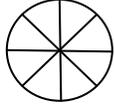


CRITICAL FACTORS INSTALLING A DH ANTENNA

1. **READ INSTRUCTIONS** before disassembling the crate.
2. **RIBS:** Look for color coded dot on the rib. Dots indicate correct order to assemble panels. Number is stamped in the lip of the antenna too.
3. **PILOT HOLE:** Locate pilot hole on the ring and antenna. **THIS IS YOUR STARTING POINT!** Pilot hole is located on the 2nd block from the left of the weld on the ring from the back view of the antenna. **MATCH** mount pilot hole to panel with pilot hole.
4. **FINGER TIGHT:** Installing the panels to the ring and installing the ribs on the panel sections. **DO NOT OVERTIGHTEN.**
5. **TIGHTEN DOWN** all ribs to become a solid antenna. (Once all panels installed)
6. **STRING THE ANTENNA.** Strings should just touch. Adjust the braces so front surface is exactly flat. 
7. **TIGHTEN DOWN ALL BOLTS:** Ring to antenna.
8. **SET FEEDHORN TO EXACT FOCAL LENGTH & TO EXACT CENTER OF THE ANTENNA.** Use a laser tool or cut a piece of wood to the focal length of your antenna. Feedhorn must be flat to antenna surface. Please consider feedhorn manufacturer's recommendation. See "Preparing the Feed Assembly" in manual.

CALL 1-608-326-8406 WITH QUESTIONS



4PC Sectional Antenna Gibraltar GE-MINI Installation Instructions

Congratulations! You have now purchased the finest Dual Powered Azimuth-Elevation Mount available. This unit will not only track the geosynchronous arc, but will work equally well for satellites that are in inclined orbit, or elliptical orbit. Please follow these instructions. You may call us at **608/326-8406** for help, Monday – Friday 7AM to 5 PM CST. Please review the shipping warranty for missing parts immediately upon arrival (see back page).

The Ge-mini is designed to go with the 2.4m, 2.7m, and 3m antenna from DH. The 2.4m and the 3m are identical in theory with the exception of the 3m having a 48” ring with eight back braces. We will cover the basic installation first and address each individually as the installation requires.

PLEASE READ COMPLETE INSTRUCTIONS BEFORE BEGINNING INSTALLATION!!



www.dhsatellite.com



PO BOX 239
600 N MARQUETTE RD
PRAIRIE DU CHIEN WI 53821

CAUTION: Your 3m antenna will have 8 back braces.
Please be sure to string your antenna at time of installation.

***Galvanized back braces please immediately
read special note on bolt bag page 2.**

**Sectional antennas must be handled with care not to twist
or distort sections while handling for installation.**

PHONE: 1 (608) 326-8406
FAX: 1 (608) 326-4233
EMAIL: dhsat@mhtc.net

Parts List for: The “Dual Powered Ge-mini”

- C14F**
Chaparral
Feed Assembly
 1- Set of 4 Struts
 1- Collar (C, Ku)
 8- ¼” x 1 ½” Bolts
 8- ¼” Lock Washers & Nuts

- Heavy Duty Feed Struts**
C14FHD or C24HD
 1- Set of 4 Struts
 1- Collar (C, Ku)
 12- 5/16” Lock Washers & Nuts
 4- 2’ x 2’ Angle Brackets
 4- 5/16” x 1 ½” Bolts

- Ku4FL: 3PC**
Add to C14F
 3- Section to 3pc collar
 3- 8-32 x 1” Bolts

- 3PC Collar for Ku4FL**
(Use to Attach to Horseshoe of C14F)
 3- 8-32 x ¾” Bolts
 3- #8 Fender Washers
 3- 8-32 Nuts

***New Style Collar C14F2018**
***C14F2018 transition Starts April 16th, 2018**

- Feed Assembly**
 1- Set of 4 Struts
 1- Collar (C, Ku)
 8- 5/16” x 3/4” Bolts
 8- 5/16” Lock Washers & Nuts

- Back Braces**
3.0m w/48” Ring
(Optional on 2.4m & 2.7m w/39” Ring)
 8- Back Braces
 8- Brace Clips
 8- Bent Tabs
 8- ½” x 1 ½” Bolts
 24- ½” Nuts
 8- ½” Lock Washers
 8- 3/8” x 2” Bolts
 8- 3/8” Nuts
 8- 3/8” Lock Washers
 16- ¼” x ¾” Bolts
 16- ¼” Nuts
 16- ¼” Lock Washers



- Antenna to Ring**
39” & 48” Ring 8 Block
 8- ½” x 3” Bolts
 8- ½” Lock Washers
 8- ½” Nuts
 8- ½” Flat Washers
 16- ½” Rubber Washers

- Mount to Ring**
 2- 1/2” Lock Washers
 2- 1/2” x 2 1/2” Bolts
 2- 1/2” Nuts
 2- 1/2” x 3/4” x 1/2” Long Brass Bushings

Highly Recommended On Systems With Galvanized Back Braces
 Please use a rubberized spray or silicon sealant to coat the threaded rods on the end of back braces to help prevent corrosion. When doing annual maintenance on your antenna system please make sure to check as it may need to be reapplied.

- Elevation Assembly**
 1- 18” Actuator w/HD Clamp
 1- 1/2” x 4 1/2” Bolt
 1- 1/2” x 2” Bolt
 2- 1/2” Lock Washers
 2- 1/2” Nuts

- Base Plate Template Kit**
(Optional)
 4- 3/4” x 18” Anchor Bolts
 4- 3/4” Nuts
 1- Wood Template

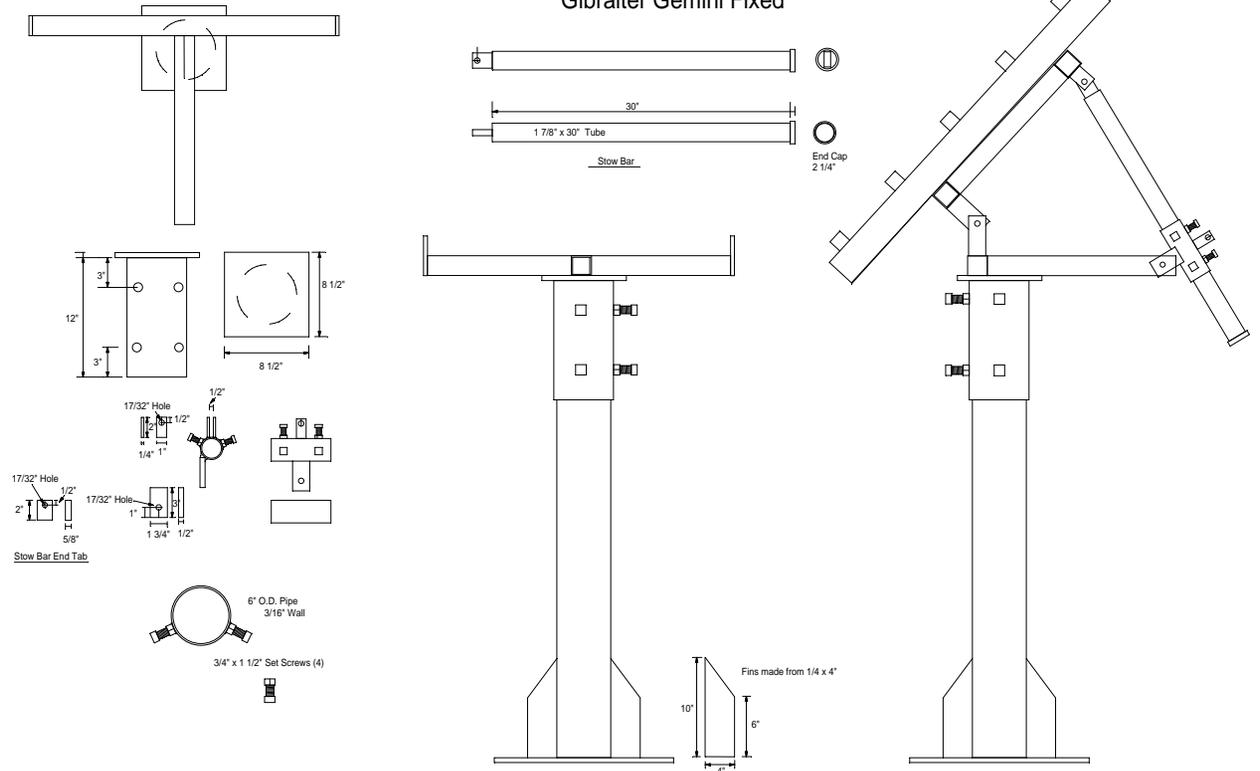
NOTE: SECTIONAL ANTENNAS INCLUDE ADDITIONAL HARDWARE, SEE TABLES BELOW

Template Rib Hardware: Sectional				
Antenna Size	3/8” x 1” Bolts	3/8” Lock Washers	3/8” Nuts	3/8 flat washers
2.4M	20	20	20	40
2.7M	20	20	20	40
3.0M	24	24	24	48

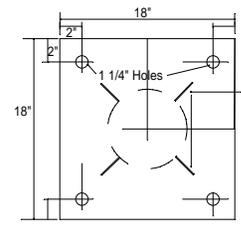
Splice Straps: Sectional				
Antenna Size	Splice Straps	¼” x ¾” Bolts	¼” Lock Washers	¼” Nuts
2.4M	4	8	8	8
2.7M	4	8	8	8
3.0M	4	8	8	8

NOTE:
 Stainless steel or DURA-CON® hardware provided.
 *DURA-CON® is a corrosion resistant coating.
 DURA-CON®: Problem of thread-galling is eliminated.

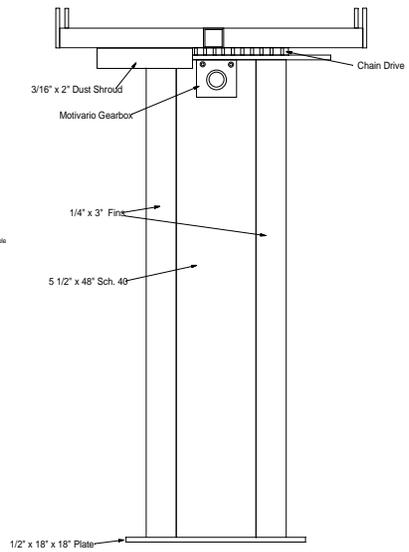
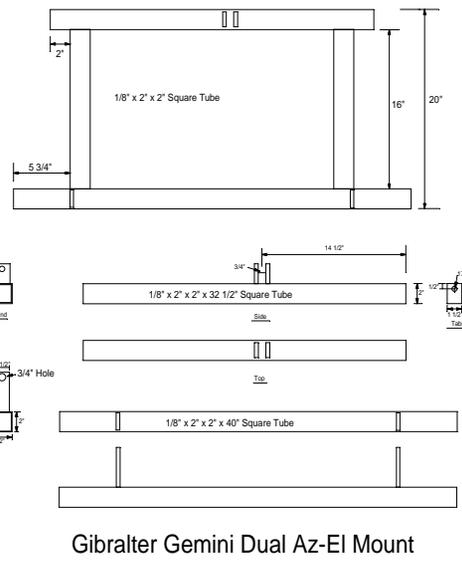
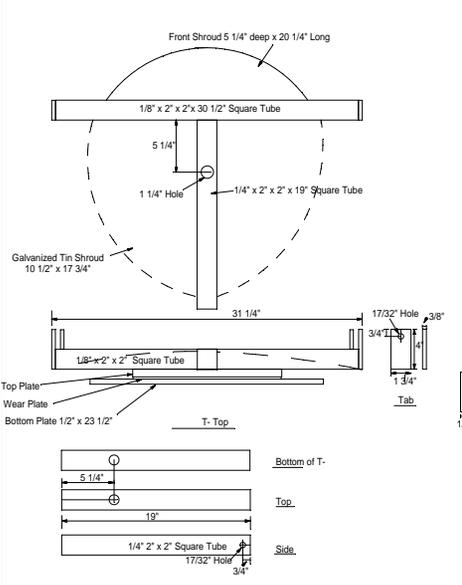
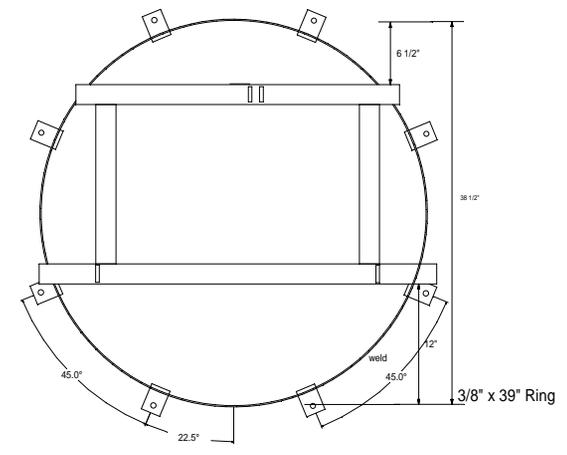
Gibraltar Gemini Fixed



Gemini Base Plate



39\"/>



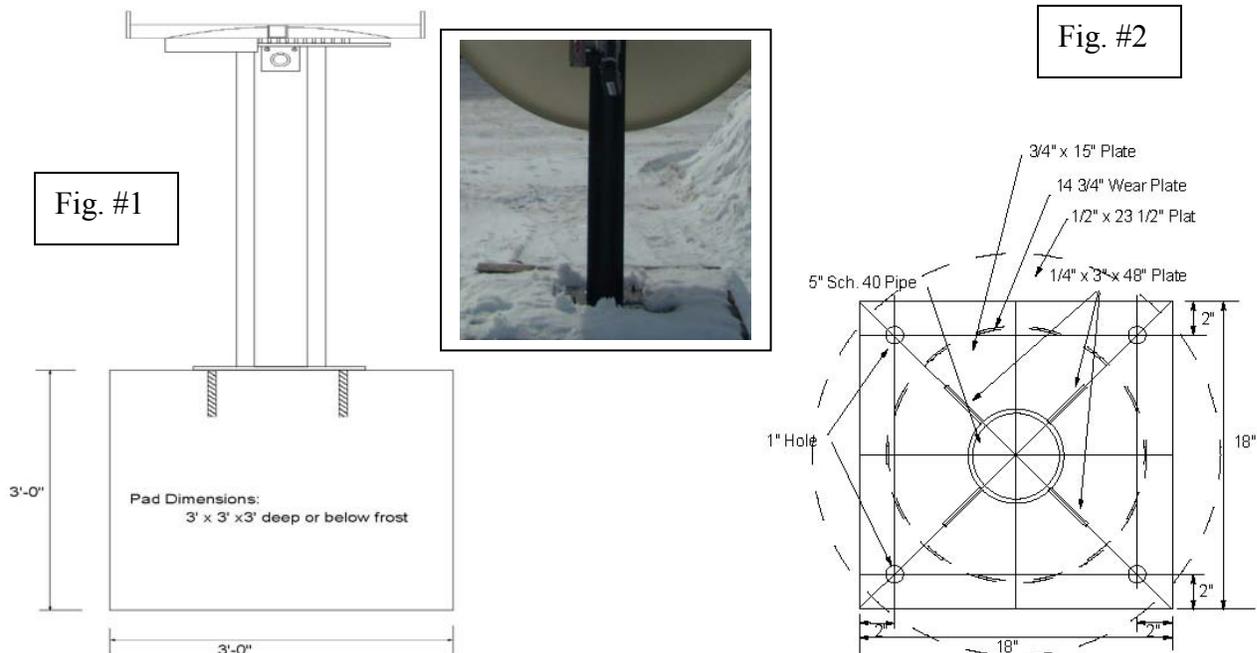
1/4 x 3/8 pins full length  PRairie Du Chien SATELLITE P.O. BOX 239 PRAIRIE DU CHIEN, WISCONSIN 53821 PHONE (608) 326-8406		
DESCRIPTION: Gemini 39\"/> 		
DRWN BY: GILBERTS	DATE: 1-27-15	DRWGR:
SCALE: NOT TO SCALE	REVISED:	39AZELMT wblocks

INSTALLATION OF BASE

Look at the drawings below. Figure #1 shows a typical recommended concrete base. This base should be a minimum of 3'0" x 3'0" x 3'0" deep for 2.4m antenna. In areas of frost, we recommend that this base go below frost levels. You can (depending on soil type) opt to use 1/2" rebar to reinforce this structure. Contact your local concrete dealer or a local engineer to give you an idea if you should use rebar for your locality. **WE RECOMMEND THAT YOU CHECK WITH A LOCAL ENGINEER TO DETERMINE SOIL TYPE AND BEARING TO VERIFY THAT THIS BASE WILL WORK FOR YOUR LOCALE.**

When pouring the concrete, be sure to have the base template ready and insert the J-bolts as per Figure #2. Leave approximately 2" of the bolt out of the concrete. These bolts can be installed after the mount is delivered; by drilling the holes in the concrete and using either lead heads or Garonite, (A resin mortar) to secure the bolts. If you decide to put the bolts in after the concrete has set, you must install regular hardened bolts or cut the bottom of the J-bolts. (We recommend the bolts be installed prior to the delivery of the mount). Our people have installed both lead heads and Garonite, we recommend the Garonite.

When installing the **Gibraltar Gemini** stand, carefully lower it over the bolts and tighten the nuts in place. *(The gearbox should be on the North side of the mount in the Northern Hemisphere and on the South side of the mount for the Southern Hemisphere.)* Be sure to install a lock washer. It is always a good idea to get the base plumb, although this is not critical with this Azimuth-Elevation mount as it would be a polar mount. The front of the mount should be facing south in the Northern Hemisphere. (The rear of the mount will have the gearbox). With the **Gibraltar Gemini** mount, you will have over 250 degrees of travel, but you do not have a full 360 degrees of azimuth. I mention this for those of you who are installing the **Gibraltar Gemini** to track things other than the Geosynchronous Satellite belt.



Assemble Ring to Base Stand (for the 2.4m & 2.7m)

You will have to assemble the 39" ring to the Ge-Mini base. Look at the photo of the mount in Fig. #3, you will notice that the top of the mount has a bracket to attach the elevation arm. The bottom of the 2" framework has two tabs. Insert a 1/2" x 3/4" x 1/2" long brass bushing (found in the bolt bag) into each of the tabs. Place the ring on the base stand, inserting the tabs (with the bushing) into the double ear tabs. Secure with 1/2" x 2 1/2" bolt, 1/2" lock washer & nut. Next install the elevation actuator. Attach the gimball actuator clamp to the right side rear of the 2" square tube with a 1/2" x 4 1/2" bolt. Then take the eyebolt on the end of the actuator and put it in between the top bracket of the frame work of the ring. Use a 1/2" x 2" bolt and use a lock washer and nut to secure it in place. This elevation actuator will be used to precisely aim the dish to the satellite you are using.



Fig. #3

Please see the parts listed supplied to help identify all parts for both the Dual Powered Ge-Mini and the Fixed Az-El Ge-mini. You will find these drawings on the previous pages of this instruction manual. Note the Fixed Az-El Ge-Mini does not include the motors or gears and drives. These parts are only used for the Dual Powered Ge-mini.



ASSEMBLING THE ANTENNA TO THE RING

The mount should be assembled and now it is time to install the antenna. We recommend two methods of lifting the antenna onto the post. **SPECIAL NOTE: A 2.4m and 2.7m use a 39" ring and a 3.0m uses a 48" ring.**

1st Option: (On Ground: Lifting the Antenna as One Piece)

The antenna will come in 4 pieces each having a color coded dot on the rib (see FIG. #9). **NOTE: After complete installation you will no longer see the colored dots.** You must take two sections of the antenna and place them on a flat surface face down allowing for an installer to work on attaching the numbered ribs. The antenna must always stay in the crate until assembled. (see FIG. #10). Take panel one labeled 08/1 and 08/2 and attach it to panel 2 which is labeled 08/2 on one rib and 08/3 on the other rib. Connect panel 1 with rib #2 (labeled 08/2) to panel 2 with rib #2 (labeled 08/2), matching the #2 on each rib of the two panels (See photos below). Install 3/8" x 1" bolts in all holes, finger tight. To allow for greater ease in aligning the templates we recommend using an alignment punch tool (See Figure #11).

IMPORTANT: Do not force or drill any ribs to make them fit. Doing so will void your warranty and the dish will not perform. Once you have the bolts inserted into the template holes, attach the splice straps to the inside lip of the antenna (See FIG. #12). Continue on to the next panel in the same manner until finished with all panels. Now tighten all hardware.

Next lift up the antenna and have the smallest worker go underneath the dish. You will then place the ring on the antenna, making sure that the two pilot holes correspond. One is located next to one of the 8- 1/2" holes in the dish and other is found on one of the 8 blocks on the mount next to the 1/2" holes. The pilot holes are just locators for aligning the holes on the dish with those on the mount. The weld on the antenna is lined up with the boom on the mount. Have the worker underneath the antenna insert the bolts up through the dish. On the other side have another worker attach the rubber washer, lock washer and nut. **Please do not tighten nuts at this point.** After all bolts have been inserted have the worker underneath come out from under the dish. If you purchased an antenna with back braces attach them now and tighten down all bolts. You can now lift the antenna and ring by a crane, forklift or a boom truck. This insures that no pressure will be put on the antenna.

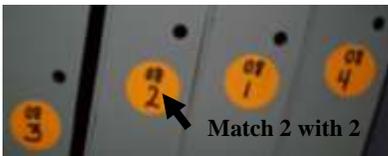


FIG. #9



FIG. #12

Splice Strap

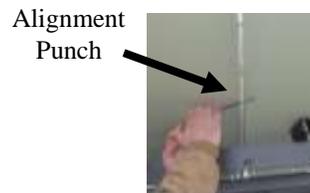


FIG. #11



FIG. #10

NOTE:

The aluminum antenna is also stamped in the lip. This number reflects the position of the panel.

The number stamped on the rib reflects the antenna as a whole for bulk shipping. Each section has one rib stamped. The number will be the same on all ribs making it one complete antenna.



Rib



The top number represents the serial number of the antenna. ***Example:** In FIG. #9 you will see 4 sections with the top number 08. You will take all four pieces of 08 to make one complete antenna.

Rib number. ***Example:** On a 4 piece 3.0m antenna the dot will have a 08 on the upper part of the dot (serial number) and the lower number of 1, 2, 3, 4 are the rib numbers.

2nd Option: Bird Bath Method, installing by sections with BACK BRACES.

(Using 2-3 People)

***IMPORTANT:** If you purchased an antenna without back braces continue to page 8.

Assemble mount and put mount in birdbath position (See picture C below).

Step 1: Install the brace clips to the back braces before placing on the antenna lip and ring. Have all 4 brace clips installed on the brace before going to the next step. See brace clip and back brace photos below.

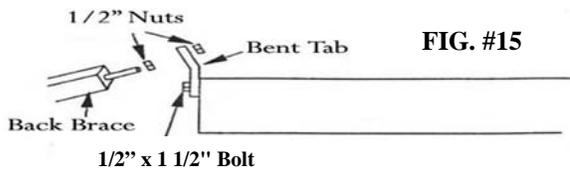
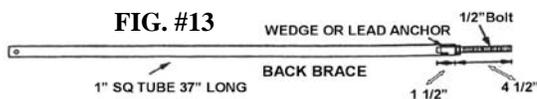
Step 2: Install brace clips to the ends of the 4 back braces and install the 1/2" nut on the threaded rod end of the back brace, threading it down approximately 4 to 4 1/2" down the threaded rod (see FIG. #13).

Step 3: Take the first panel and install it to the ring of the mount finger tight. Be sure to find the pilot hole on the mount and on the antenna. Take the back brace that is ready and put the threaded rod through the tab on the ring (see photo A). Take the other end of the rod with the clip and attach the brace and clip to the lip of the antenna section (see picture B).

Step 4: Insert 1/2" x 3" bolt (see FIG. #17 for washers and rubber placement) from the antenna to the mount. Have one person continue holding the panel in place while the second person attaches the back brace. (Remember the threaded end of the back brace should already have the 1/2" nut on the threaded end about 4-4 1/2" on the threaded rod and the bent tab already installed on the ring, see FIG. #15). Insert the threaded rod of the back brace into the bent tab and bolt brace clip on the edge of the antenna with 3/8" x 1 1/2" bolt, 3/8" nut and 3/8" lock washer. Make sure everything is finger tight.

Step 5: Pick up the second antenna panel and be sure the numbers line up and bolt in place just like the first panel. (see FIG. #9) Once secure you can begin bolting the two units together by placing the 3/8" x 1" bolts through the templates. Again only finger tight. Continue for the next 2 panels. To allow for greater ease in aligning the templates we recommend that you use an alignment punch tool. (see FIG. #10).

STEP 6: You will notice all 8 bolts in the face of the antenna have been installed from the antenna to the ring at this point. You now remove every other bolt from the face of the antenna and replace them with a feed strut. (See preparing the feed assembly on page 10)



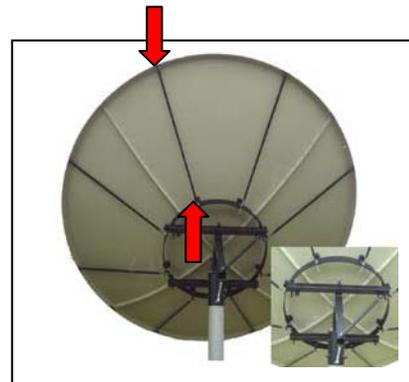
Back braces are measured by tube length only.



PICTURE A

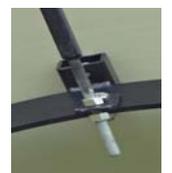


PICTURE AA



PICTURE B

Brace Clip



Brace Tab Threaded

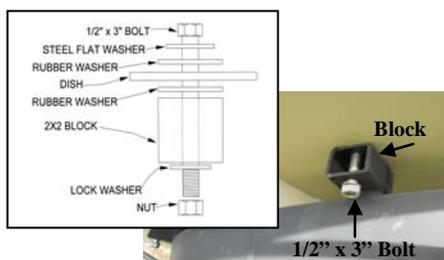


FIG. #17

Alignment Punch



FIG. #10



PICTURE C



FIG. #9

Bird Bath Method, installing by sections **NO BACK BRACES.**

(Using 2-3 People)

Assemble mount and put mount in birdbath position (See picture C below).

Step 1: Take the first panel and install the 1/2" x 3" bolt from the antenna to the mount finger tight (see FIG. #9 for washer and rubber placement). Be sure to find the pilot hole on the mount and on the antenna.

Step 2: Pick up the second antenna panel and be sure the numbers line up and bolt in place just like the first panel (see FIG. #10). Once secure you can begin bolting the two units together by placing the 1/4" x 3/4" bolts through the templates. Again only finger tight. Continue for the next 2 panels. To allow for greater ease in aligning the templates we recommend that you use an alignment punch tool (see FIG. #11).

Step 3: You will notice all 8 bolts in the face of the antenna have been installed from the antenna to the ring at this point. You now remove every other bolt from the face of the antenna and replace them with a feed strut. Use this sequence: bolt, metal washer, feed strut, rubber washer. On the backside of the dish, insert a rubber washer between the dish and the ring block, followed by a lock washer and a nut. **Please do not tighten nuts at this time.**

Step 4: Next install the feed collar (C14F collar) into the feed struts. Secure with 8- 1/4" x 1 1/2" bolts and 1/4" lock washers and nuts. (see FIG. #12). Your next step is to tighten the 8 bolts that secure the dish to the ring. **DO NOT OVER TIGHTEN.** This is also addressed in Preparing the Feed Assembly on page 10.

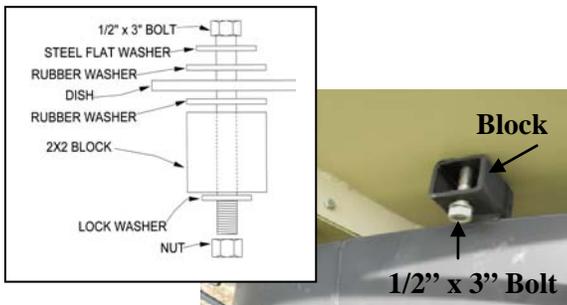


FIG. #9

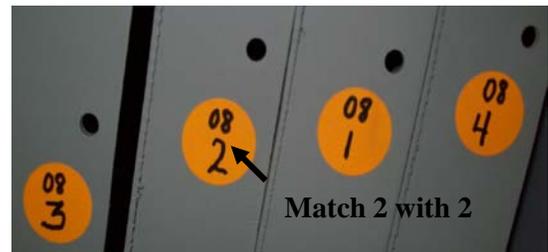
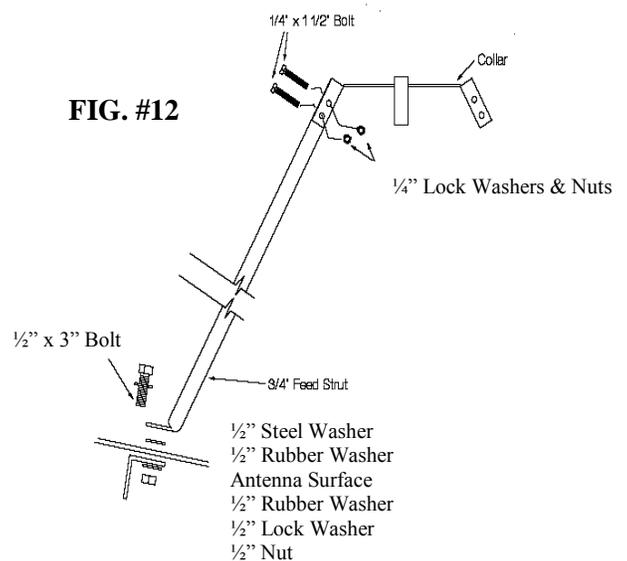


FIG. #10

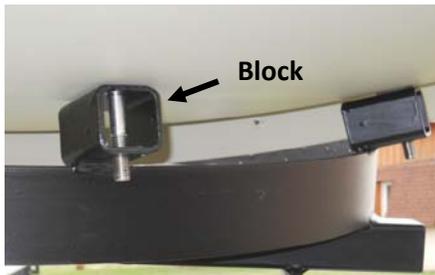
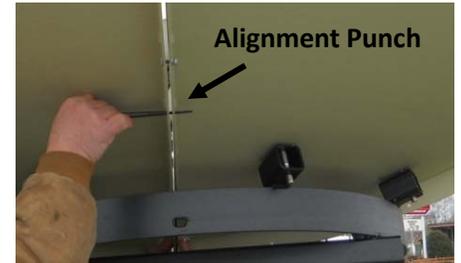
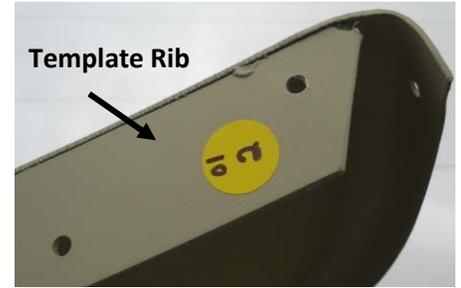


FIG. #11



PICTURE C

Installation Photos: Additional Help for Installing by Sections to the Ring



Preparing the Feed Assembly

If the feedhorn you have selected has an adjustable scalar ring, move it to the proper wave-guide setting. The 2.4M, 2.7M, and 3M antennas all have the same f/l. The F/D ratio is listed below for each. Be sure to measure from the center of the dish to the throat of the feedhorn when using a Chaparral style feed. You should be measuring 35 3/4" from the center of the dish to the throat of the feedhorn for C band. Ku band is more critical so please if using a C/Ku band feedhorn to error on setting it up for measuring the Ku which would be 35 7/8" from the center of the dish to the throat of the feedhorn. Major adjustments for Ku band can be made by placing the three-piece collar on either side of the horseshoe collar.

Special note: Seavey feeds are measured to the scalar ring and not the throat.

Unless you have specified what brand name and frequency your feedhorn is, you will have received by default the C14F collar. It is best if you have discussed with your sales rep the feedhorn you are using prior to shipping so that **DH Satellite** can make sure you have the proper collar to mate to your feedhorn. You do need to make sure your feedhorn and collar are the correct combination.

Take the scalar ring of the feedhorn and place it under the collar with rings pointing toward the dish. Turn it until all three holes line up between the two and insert the 1/4" x 3/4" bolts through the scalar ring and then through the collar; fasten with the 1/4" nuts. Most C-band and dual feeds have a 3-bolt pattern on the scalar ring just for this. Tighten all nuts and bolts. Figure #7 is the final assembly for the Ku band showing a Ku straight through feedhorn being used.

Check to see that the feed is at the focal length, the actual focal length should be 1/4" inside the wave-guide, for C-band and 1/8" for Ku band.

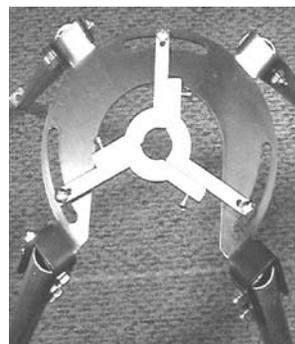
8'	35 3/4" Focal Length - .375 F/D - Wave Guide 9/16"
9'	35 3/4" Focal Length - .33 F/D -Wave Guide 5/8"
10'	35 3/4" Focal Length - .3 F/D -Wave Guide 7/8"



C14F COLLAR AND STRUTS



Strut Local on Ring Face of 4PC Sectional Antenna 8 Block Ring



KU4FL
FIG. #6

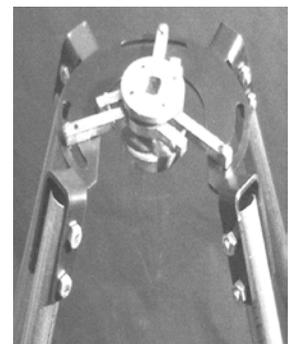


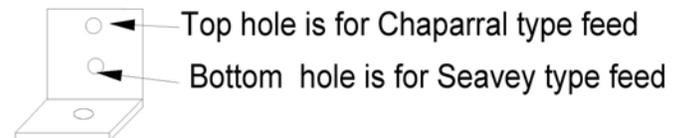
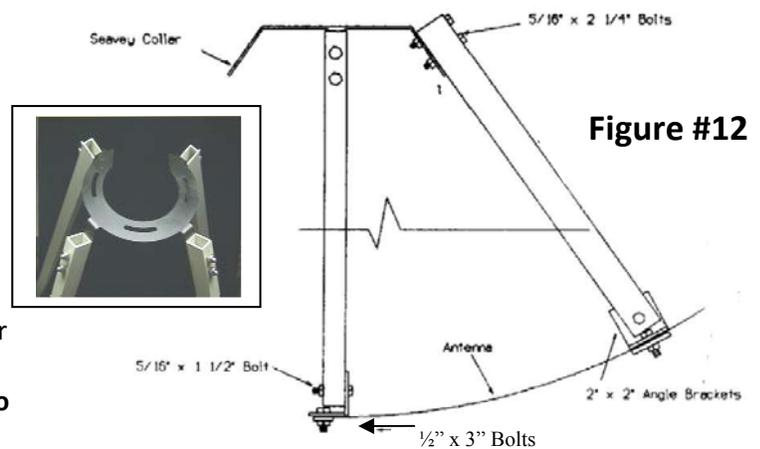
FIG #7

Heavy Duty Feed Strut

We have developed a new feed strut and collar for the heavier 4 Port Seavey feed assembly. This utilizes the rectangular aluminum tube for the feed strut. Figure #12 right shows the sketch of this feed assembly; it is very simple to install. Each strut has 2 - 5/16 x 2 1/4" bolts to attach to the feed collar. Now attach one of the angle brackets (2" x 2") to the antenna with the 1/2" x 3" bolts. Notice that angle bracket has two holes. You will use the bottom hole. **The top hole is for an optional Chaparral type feed.** Next, attach the base of the strut to the angle brackets with the 5/16 x 1 1/2" bolts supplied. Align the feed to point directly at the center of the antenna. Now measure the focal length to the front of the scalar rings. (Seavey recommends f/l is measured to front of scalar ring.)

Feed Strut Length

2.4m & 2.7m with a 39" mount is 36 5/8"
 3.0m with a 48" mount is 41 3/4"



Ku Band Feed Assembly

When using the Ku only feeds, you will be using the C14F feed plate and tri-collar. See Figure #13. First, **attach the flat tri-collar to the feedhorn** as follows: attach the first two pieces by using the 8-32 x 1" screws provided. Now slide the collar onto the feedhorn and add the third piece; tighten evenly. Attach the tri-collar to the larger horseshoe collar by the 8-32 x 3/4" bolts and nuts; tighten down. You can adjust polarity by loosening these nuts and rotating feed. Finish by assembling the struts to the feed collar as shown in Figure 14. (Fig#14 shows single Ku feed inserted in collar)

Figure #13

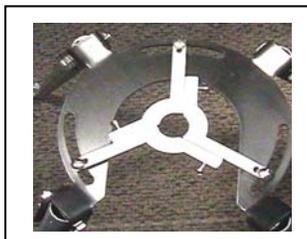
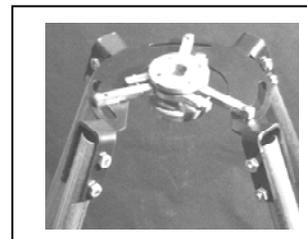


Figure #14



Fine Tuning the Antenna

After the assembly is complete, we recommend you "string the antenna." Simply run a string from a back brace across the front of the antenna to the brace 180 degrees apart. Now do this with each brace. If the strings all meet in the middle and no pressure is on any of them, the antenna is perfect and no further work needs be done. If one of the strings is not close to the others, then step back and sight across the dish and see where you will have to push with the back braces. Only make small adjustments at a time and remember to start with all braces loose. After you are sure the antenna surface is flat, you should double check to see that the feedhorn is set at the proper distance, then check to see that it is pointed at the center of the antenna. In our years of setting up antennas, these three items seem to cover over 98% of all problems of picture quality.

Final Inspection of the Antenna

After the assembly is complete, we recommend that you visually look at the dish for **FOUR** things. **1.** Make sure that both edges are symmetrical. To accomplish this you should stand approx. 3M(10ft) away from the side of the dish. Eye ball the two edges to confirm that they are even. This will confirm your dish is in perfect shape. **2.** Check to make sure that your feed is set to the right focal distance. **3.** Check that the feed is pointed precisely to the center of the dish. **4.** Look at all the nuts & bolts to confirm that they are tight. After this final inspection you should be able to install all your electronics and complete the wiring.



Technical Service: 1-608-326-8406
M-F 7:30AM to 5PM CST

www.dhsatellite.com

MISSING PARTS WARRANTY

You have obtained one of the best antennas on the market today! We hope that you will be happy with your new DH Antenna.

To better acquaint you with our system, we ask that you read the instruction manual and verify that all of the equipment has been supplied in your shipment. Please check the hardware as well as the parts list and compare to what you have received. It is our policy to make every effort to assure you that you have received all parts necessary to make this a pleasant experience.

While checking over your parts it is possible to find that you are missing pieces that are necessary to complete the installation. You will find below our shipping policy and charges if any.

Notify Factory within 5 days ARO (Delivery): Red / no charge

Notify Factory 5 to 30 days ARO: Regular / no charge

Notify Factory 31 days ARO: Your cost for parts and shipping.

Please note we are only able to ship out from our location if notified by 12:00 PM CST. Calls received after this time will ship the following business day.

International shipping will need to be discussed prior to shipping.

Call us M-F 7:00 am to 4 pm 1-608-326-8406

In the event that you need touch up paint for your antenna or mount, these colors from any Sherwin Williams store are the best match to our colors.(Due to shipping restrictions, we are not able to ship paint).

Antenna color: Sherwin Williams Custom Beige product number **0110339-001**

Black Mount color: Sherwin Williams Black **6509-00780**



PHONE: 1 (608) 326-8406
FAX: 1 (608) 326-4233
EMAIL: dhsat@mhtc.net

Please make notes below to help in future years with replacement needs.

Size of antenna: _____

Date: _____

Feedhorn make: _____

Model: _____

LNB Make: _____

Model: _____