.E. Highway 212
Clackamas, OR 97015
(503) 656-9878