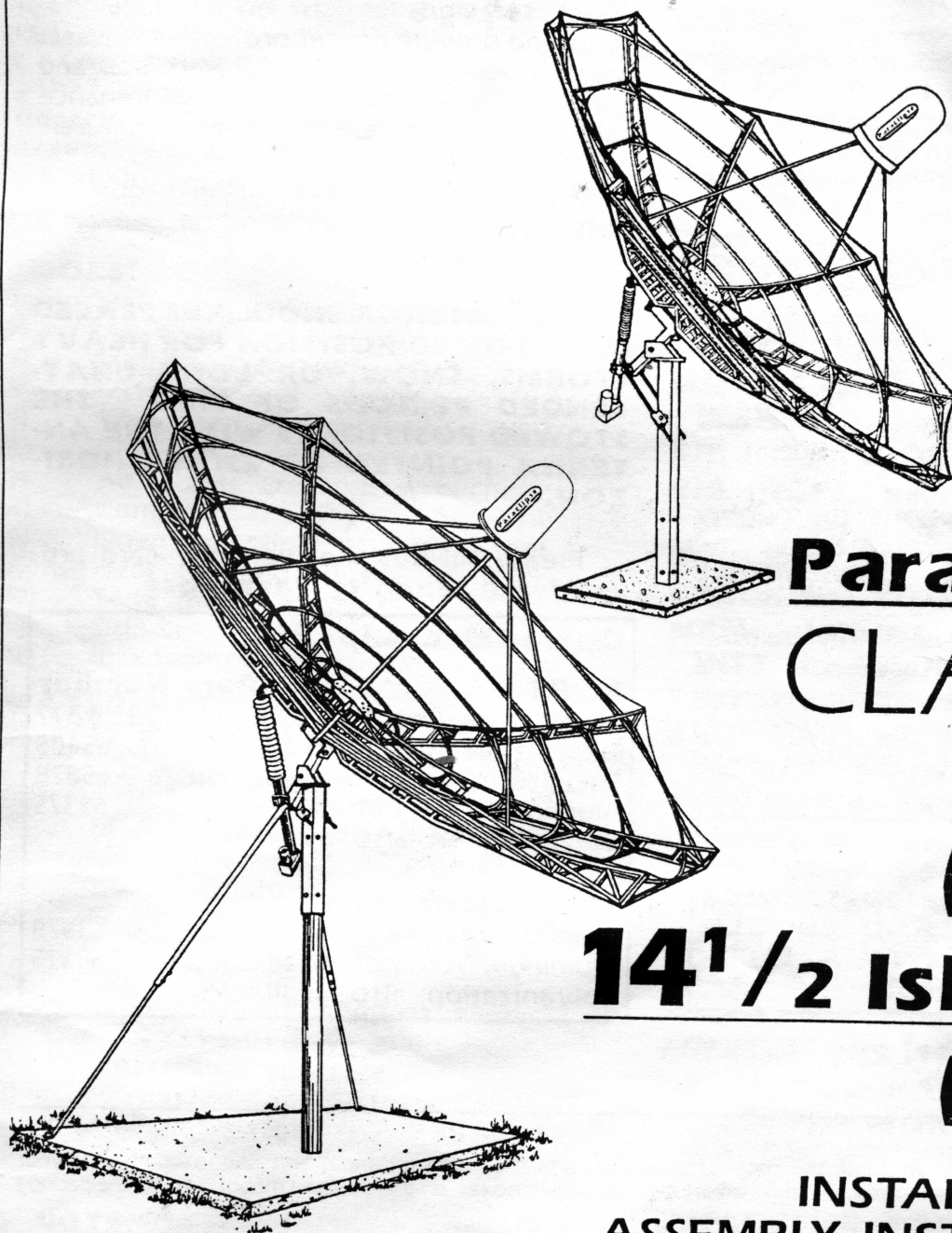


Paraclipse[®]

HIGH PERFORMANCE ANTENNAS
Your Complete Reflector Source



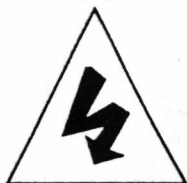
Paraclipse[®]
CLASSIC
12 PT
(3.8 m)

14¹/₂ Islander
(4.5 m)

**INSTALLATION &
ASSEMBLY INSTRUCTIONS**

FILL OUT WARRANTY CARD PROVIDED AND RETURN TO PARACLIPSE TO SECURE VALUABLE EXTENDED WARRANTY RIGHTS.

Welcome to the world of satellite television and your Paraclipse satellite antenna



This symbol is intended to alert you of the presence of unusually dangerous voltage within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



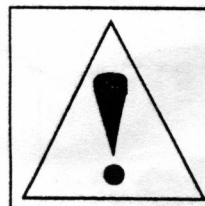
This symbol is intended to alert you of the presence of important operating and maintenance instructions in the literature accompanying the unit.

WE RECOMMEND THE FOLLOWING:

1. Site location: THIS IS EXTREMELY IMPORTANT! We recommend that the site survey be performed by qualified personnel to ensure proper antenna location and to test for microwave interference.

2. Read the instructions thoroughly prior to assembly so that you may become familiar with our method of installation.

3. Please keep this assembly instruction manual for future reference. The information below and inside this manual will help you when ordering replacement parts, and with questions you may have about your antenna.



THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES.

MAINTENANCE AND OPERATION:

The condition of your antenna should be checked at least once a year and after severe weather conditions. Replace or tighten any loose or missing hardware, watch for signs of rust on steel components and provide proper protection. Inspect weather protection for electronics and motor drive and perform any maintenance called for by motor drive manufacturer.

Check site location for any obstructions to movement of antenna and clear branches, etc. as needed.

THE ANTENNA SHOULD BE PLACED IN A STOWED POSITION FOR HEAVY STORMS, SNOW, OR LONG UNATTENDED PERIODS OF TIME. THE STOWED POSITION IS WITH THE ANTENNA POINTED AT EITHER HORIZON.

Please fill out the warranty card provided and return to **Paraclipse**.

Optional Equipment

12 PT	Part Number
Stainless steel hardware	62177
Extreme weather bolt kit	65405
Stabilizer struts	65826 & 65828
Aluminum front hub plate	65375
Galvanization also available	

14 1/2 Islander

Stainless steel hardware	65578
Aluminum front hub plate	65375
Galvanization also available	

Write the serial number of your antenna, the date of purchase, and the name, address, and phone number of your **Paraclipse** dealer. The serial number can be found on ends of packaging boxes, on the antenna mount, and on the packing list packed with the antenna.

Serial #:

Date purchased:

Dealer:

Telephone:

Manufacturer's Note

A home satellite antenna system is extremely difficult to correctly install without proper training and specialized equipment. It is therefore recommended that installation be done by an authorized dealer.

Before starting installation, check applicable local building codes and restrictions.

The antenna can be assembled other than the assembly sequence described in this manual. It can be assembled on the base pipe, but when the reflector is assembled first, assembly is faster.

TOOLS:

- 1) $\frac{7}{16}$ " open end wrench.
- 2) $\frac{1}{2}$ " open end wrench.
- 3) $\frac{9}{16}$ " open end wrench.
- 4) $\frac{3}{4}$ " open end wrench.
- 5) $\frac{15}{16}$ " open end wrench.
- 6) $1\frac{1}{8}$ " open end wrench.
- 7) Adjustable crescent wrench.
- 8) Compass.
- 9) Lineman's pliers or similar tool for bending clips.
- 10) Tape measure.
- 11) Side-cutting pliers (tin snips).
- 12) Inclinometer (optional).

MATERIALS:

- 1) **12 PT** 3.5" (88.9 mm) o. d. x 3.5' (1.07 m) pipe (3" schedule 40 black pipe).
- 14 $\frac{1}{2}$ Islander** 3.5" (88.9 mm) o. d. x 10' (3.05 m) pipe (3" schedule 40 black pipe).
- 2) **12 PT** Approximately $\frac{2}{3}$ cubic yard ($\frac{1}{2}$ cubic meter) of concrete.
- 14 $\frac{1}{2}$ Islander** Approximately 2 cubic yards ($1\frac{1}{2}$ cubic meter) of concrete.
- 3) **14 $\frac{1}{2}$ Islander** Sixteen 7'6" (2.29 m) and sixteen 5'6" (1.68 m) #4 (10 mm) diameter reinforcing bars.

NOTE: On assembly illustrations where circled numbers rather than part names are noted, please refer to page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander** for part identification.

Paracclipse[®] CLASSIC

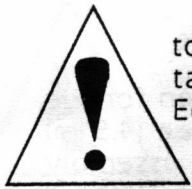
This assembly manual is written for the **12 PT** (3.8 m) and **14 $\frac{1}{2}$ Islander** (4.5 m) series antennas. Any unique assembly differences within this manual will be noted by the following bold headings:

12 PT 14 $\frac{1}{2}$ Islander

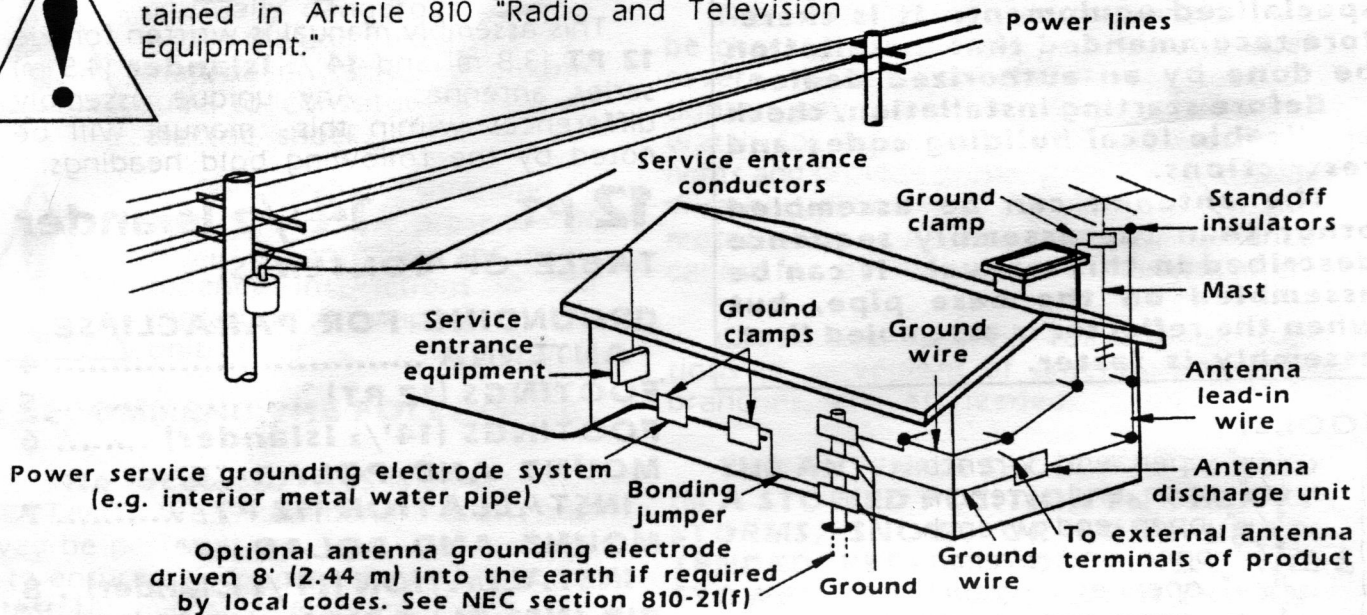
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GROUNDING FOR PARACLIPSE ANTENNA



Example of antenna grounding according to National Electric Code instructions contained in Article 810 "Radio and Television Equipment."



1. Use #10 AWG (2.6 mm) copper, #8 AWG (3.3 mm) aluminum, #17 AWG (1.2 mm) copper-clad steel or bronze wire, or larger, as a ground wire. Use a 0.625" (16 mm) ground rod 8' (2.4 m) minimum into ground.

2. Secure antenna lead-in and ground wires to house with stand off insulators spaced from 4'-6' (1.22-1.83 m) apart.

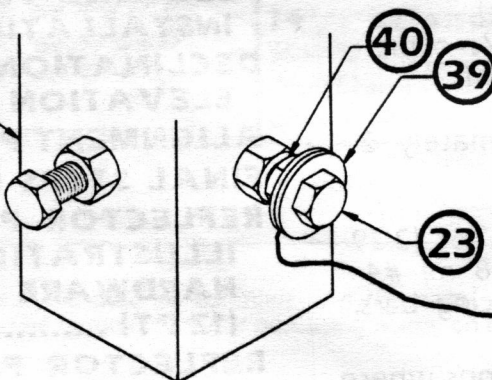
3. Mount antenna discharge unit as close as possible to where lead-in enters house.

4. Use jumper wire not smaller than #6 AWG (4.1 mm) copper, or equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21(i).

TYPICAL GROUNDING CONFIGURATION

NOTE: This is a typical grounding configuration only. It should be noted that multiple grounding locations may be required to thoroughly ground the antenna. It is suggested that a ground wire be installed at the mount and at the back hub plate of the antenna.

Mount assembly
(12 65220)
(14 1/2 64001)

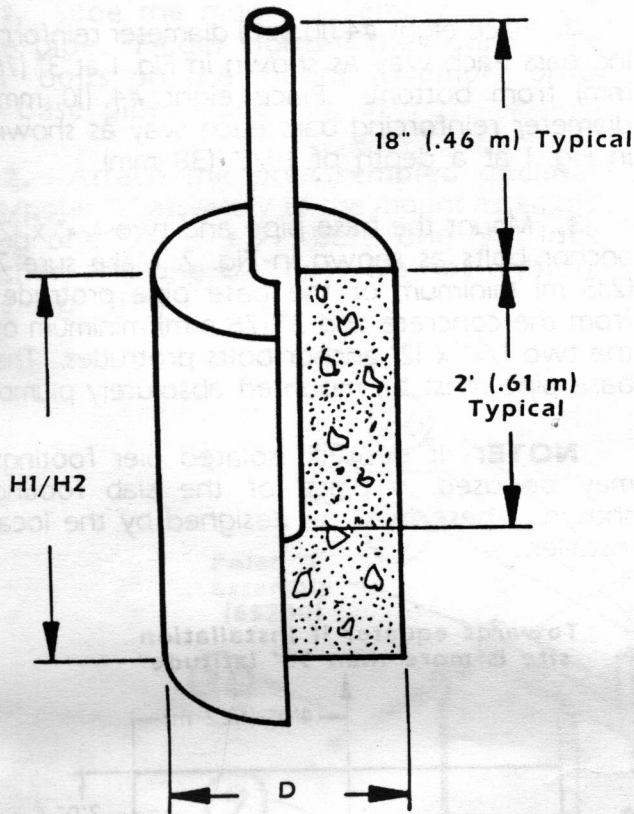


Wire (minimum) 10 ga. (3.4 mm) copper, 8 ga. (4.1 mm) aluminum (not supplied)

Ground clamp (not supplied)

0.625" (16 mm) dia. ground rod 8' (2.4 m) minimum into ground (not supplied)

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



1. The hole for the antenna footing should be dug in accordance with the chart below in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. The base pipe must be mounted absolutely plumb in concrete.

2. For a hole depth over 3' (.91 m) we recommend using reinforcing bar in the concrete.

3. **Above ground requirements (please see drawing)** For most areas, this amount of base pipe above the ground is all that is needed. For special clearance requirements (snow, uneven terrain, etc.) add the needed clearance requirement to the standard to determine above ground requirements.

D	Diameter of hole
H1	Depth of hole, natural soil
H2	Depth of hole, paved soil

SOIL TYPE	Soft	Medium	Hard	Rock
80-85 mph (129 to 137 kph) wind force				
D	17" (.48 m)	17" (.48 m)	12" (.36 m)	10" (.31 m)
H1	4'6" (1.37 m)	3'6" (1.07 m)	3'6" (1.07 m)	2'0" (.61 m)
H2	3'0" (.91 m)	3'0" (.91 m)	2'6" (.76 m)	2'0" (.61 m)
90-95 mph (145 to 153 kph) wind force				
D	17" (.48 m)	17" (.48 m)	12" (.36 m)	10" (.31 m)
H1	5'6" (1.68 m)	5'6" (1.68 m)	4'6" (1.37 m)	2'0" (.61 m)
H2	3'6" (1.07 m)	3'6" (1.07 m)	3'0" (.91 m)	2'0" (.61 m)

SOIL REFERENCE:

Soft	clayey silts, sandy clays, or silty clays
Medium	medium dense sand, silty sand, or clayey sand
Hard	sandy gravel or gravel
Rock	fractured or solid sandstone or better

NOTE: The soil type determination shall be made by the antenna installer.

FOOTINGS (14 1/2' Islander)

Construction Notes

1. **CONCRETE:** Five sacks of Type 2 Portland Cement per cubic yard (.76 cubic meter). Slump 3" (76 mm) to 4" (102 mm). Air entrained in freezing climates. 3,000 psi (20,700 MPa) minimum compression strength.

2. **REINFORCING BAR:** #4 ASTM A615 Grade 40 deformed bars. No splices.

3. **SOIL:** Remove all grass and root-bound material from under the footing prior to placing the concrete.

4. **LOCATION:** Bottom of the footing shall be 1' (.31 m) minimum below the frost line.

Reinforcing Bar and Anchor Bolt Layout

1. The footings should be poured as level as possible in accordance with the dimensions shown in Fig. 1 in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. **NOTE:** It is recommended to use eye bolts in the corners of the footings to tie down the antenna during assembly and in areas subject to high winds. Eye bolts may be installed later with expansion sleeves, if necessary.

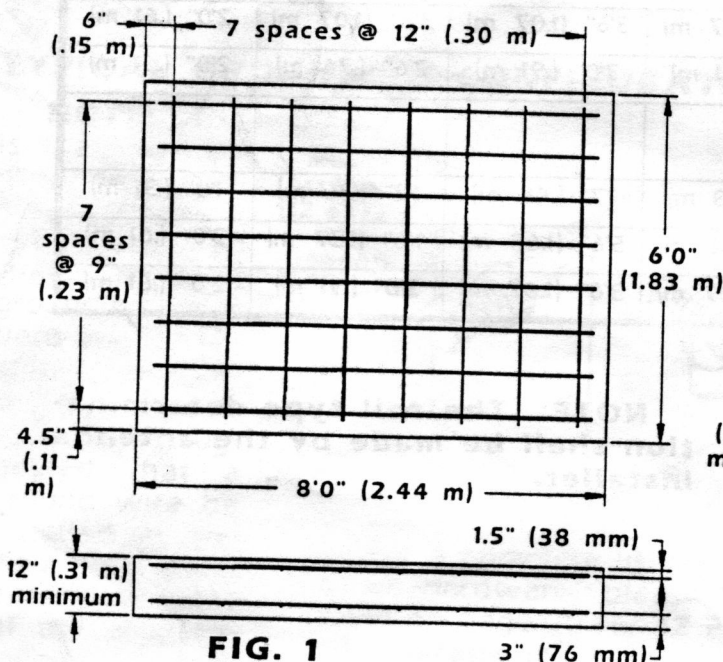


FIG. 1

2. Place eight #4 (10 mm) diameter reinforcing bars each way as shown in Fig. 1 at 3" (76 mm) from bottom. Place eight #4 (10 mm) diameter reinforcing bars each way as shown in Fig. 1 at a depth of 1 1/2" (38 mm).

3. Mount the base pipe and two 3/4" x 12" anchor bolts as shown in Fig. 2. Make sure 7' (2.13 m) minimum of the base pipe protrudes from the concrete and 3" (76 mm) minimum of the two 3/4" x 12" anchor bolts protrudes. The base pipe must be mounted absolutely plumb.

NOTE: If desired, isolated pier footings may be used in place of the slab footing shown. These must be designed by the local installer.

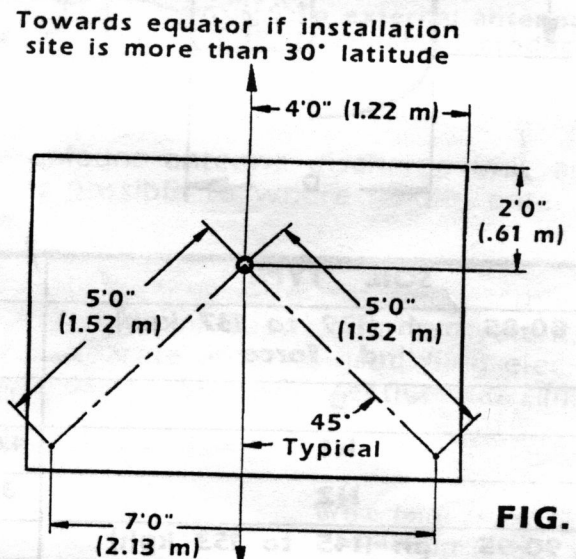
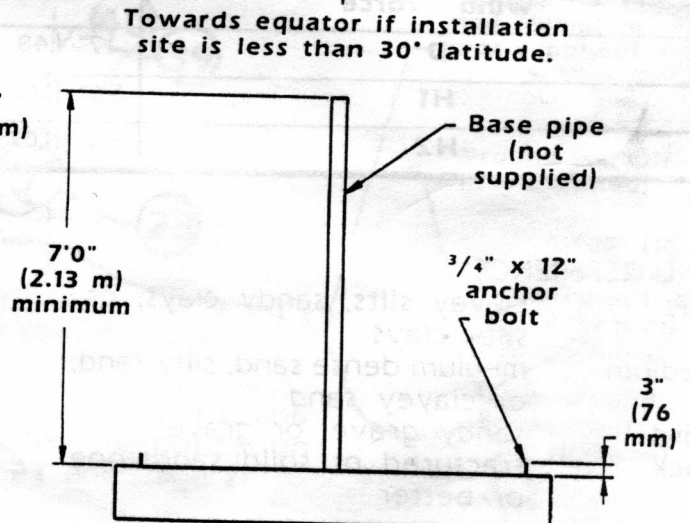


FIG. 2



MOUNT AND POLAR "T" INSTALLATION (12 PT)

1. Slide the mount assembly over the base pipe. Finger tighten the four $\frac{5}{8}$ " x $1\frac{1}{4}$ " bolts on the mount assembly onto the base pipe. (See Fig. 3)

2. Attach the preassembled declination/polar "T" assembly to the mount assembly using one $\frac{5}{8}$ " x $3\frac{1}{2}$ " bolt, one $\frac{5}{8}$ " lock washer, and one $\frac{5}{8}$ " nut. Do not tighten. (See Fig. 3)

3. Assemble the two EZ adjustment rods (one EZ adjustment bracket, two $\frac{5}{8}$ " flatwashers, and two $\frac{5}{8}$ " nuts for each EZ adjustment rod). Attach the assembled EZ adjustment rods to the polar "T" assembly using one $\frac{5}{8}$ " x $8\frac{1}{2}$ " bolt, four $\frac{5}{8}$ " USS flatwashers, and one $\frac{5}{8}$ " nyloc nut. Thread the two $\frac{1}{2}$ " nuts onto the two $\frac{1}{2}$ " x 2" bolts and use these to attach the assembled EZ adjustment rods (through the EZ adjustment brackets) to the mount assembly. Do not tighten. (See Fig. 3)

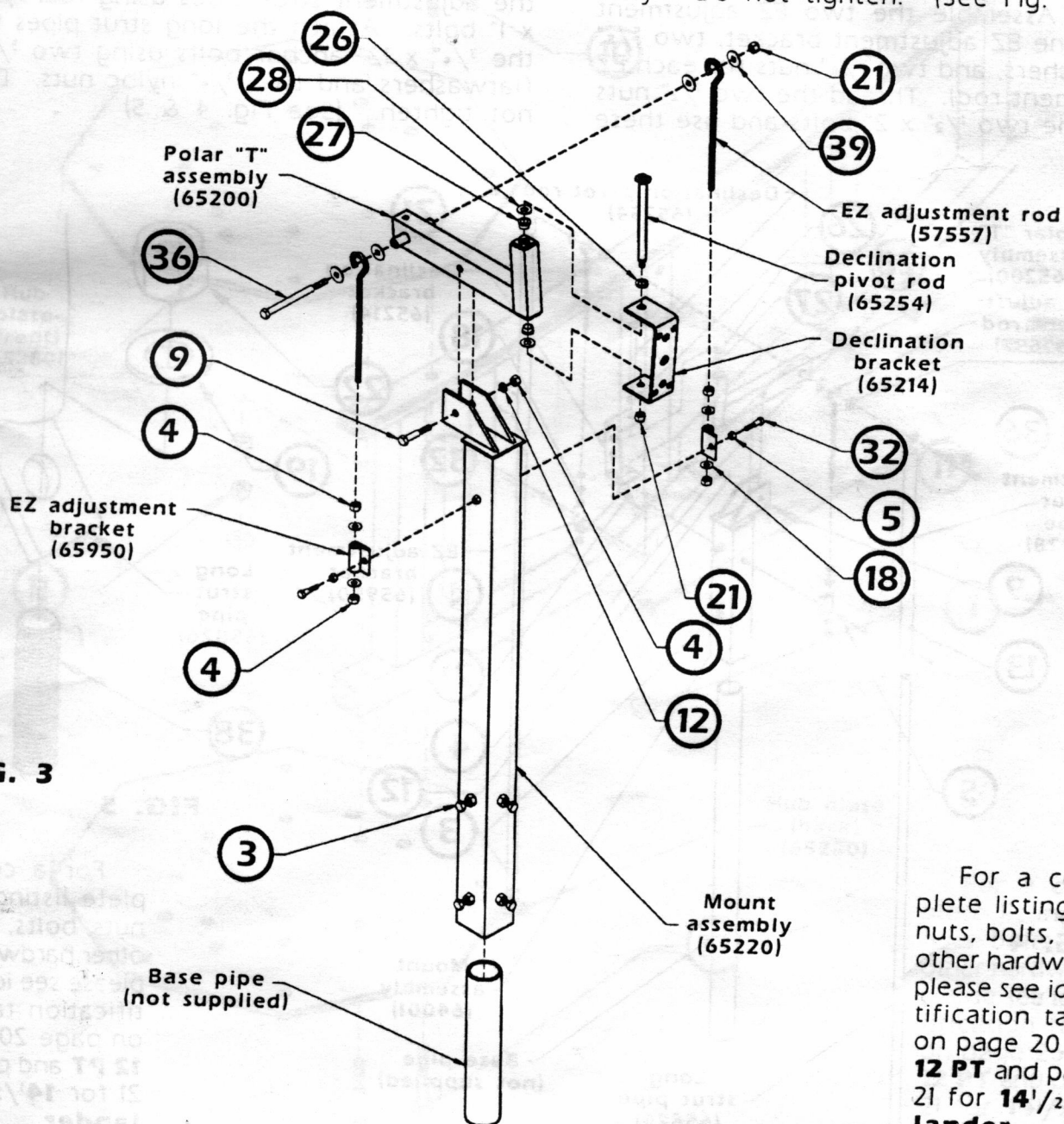


FIG. 3

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander**.

MOUNT AND POLAR "T" INSTALLATION (14 1/2 Islander)

1. Slide the mount assembly over the base pipe. Finger tighten the four 5/8" x 1 1/4" bolts on the mount assembly onto the base pipe. (See Fig. 4)

2. Attach the preassembled declination/polar "T" assembly to the mount assembly using one 5/8" x 3 1/2" bolt, one 5/8" lock washer, and one 5/8" nut. Do not tighten. (See Fig. 4)

3. Assemble the two EZ adjustment rods (one EZ adjustment bracket, two 5/8" flatwashers, and two 5/8" nuts for each EZ adjustment rod). Thread the two 1/2" nuts onto the two 1/2" x 2" bolts and use these

to attach the assembled EZ adjustment rods (through the EZ adjustment brackets) to the mount assembly. Do not tighten. Attach the assembled EZ adjustment rods to the polar "T" assembly and the two adjustment strut pipes using one 5/8" x 8 1/2" bolt, four 5/8" USS flatwashers, and one 5/8" nyloc nut. Do not tighten. (See Fig. 4)

4. Attach the two long strut pipes to the adjustment strut pipes using four 3/8" x 1" bolts. Attach the long strut pipes to the 3/4" x 12" anchor bolts using two 3/4" flatwashers and two 3/4" nyloc nuts. Do not tighten. (See Fig. 4 & 5)

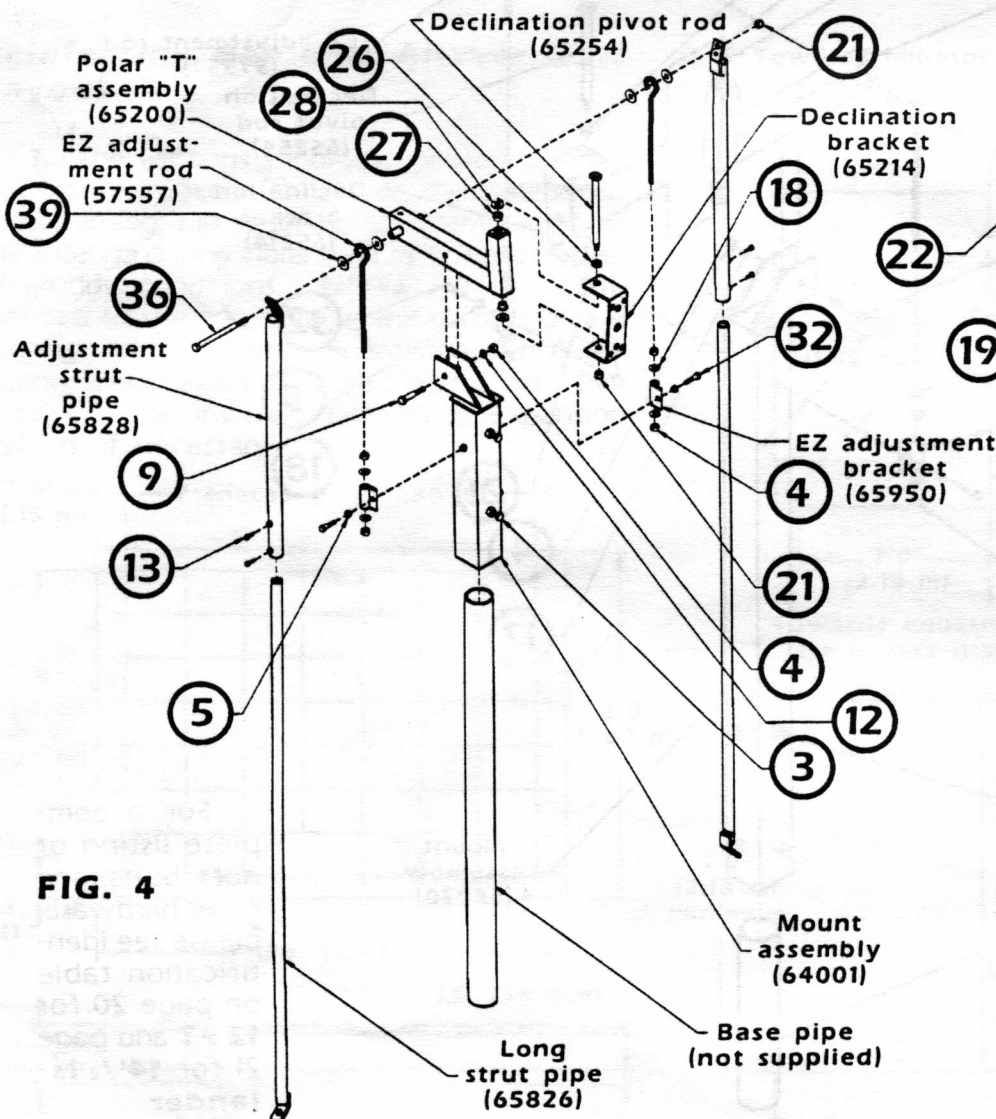


FIG. 4

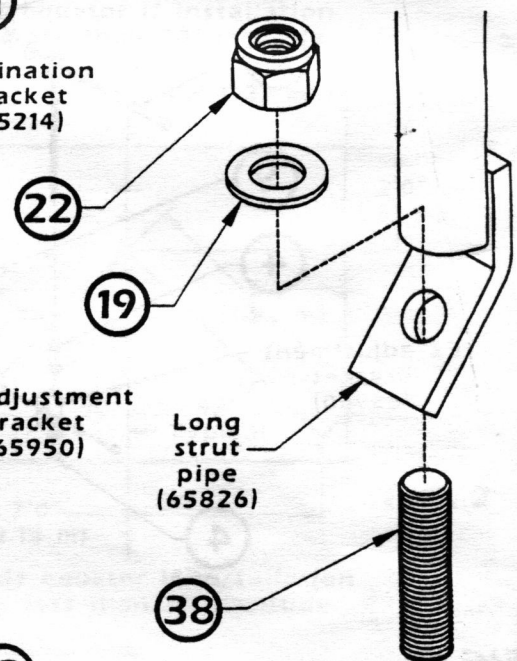
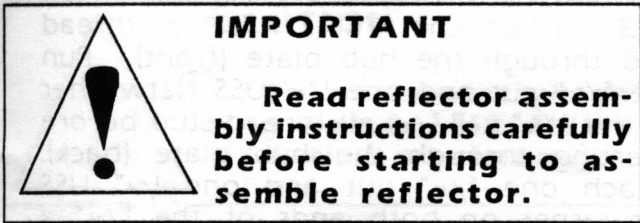


FIG. 5

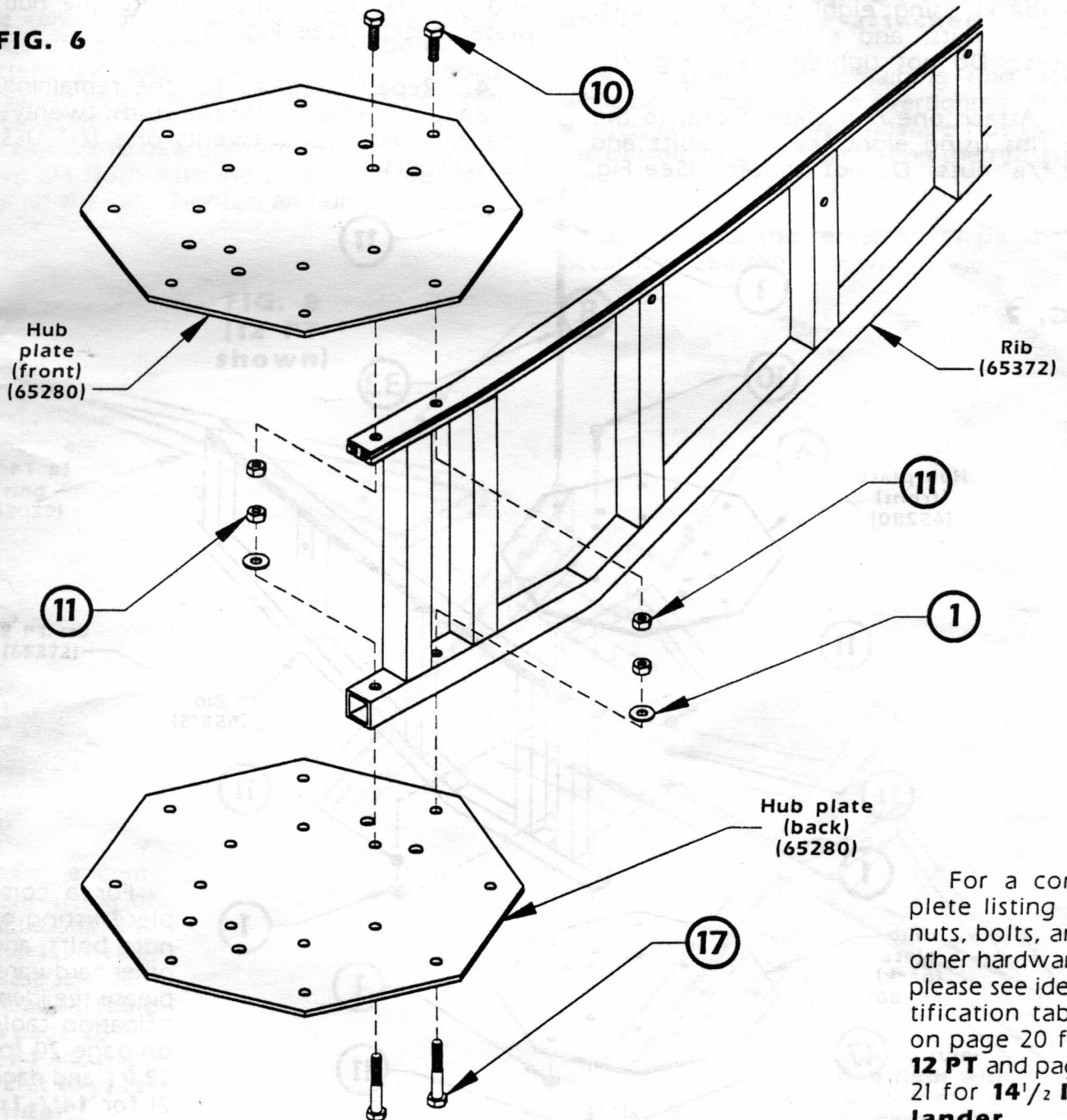
For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



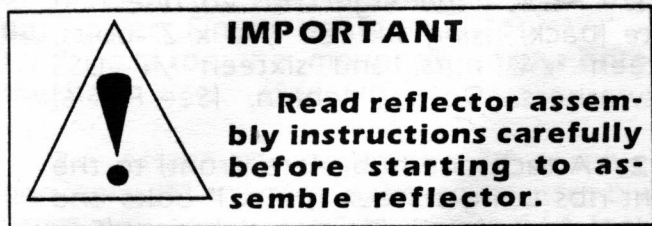
1. Attach the eight ribs to one hub plate (back) using sixteen $\frac{5}{16}$ " x 2" bolts, sixteen $\frac{5}{16}$ " nuts, and sixteen $\frac{1}{4}$ " USS flatwashers. Do not tighten. (See Fig. 6)

2. Attach one hub plate (front) to the eight ribs using sixteen $\frac{5}{16}$ " x 1" bolts and sixteen $\frac{5}{16}$ " nuts. Do not tighten. (See Fig. 6)

FIG. 6



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



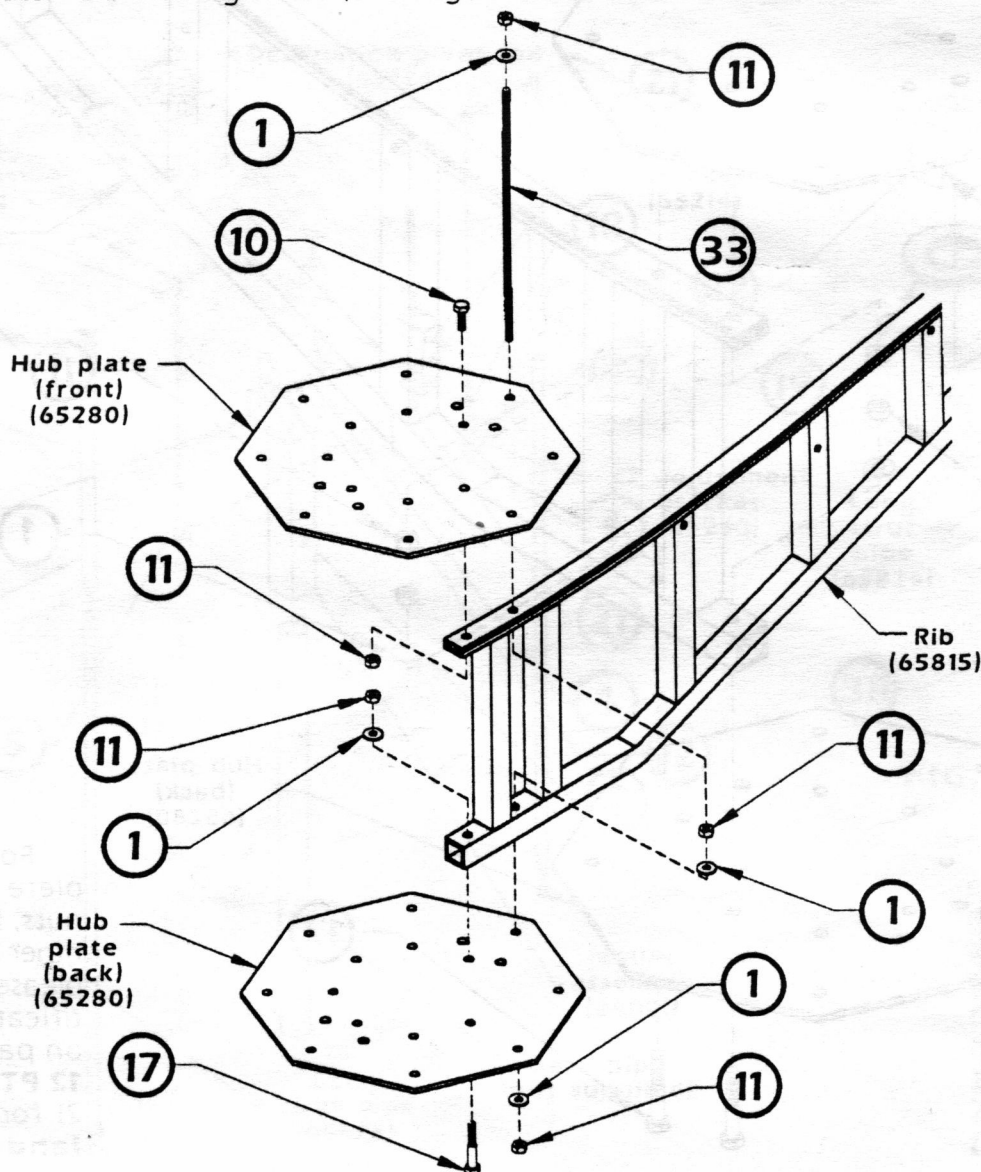
1. Attach the eight ribs to one hub plate (back) using eight $\frac{5}{16}$ " x 2" bolts, eight $\frac{5}{16}$ " nuts, and eight $\frac{1}{4}$ " USS flatwashers. Do not tighten. (See Fig. 7)

2. Attach one hub plate (front) to the eight ribs using eight $\frac{5}{16}$ " x 1" bolts and eight $\frac{5}{16}$ " nuts. Do not tighten. (See Fig. 7)

3. Insert one $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud through the hub plate (front). Run one $\frac{5}{16}$ " nut and one $\frac{1}{4}$ " USS flatwasher up the $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud before inserting through the hub plate (back). Attach one $\frac{5}{16}$ " nut and one $\frac{1}{4}$ " USS flatwasher on both ends of the $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud and finger tighten. Then finger tighten the remaining $\frac{5}{16}$ " nut and $\frac{1}{4}$ " USS flatwasher toward the hub plate (back). (See Fig. 7)

4. Repeat step #3 for the remaining seven $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread studs, twenty-one $\frac{5}{16}$ " nuts, and twenty-one $\frac{1}{4}$ " USS flatwashers.

FIG. 7



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2' Islander**.

**CAUTION**

**Do not overtighten
ring bolts. [10 ft/lbs
(13.6 Nm) maximum.]**

1. Attach all eight of the outside rings (the largest rings) to the outermost holes of the ribs with the curved section facing toward the center of the antenna. Secure these rings using sixteen $\frac{1}{4}$ " x $1\frac{3}{4}$ " bolts and sixteen $\frac{1}{4}$ " nuts. Tighten these ring bolts (after all of the outermost rings have been assembled. (See Fig. 8 and 9) while being careful not to overtighten. Check that these rings are flush with the bottom of the mesh slot of the rib. Tighten all hub plate bolts.

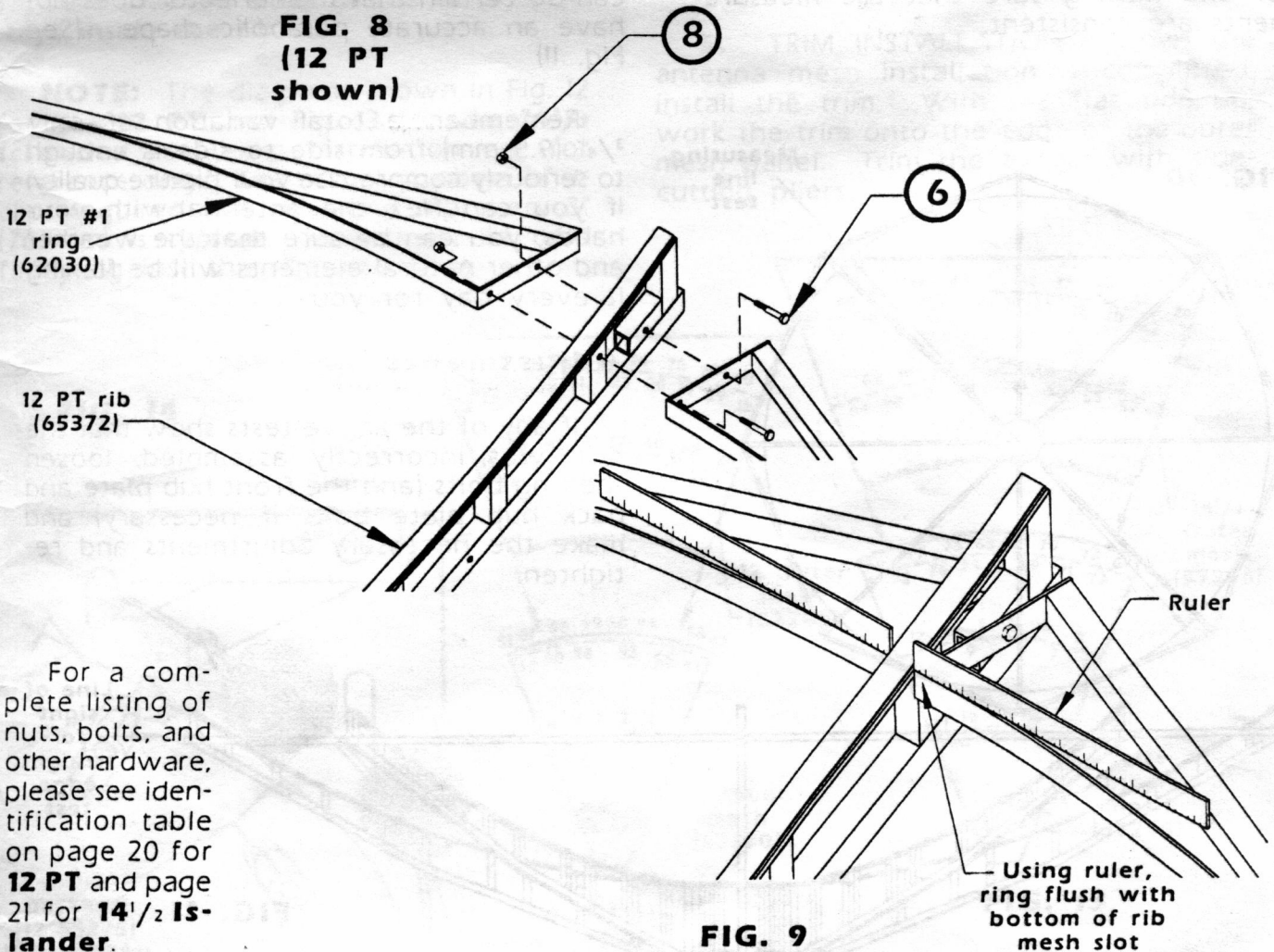
2. Check the reflector for parabolic accuracy using tests located on the following page. If adjustments are required, loosen the ring bolts and/or rib bolts and make the necessary corrections and retighten these bolts.

3. Attach all the remaining rings, in any order, to the ribs using the remaining $\frac{1}{4}$ " x $1\frac{3}{4}$ " bolts and $\frac{1}{4}$ " nuts. **Do not tighten until all rings are attached.**

4. Tighten the remaining ring bolts while being careful not to overtighten. Using a ruler, check that the rings are flush with the bottom of the mesh slot on the rib. (See Fig. 9)

5. Recheck the reflector for parabolic accuracy. See the following page.

**FIG. 8
(12 PT
shown)**



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Is-lander**.

FIG. 9

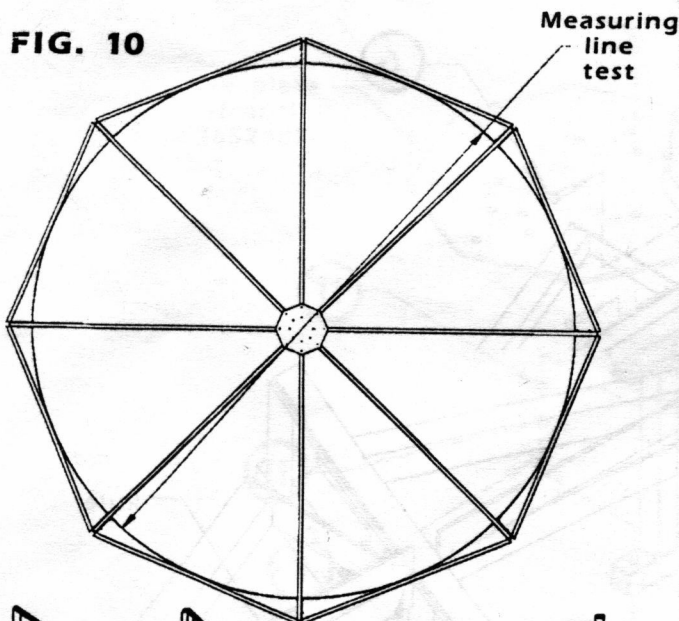
Parabolic Integrity

A precise parabolic surface that is both accurate and symmetrical is a must for good antenna performance. The design of the antenna structure must not allow for any change in the shape of the reflector. The reflector cannot elongate, warp, or sag if it is to maintain its picture quality.

Measuring Test

With an accurate tape measure, measure from the outside of the largest ring across the face of the dish to the outside of the largest ring opposite the measuring point. (See Fig. 10) Repeat this step measuring completely around the reflector and making sure that the measurements are consistent.

FIG. 10



String Test

With a ball of string and some masking tape, you can check the antenna for symmetry. Find at least four identical spots on the antenna and run lengths of string to the opposite side. Where the strings cross each other, there should be a perfect intersection. The intersection of the string should be perfectly aligned without horizontal or vertical gaps or tension.

Straight Edge Test

When you inspect the assembled antenna, lay an imaginary straight edge across the top of the outside ring, close one eye, and sight across the reflector. If you notice a deviation along this edge, you can be certain that the reflector does not have an accurate parabolic shape. (See Fig. 11)

Remember, a total variation of only $\frac{3}{8}$ " (9.5 mm) from side to side is enough to seriously compromise your picture quality. If you can flex the antenna with your hands, you can be sure that the weather and other natural elements will be flexing it every day for you.

Adjustments

If any of the above tests show that the dish was incorrectly assembled, loosen the ring bolts (and the front hub plate and back hub plate bolts if necessary) and make the necessary adjustments and re-tighten.

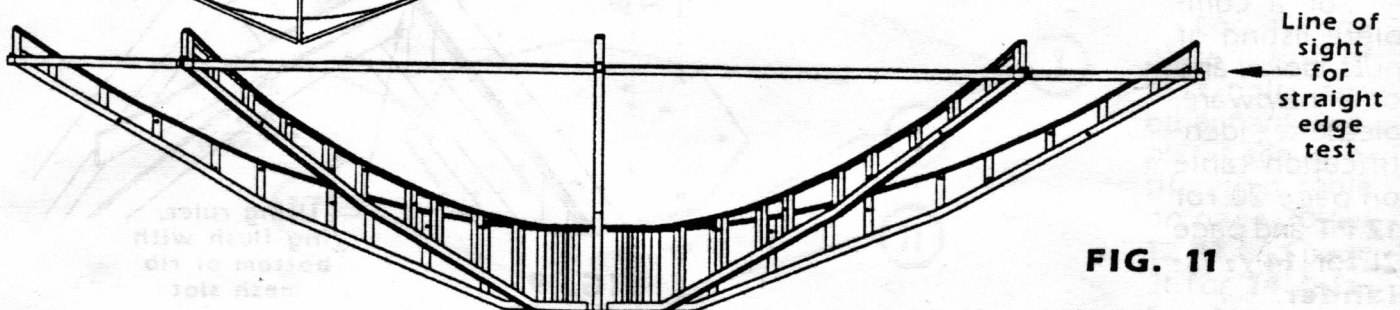


FIG. 11

IMPORTANT

Read all instructions carefully prior to beginning mesh installation.

1. INNER MESH INSTALLATION: Lay the inner mesh on the rings. Starting with one side of mesh, slide the inner mesh into the slot on top of the rib. Once one side of the inner mesh has been completely installed into the slot, slide it towards the center of the reflector until the other side of the inner mesh begins to touch the opposite rib slot. Completely work the inner mesh into the opposite slot. Then firmly slide the inner mesh towards the center of the reflector, making sure that the sides of the inner mesh stay inside the rib slot.

NOTE: The diagrams shown in Fig. 12 for the **12 PT** and Fig. 13 for the **14 $\frac{1}{2}$ Islander** for J-clip installation are for reference only. The actual numbers of J-clips required will vary; one clip every 3" (76 mm) is typical. Mesh must be held firmly against the ribs and rings.

2. J-CLIP INSTALLATION: After a piece of inner mesh is in place, install J-clips using the clip installation sequence shown in Fig. 12 and 13. When installing the J-clips, firmly pull downward and around the ring while making sure the J-clip is square to the ring. (See Fig. 14)

NOTE: There will be one ring (the third largest) that will not be clipped until the outer mesh is in place.

3. OUTER MESH INSTALLATION: Install the outer mesh as per steps #1 and #2 while making sure to slide the outer mesh **under** the inner mesh where the two pieces of mesh overlap.

4. Repeat steps #1, #2, and #3 until the antenna is completely meshed.

5. TRIM INSTALLATION: When the antenna mesh installation is completed, install the trim. With the flat side up, work the trim onto the edge of the outer mesh panel. Trim the excess with side-cutting pliers.

FIG. 14

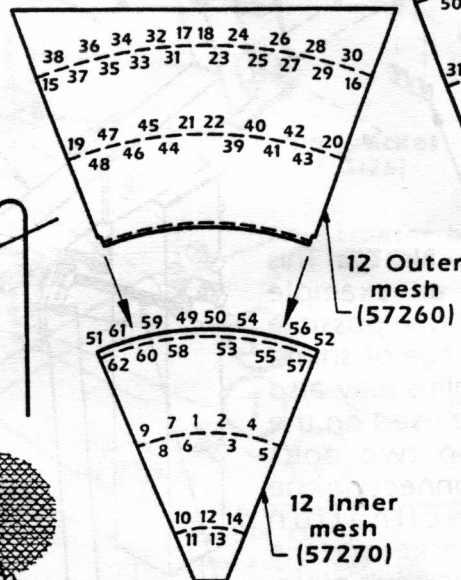
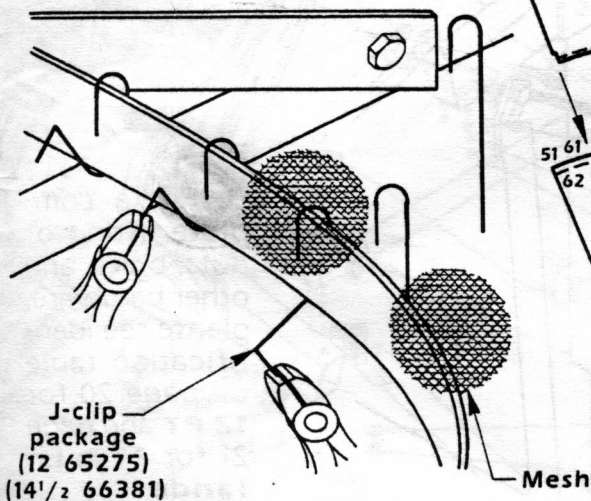


FIG. 12

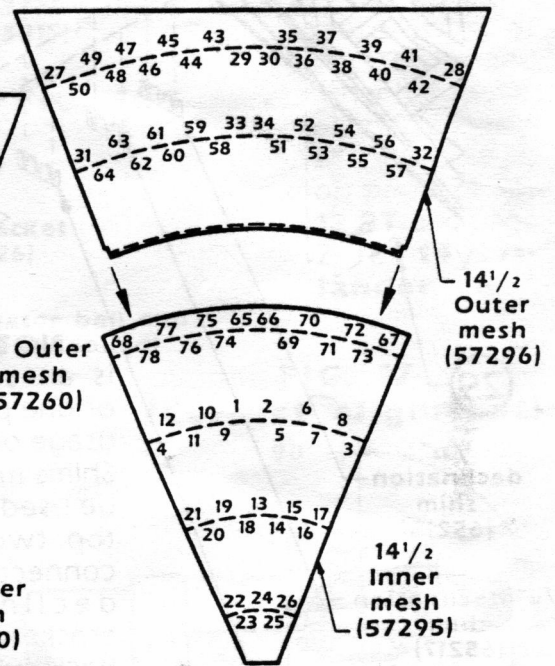


FIG. 13

1. Set the elevation of the polar "T" assembly to 10° with the EZ adjustment rods. (See Fig. 15)

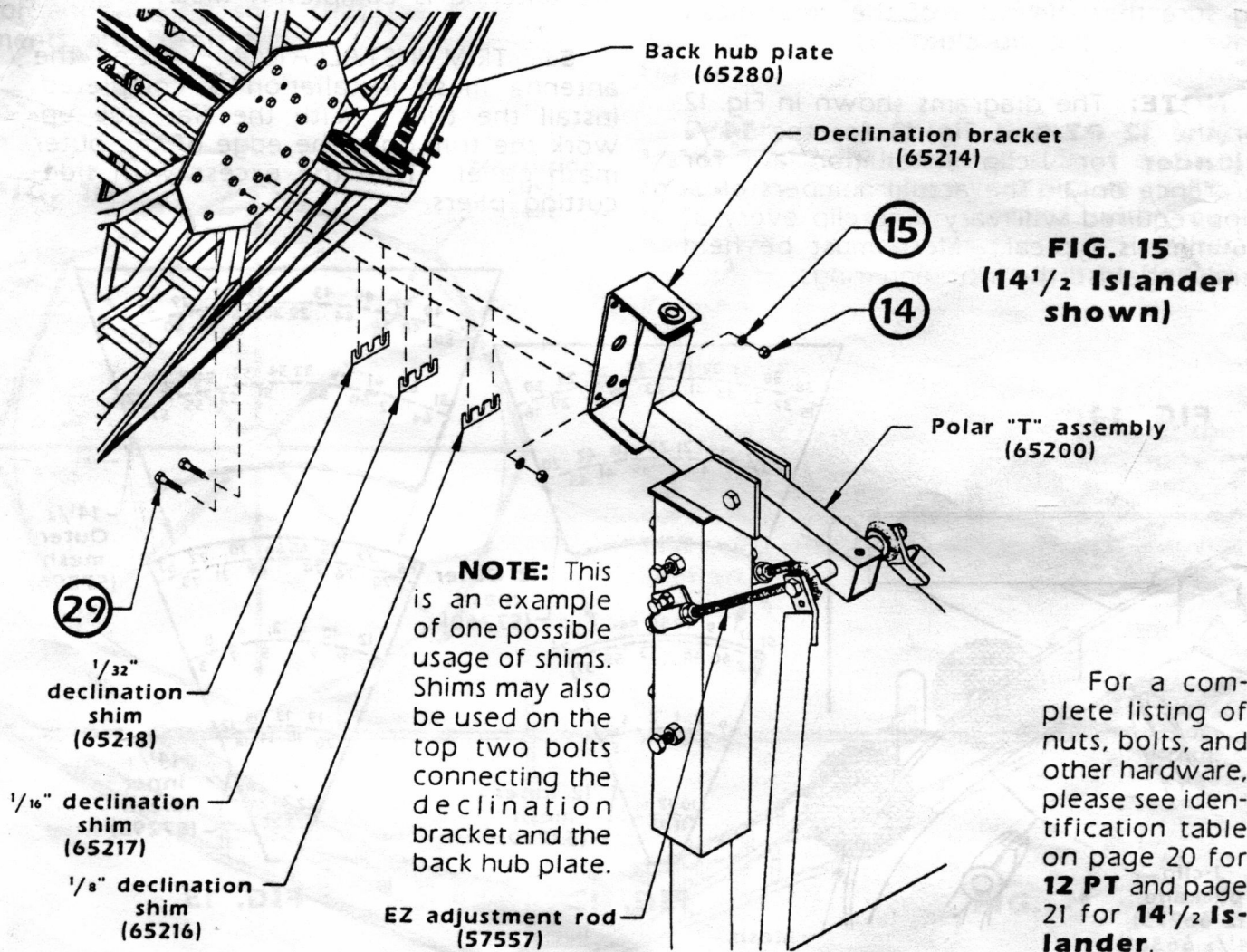
2. Carry the assembled reflector to the front of preassembled declination/polar "T" assembly and rest the tip of the bottom rib on the ground (be sure to protect the tip of the bottom rib with cardboard or plywood, etc.).

3. Slide the assembled reflector back to the preassembled declination/polar "T" assembly (while it is still resting on the tip of the rib) and line up the mounting holes in the back hub plate to the mounting holes of the declination bracket. Insert two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts into the two lower

mounting holes and attach using two $\frac{3}{8}$ " lock washers and two $\frac{3}{8}$ " nuts. After aligning the upper two mounting holes, use the remaining two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts, two $\frac{3}{8}$ " lock washers, and two $\frac{3}{8}$ " nuts. (See Fig. 15)

4. Install the declination shim(s) between the back hub plate and the declination bracket. Refer to the "Declination & Elevation Chart" on page 18 for shim usage and placement. (See Fig. 15 for one possible example of usage and placement.)

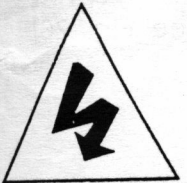
5. Tighten the four bolts that connect the back hub plate to the declination bracket. Then, rotate the assembled reflector until it rests on the ground.



RIB BRACKET AND ACTUATOR INSTALLATION



This antenna should be used with a 36 volt, 18" (.46 m) to 24" (.61 m) actuator rated for antennas with up to 250 lbs. (551 kg) reflector weight. Actuator thrust should be 400 lbs. (882 kg) minimum for the 12 PT and 500 lbs. (1102 kg) minimum for the 14 1/2 Islander.



1. Predetermine the side of the mount to which the actuator will be attached. For North American locations only, determine if your site is east or west of 105° W longitude.

If your site is east of 105° W longitude, the actuator will be attached to the right hand side (facing the back of the mount). If your site is west of 105° W longitude, your actuator will be attached to the left hand side. For all other locations, predetermine which side of the satellite arc has the largest concentration of satellites that you wish to track and attach the actuator to that side.

2. The rib brackets are attached approximately 15" (.38 m) from the edge of the back hub plate (the 4th rib spacer out) on the center rib (the one with the lowest look angle) on the side determined in step #1. Straddle the strut of the rib with the rib brackets and fasten them using three 5/16" x 2" bolts, three 1/4" USS flatwashers, and three 5/16" nyloc nuts. (See Fig. 16)

3. Attach the actuator saddle clamp (not supplied) to the polar "T" assembly using one 1/2" x 2 3/4" bolt, two 1/2" flatwashers, and one 1/2" nyloc nut. (See Fig. 16)

4. Attach the actuator ball end (not supplied) to the rib brackets using one 1/2" x 2" bolt and one 1/2" nyloc nut. (See Fig. 16)



Care must be taken when installing the actuator so that correct alignment is achieved. (See Fig. 17)

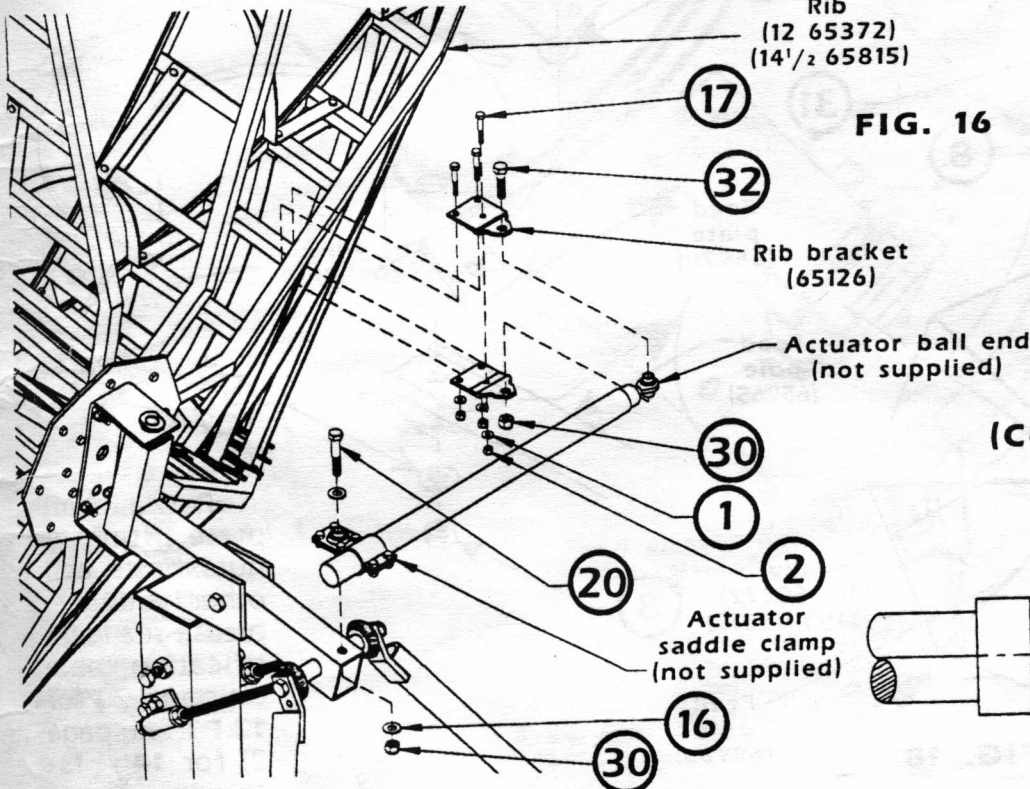
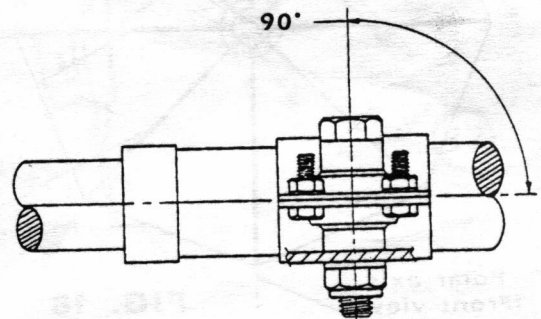


FIG. 16

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

**FIG. 17
(Correct alignment)**



FEED POLE AND FEED PLATE INSTALLATION

1. Assemble the feed horn according to manufacturer's instructions.

NOTE: The feed pole to rib assembly mounting locations will vary from feed to feed depending on the feed offset angle with respect to the polar axis. Mount the

feed poles and the feed plate on the ribs which suitably accommodate the individual feed offset angle. Fig. 18 below will suffice in most cases.

2. Attach the feed poles to the ribs using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flat washers, and four $\frac{1}{4}$ " nuts. (See Fig. 19)

3. Attach the feed plate to the feed poles using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flat washers, and four $\frac{1}{4}$ " nuts. (See Fig. 20)

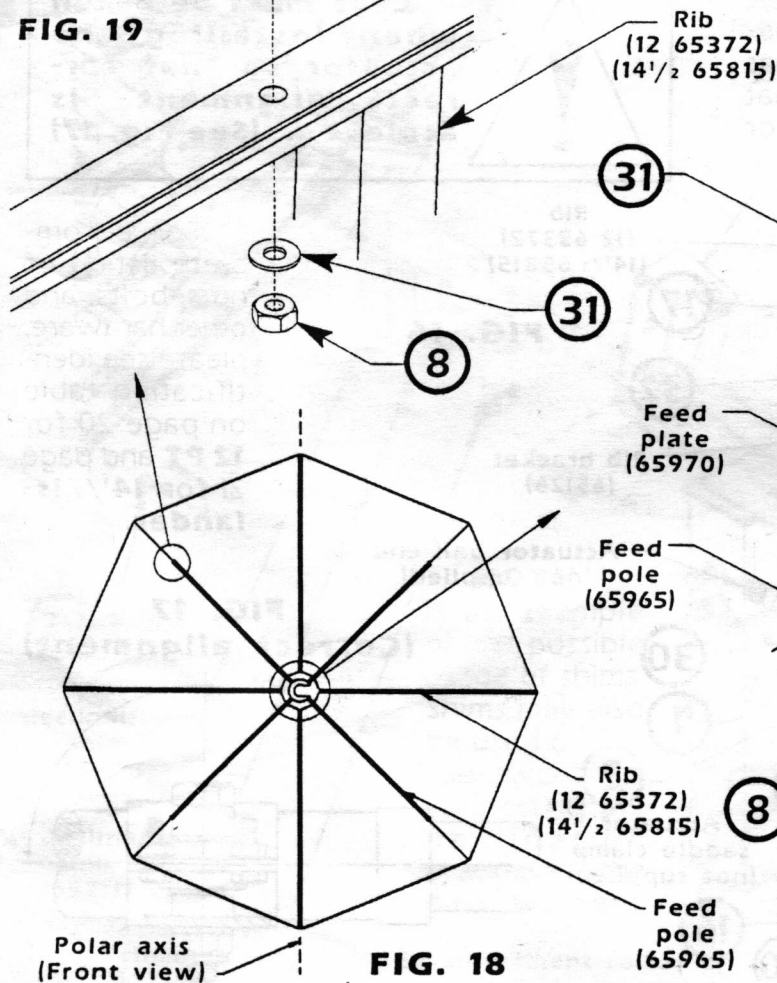
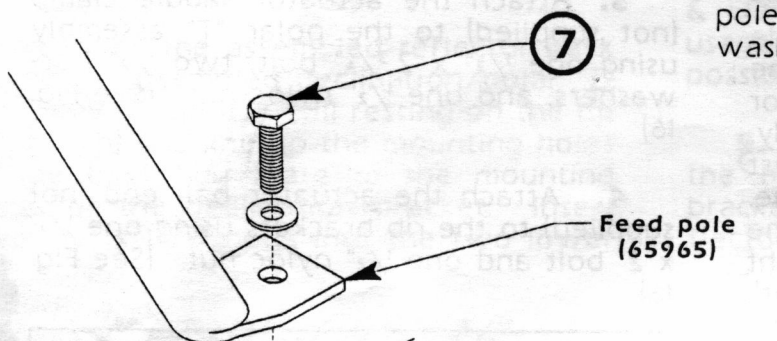
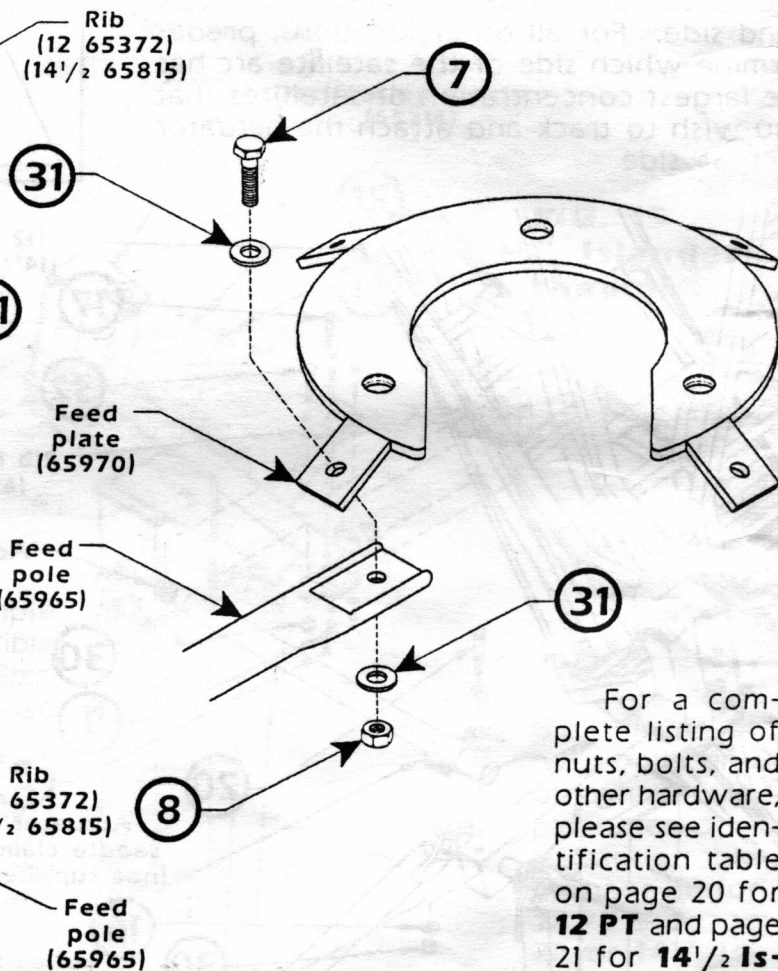


FIG. 20



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Is-lander**.

FEED AND FEED COVER INSTALLATION

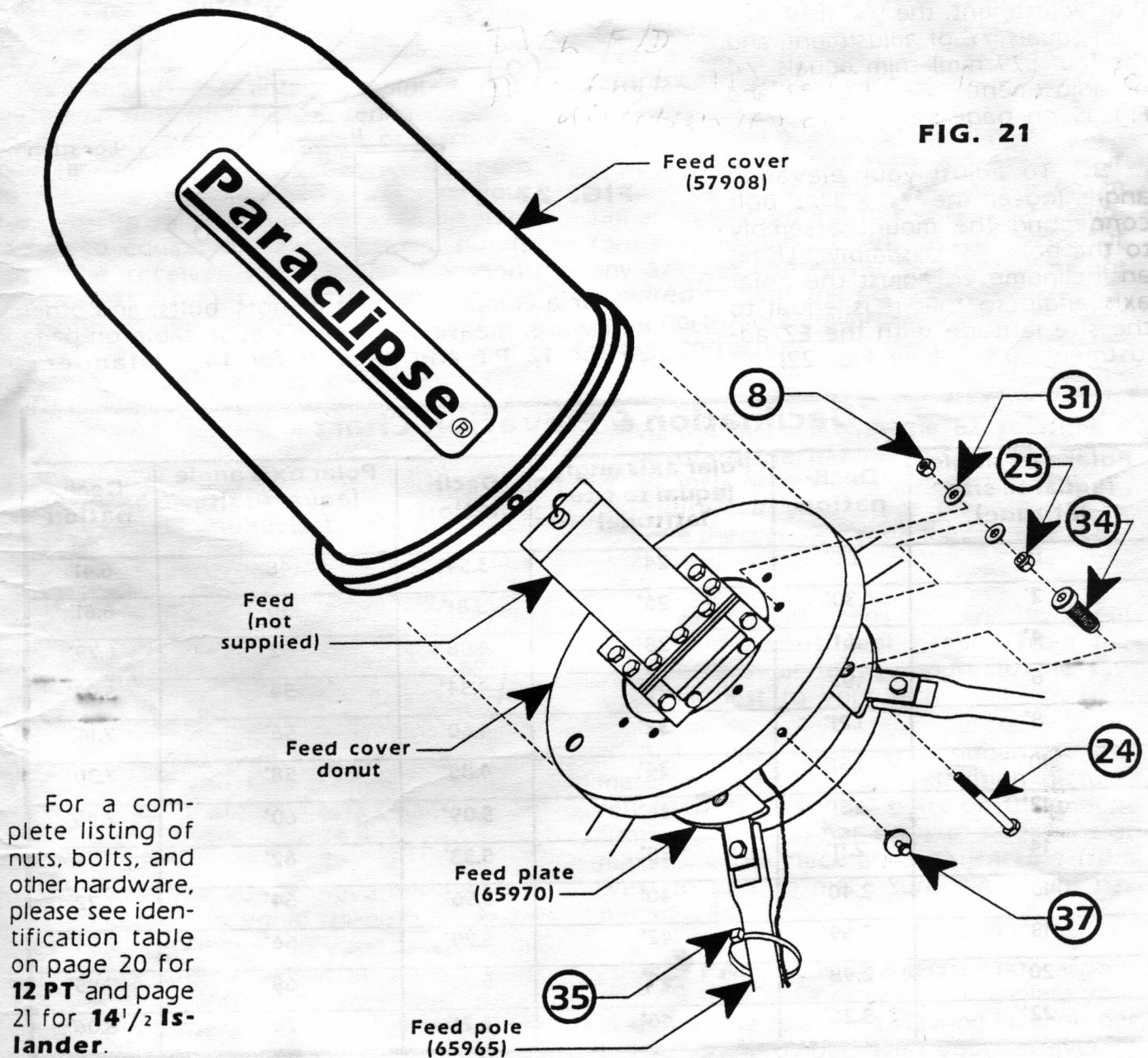
1. Attach the feed (not supplied) and feed cover donut to the feed plate using three $\frac{1}{4}$ " x $2\frac{1}{2}$ " bolts, three nylon thumb screws (which thread into the feed plate), three $\frac{1}{4}$ " nyloc nuts, six $\frac{1}{4}$ " flat washers, and three $\frac{1}{4}$ " nuts. (See Fig. 21)

2. Attach the feed cables to a feed pole and the back of a rib using seven cable tie wraps. (See Fig. 21)

3. Center the feed horn in the antenna. Equal measurements to all ribs is a must. Adjust the focal length (see specifications on page 23). The focal length is measured from the top of the front hub plate to the throat of the feed.

4. Attach the feed cover to the feed cover donut using four cover push nuts (insert and thread in). (See Fig. 21)

FIG. 21



DECLINATION AND ELEVATION ADJUSTMENT

$$\begin{aligned} 1/8 &= 0.125 \\ 1/16 &= 0.0625 \\ 1/32 &= 0.03125 \end{aligned}$$

1. Using an inclinometer at locations "A" and "B" indicated on Fig. 22 and the "Declination & Elevation Chart" below, recheck your declination angle that was set with shims on page 14.

2. The antenna is preset with approximately 4° declination. To increase your declination angle, add shim(s) to the top. To decrease it, add shim(s) to the bottom. The 1/8" (3.18 mm) shim equals 1° of adjustment, the 1/16" (1.59 mm) shim equals 1/2° of adjustment, and the 1/32" (.79 mm) shim equals 1/4° of adjustment. (See Fig. 22 and Fig. 15 on page 14.)

3. To adjust your elevation angle, loosen the 5/8" x 3 1/2" bolt connecting the mount assembly to the polar "T" assembly. Using an inclinometer, adjust the polar axis angle so that it is equal to the site latitude with the EZ adjustment rods. (See Fig. 22)

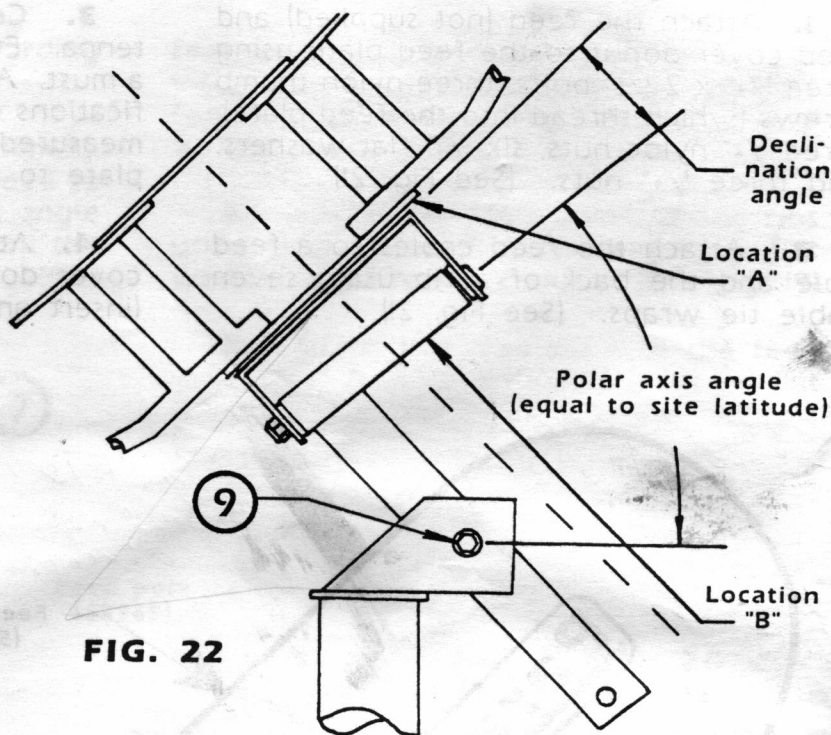


FIG. 22

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

Declination & Elevation Chart

Polar axis angle (equal to site latitude)	Declination	Polar axis angle (equal to site latitude)	Declination	Polar axis angle (equal to site latitude)	Declination
0°	.00°	24°	3.54°	48°	6.41°
2°	.30°	26°	3.81°	50°	6.61°
4°	.61°	28°	4.08°	52°	6.79°
6°	.91°	30°	4.34°	54°	6.97°
8°	1.21°	32°	4.60°	56°	7.14°
10°	1.51°	34°	4.85°	58°	7.30°
12°	1.81°	36°	5.09°	60°	7.45°
14°	2.11°	38°	5.33°	62°	7.59°
16°	2.40°	40°	5.56°	64°	7.72°
18°	2.69°	42°	5.79°	66°	7.84°
20°	2.98°	44°	6.00°	68°	7.95°
22°	3.26°	46°	6.21°	70°	8.06°

1. Tighten all mount hardware. The $\frac{5}{8}$ " nyloc nut on the $\frac{5}{8}$ " x $8\frac{1}{2}$ " bolt connecting the polar "T" assembly to the EZ adjustment rods must be thoroughly tightened down. (The $\frac{5}{8}$ " USS flatwashers will begin to cup.) (See Fig. 3 on page 7 for **12 PT** and Fig. 4 on page 8 for **14 $\frac{1}{2}$ Islander**.)

2. It is necessary to search for the most southerly satellite (for antenna location sites in northern hemisphere) or northerly satellite (for sites in southern hemisphere) from your location. Refer to a "Satellite Guide" or consult your nearest dealer.

Begin with the antenna pointed in a southerly direction (for antenna location sites in northern hemisphere) or northerly direction (for antenna sites in southern hemisphere). To begin searching, turn your receiver on to scan-tune (if your receiver is not so equipped, have someone slowly tune the receiver through the transponders). Next, turn the antenna slightly in the direction of the satellite.

3. Systematically search for the satellite by making one-turn-at-a-time adjustments of the EZ adjustment rods. With each adjustment of elevation, slowly swing the antenna using the motor drive from east to west, while looking for a signal on your television.

NOTE: If no signal can be found, recheck the antenna elevation/declination, north-south alignment and plumb of mount. If no problem is found with the mechanical alignment, consult the owner's manual for your receiver or call your local dealer.

4. When you find your first satellite, turn off the scan-tune and adjust to an active transponder (channel).

5. Carefully adjust elevation and azimuth to maximum signal strength using the signal strength meter on your receiver, or, if available, use a digital or analog voltohmmeter (VOM). You may also adjust visually by observing your television for the best picture.

6. Turn on scan-tune once again and swing antenna, using the motor drive while looking for other satellites. If no other satellites are "visible," or you can not receive all the satellites (and your signal path is not blocked), the mount is not aligned to true north/south.

7. North/south alignment: While facing the equator, determine whether the lowest (closest to the horizon) viewable satellite is to the right or left of you. If it is to your left, continue with the following instructions. If it is to your right, reverse all "right/left" and "raise/lower" references.

a) Swing your antenna to the satellite farthest to your right and adjust your azimuth and elevation for the absolute maximum signal. Swing your antenna to the satellite farthest to your left and do the same. If any azimuth and elevation adjustments are required to peak the signal on this satellite, your north/south alignment will still need minor correction.

b) If you raise the antenna to improve the picture with the EZ adjustment rods, rotate the mount slightly (a fraction of an inch or a few millimeters) counter-clockwise. If you lower the antenna to improve the picture, rotate the mount slightly clockwise.

c) Repeat steps "a" and "b" until there is no adjustment needed from the satellite farthest to your right to the satellite farthest to your left.

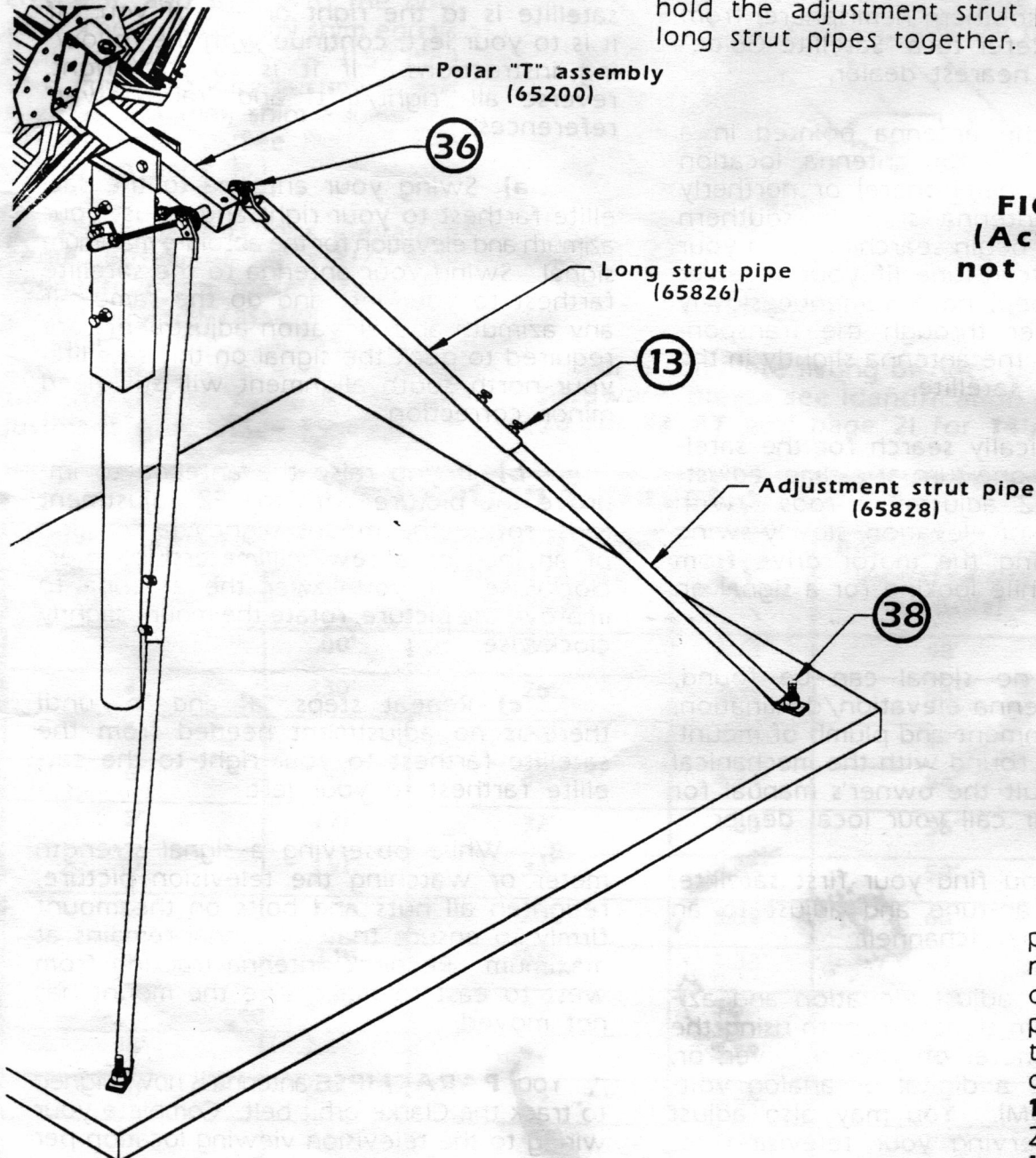
8. While observing a signal strength meter or watching the television picture, retighten all nuts and bolts on the mount firmly to ensure that the signal remains at maximum. Recheck antenna tracking from west to east to make sure the mount has not moved.

You **PARACLIPSE** antenna is now aligned to track the Clarke orbit belt. Complete your wiring to the television viewing location per instructions provided with your receiver.

The adjustment strut pipes and the long strut pipes are used to help keep the mount stable in high wind areas. When the strut pipes are attached, the north/south alignment is limited. The adjustment strut pipes and the long strut pipes are optional on the 12 PT.

1. Correctly align the adjustment strut pipes and the long strut pipes so binding will not take place. The $\frac{5}{8}$ " nyloc nut on the $\frac{5}{8}$ " x 8 1/2" bolt that connects the polar "T" assembly to the EZ adjustment rods must be thoroughly tightened down. (The $\frac{5}{8}$ " USS flatwashers will begin to cup.) Take caution so as not to pull on the aligned antenna. (See Fig. 23)

2. Tighten the four $\frac{3}{8}$ " x 1" bolts that hold the adjustment strut pipes and the long strut pipes together. (See Fig. 23)

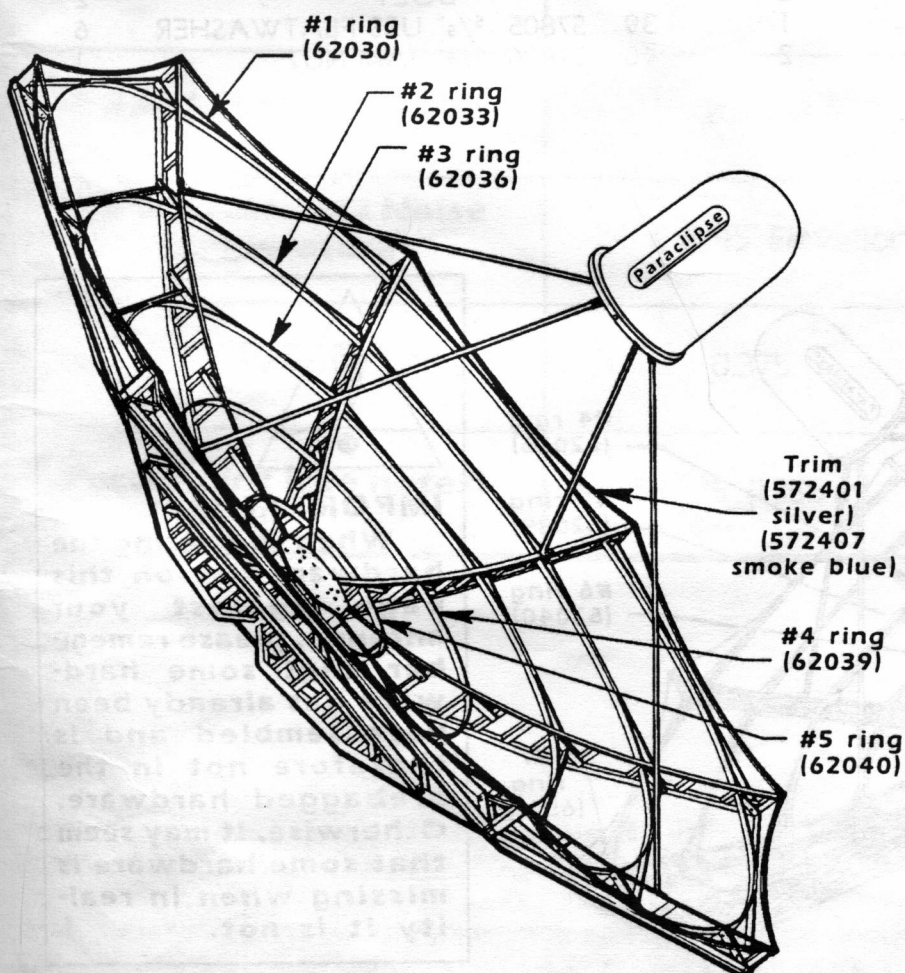


**FIG. 23
(Actuator
not shown)**

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

12 PT HARDWARE TABLE (Includes all hardware, see note below.)

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52019	1/4" USS FLATWASHER	19	21	55118	5/8" NYLOC NUT	2
2	52020	5/16" NYLOC NUT	3	23	55131	5/8" x 1 3/4" BOLT	1
3	52072	5/8" x 1 1/4" BOLT	4	24	55186	1/4" x 2 1/2" BOLT	3
4	52073	5/8" NUT	5	25	55190	1/4" NYLOC NUT	3
5	52089	1/2" NUT	2	26	55214	3/4" LOCK WASHER	1
6	52175	1/4" x 1 3/4" BOLT	80	27	55218	FLANGED BUSHING	2
7	52176	1/4" x 1" BOLT	8	28	55219	CLASSIC PT WASHER	2
8	52177	1/4" NUT	91	29	55222	3/8" x 1 1/2" BOLT	4
9	52179	5/8" x 3 1/2" BOLT	1	30	55255	1/2" NYLOC NUT	2
10	52181	5/16" x 1" BOLT	16	31	55270	1/4" FLATWASHER	22
11	52183	5/16" NUT	32	32	55275	1/2" x 2" BOLT	3
12	52185	5/8" LOCK WASHER	1	34	57530	NYLON THUMB SCREW	3
14	52188	3/8" NUT	4	35	57560	CABLE TIE WRAP	7
15	52189	3/8" LOCK WASHER	4	36	57565	5/8" x 8 1/2" BOLT	1
16	52213	1/2" FLATWASHER	2	37	57567	COVER PUSH NUT	4
17	55061	5/16" x 2" BOLT	19	39	57805	5/8" USS FLATWASHER	6
18	55076	5/8" FLATWASHER	4	40	57806	5/8" JAM NUT	1
20	55110	1/2" x 2 3/4" BOLT	1				

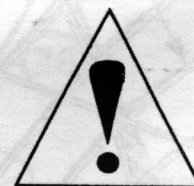
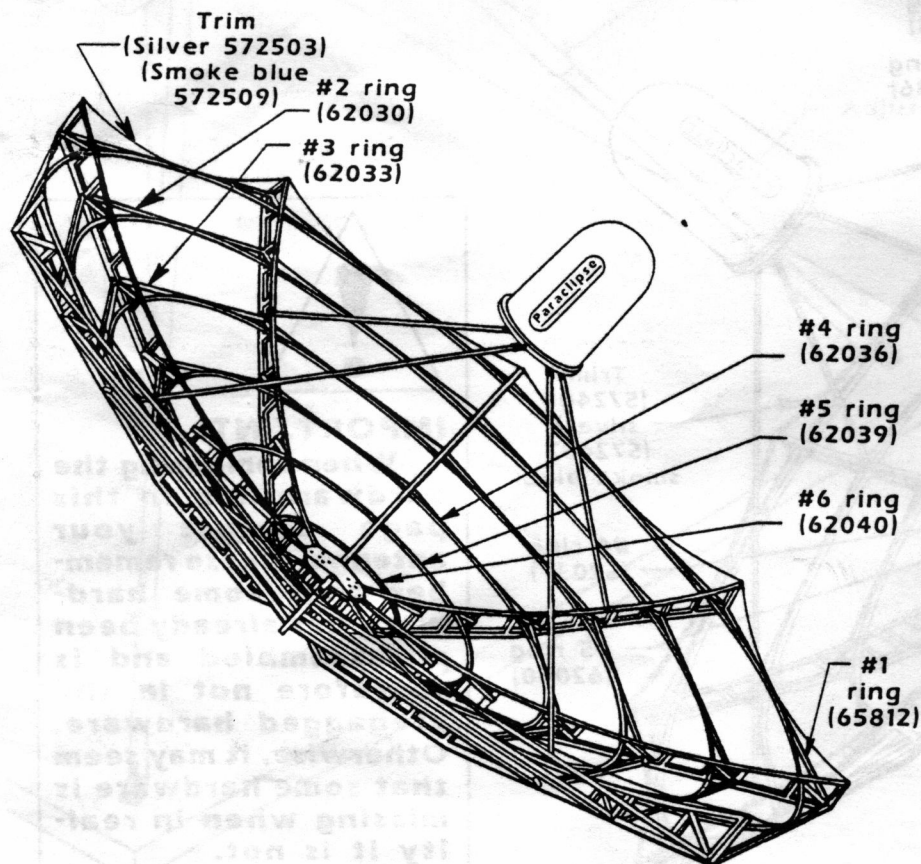
**IMPORTANT!**

When comparing the hardware list on this page against your antenna, please remember that some hardware has already been preassembled and is therefore not in the prebagged hardware. Otherwise, it may seem that some hardware is missing when in reality it is not.

REFLECTOR PARTS ILLUSTRATION AND HARDWARE IDENTIFICATION

14 1/2' Islander HARDWARE TABLE (Includes all hardware, see note below.)

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52019	1/4" USS FLATWASHER	35	22	55125	3/4" NYLOC NUT	2
2	52020	5/16" NYLOC NUT	3	23	55131	5/8" x 1 3/4" BOLT	1
3	52072	5/8" x 1 1/4" BOLT	4	24	55186	1/4" x 2 1/2" BOLT	3
4	52073	5/8" NUT	5	25	55190	1/4" NYLOC NUT	3
5	52089	1/2" NUT	2	26	55214	3/4" LOCK WASHER	1
6	52175	1/4" x 1 3/4" BOLT	96	27	55218	FLANGED BUSHING	2
7	52176	1/4" x 1" BOLT	8	28	55219	CLASSIC PT WASHER	2
8	52177	1/4" NUT	107	29	55222	3/8" x 1 1/2" BOLT	4
9	52179	5/8" x 3 1/2" BOLT	1	30	55255	1/2" NYLOC NUT	2
10	52181	5/16" x 1" BOLT	8	31	55270	1/4" FLATWASHER	22
11	52183	5/16" NUT	40	32	55275	1/2" x 2" BOLT	3
12	52185	5/8" LOCK WASHER	1	33	55325	5/16" x 11 7/8" ALL- THREAD STUD	8
13	52187	3/8" x 1" BOLT	4	34	57530	NYLON THUMB SCREW	3
14	52188	3/8" NUT	4	35	57560	CABLE TIE WRAP	7
15	52189	3/8" LOCK WASHER	4	36	57565	5/8" x 8 1/2" BOLT	1
16	52213	1/2" FLATWASHER	2	37	57567	COVER PUSH NUT	4
17	55061	5/16" x 2" BOLT	11	38	57800	3/4" x 12" ANCHOR BOLT	2
18	55076	5/8" FLATWASHER	4	39	57805	5/8" USS FLATWASHER	6
19	55079	3/4" FLATWASHER	2	40	57806	5/8" JAM NUT	1
20	55110	1/2" x 2 3/4" BOLT	1				
21	55118	5/8" NYLOC NUT	2				



IMPORTANT!

When comparing the hardware list on this page against your antenna, please remember that some hardware has already been preassembled and is therefore not in the prebagged hardware. Otherwise, it may seem that some hardware is missing when in reality it is not.

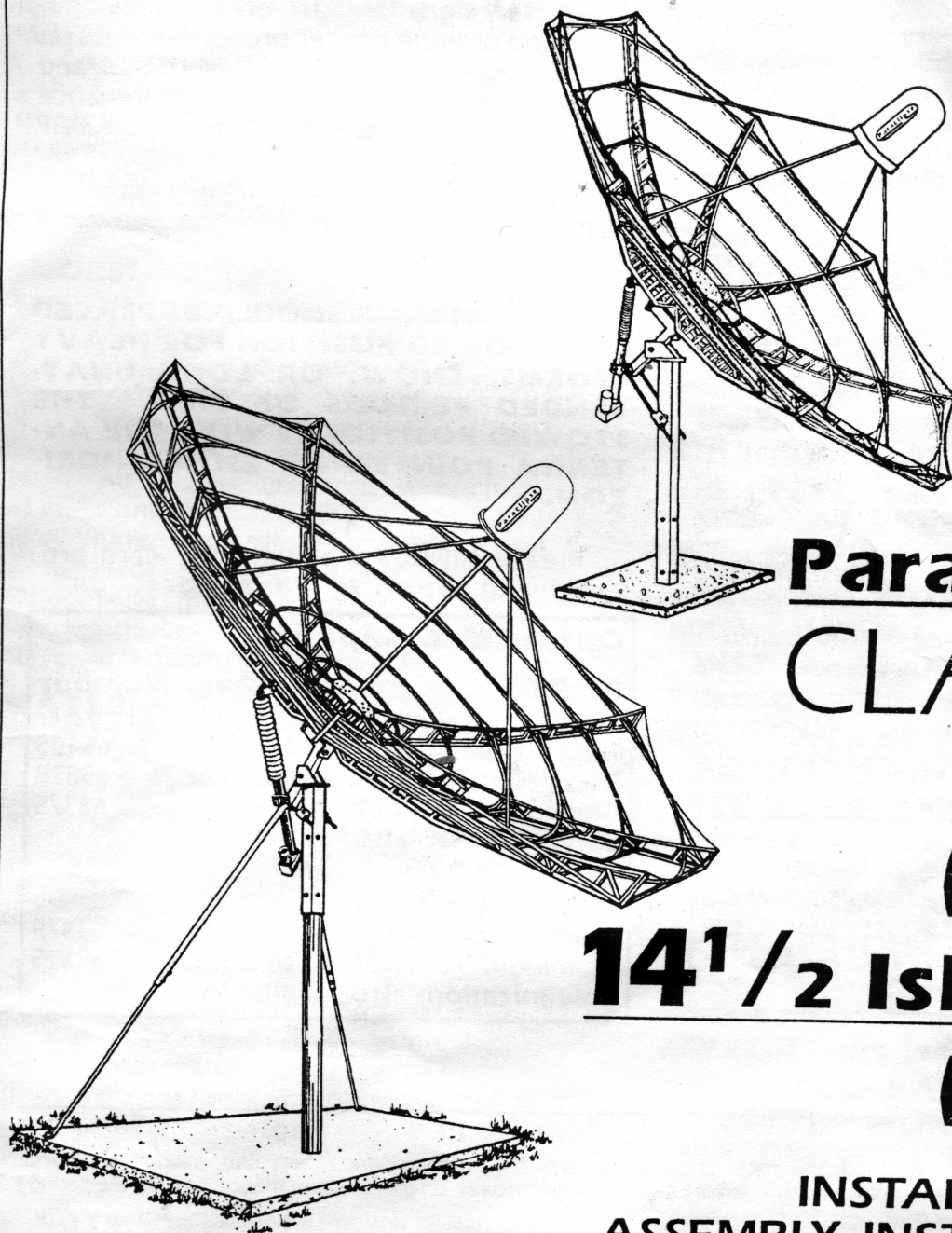
SPECIFICATION	12 PT	14.5 Islander
C Band Gain	42.3 dB	43.6 dB
Ku Band Gain	50.0 dB	51.5 dB
C Band Efficiency	70%	65%
2° Spacing Approved	Yes	Yes
C Band 3dB Beam Width	1.3°	1.2°
C Band First Side Lobe	-20.4 dB	-20.0 dB
C Band Antenna Noise Temperature	24° K @ 45° Elevation	23° K @ 45° Elevation
F/D	0.375	0.31
Focal Point (see notes)	53.375" (1.356 m) 53 3/8"	53.375" (1.356 m)

NOTES:

- Specifications of the Paraclipse **12 PT** and **14 1/2 Islander** antennas are determined by range testing and engineering computation methods.
- Different feed horn designs call for special mounting and focal requirements. Call for correct applications or follow manufacturer's suggestions.

Paraclipse[®]

HIGH PERFORMANCE ANTENNAS
Your Complete Reflector Source



Paraclipse[®]
CLASSIC
12 PT
(3.8 m)

14 1/2' Islander
(4.5 m)

**INSTALLATION &
ASSEMBLY INSTRUCTIONS**

FILL OUT WARRANTY CARD PROVIDED AND RETURN TO PARACLIPSE TO SECURE VALUABLE EXTENDED WARRANTY RIGHTS.

**CAUTION**

**Do not overtighten
ring bolts. [10 ft/lbs
(13.6 Nm) maximum.]**

1. Attach all eight of the outside rings (the largest rings) to the outermost holes of the ribs with the curved section facing toward the center of the antenna. Secure these rings using sixteen $\frac{1}{4}$ " x $1\frac{3}{4}$ " bolts and sixteen $\frac{1}{4}$ " nuts. Tighten these ring bolts (after all of the outermost rings have been assembled. (See Fig. 8 and 9) while being careful not to overtighten. Check that these rings are flush with the bottom of the mesh slot of the rib. Tighten all hub plate bolts.

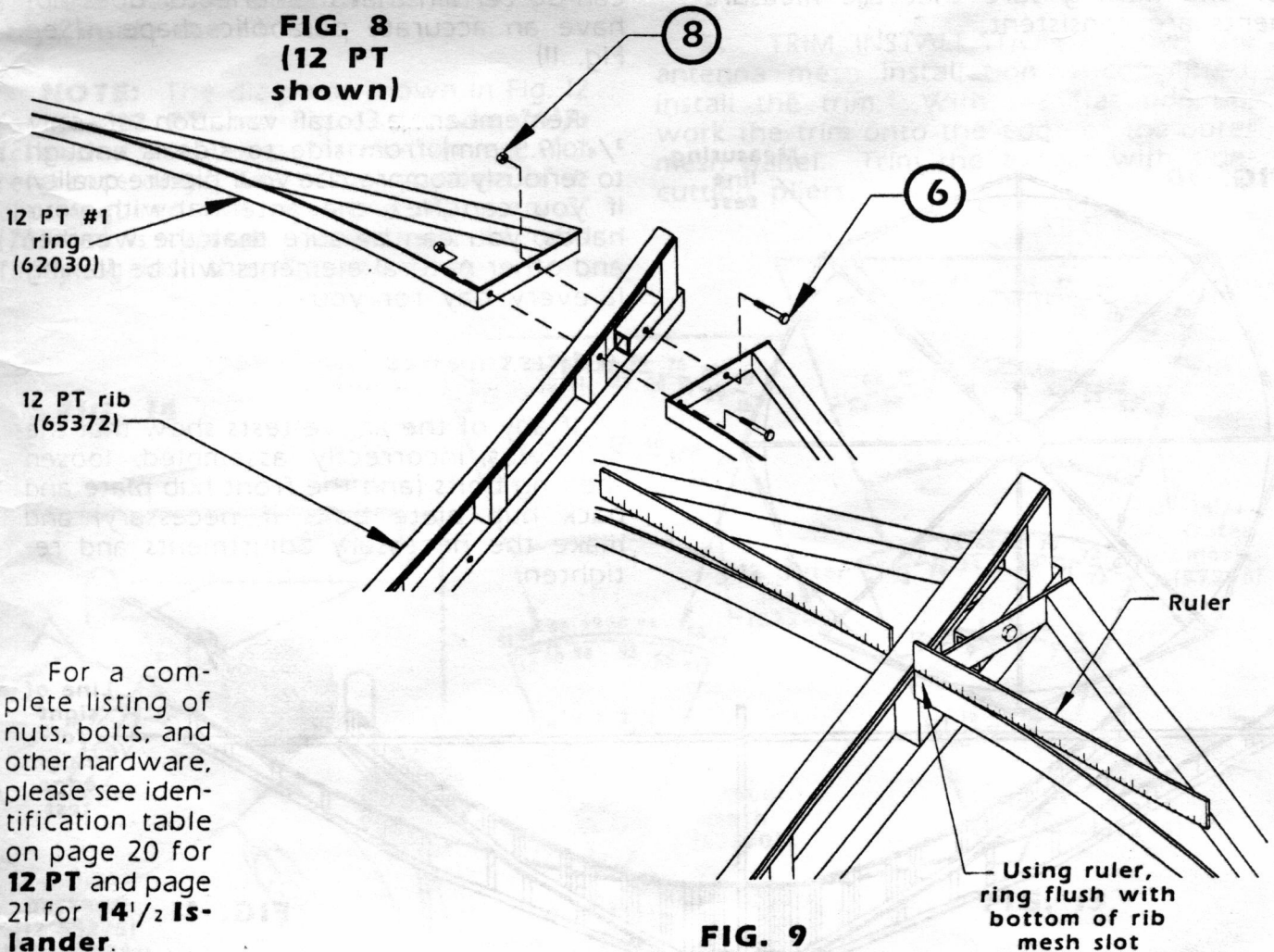
2. Check the reflector for parabolic accuracy using tests located on the following page. If adjustments are required, loosen the ring bolts and/or rib bolts and make the necessary corrections and retighten these bolts.

3. Attach all the remaining rings, in any order, to the ribs using the remaining $\frac{1}{4}$ " x $1\frac{3}{4}$ " bolts and $\frac{1}{4}$ " nuts. **Do not tighten until all rings are attached.**

4. Tighten the remaining ring bolts while being careful not to overtighten. Using a ruler, check that the rings are flush with the bottom of the mesh slot on the rib. (See Fig. 9)

5. Recheck the reflector for parabolic accuracy. See the following page.

**FIG. 8
(12 PT
shown)**



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Is-lander**.

FIG. 9

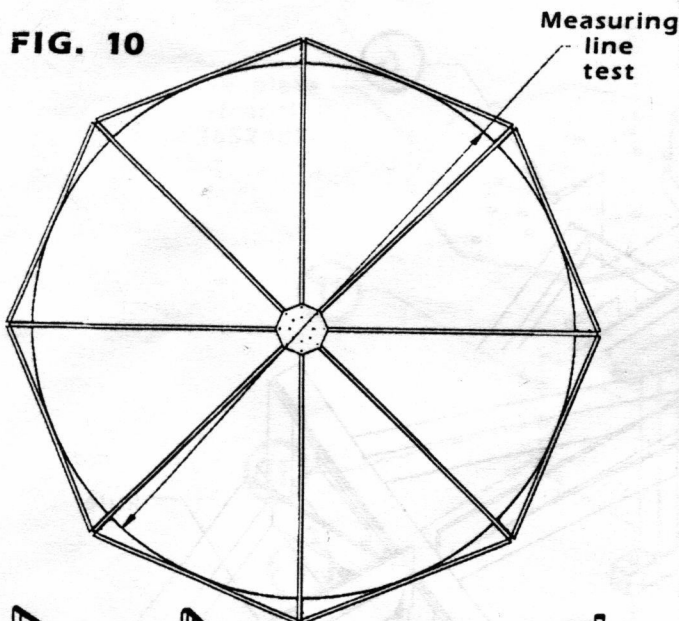
Parabolic Integrity

A precise parabolic surface that is both accurate and symmetrical is a must for good antenna performance. The design of the antenna structure must not allow for any change in the shape of the reflector. The reflector cannot elongate, warp, or sag if it is to maintain its picture quality.

Measuring Test

With an accurate tape measure, measure from the outside of the largest ring across the face of the dish to the outside of the largest ring opposite the measuring point. (See Fig. 10) Repeat this step measuring completely around the reflector and making sure that the measurements are consistent.

FIG. 10



String Test

With a ball of string and some masking tape, you can check the antenna for symmetry. Find at least four identical spots on the antenna and run lengths of string to the opposite side. Where the strings cross each other, there should be a perfect intersection. The intersection of the string should be perfectly aligned without horizontal or vertical gaps or tension.

Straight Edge Test

When you inspect the assembled antenna, lay an imaginary straight edge across the top of the outside ring, close one eye, and sight across the reflector. If you notice a deviation along this edge, you can be certain that the reflector does not have an accurate parabolic shape. (See Fig. 11)

Remember, a total variation of only $\frac{3}{8}$ " (9.5 mm) from side to side is enough to seriously compromise your picture quality. If you can flex the antenna with your hands, you can be sure that the weather and other natural elements will be flexing it every day for you.

Adjustments

If any of the above tests show that the dish was incorrectly assembled, loosen the ring bolts (and the front hub plate and back hub plate bolts if necessary) and make the necessary adjustments and re-tighten.

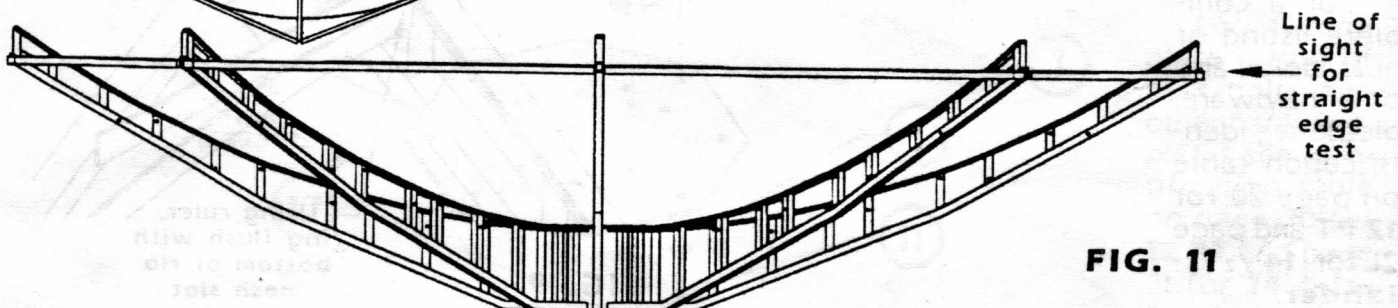


FIG. 11

IMPORTANT

Read all instructions carefully prior to beginning mesh installation.

1. INNER MESH INSTALLATION: Lay the inner mesh on the rings. Starting with one side of mesh, slide the inner mesh into the slot on top of the rib. Once one side of the inner mesh has been completely installed into the slot, slide it towards the center of the reflector until the other side of the inner mesh begins to touch the opposite rib slot. Completely work the inner mesh into the opposite slot. Then firmly slide the inner mesh towards the center of the reflector, making sure that the sides of the inner mesh stay inside the rib slot.

NOTE: The diagrams shown in Fig. 12 for the **12 PT** and Fig. 13 for the **14 $\frac{1}{2}$ Islander** for J-clip installation are for reference only. The actual numbers of J-clips required will vary; one clip every 3" (76 mm) is typical. Mesh must be held firmly against the ribs and rings.

2. J-CLIP INSTALLATION: After a piece of inner mesh is in place, install J-clips using the clip installation sequence shown in Fig. 12 and 13. When installing the J-clips, firmly pull downward and around the ring while making sure the J-clip is square to the ring. (See Fig. 14)

NOTE: There will be one ring (the third largest) that will not be clipped until the outer mesh is in place.

3. OUTER MESH INSTALLATION: Install the outer mesh as per steps #1 and #2 while making sure to slide the outer mesh **under** the inner mesh where the two pieces of mesh overlap.

4. Repeat steps #1, #2, and #3 until the antenna is completely meshed.

5. TRIM INSTALLATION: When the antenna mesh installation is completed, install the trim. With the flat side up, work the trim onto the edge of the outer mesh panel. Trim the excess with side-cutting pliers.

FIG. 14

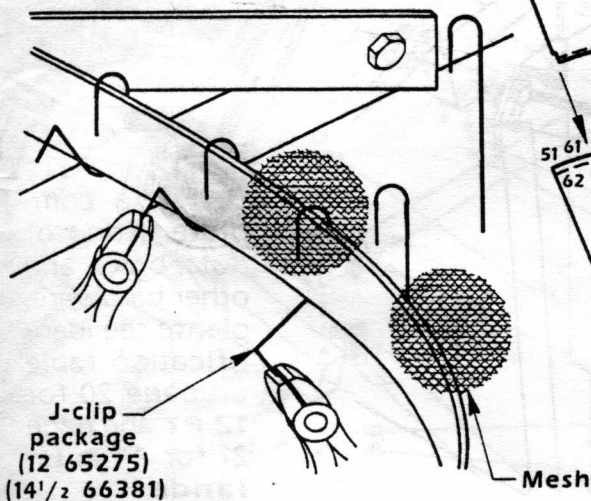


FIG. 12

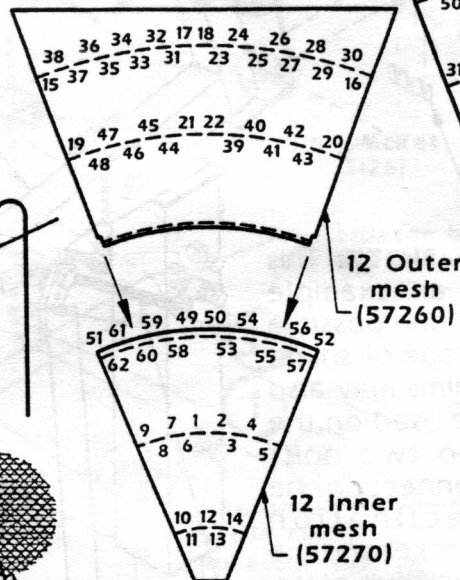
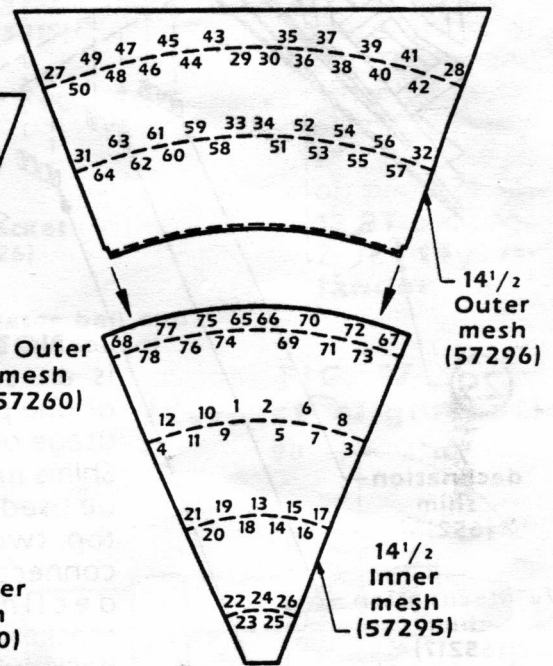


FIG. 13



1. Set the elevation of the polar "T" assembly to 10° with the EZ adjustment rods. (See Fig. 15)

2. Carry the assembled reflector to the front of preassembled declination/polar "T" assembly and rest the tip of the bottom rib on the ground (be sure to protect the tip of the bottom rib with cardboard or plywood, etc.).

3. Slide the assembled reflector back to the preassembled declination/polar "T" assembly (while it is still resting on the tip of the rib) and line up the mounting holes in the back hub plate to the mounting holes of the declination bracket. Insert two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts into the two lower

mounting holes and attach using two $\frac{3}{8}$ " lock washers and two $\frac{3}{8}$ " nuts. After aligning the upper two mounting holes, use the remaining two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts, two $\frac{3}{8}$ " lock washers, and two $\frac{3}{8}$ " nuts. (See Fig. 15)

4. Install the declination shim(s) between the back hub plate and the declination bracket. Refer to the "Declination & Elevation Chart" on page 18 for shim usage and placement. (See Fig. 15 for one possible example of usage and placement.)

5. Tighten the four bolts that connect the back hub plate to the declination bracket. Then, rotate the assembled reflector until it rests on the ground.

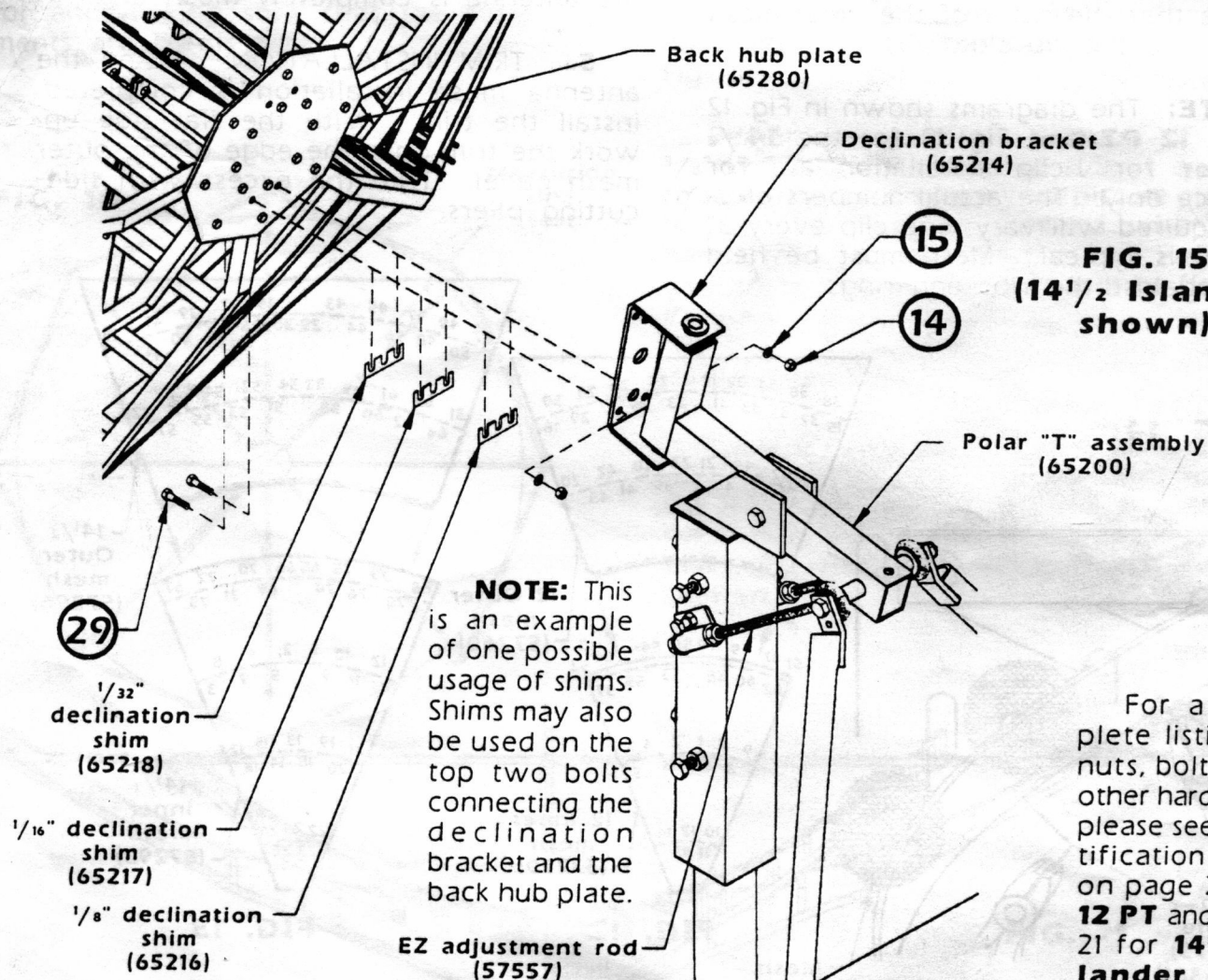


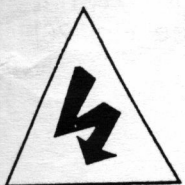
FIG. 15
(14 $\frac{1}{2}$ Islander shown)

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander**.

RIB BRACKET AND ACTUATOR INSTALLATION



This antenna should be used with a 36 volt, 18" (.46 m) to 24" (.61 m) actuator rated for antennas with up to 250 lbs. (551 kg) reflector weight. Actuator thrust should be 400 lbs. (882 kg) minimum for the 12 PT and 500 lbs. (1102 kg) minimum for the 14 1/2 Islander.



1. Predetermine the side of the mount to which the actuator will be attached. For North American locations only, determine if your site is east or west of 105° W longitude.

If your site is east of 105° W longitude, the actuator will be attached to the right hand side (facing the back of the mount). If your site is west of 105° W longitude, your actuator will be attached to the left hand side. For all other locations, predetermine which side of the satellite arc has the largest concentration of satellites that you wish to track and attach the actuator to that side.

2. The rib brackets are attached approximately 15" (.38 m) from the edge of the back hub plate (the 4th rib spacer out) on the center rib (the one with the lowest look angle) on the side determined in step #1. Straddle the strut of the rib with the rib brackets and fasten them using three 5/16" x 2" bolts, three 1/4" USS flatwashers, and three 5/16" nyloc nuts. (See Fig. 16)

3. Attach the actuator saddle clamp (not supplied) to the polar "T" assembly using one 1/2" x 2 3/4" bolt, two 1/2" flatwashers, and one 1/2" nyloc nut. (See Fig. 16)

4. Attach the actuator ball end (not supplied) to the rib brackets using one 1/2" x 2" bolt and one 1/2" nyloc nut. (See Fig. 16)



Care must be taken when installing the actuator so that correct alignment is achieved. (See Fig. 17)

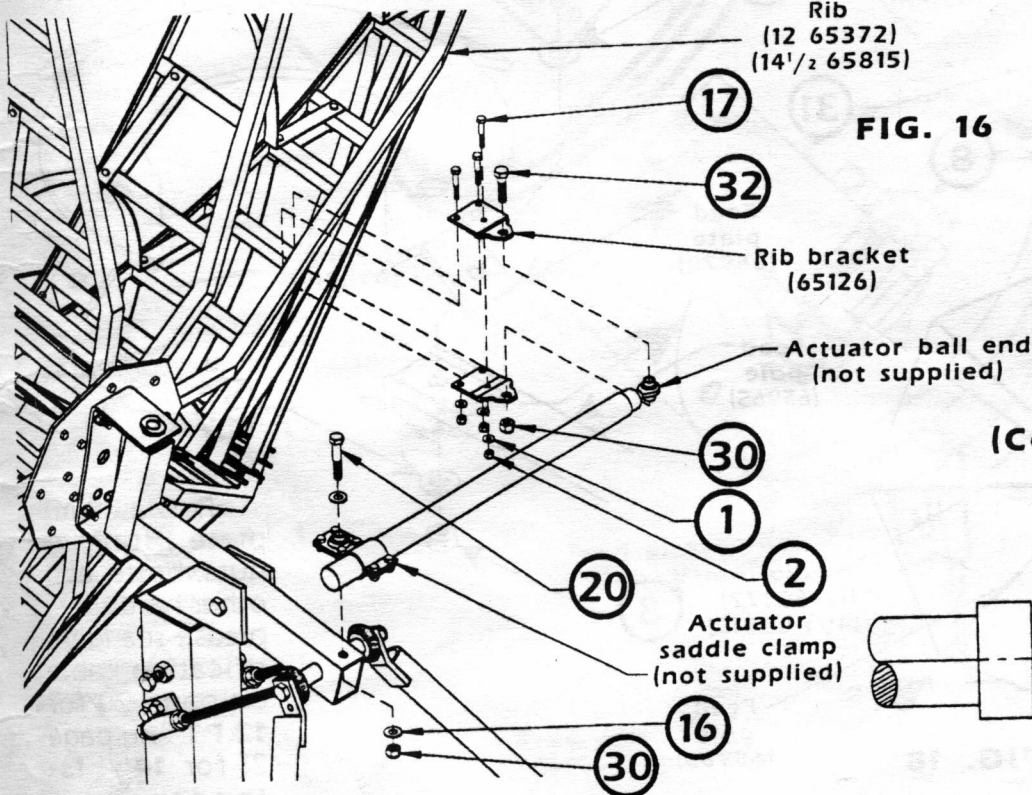
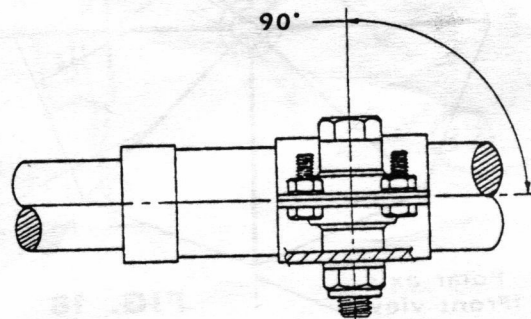


FIG. 16

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

**FIG. 17
(Correct alignment)**



FEED POLE AND FEED PLATE INSTALLATION

1. Assemble the feed horn according to manufacturer's instructions.

NOTE: The feed pole to rib assembly mounting locations will vary from feed to feed depending on the feed offset angle with respect to the polar axis. Mount the

feed poles and the feed plate on the ribs which suitably accommodate the individual feed offset angle. Fig. 18 below will suffice in most cases.

2. Attach the feed poles to the ribs using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flat washers, and four $\frac{1}{4}$ " nuts. (See Fig. 19)

3. Attach the feed plate to the feed poles using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flat washers, and four $\frac{1}{4}$ " nuts. (See Fig. 20)

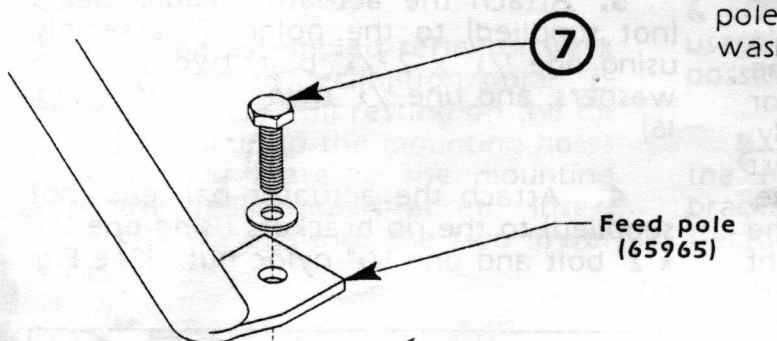


FIG. 19

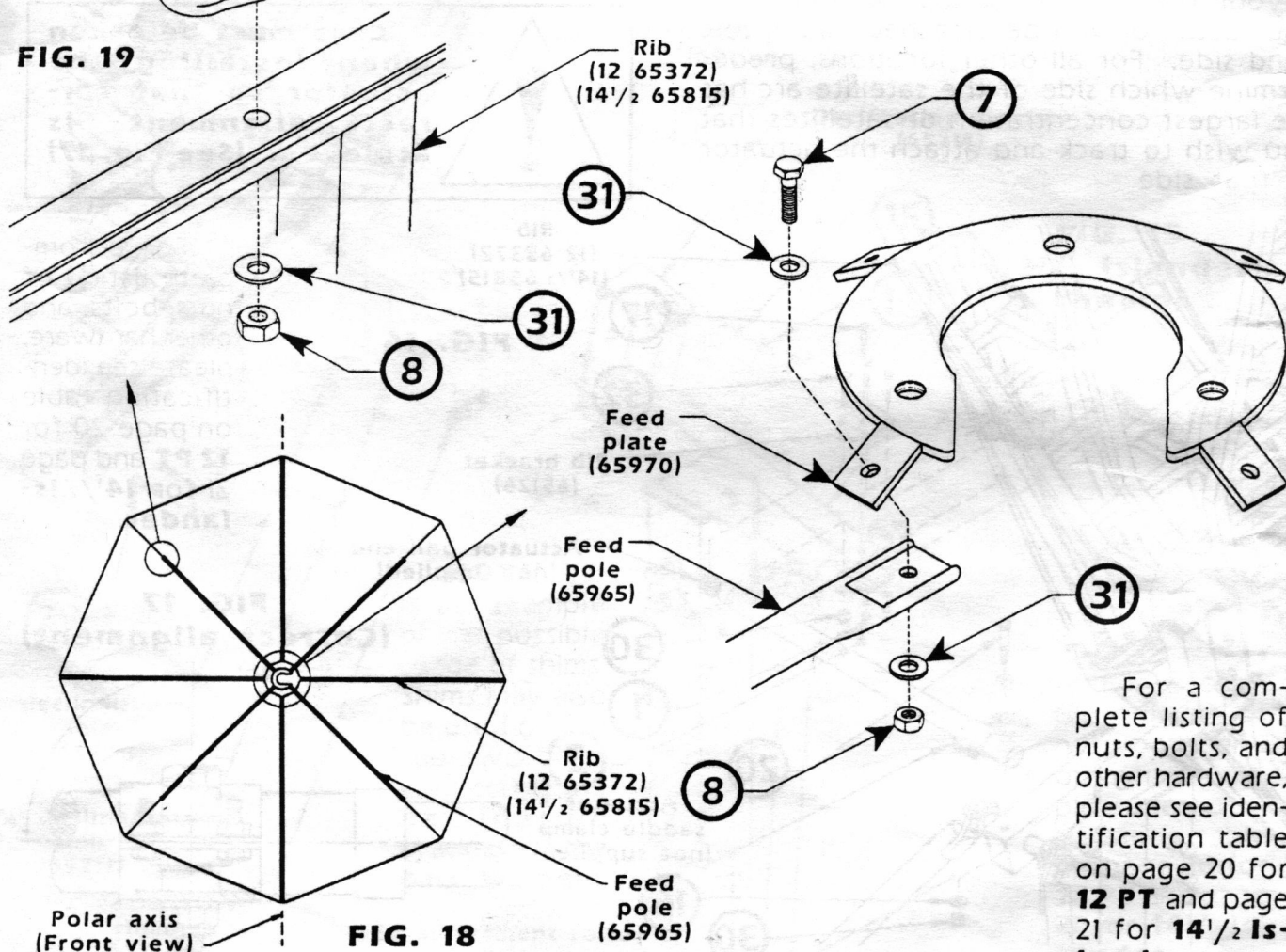


FIG. 20

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Is-lander**.

FEED AND FEED COVER INSTALLATION

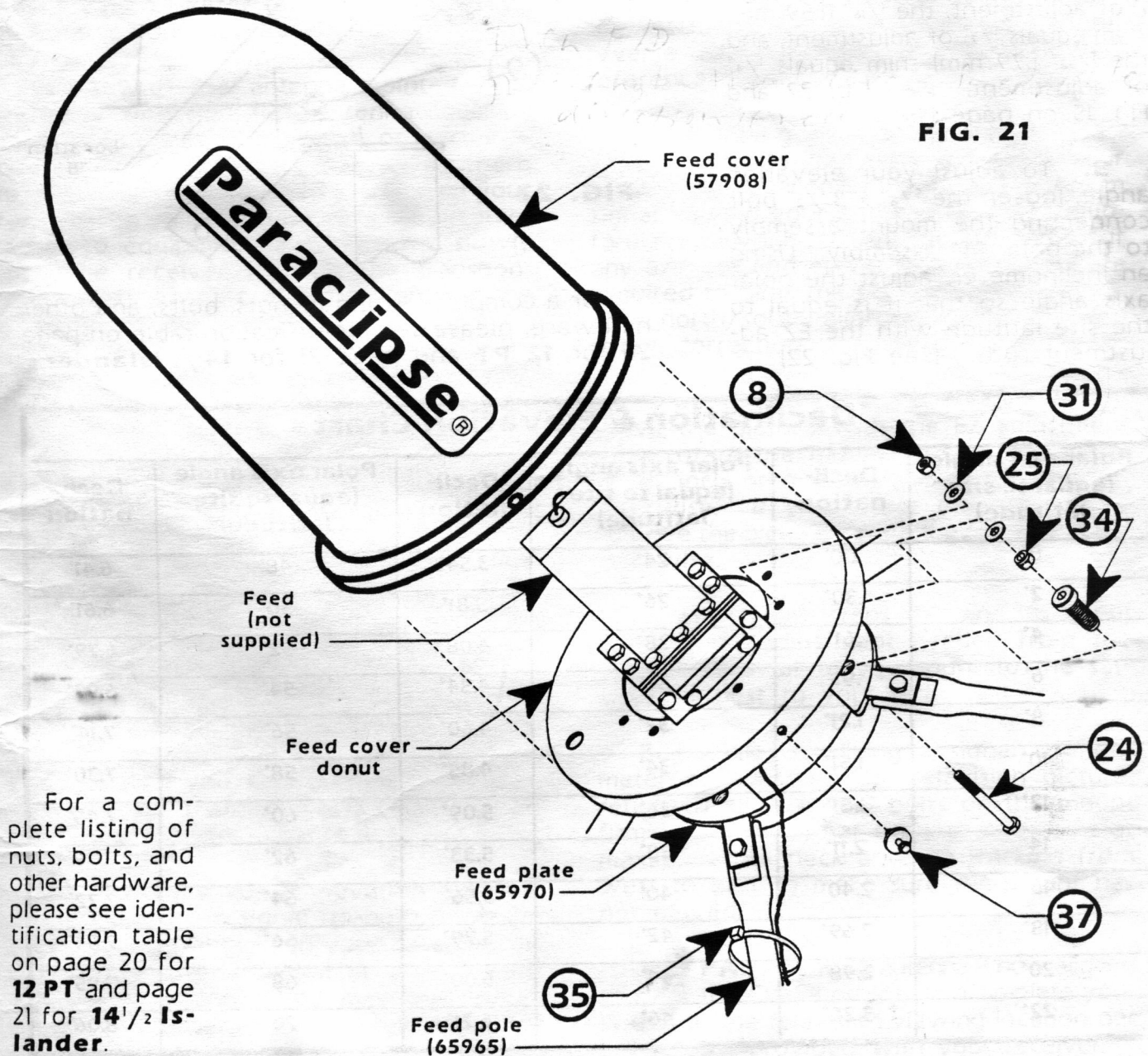
1. Attach the feed (not supplied) and feed cover donut to the feed plate using three $\frac{1}{4}$ " x $2\frac{1}{2}$ " bolts, three nylon thumb screws (which thread into the feed plate), three $\frac{1}{4}$ " nyloc nuts, six $\frac{1}{4}$ " flat washers, and three $\frac{1}{4}$ " nuts. (See Fig. 21)

2. Attach the feed cables to a feed pole and the back of a rib using seven cable tie wraps. (See Fig. 21)

3. Center the feed horn in the antenna. Equal measurements to all ribs is a must. Adjust the focal length (see specifications on page 23). The focal length is measured from the top of the front hub plate to the throat of the feed.

4. Attach the feed cover to the feed cover donut using four cover push nuts (insert and thread in). (See Fig. 21)

FIG. 21



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander**.

DECLINATION AND ELEVATION ADJUSTMENT

$$\begin{aligned} 1/8 &= 0.125 \\ 1/16 &= 0.0625 \\ 1/32 &= 0.03125 \end{aligned}$$

1. Using an inclinometer at locations "A" and "B" indicated on Fig. 22 and the "Declination & Elevation Chart" below, recheck your declination angle that was set with shims on page 14.

2. The antenna is preset with approximately 4° declination. To increase your declination angle, add shim(s) to the top. To decrease it, add shim(s) to the bottom. The 1/8" (3.18 mm) shim equals 1° of adjustment, the 1/16" (1.59 mm) shim equals 1/2° of adjustment, and the 1/32" (.79 mm) shim equals 1/4° of adjustment. (See Fig. 22 and Fig. 15 on page 14.)

3. To adjust your elevation angle, loosen the 5/8" x 3 1/2" bolt connecting the mount assembly to the polar "T" assembly. Using an inclinometer, adjust the polar axis angle so that it is equal to the site latitude with the EZ adjustment rods. (See Fig. 22)

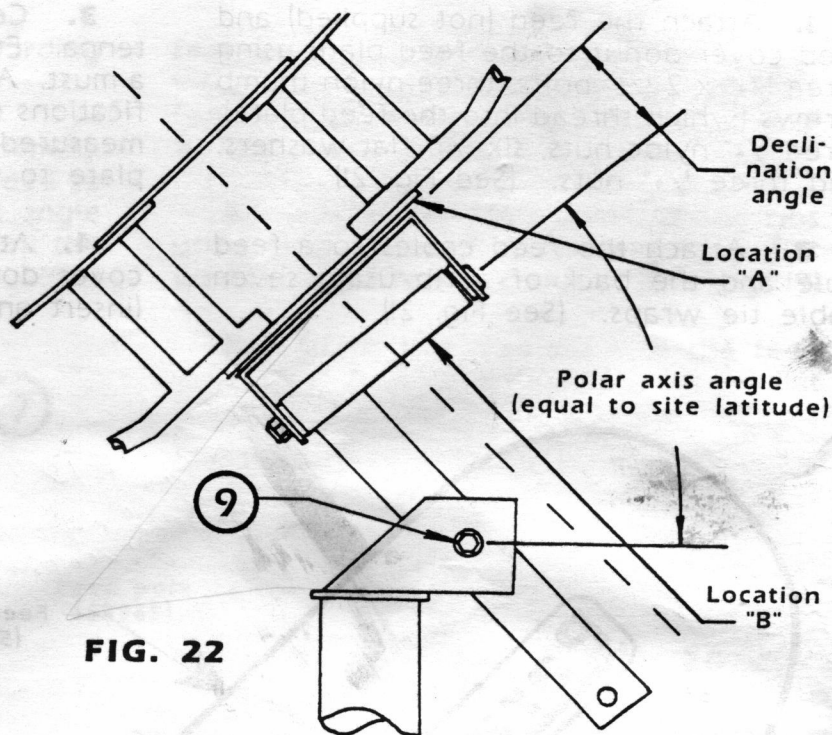


FIG. 22

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

Declination & Elevation Chart

Polar axis angle (equal to site latitude)	Declination	Polar axis angle (equal to site latitude)	Declination	Polar axis angle (equal to site latitude)	Declination
0°	.00°	24°	3.54°	48°	6.41°
2°	.30°	26°	3.81°	50°	6.61°
4°	.61°	28°	4.08°	52°	6.79°
6°	.91°	30°	4.34°	54°	6.97°
8°	1.21°	32°	4.60°	56°	7.14°
10°	1.51°	34°	4.85°	58°	7.30°
12°	1.81°	36°	5.09°	60°	7.45°
14°	2.11°	38°	5.33°	62°	7.59°
16°	2.40°	40°	5.56°	64°	7.72°
18°	2.69°	42°	5.79°	66°	7.84°
20°	2.98°	44°	6.00°	68°	7.95°
22°	3.26°	46°	6.21°	70°	8.06°

1. Tighten all mount hardware. The $\frac{5}{8}$ " nyloc nut on the $\frac{5}{8}$ " x $8\frac{1}{2}$ " bolt connecting the polar "T" assembly to the EZ adjustment rods must be thoroughly tightened down. (The $\frac{5}{8}$ " USS flatwashers will begin to cup.) (See Fig. 3 on page 7 for **12 PT** and Fig. 4 on page 8 for **14 $\frac{1}{2}$ Islander**.)

2. It is necessary to search for the most southerly satellite (for antenna location sites in northern hemisphere) or northerly satellite (for sites in southern hemisphere) from your location. Refer to a "Satellite Guide" or consult your nearest dealer.

Begin with the antenna pointed in a southerly direction (for antenna location sites in northern hemisphere) or northerly direction (for antenna sites in southern hemisphere). To begin searching, turn your receiver on to scan-tune (if your receiver is not so equipped, have someone slowly tune the receiver through the transponders). Next, turn the antenna slightly in the direction of the satellite.

3. Systematically search for the satellite by making one-turn-at-a-time adjustments of the EZ adjustment rods. With each adjustment of elevation, slowly swing the antenna using the motor drive from east to west, while looking for a signal on your television.

NOTE: If no signal can be found, recheck the antenna elevation/declination, north-south alignment and plumb of mount. If no problem is found with the mechanical alignment, consult the owner's manual for your receiver or call your local dealer.

4. When you find your first satellite, turn off the scan-tune and adjust to an active transponder (channel).

5. Carefully adjust elevation and azimuth to maximum signal strength using the signal strength meter on your receiver, or, if available, use a digital or analog volt-ohm meter (VOM). You may also adjust visually by observing your television for the best picture.

6. Turn on scan-tune once again and swing antenna, using the motor drive while looking for other satellites. If no other satellites are "visible," or you can not receive all the satellites (and your signal path is not blocked), the mount is not aligned to true north/south.

7. North/south alignment: While facing the equator, determine whether the lowest (closest to the horizon) viewable satellite is to the right or left of you. If it is to your left, continue with the following instructions. If it is to your right, reverse all "right/left" and "raise/lower" references.

a) Swing your antenna to the satellite farthest to your right and adjust your azimuth and elevation for the absolute maximum signal. Swing your antenna to the satellite farthest to your left and do the same. If any azimuth and elevation adjustments are required to peak the signal on this satellite, your north/south alignment will still need minor correction.

b) If you raise the antenna to improve the picture with the EZ adjustment rods, rotate the mount slightly (a fraction of an inch or a few millimeters) counter-clockwise. If you lower the antenna to improve the picture, rotate the mount slightly clockwise.

c) Repeat steps "a" and "b" until there is no adjustment needed from the satellite farthest to your right to the satellite farthest to your left.

8. While observing a signal strength meter or watching the television picture, retighten all nuts and bolts on the mount firmly to ensure that the signal remains at maximum. Recheck antenna tracking from west to east to make sure the mount has not moved.

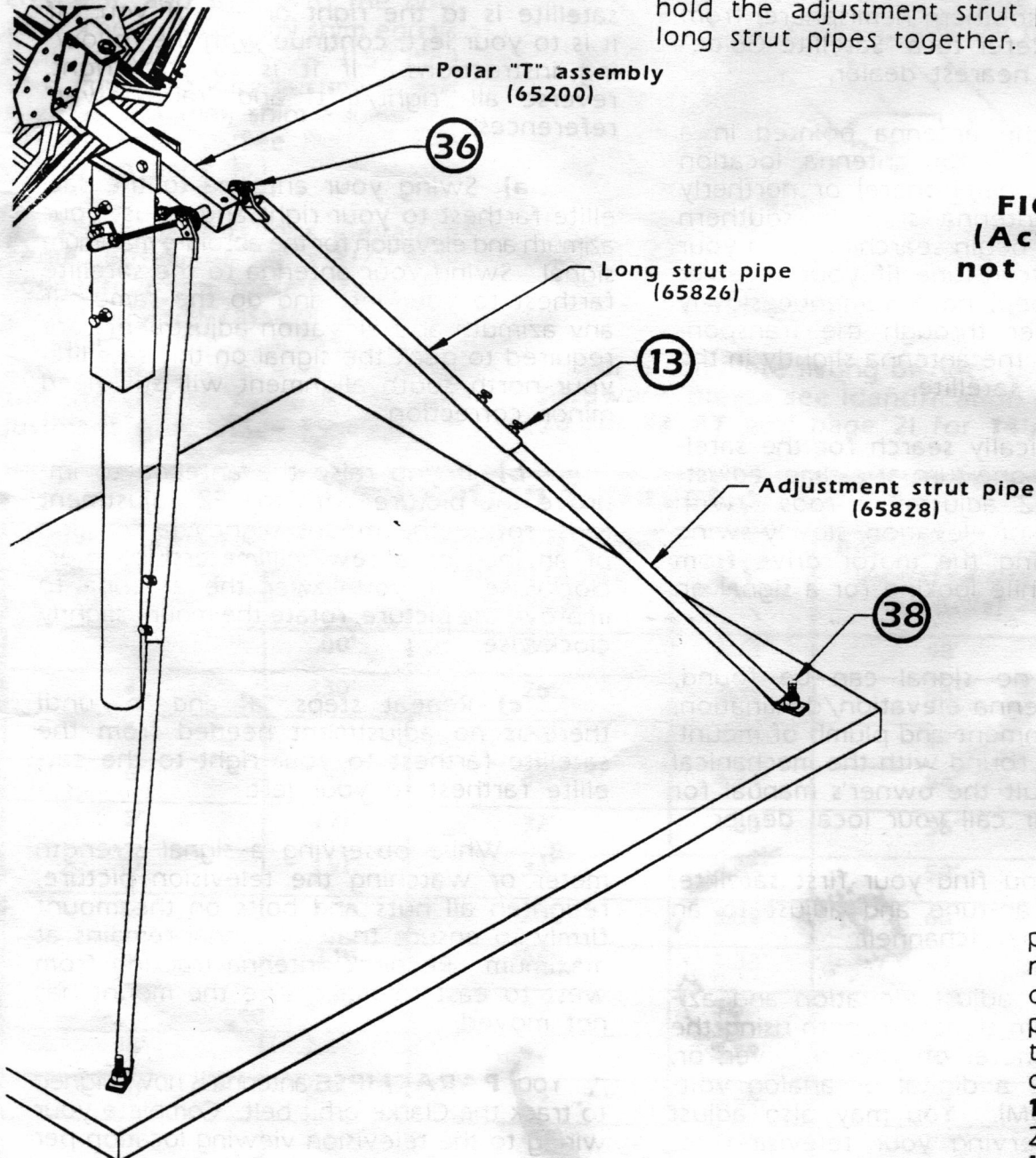
You **PARACLIPSE** antenna is now aligned to track the Clarke orbit belt. Complete your wiring to the television viewing location per instructions provided with your receiver.



The adjustment strut pipes and the long strut pipes are used to help keep the mount stable in high wind areas. When the strut pipes are attached, the north/south alignment is limited. The adjustment strut pipes and the long strut pipes are optional on the 12 PT.

1. Correctly align the adjustment strut pipes and the long strut pipes so binding will not take place. The $\frac{5}{8}$ " nyloc nut on the $\frac{5}{8}$ " x 8 1/2" bolt that connects the polar "T" assembly to the EZ adjustment rods must be thoroughly tightened down. (The $\frac{5}{8}$ " USS flatwashers will begin to cup.) Take caution so as not to pull on the aligned antenna. (See Fig. 23)

2. Tighten the four $\frac{3}{8}$ " x 1" bolts that hold the adjustment strut pipes and the long strut pipes together. (See Fig. 23)



**FIG. 23
(Actuator
not shown)**

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.

Welcome to the world of satellite television and your Paraclipse satellite antenna



This symbol is intended to alert you of the presence of unusually dangerous voltage within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



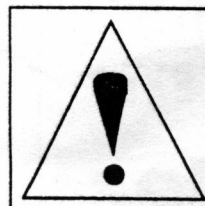
This symbol is intended to alert you of the presence of important operating and maintenance instructions in the literature accompanying the unit.

WE RECOMMEND THE FOLLOWING:

1. Site location: THIS IS EXTREMELY IMPORTANT! We recommend that the site survey be performed by qualified personnel to ensure proper antenna location and to test for microwave interference.

2. Read the instructions thoroughly prior to assembly so that you may become familiar with our method of installation.

3. Please keep this assembly instruction manual for future reference. The information below and inside this manual will help you when ordering replacement parts, and with questions you may have about your antenna.



THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES.

MAINTENANCE AND OPERATION:

The condition of your antenna should be checked at least once a year and after severe weather conditions. Replace or tighten any loose or missing hardware, watch for signs of rust on steel components and provide proper protection. Inspect weather protection for electronics and motor drive and perform any maintenance called for by motor drive manufacturer.

Check site location for any obstructions to movement of antenna and clear branches, etc. as needed.

THE ANTENNA SHOULD BE PLACED IN A STOWED POSITION FOR HEAVY STORMS, SNOW, OR LONG UNATTENDED PERIODS OF TIME. THE STOWED POSITION IS WITH THE ANTENNA POINTED AT EITHER HORIZON.

Please fill out the warranty card provided and return to **Paraclipse**.

Optional Equipment

12 PT	Part Number
Stainless steel hardware	62177
Extreme weather bolt kit	65405
Stabilizer struts	65826 & 65828
Aluminum front hub plate	65375
Galvanization also available	

14 1/2 Islander

Stainless steel hardware	65578
Aluminum front hub plate	65375
Galvanization also available	

Write the serial number of your antenna, the date of purchase, and the name, address, and phone number of your **Paraclipse** dealer. The serial number can be found on ends of packaging boxes, on the antenna mount, and on the packing list packed with the antenna.

Serial #:

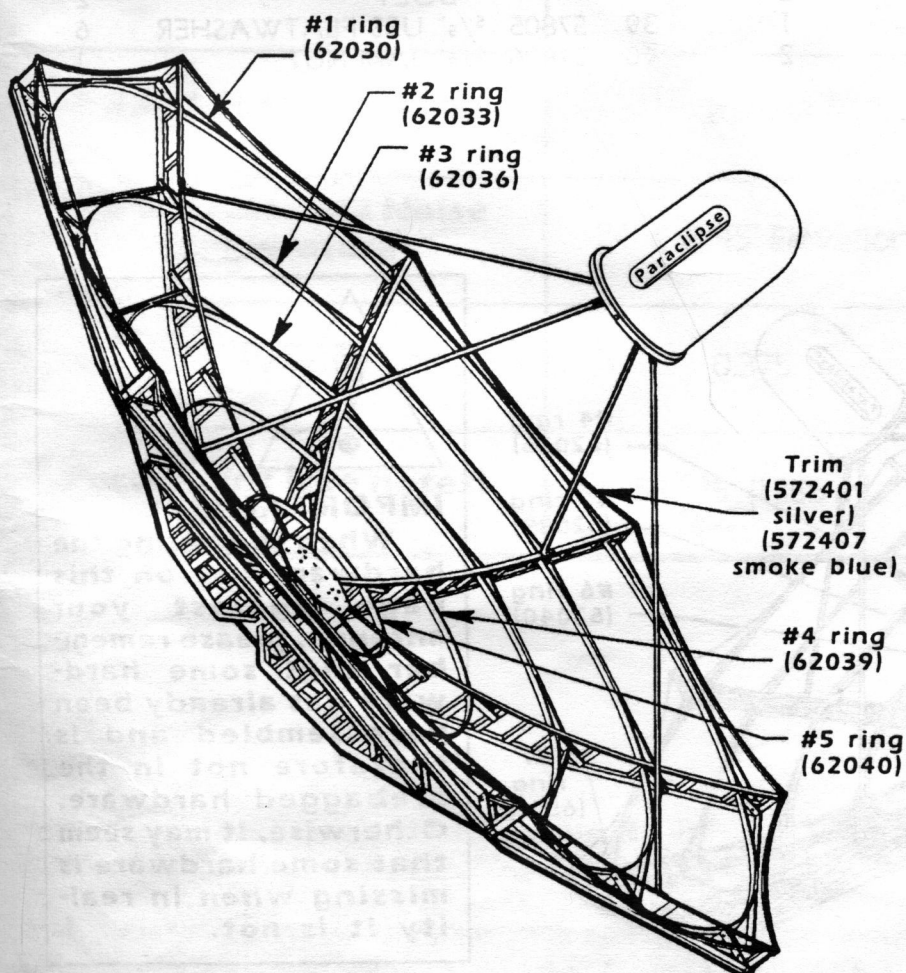
Date purchased:

Dealer:

Telephone:

12 PT HARDWARE TABLE (Includes all hardware, see note below.)

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52019	1/4" USS FLATWASHER	19	21	55118	5/8" NYLOC NUT	2
2	52020	5/16" NYLOC NUT	3	23	55131	5/8" x 1 3/4" BOLT	1
3	52072	5/8" x 1 1/4" BOLT	4	24	55186	1/4" x 2 1/2" BOLT	3
4	52073	5/8" NUT	5	25	55190	1/4" NYLOC NUT	3
5	52089	1/2" NUT	2	26	55214	3/4" LOCK WASHER	1
6	52175	1/4" x 1 3/4" BOLT	80	27	55218	FLANGED BUSHING	2
7	52176	1/4" x 1" BOLT	8	28	55219	CLASSIC PT WASHER	2
8	52177	1/4" NUT	91	29	55222	3/8" x 1 1/2" BOLT	4
9	52179	5/8" x 3 1/2" BOLT	1	30	55255	1/2" NYLOC NUT	2
10	52181	5/16" x 1" BOLT	16	31	55270	1/4" FLATWASHER	22
11	52183	5/16" NUT	32	32	55275	1/2" x 2" BOLT	3
12	52185	5/8" LOCK WASHER	1	34	57530	NYLON THUMB SCREW	3
14	52188	3/8" NUT	4	35	57560	CABLE TIE WRAP	7
15	52189	3/8" LOCK WASHER	4	36	57565	5/8" x 8 1/2" BOLT	1
16	52213	1/2" FLATWASHER	2	37	57567	COVER PUSH NUT	4
17	55061	5/16" x 2" BOLT	19	39	57805	5/8" USS FLATWASHER	6
18	55076	5/8" FLATWASHER	4	40	57806	5/8" JAM NUT	1
20	55110	1/2" x 2 3/4" BOLT	1				

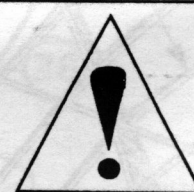
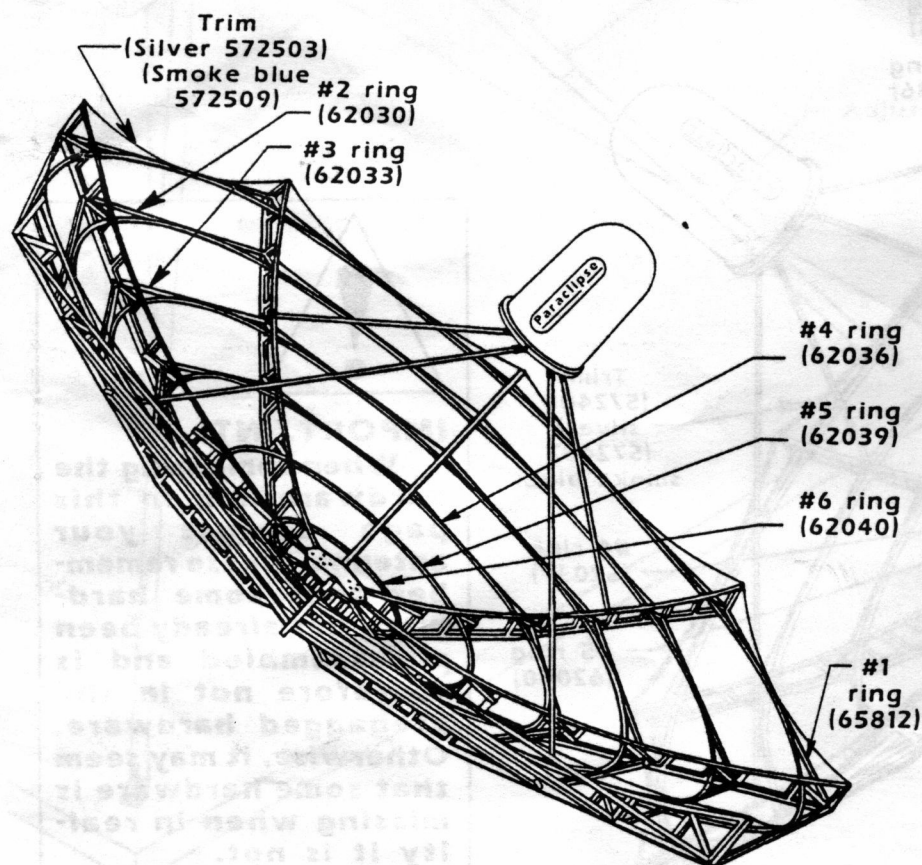
**IMPORTANT!**

When comparing the hardware list on this page against your antenna, please remember that some hardware has already been preassembled and is therefore not in the prebagged hardware. Otherwise, it may seem that some hardware is missing when in reality it is not.

REFLECTOR PARTS ILLUSTRATION AND HARDWARE IDENTIFICATION

14 1/2' Islander HARDWARE TABLE (Includes all hardware, see note below.)

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52019	1/4" USS FLATWASHER	35	22	55125	3/4" NYLOC NUT	2
2	52020	5/16" NYLOC NUT	3	23	55131	5/8" x 1 3/4" BOLT	1
3	52072	5/8" x 1 1/4" BOLT	4	24	55186	1/4" x 2 1/2" BOLT	3
4	52073	5/8" NUT	5	25	55190	1/4" NYLOC NUT	3
5	52089	1/2" NUT	2	26	55214	3/4" LOCK WASHER	1
6	52175	1/4" x 1 3/4" BOLT	96	27	55218	FLANGED BUSHING	2
7	52176	1/4" x 1" BOLT	8	28	55219	CLASSIC PT WASHER	2
8	52177	1/4" NUT	107	29	55222	3/8" x 1 1/2" BOLT	4
9	52179	5/8" x 3 1/2" BOLT	1	30	55255	1/2" NYLOC NUT	2
10	52181	5/16" x 1" BOLT	8	31	55270	1/4" FLATWASHER	22
11	52183	5/16" NUT	40	32	55275	1/2" x 2" BOLT	3
12	52185	5/8" LOCK WASHER	1	33	55325	5/16" x 11 7/8" ALL- THREAD STUD	8
13	52187	3/8" x 1" BOLT	4	34	57530	NYLON THUMB SCREW	3
14	52188	3/8" NUT	4	35	57560	CABLE TIE WRAP	7
15	52189	3/8" LOCK WASHER	4	36	57565	5/8" x 8 1/2" BOLT	1
16	52213	1/2" FLATWASHER	2	37	57567	COVER PUSH NUT	4
17	55061	5/16" x 2" BOLT	11	38	57800	3/4" x 12" ANCHOR BOLT	2
18	55076	5/8" FLATWASHER	4	39	57805	5/8" USS FLATWASHER	6
19	55079	3/4" FLATWASHER	2	40	57806	5/8" JAM NUT	1
20	55110	1/2" x 2 3/4" BOLT	1				
21	55118	5/8" NYLOC NUT	2				



IMPORTANT!

When comparing the hardware list on this page against your antenna, please remember that some hardware has already been preassembled and is therefore not in the prebagged hardware. Otherwise, it may seem that some hardware is missing when in reality it is not.

SPECIFICATION	12 PT	14.5 Islander
C Band Gain	42.3 dB	43.6 dB
Ku Band Gain	50.0 dB	51.5 dB
C Band Efficiency	70%	65%
2° Spacing Approved	Yes	Yes
C Band 3dB Beam Width	1.3°	1.2°
C Band First Side Lobe	-20.4 dB	-20.0 dB
C Band Antenna Noise Temperature	24° K @ 45° Elevation	23° K @ 45° Elevation
F/D	0.375	0.31
Focal Point (see notes)	53.375" (1.356 m) 53 3/8"	53.375" (1.356 m)

NOTES:

- Specifications of the Paraclipse **12 PT** and **14 1/2 Islander** antennas are determined by range testing and engineering computation methods.
- Different feed horn designs call for special mounting and focal requirements. Call for correct applications or follow manufacturer's suggestions.

Manufacturer's Note

A home satellite antenna system is extremely difficult to correctly install without proper training and specialized equipment. It is therefore recommended that installation be done by an authorized dealer.

Before starting installation, check applicable local building codes and restrictions.

The antenna can be assembled other than the assembly sequence described in this manual. It can be assembled on the base pipe, but when the reflector is assembled first, assembly is faster.

TOOLS:

- 1) $\frac{7}{16}$ " open end wrench.
- 2) $\frac{1}{2}$ " open end wrench.
- 3) $\frac{9}{16}$ " open end wrench.
- 4) $\frac{3}{4}$ " open end wrench.
- 5) $\frac{5}{8}$ " open end wrench.
- 6) $1\frac{1}{8}$ " open end wrench.
- 7) Adjustable crescent wrench.
- 8) Compass.
- 9) Lineman's pliers or similar tool for bending clips.
- 10) Tape measure.
- 11) Side-cutting pliers (tin snips).
- 12) Inclinometer (optional).

MATERIALS:

- 1) **12 PT** 3.5" (88.9 mm) o. d. x 3.5' (1.07 m) pipe (3" schedule 40 black pipe).
- 14 $\frac{1}{2}$ Islander** 3.5" (88.9 mm) o. d. x 10' (3.05 m) pipe (3" schedule 40 black pipe).
- 2) **12 PT** Approximately $\frac{2}{3}$ cubic yard ($\frac{1}{2}$ cubic meter) of concrete.
- 14 $\frac{1}{2}$ Islander** Approximately 2 cubic yards ($1\frac{1}{2}$ cubic meter) of concrete.
- 3) **14 $\frac{1}{2}$ Islander** Sixteen 7'6" (2.29 m) and sixteen 5'6" (1.68 m) #4 (10 mm) diameter reinforcing bars.

NOTE: On assembly illustrations where circled numbers rather than part names are noted, please refer to page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander** for part identification.

Paraclipse® CLASSIC

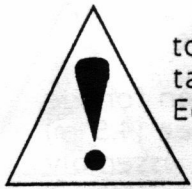
This assembly manual is written for the **12 PT** (3.8 m) and **14 $\frac{1}{2}$ Islander** (4.5 m) series antennas. Any unique assembly differences within this manual will be noted by the following bold headings:

12 PT 14 $\frac{1}{2}$ Islander

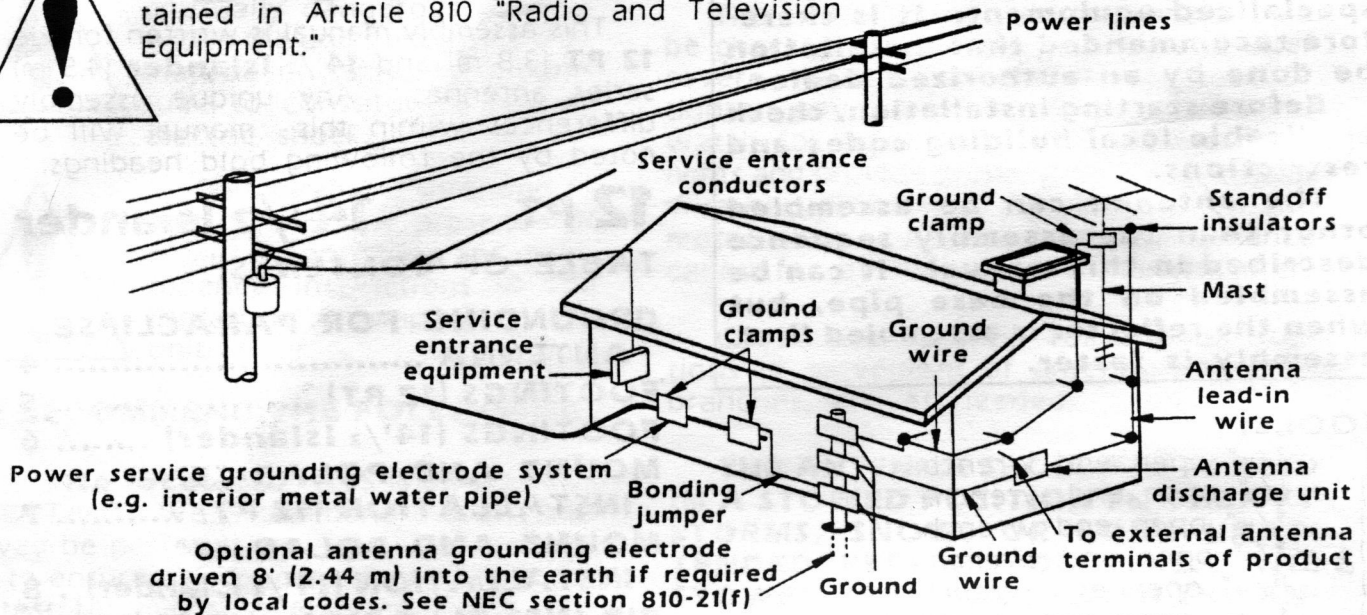
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GROUNDING FOR PARACLIPSE ANTENNA



Example of antenna grounding according to National Electric Code instructions contained in Article 810 "Radio and Television Equipment."



1. Use #10 AWG (2.6 mm) copper, #8 AWG (3.3 mm) aluminum, #17 AWG (1.2 mm) copper-clad steel or bronze wire, or larger, as a ground wire. Use a 0.625" (16 mm) ground rod 8' (2.4 m) minimum into ground.

2. Secure antenna lead-in and ground wires to house with stand off insulators spaced from 4'-6' (1.22-1.83 m) apart.

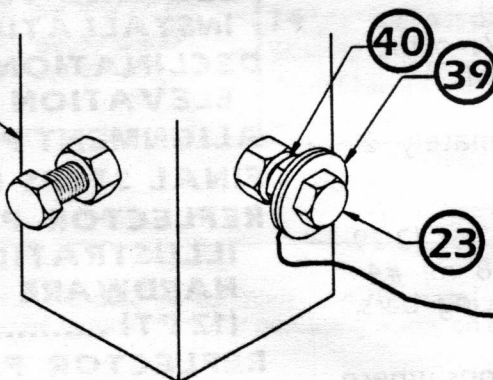
3. Mount antenna discharge unit as close as possible to where lead-in enters house.

4. Use jumper wire not smaller than #6 AWG (4.1 mm) copper, or equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21(i).

TYPICAL GROUNDING CONFIGURATION

NOTE: This is a typical grounding configuration only. It should be noted that multiple grounding locations may be required to thoroughly ground the antenna. It is suggested that a ground wire be installed at the mount and at the back hub plate of the antenna.

Mount assembly
(12 65220)
(14 1/2 64001)

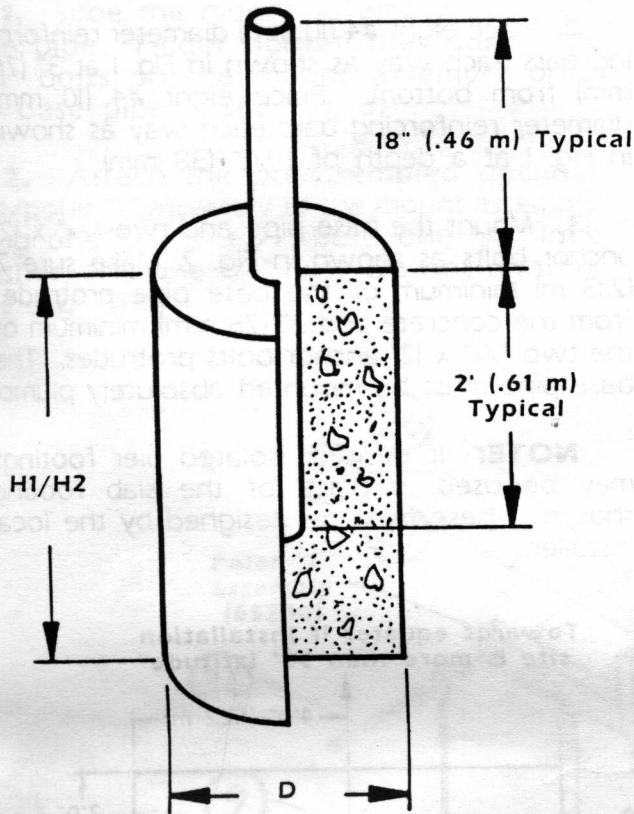


Wire (minimum) 10 ga. (3.4 mm) copper, 8 ga. (4.1 mm) aluminum (not supplied)

Ground clamp (not supplied)

0.625" (16 mm) dia. ground rod 8' (2.4 m) minimum into ground (not supplied)

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



1. The hole for the antenna footing should be dug in accordance with the chart below in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. The base pipe must be mounted absolutely plumb in concrete.

2. For a hole depth over 3' (.91 m) we recommend using reinforcing bar in the concrete.

3. **Above ground requirements (please see drawing)** For most areas, this amount of base pipe above the ground is all that is needed. For special clearance requirements (snow, uneven terrain, etc.) add the needed clearance requirement to the standard to determine above ground requirements.

D	Diameter of hole
H1	Depth of hole, natural soil
H2	Depth of hole, paved soil

SOIL TYPE	Soft	Medium	Hard	Rock
80-85 mph (129 to 137 kph) wind force				
D	17" (.48 m)	17" (.48 m)	12" (.36 m)	10" (.31 m)
H1	4'6" (1.37 m)	3'6" (1.07 m)	3'6" (1.07 m)	2'0" (.61 m)
H2	3'0" (.91 m)	3'0" (.91 m)	2'6" (.76 m)	2'0" (.61 m)
90-95 mph (145 to 153 kph) wind force				
D	17" (.48 m)	17" (.48 m)	12" (.36 m)	10" (.31 m)
H1	5'6" (1.68 m)	5'6" (1.68 m)	4'6" (1.37 m)	2'0" (.61 m)
H2	3'6" (1.07 m)	3'6" (1.07 m)	3'0" (.91 m)	2'0" (.61 m)

SOIL REFERENCE:

Soft clayey silts, sandy clays, or silty clays
 Medium medium dense sand, silty sand, or clayey sand
 Hard sandy gravel or gravel
 Rock fractured or solid sandstone or better

NOTE: The soil type determination shall be made by the antenna installer.

- NOTE:** If desired, isolated pier footings may be used in place of the slab footing shown. These must be designed by the local installer.

1. The footings should be poured as level as possible in accordance with the dimensions shown in Fig. 1 in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. **NOTE:** It is recommended to use eye bolts in the corners of the footings to tie down the antenna during assembly and in areas subject to high winds. Eye bolts may be installed later with expansion sleeves, if necessary.

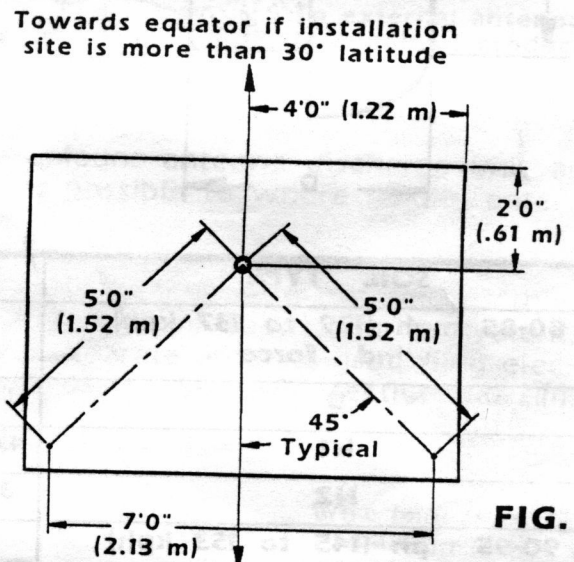
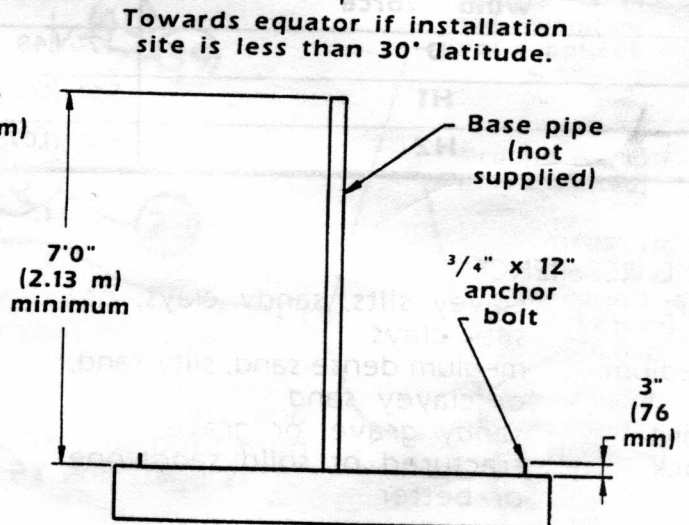


FIG. 2



MOUNT AND POLAR "T" INSTALLATION (12 PT)

1. Slide the mount assembly over the base pipe. Finger tighten the four $\frac{5}{8}$ " x $1\frac{1}{4}$ " bolts on the mount assembly onto the base pipe. (See Fig. 3)

2. Attach the preassembled declination/polar "T" assembly to the mount assembly using one $\frac{5}{8}$ " x $3\frac{1}{2}$ " bolt, one $\frac{5}{8}$ " lock washer, and one $\frac{5}{8}$ " nut. Do not tighten. (See Fig. 3)

3. Assemble the two EZ adjustment rods (one EZ adjustment bracket, two $\frac{5}{8}$ " flatwashers, and two $\frac{5}{8}$ " nuts for each EZ adjustment rod). Attach the assembled EZ adjustment rods to the polar "T" assembly using one $\frac{5}{8}$ " x $8\frac{1}{2}$ " bolt, four $\frac{5}{8}$ " USS flatwashers, and one $\frac{5}{8}$ " nyloc nut. Thread the two $\frac{1}{2}$ " nuts onto the two $\frac{1}{2}$ " x 2" bolts and use these to attach the assembled EZ adjustment rods (through the EZ adjustment brackets) to the mount assembly. Do not tighten. (See Fig. 3)

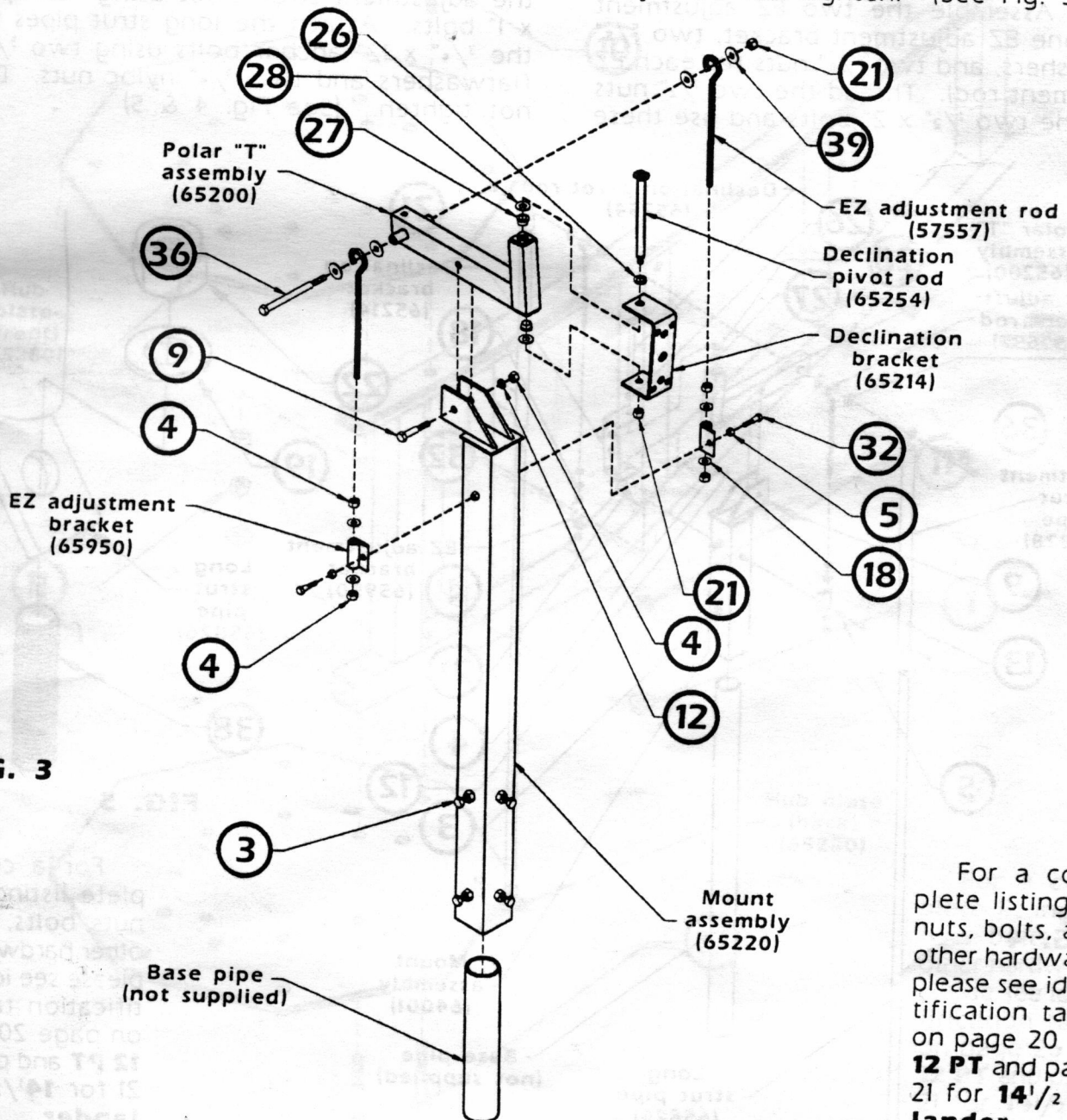


FIG. 3

For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 $\frac{1}{2}$ Islander**.

MOUNT AND POLAR "T" INSTALLATION (14 1/2 Islander)

1. Slide the mount assembly over the base pipe. Finger tighten the four 5/8" x 1 1/4" bolts on the mount assembly onto the base pipe. (See Fig. 4)

2. Attach the preassembled declination/polar "T" assembly to the mount assembly using one 5/8" x 3 1/2" bolt, one 5/8" lock washer, and one 5/8" nut. Do not tighten. (See Fig. 4)

3. Assemble the two EZ adjustment rods (one EZ adjustment bracket, two 5/8" flatwashers, and two 5/8" nuts for each EZ adjustment rod). Thread the two 1/2" x 2" bolts and use these

to attach the assembled EZ adjustment rods (through the EZ adjustment brackets) to the mount assembly. Do not tighten. Attach the assembled EZ adjustment rods to the polar "T" assembly and the two adjustment strut pipes using one 5/8" x 8 1/2" bolt, four 5/8" USS flatwashers, and one 5/8" nyloc nut. Do not tighten. (See Fig. 4)

4. Attach the two long strut pipes to the adjustment strut pipes using four 3/8" x 1" bolts. Attach the long strut pipes to the 3/4" x 12" anchor bolts using two 3/4" flatwashers and two 3/4" nyloc nuts. Do not tighten. (See Fig. 4 & 5)

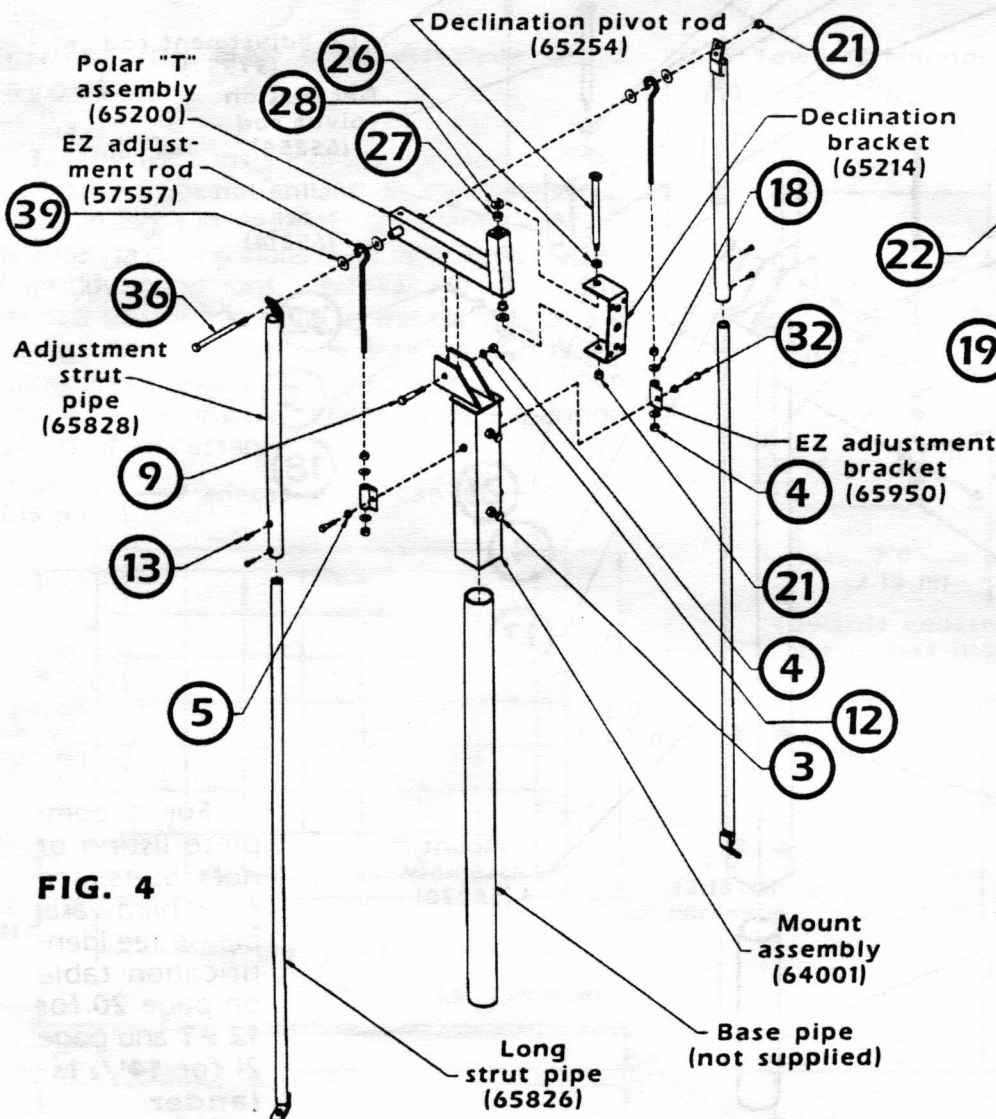


FIG. 4

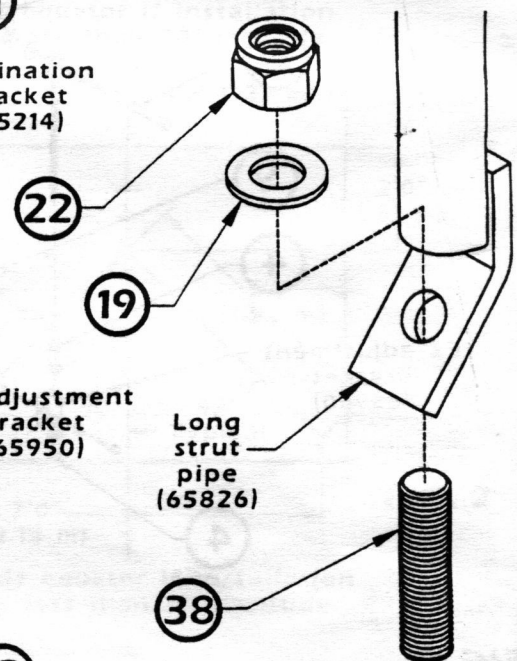
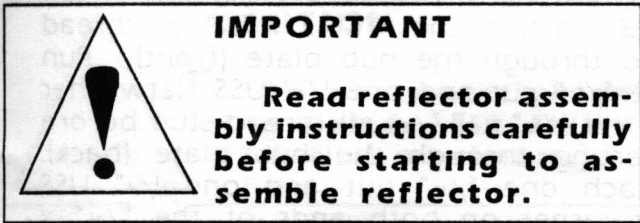


FIG. 5

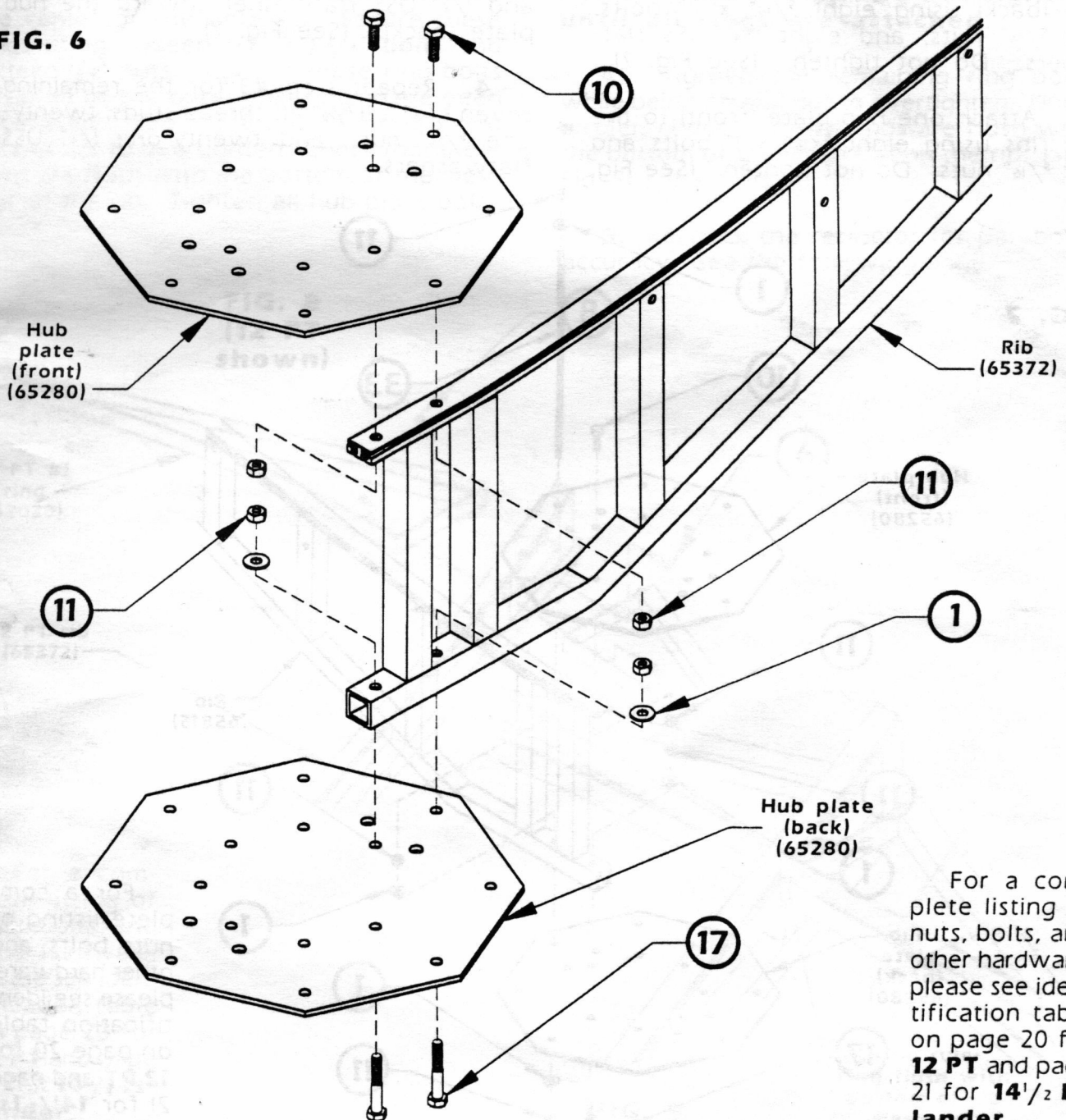
For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



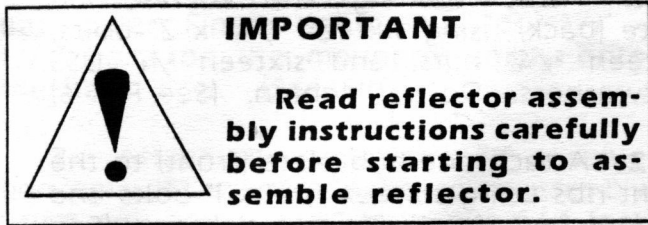
1. Attach the eight ribs to one hub plate (back) using sixteen $\frac{5}{16}$ " x 2" bolts, sixteen $\frac{5}{16}$ " nuts, and sixteen $\frac{1}{4}$ " USS flatwashers. Do not tighten. (See Fig. 6)

2. Attach one hub plate (front) to the eight ribs using sixteen $\frac{5}{16}$ " x 1" bolts and sixteen $\frac{5}{16}$ " nuts. Do not tighten. (See Fig. 6)

FIG. 6



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2 Islander**.



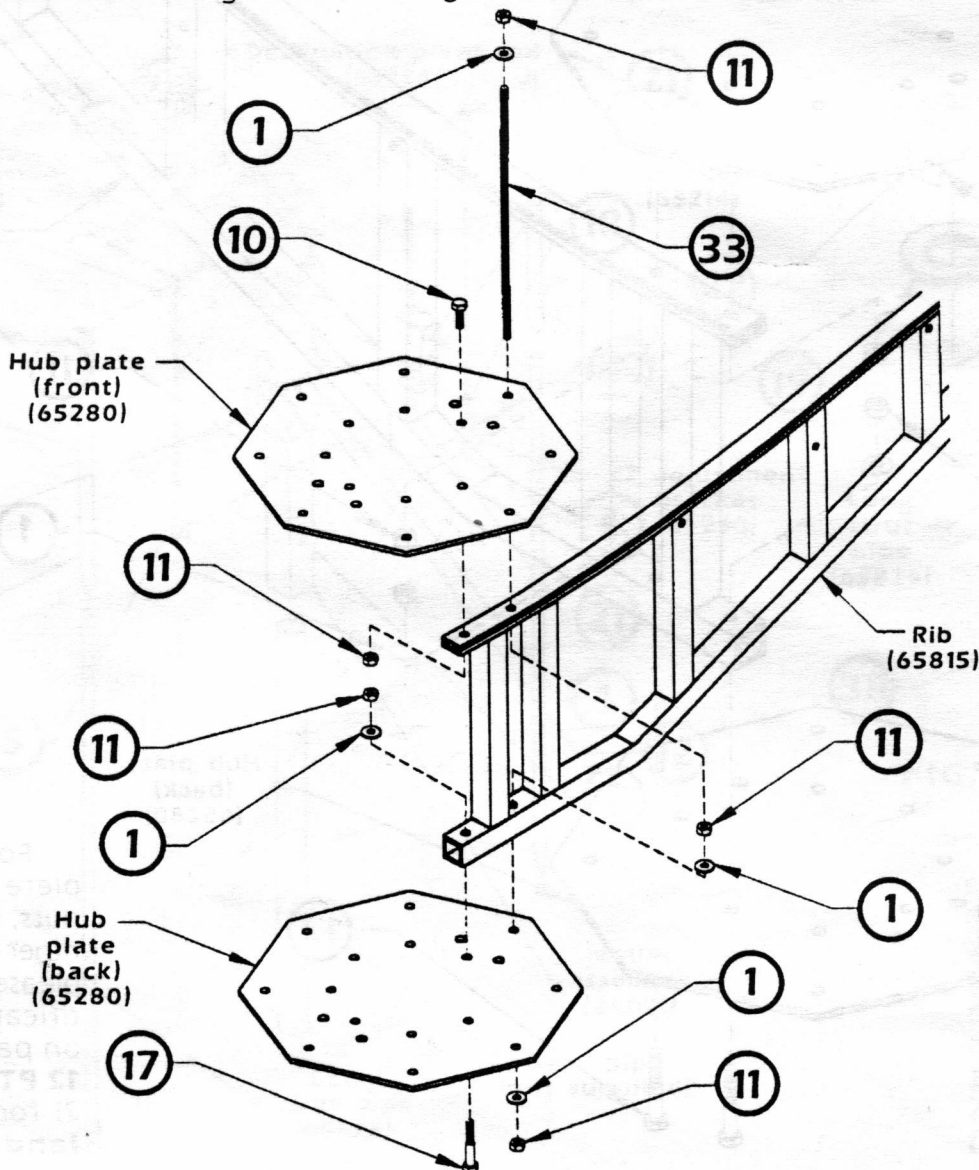
1. Attach the eight ribs to one hub plate (back) using eight $\frac{5}{16}$ " x 2" bolts, eight $\frac{5}{16}$ " nuts, and eight $\frac{1}{4}$ " USS flatwashers. Do not tighten. (See Fig. 7)

2. Attach one hub plate (front) to the eight ribs using eight $\frac{5}{16}$ " x 1" bolts and eight $\frac{5}{16}$ " nuts. Do not tighten. (See Fig. 7)

3. Insert one $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud through the hub plate (front). Run one $\frac{5}{16}$ " nut and one $\frac{1}{4}$ " USS flatwasher up the $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud before inserting through the hub plate (back). Attach one $\frac{5}{16}$ " nut and one $\frac{1}{4}$ " USS flatwasher on both ends of the $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread stud and finger tighten. Then finger tighten the remaining $\frac{5}{16}$ " nut and $\frac{1}{4}$ " USS flatwasher toward the hub plate (back). (See Fig. 7)

4. Repeat step #3 for the remaining seven $\frac{5}{16}$ " x $11\frac{7}{8}$ " all-thread studs, twenty-one $\frac{5}{16}$ " nuts, and twenty-one $\frac{1}{4}$ " USS flatwashers.

FIG. 7



For a complete listing of nuts, bolts, and other hardware, please see identification table on page 20 for **12 PT** and page 21 for **14 1/2' Islander**.

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