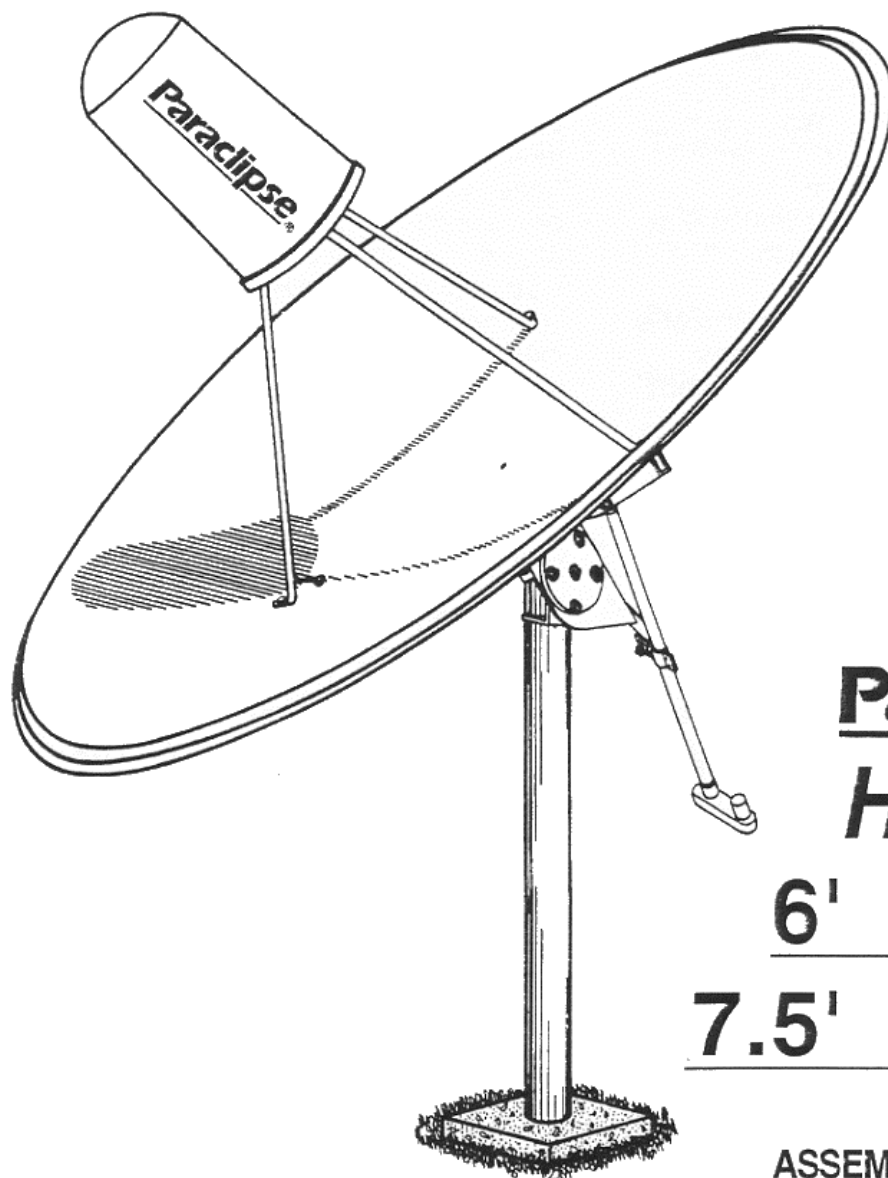


Paraclipse[®]

HIGH PERFORMANCE ANTENNAS

Your Complete Reflector Source



Paraclipse[®]

HYDRO

6' POLAR

7.5' POLAR

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 more 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 obstruction to movement of antenna and clear branches, etc. as needed.

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 warranty card provided and return to **Paraclipse**.

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 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.

TOOLS:

- 1) $7/16$ " open end wrench
- 2) $9/16$ " open end wrench
- 3) $3/4$ " open end wrench
- 4) $15/16$ " open end wrench
- 5) Adjustable crescent wrench
- 6) Compass
- 7) Inclinator (optional)

MATERIALS:

- 1) 3.5" o.d. x 7' pipe (3" schedule 40 black pipe)
- 2) Approximately $2/3$ cubic yard of concrete

Paraclipse[®]

HYDRO

6' POLAR

7.5' POLAR

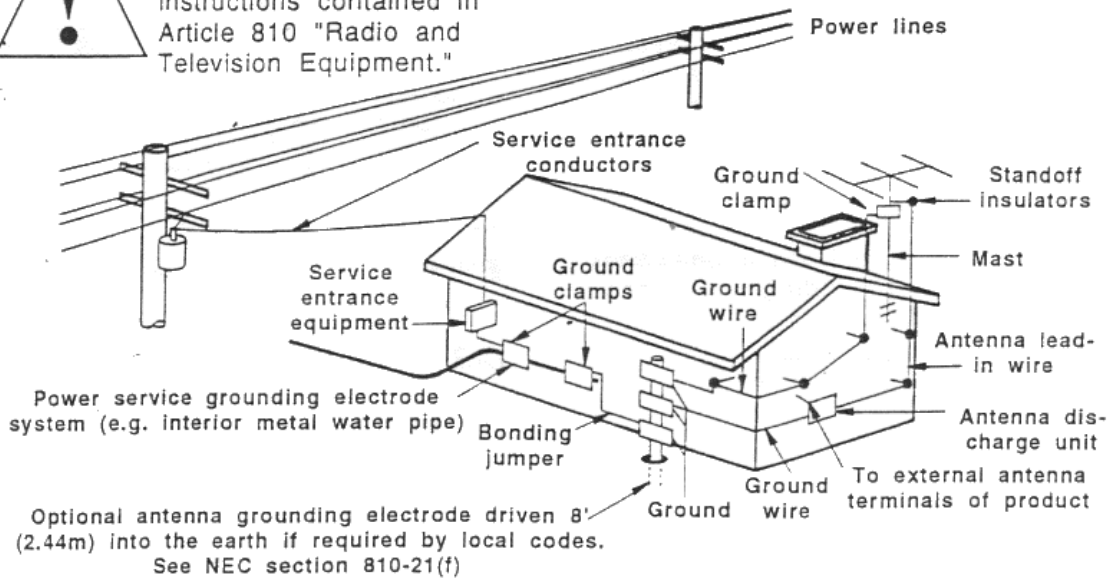
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GROUNDING FOR PARACLIPSE ANTENNA



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



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

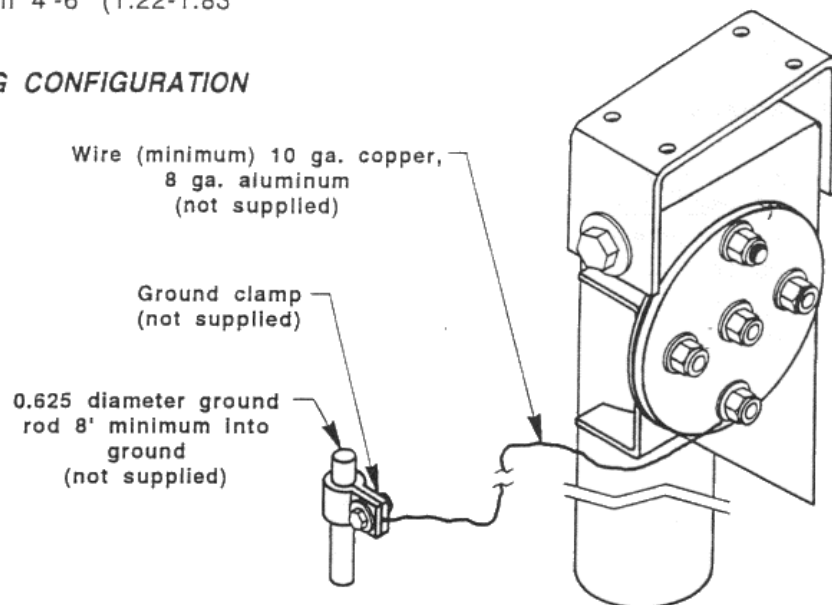
2. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4'-6' (1.22-1.83 m) apart.

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

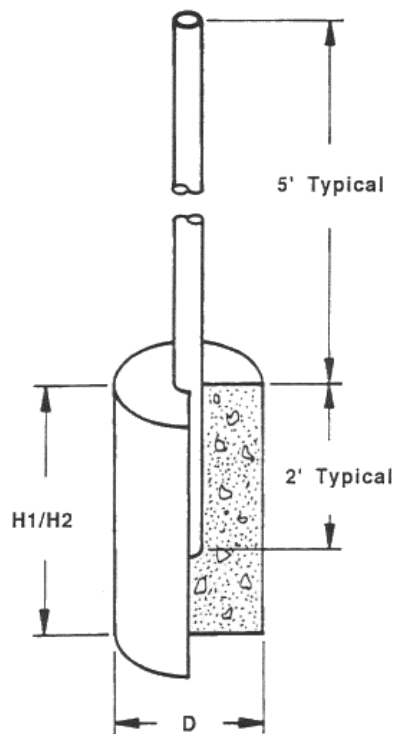
4. Use jumper wire not smaller than #6 AWG (4.1mm) copper, or equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21(i).

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 8-hole tri-hub plate of the antenna.



FOOTINGS



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

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' we recommend using reinforcing bar in the concrete.

3. Above ground requirements (please see drawing) For most areas, 5' 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 5' to determine above ground requirements.

SOIL TYPE	Soft	Medium	Hard	Rock
80-85 mph wind force				
D	1' 7"	1' 7"	1' 2"	1' 0"
H1	4' 6"	3' 6"	3' 6"	2' 0"
H2	3' 0"	3' 0"	2' 6"	2' 0"
90-95 mph wind force				
D	1' 7"	1' 7"	1' 2"	1' 0"
H1	5' 6"	5' 6"	4' 6"	2' 0"
H2	3' 6"	3' 6"	3' 0"	2' 0"

SOIL REFERENCE:

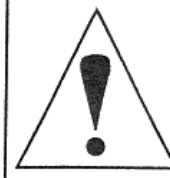
Soft : clayey silts, sandy clays, or silty clays
Medium : medium dense sand, silty sand, or clayey sand
Hard : sandy gravel or gravel
Rock : fractured or solid sandstone or better

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

MOUNT ASSEMBLY

1. Insert $\frac{1}{2}$ " U-bolt into the two open holes of the pipe bracket assembly and attach with two $\frac{1}{2}$ " flat washers and two $\frac{1}{2}$ " nyloc nuts. Do not tighten. (See Fig. 1)

2. Slide mount onto base pipe. Tighten. **NOTE:** Be sure that bolt head is resting on base pipe. (See Fig. 2)



For North American locations only

The 8-hole tri-hub plate is pre-assembled for sites west of 105° W longitude. For sites east of 105° W longitude, take the 8-hole tri-hub plate off the pre-assembled mount, rotate 180° , and reattach. (See Fig. 2)

FIG. 1

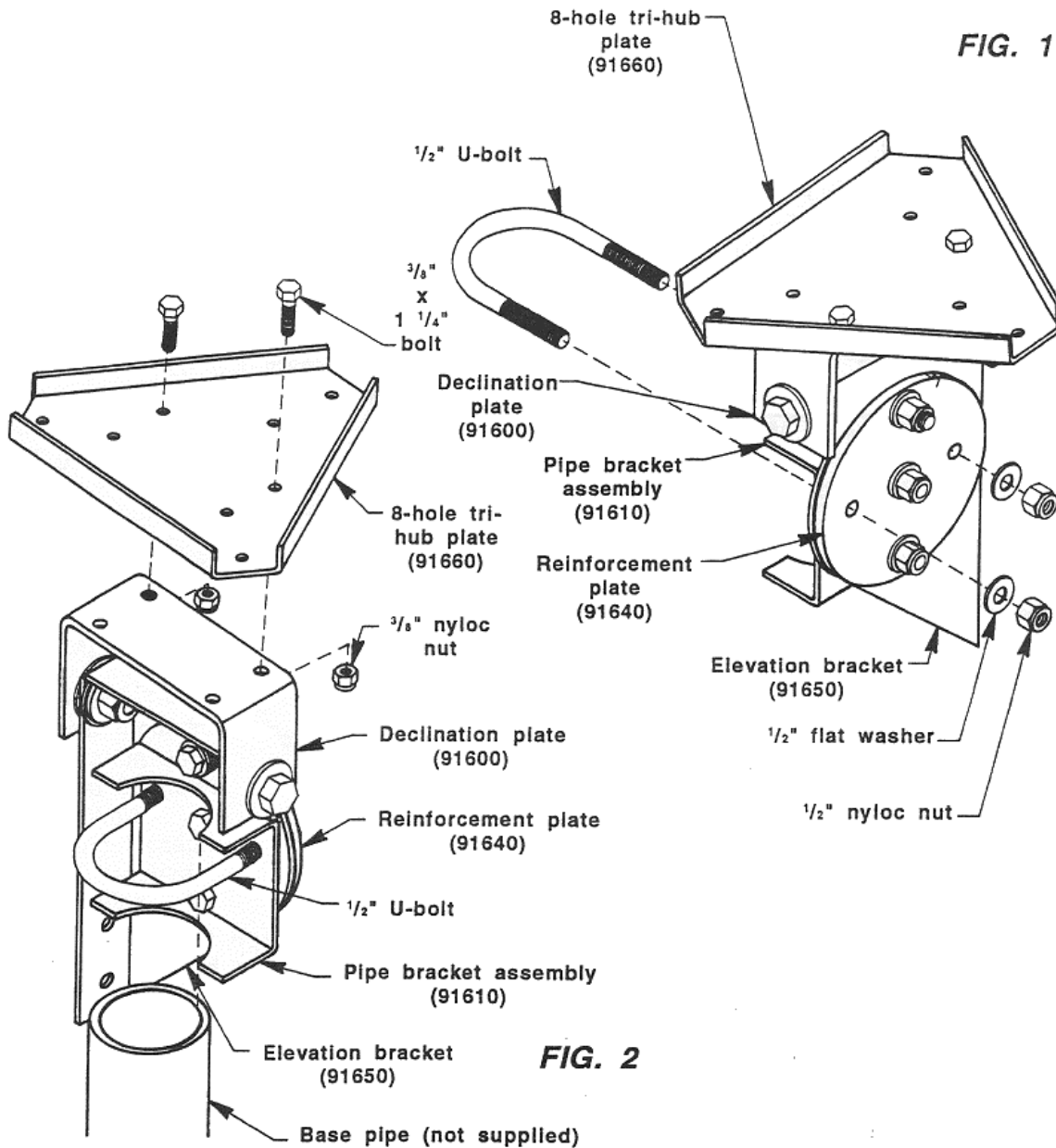


FIG. 2

SUPPORT ARM AND ACTUATOR EXTENSION BAR ASSEMBLY

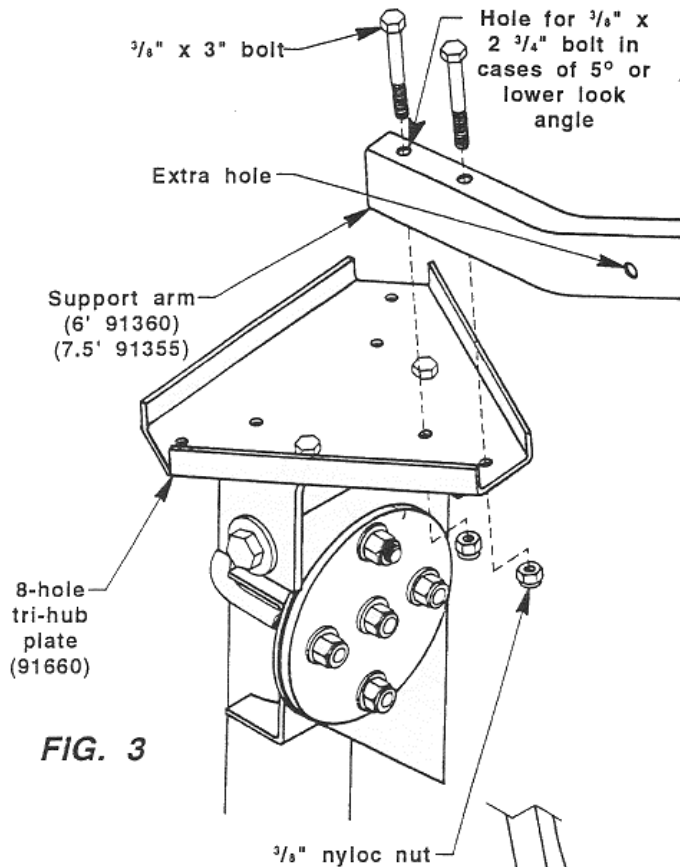


FIG. 3

1. Attach three support arms to the 8-hole tri-hub plate using six $\frac{3}{8}$ " x 3" bolts and six $\frac{3}{8}$ " nyloc nuts. Do not tighten. (See Fig. 3)

NOTES:

a.) Support arm with the extra hole should be the horizontal arm. (See Fig. 3)

b.) In cases of 5° look angles or lower, attach support arm with the extra hole using $\frac{3}{8}$ " x 2 $\frac{3}{4}$ " bolt instead of $\frac{3}{8}$ " x 3" bolt. (See Fig. 3)

2. Attach actuator extension bar to the elevation bracket using two $\frac{1}{2}$ " x 1" bolts and two $\frac{1}{2}$ " nyloc nuts (through the two holes on the end of the actuator extension bar with the angular cut. (See Fig. 4)

NOTE: The actuator extension bar should extend to the same side as the support arm with the extra hole. (See Fig. 4)

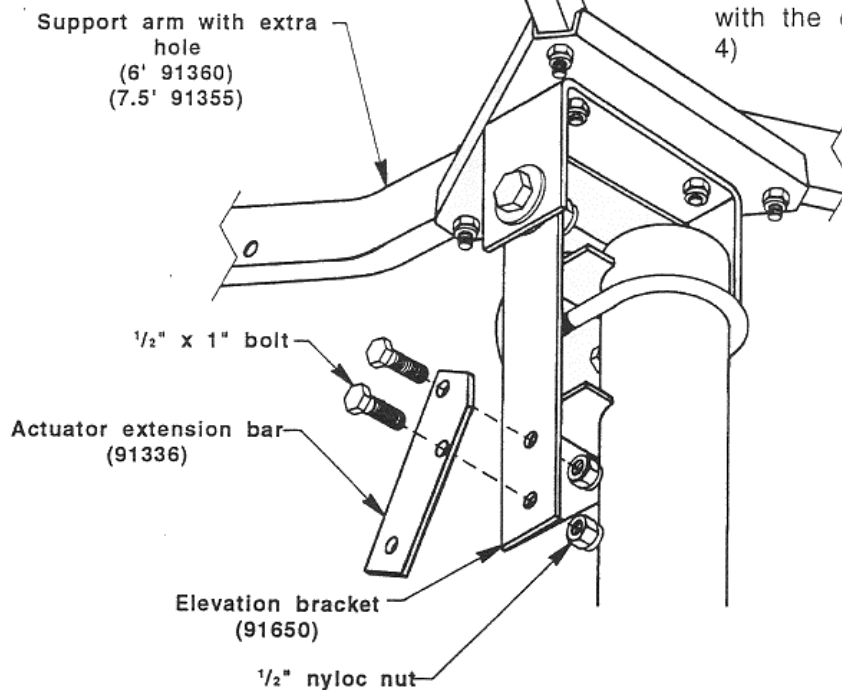


FIG. 4

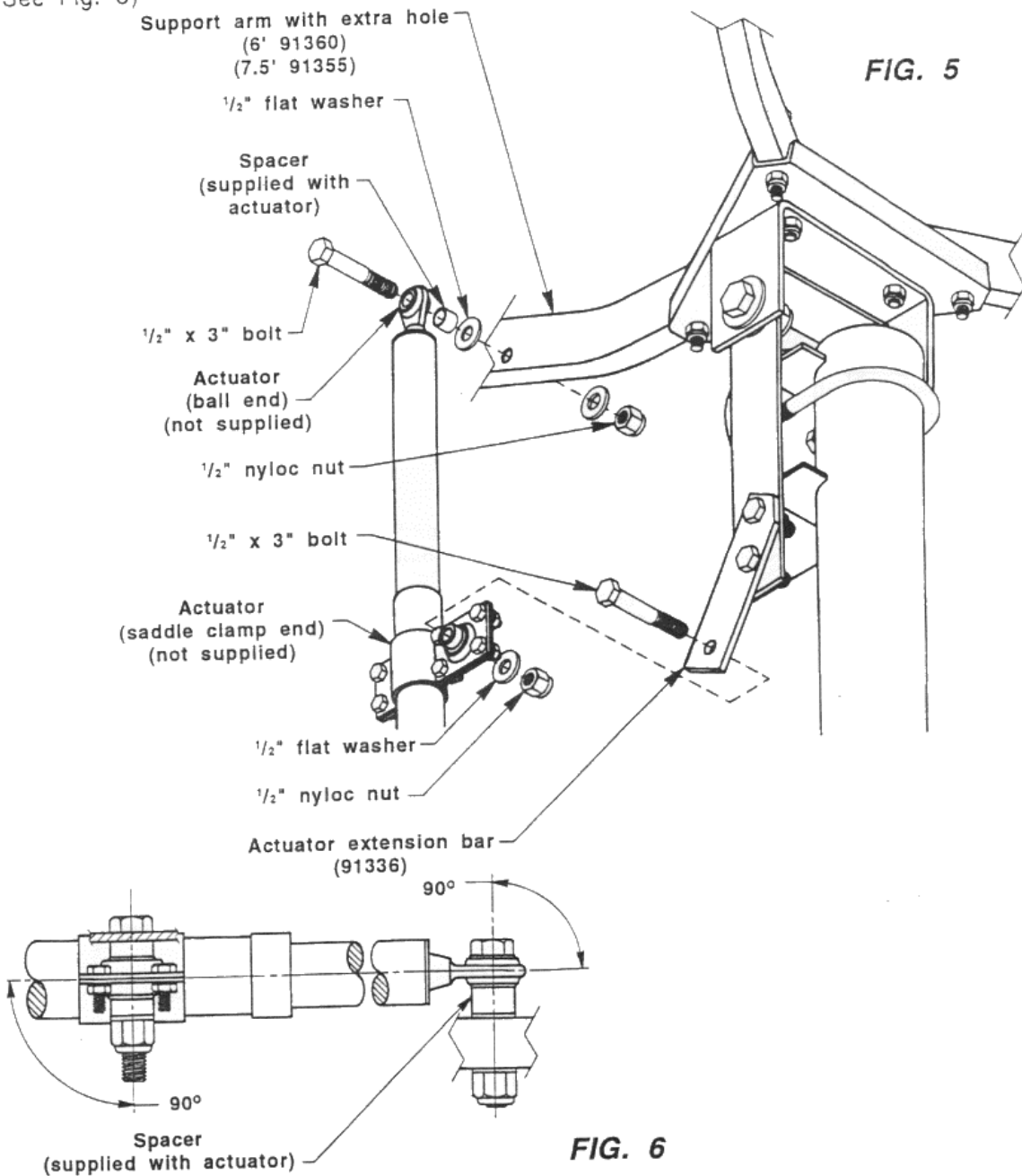
ACTUATOR ASSEMBLY



Care must be taken when installing actuator so that correct alignment is achieved. (See Fig. 6)

1. Attach actuator (saddle clamp end) to the actuator extension bar using one $\frac{1}{2}$ " x 3" bolt, one $\frac{1}{2}$ " flat washer, and one $\frac{1}{2}$ " nyloc nut. (See Fig. 5)

2. Attach actuator (ball end) to support arm with extra hole using one $\frac{1}{2}$ " x 3" bolt, one spacer (supplied with actuator), two $\frac{1}{2}$ " flat washers, and one $\frac{1}{2}$ " nyloc nut. **NOTE: Spacer must be used!** (See Fig. 5)



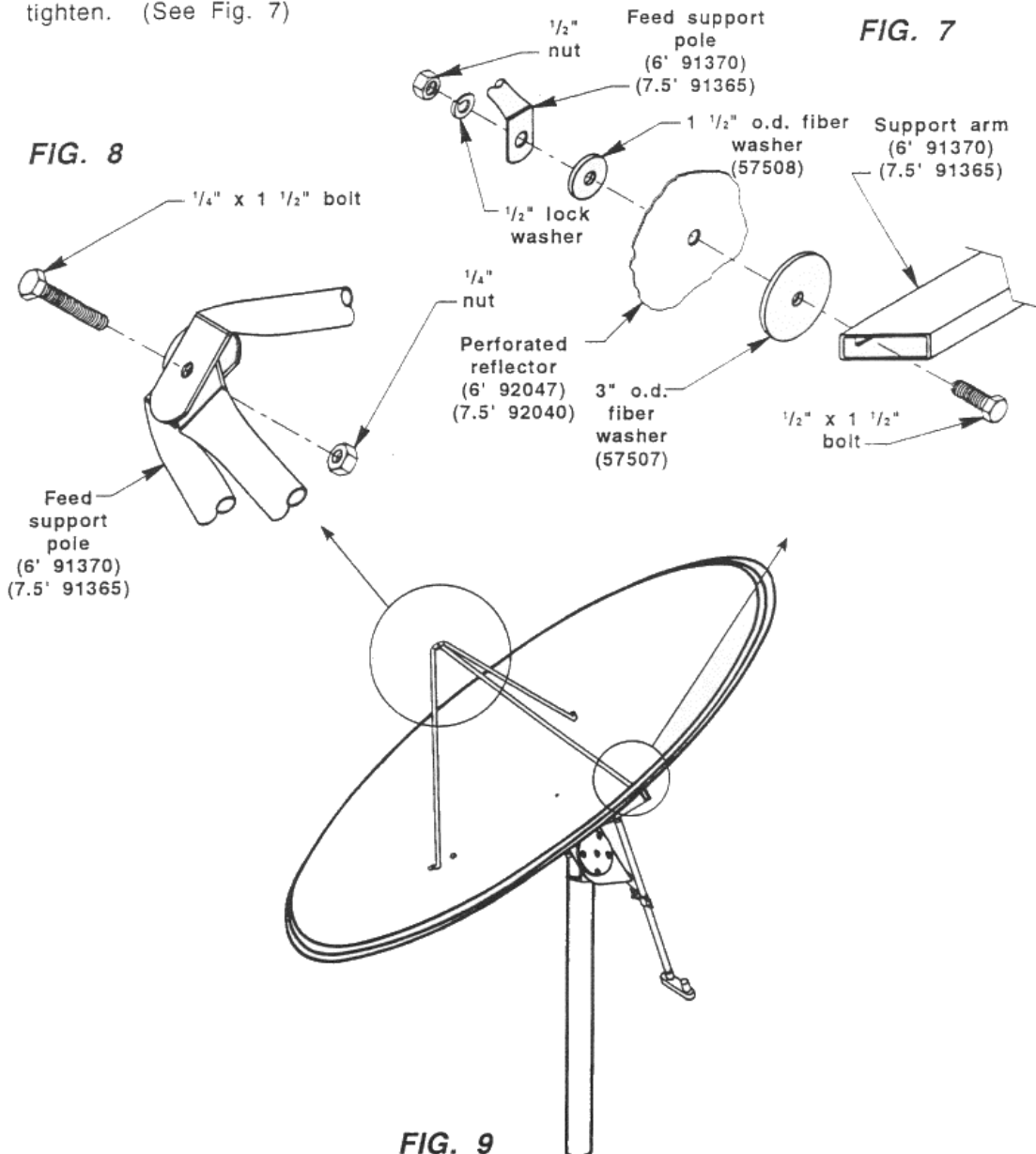
REFLECTOR AND FEED SUPPORT POLE ASSEMBLY

1. Adjust the mount elevation so the 8-hole tri-hub plate is in a semi-vertical position. (See Fig. 9)

2. Attach the perforated reflector and feed support poles to the support arms using three $\frac{1}{2}$ " x $1\frac{1}{2}$ " bolts, three 3" o.d. fiber washers, three $1\frac{1}{2}$ " o.d. fiber washers, three $\frac{1}{2}$ " lock washers, and three $\frac{1}{2}$ " nuts. Do not tighten. (See Fig. 7)

3. Using one $\frac{1}{4}$ " x $1\frac{1}{2}$ " bolt and one $\frac{1}{4}$ " nut, connect all three feed support poles as shown. This will correctly position the feed support poles for feed centering. (See Fig. 8)

4. Tighten hardware at support arms. (See Fig. 7)



FEED ATTACHMENT AND FEED COVER


1. Attach LNB(s) to the feed as per manufacturer's instructions and preset to Hydro specifications :

$$6' \text{ } F/D=0.335 \quad 7.5' \text{ } F/D=0.312$$

2. The LNB wires should be secured to a feed support pole and run through the hole with the grommet of the perforated reflector.

3. Remove the $\frac{1}{4}$ " x $1 \frac{1}{2}$ " bolt and $\frac{1}{4}$ " nut that attached the three feed support poles together during installation.

4. Attach the feed and the Hydro feed cover donut to the feed support poles using three $\frac{1}{4}$ " x $1 \frac{1}{2}$ " bolts, six $\frac{1}{4}$ " flat washers, and six $\frac{1}{4}$ " nuts. (See Fig. 10)



FEED ORIENTATION

Be certain that the feed is oriented on the feed support poles according to the feed manufacturer's instructions. Additionally, be certain that the feed is centered in relation to the perforated reflector. The center hole in the perforated reflector can be used as a reference point.

5. Adjust feed to the correct focal length:

$$6' - 23 \frac{1}{8}"$$

$$7.5' - 28 \frac{1}{8}"$$

6. Attach top of Hydro feed cover to the donut using the special cover push nuts provided.

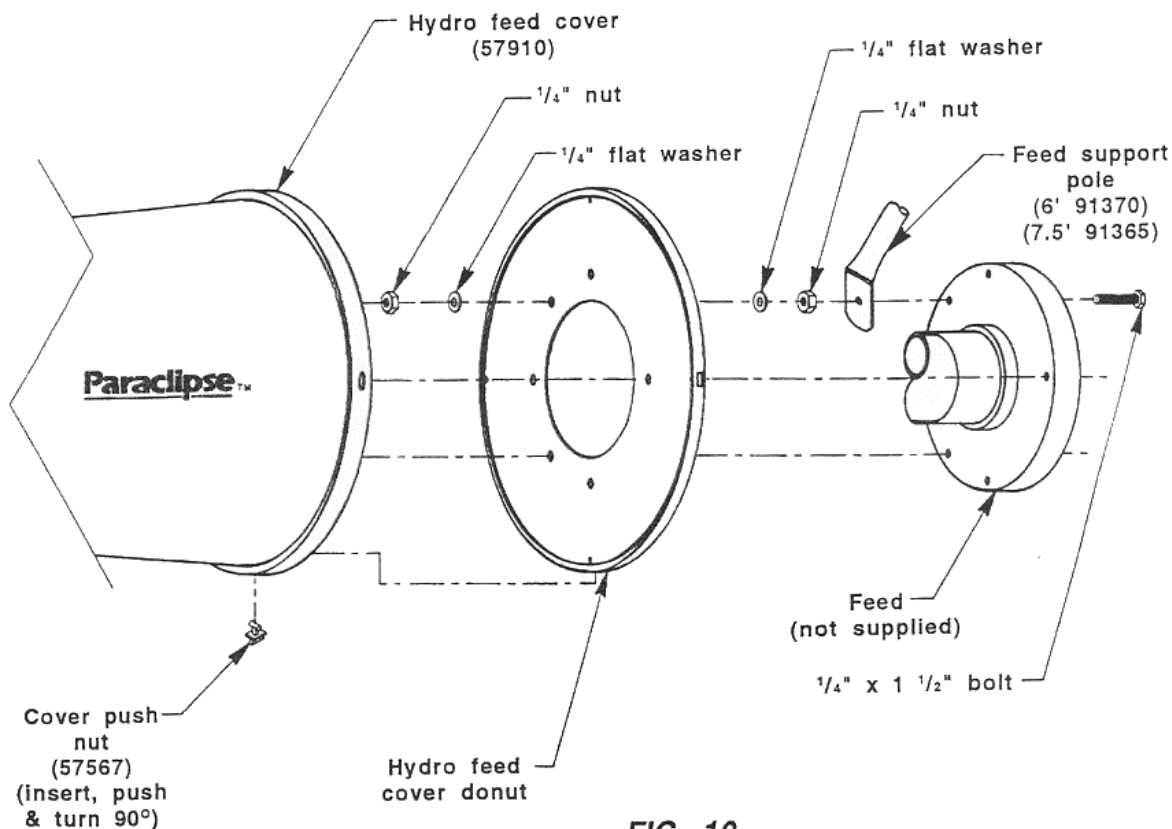


FIG. 10

ELEVATION AND DECLINATION ADJUSTMENT

1. Declination is the offset of an antenna to the polar axis. It can be measured as the angle between points "A" and "B" in Fig. 12 on the following page. To adjust, install plastic shim(s) on the 8-hole tri-hub plate as required to achieve the correct declination angle.

2. The antenna is preset with approximately 5° declination. For less than 5° declination, install plastic shim(s) on the bottom of the 8-hole tri-hub plate. (See Fig. 11) For more than 5° declination, install plastic shim(s) on the top of the 8-hole tri-hub plate. The $.075" \times 3"$ plastic

shim equals 1° of adjustment, and the $.025" \times 3"$ plastic shim equals $\frac{1}{3}^\circ$ of adjustment. **NOTE:** For extreme declinations, see instructions on following page.

3. Using an inclinometer and the guidelines in the chart and Fig. 13 on the page 13, adjust the declination angle and polar axis angle (elevation) for your installation location. Elevation can be adjusted by slightly loosening the five $\frac{1}{2}"$ nuts on the reinforcement plate and turning the antenna using the sticker provided on the reinforcement plate as a reference. Tighten all associated hardware. (See Fig. 11)

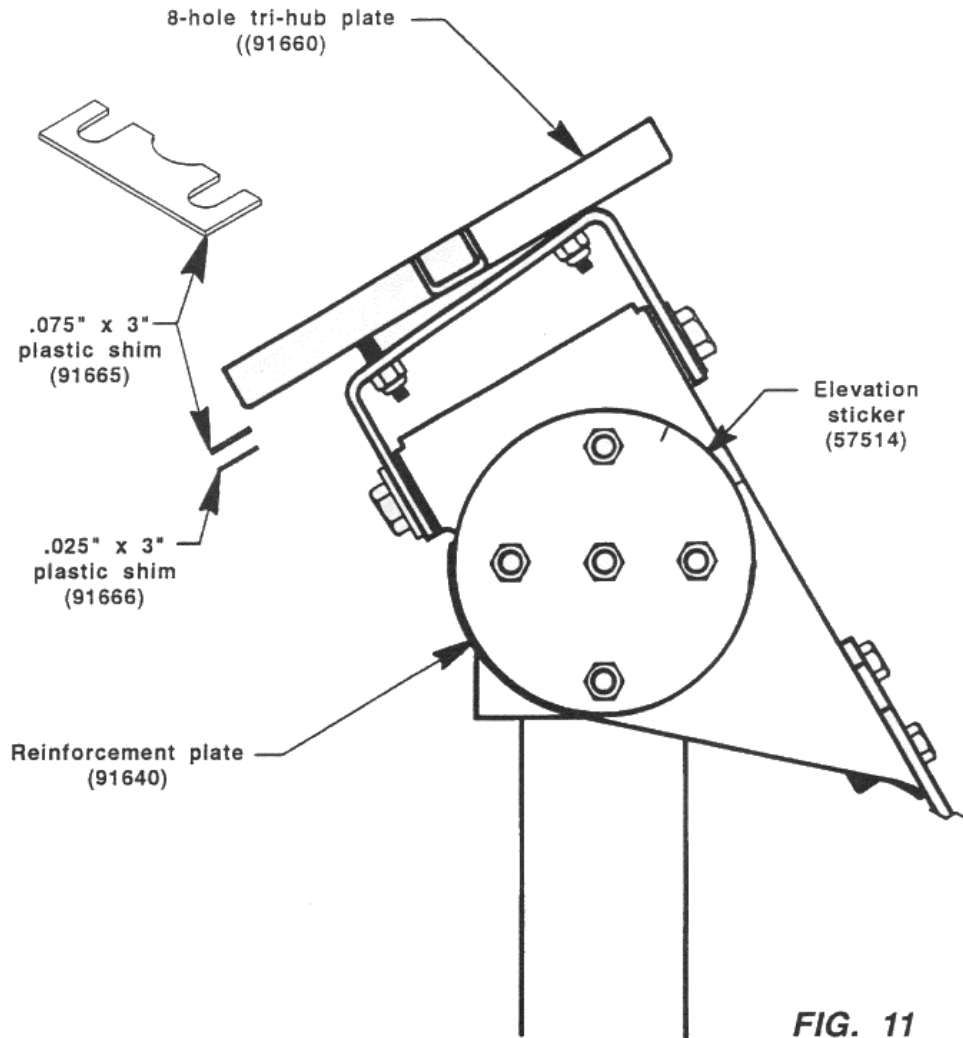


FIG. 11

ELEVATION AND DECLINATION ADJUSTMENT

1. For declinations where bolt "A" is not long enough, replace bolt "A" ($\frac{3}{8}$ " x 3" bolt) with $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " bolt. (See Fig. 12)

2. For declinations where bolt "B" is not long enough, replace bolt "B" ($\frac{3}{8}$ " x 3" bolt) with $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " bolt. (See Fig. 12)

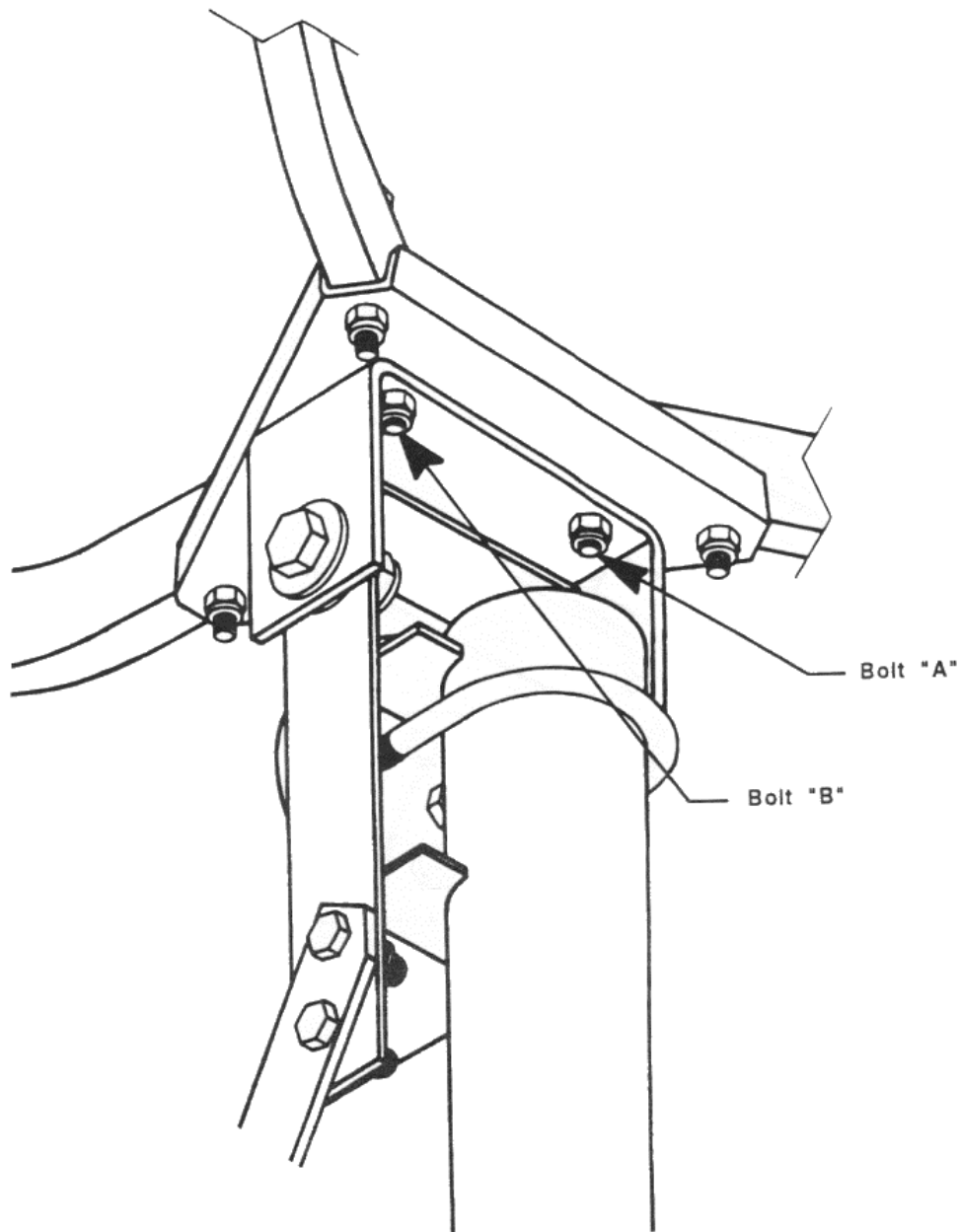


FIG. 12

ELEVATION AND DECLINATION ADJUSTMENT

<i>Declination & Elevation Chart</i>			
Polar Axis Angle (Equal to Installation Site Latitude)	Declination (In Degrees)	Polar Axis Angle (Equal to Installation Site Latitude)	Declination (In Degrees)
A	B	A	B
0	.00	32	4.60
2	.30	34	4.85
4	.61	36	5.09
6	.91	38	5.33
8	1.21	40	5.56
10	1.51	42	5.79
12	1.81	44	6.00
14	2.11	46	6.21
16	2.40	48	6.41
18	2.69	50	6.61
20	2.98	52	6.79
22	3.26	54	6.97
24	3.54	56	7.14
26	3.81	58	7.3
28	4.08	60	7.45
30	4.34	62	7.59

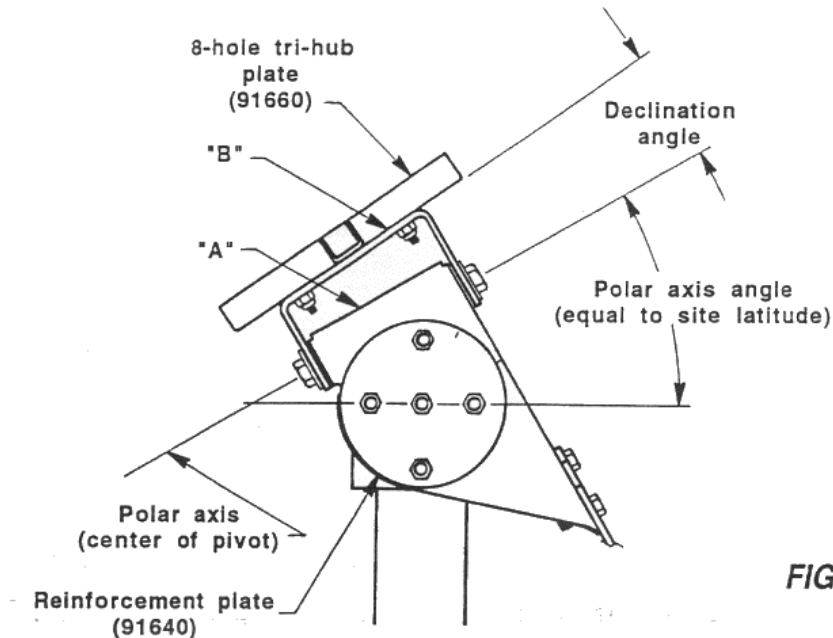


FIG. 13

ALIGNMENT PROCEDURE

1. Set antenna elevation. The elevation will vary with the latitude of your location. Use the Declination and Elevation Chart as a guideline.

2. It is necessary to search for the most southerly satellite 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 location 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 minor adjustments of the elevation. 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 cannot receive all the satellites (and your signal path is not blocked), the mount is not aligned to true north/south. **NOTE:** When you have achieved your desired elevation adjustment, tighten the three vertical bolts on the reinforcement plate to prevent elevation adjustment from slipping.

7. **North/South alignment:** **NOTE:** If installation is located east of 105° W longitude, reverse all "west/east" and "raise/lower" references.

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

b.) If you raise the antenna to improve the picture, rotate the mount slightly (a fraction of an inch) counterclockwise. 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 most westerly to the most easterly satellite.

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.

Your **PARACLIPSE** antenna is now aligned to track the Clarke orbit belt. Therefore, complete your wiring to the television viewing location per instructions provided with your receiver.

SPECIFICATIONS

	6' POLAR	7.5' POLAR
C Band gain mid-band	35.9 dBi	37.8 dBi
KU Band gain mid-band	44.9 dBi	47.0 dBi
C Band efficiency mid-band	63%	67%
2 degrees Spacing approved (C & KU)	Yes (with opposite polarization of satellites)	Yes
C Band 3dB beam width	2.9 degrees	2.2 degrees
C Band first side lobe	-21.0 dB	-24.5 dB
C Band antenna noise temperature	58 degrees K @ 30 degrees elevation	48 degrees K @ 30 degrees elevation
F/D	0.335	0.312
Focal Point (see notes)	23-1/8	28-1/8
Wind survival (please see warranty policy)	100 mph in stowed position	100 mph in stowed position

NOTES:

Different feed horn designs call for special mounting, focal requirements, and extra accessories. Call for correct application or follow manufacturer's suggestions.

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HIGH PERFORMANCE ANTENNAS

Your Complete Reflector Source

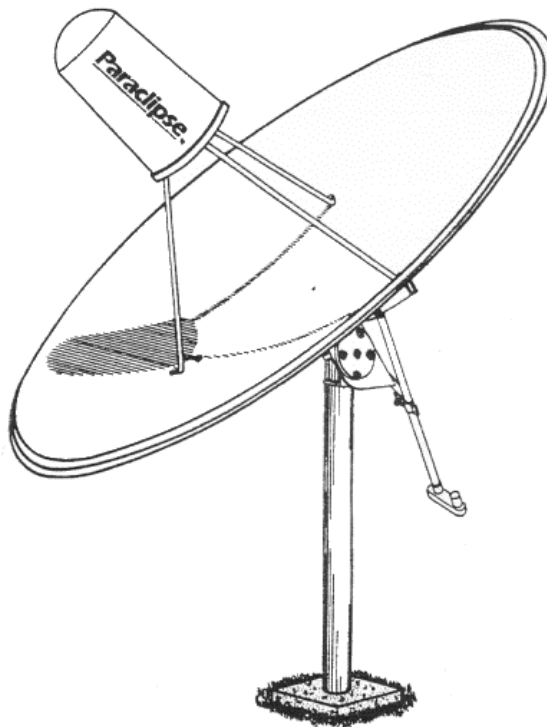
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