IMPORTANT: Inspect crate for any damage before signing off on BOL. ANY damage must be noted on BOL to have a claim.

GIBRALTER
QUICK START GUIDE

FOR DETAILED INSTRUCTIONS, READ INSTALLATION INSTRUCTIONS COMPLETELY

1. OPEN CRATE, INSPECT SHIPMENT, VERIFY PARTS.

Remove sides of crate. Notify DH Satellite of any damage. Familiarize yourself with the parts. Set aside any electronics received in dry storage.


2. INSTALL BASE.

Lift Gibralter base over concrete pad and carefully lower it over the bolts. Front of mount should be facing South in the Northern Hemisphere. Place washer, lock washer, and nut. Tighten.


3. INSTALL RING AND ELEVATION ASSEMBLY TO BASE.

Raise the ring and align its framework with the swivel brackets. Install brass bushing, surface washers and 3-1/2” bolts. Tighten. Install Elevation Assembly.


4. BUILD REFLECTOR.

The first antenna panel out of crate has a **PILOT HOLE.** Match this panel to the pilot hole on the ring. Match numbers on color coded dots, to verify correct placement. (1 to 1, 2 to 2, etc.) Finger tighten all hardware until complete, and then tighten.

5. INSTALL FEED ASSEMBLY.

Assemble feed struts and collar on the ground. Start by removing bolt on the ring next to **PILOT HOLE.** The first strut is placed there. Skip the next three bolts, and the 2nd strut goes under the next bolt. Repeat for remaining struts. Verify focal length of 57.6”


6. COMPLETE THE INSTALLATION.

String the antenna using four strings across the face of the antenna. Adjust back braces accordingly. Verify feed is centered. Set look angles. Prepare and program Research Concepts

Recommended tool list is located on the Parts List : see page 2 of instruction manual.

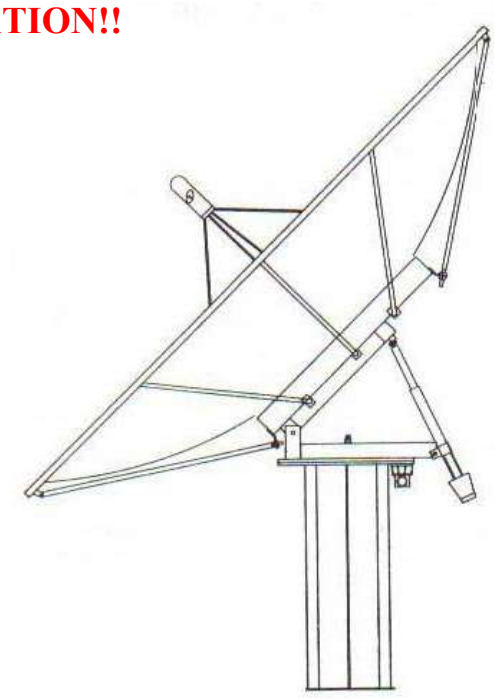
Installation Instructions

GIBRALTER IV MOUNT

DUAL AXIS MOTORIZED AND FIXED AZ/EL

Congratulations! You have purchased the BEST mount in the industry! **Both the Dual Axis Fixed and Motorized Gibralter are approved with DH Antennas up to 5M's for wind survival up to 194 mph!** This system is capable of tracking the geosynchronous arc, inclined orbit satellites, or elliptical orbit satellites. Please follow these instructions and if you have any questions, please call **1-608-326-8406** for assistance.

The Gibralter is designed to go with the 3.0m, 3.7m, 3.8m, 4.2m, 4.5m and the 5.0m DH Antennas. Installation for all sizes is identical in theory. We will cover the basic installation first and address each individually as the installation requires. **PLEASE READ COMPLETE INSTRUCTIONS BEFORE BEGINNING INSTALLATION!!**



SEE SHIPPING WARRANTY FOR MISSING PARTS

***Galvanized back braces please immediately read special note on bolt bag pages (page 2 for Dual Axis Motorized Gibralter Systems and page 13 for Fixed Dual Axis Gibralter Systems.)**

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

DH SATELLITE

PO BOX 239
PRAIRIE DU CHIEN WI 53821
PH: (608) 326-8406
Fax: (608) 326-4233

TECH SUPPORT: M-F / 8:30AM TO 3PM CST

Parts List for: The Motorized Dual Axis Gibralter

Heavy Duty Feed Struts (BFSHD)
C14HD 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
8- 5/16" x 2 ¼" Bolts

***C14F2018 (BFS)**
Feed Assembly
1- Set of 4 Struts
1- Collar (C, Ku)
8- 5/16" x 3/4" Bolts
8- 5/16" Lock Washers & Nuts

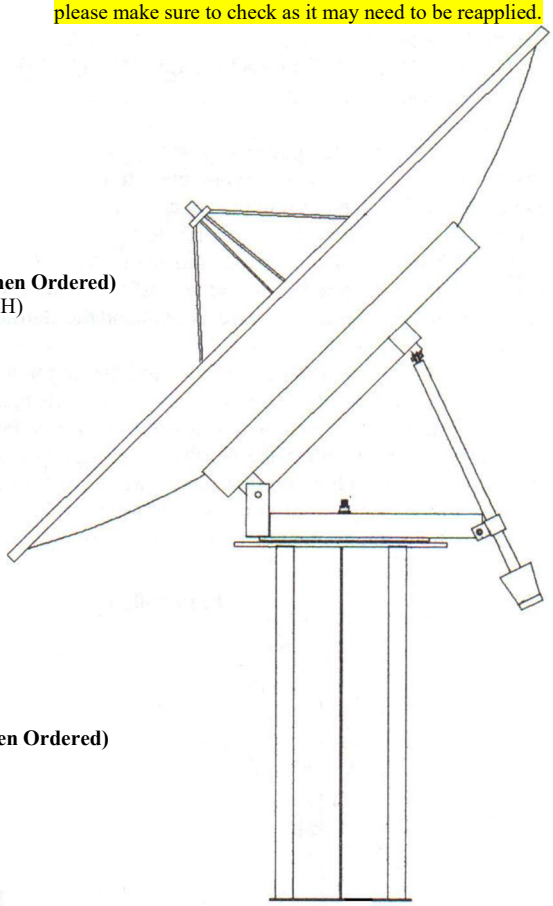
Feedhorn to Collar & LNB (When Ordered)
19- M6-1.0 x 25MM Bolts (BFH)
19-Lock Washers
19-M6-1.0 Hex Nut
3 – ¼" Flat Washers

Antenna To Ring (BAM)
(16 Block)
16- ½" x 3" Bolts
16- ½" Flat Washers
32- ½" Rubber Washers
16- ½" Lock Washers
16- ½" Nuts

Mount To Ring (BGB)
2- 1" Brass Bushings
2- 3" Bearing Plates
2- 1" x 3 1/2" Bolts

Template Anchor Bolt Kit (When Ordered)
8- ¾" x 18" Threaded Rod
16- ¾" Flat Washers
8- ¾" Lock washers
16 ¾" Nuts

Highly Recommended On Systems With Galvanized Back Braces
Please use a rubberized spray or silicon sealant or a Cold Galvanizing spray 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.



Ku4FL: 3PC Attach to C14F2018
3- Section to 3pc collar
3 8-32 x 1" Bolts
3- 8-32 x ¾" Bolts
3- #8 Fender Washers
3- 8-32 Nuts

Elevation Assembly (BEADP)
1-36" Actuator w/Clamp
1-48" Stow Bar w/Clamp
1 - 3/4" x 10" Bolt
1 - 3/4" Lock Washer
1 - 3/4" Nut
2 -1/2" x 2 ½" Bolts
2 -1/2" Lock Washers
2 -1/2" Nuts
3 - 3/4" x 5/8" Spacers

Back Braces (BBG)
4- Bent Back Braces
4- Straight Back Braces
4- Bent Tabs
4- 1/2" x 1 1/2" Bolts
4- 1/2" Lock Washers
20- ½" Nuts
8- Brace Clips
16- 1/4" x 3/4" Bolts
16- 1/4" Lock Washers & Nuts
8- 3/8" x 2" bolts
8- 3/8" Lock Washers & Nuts
8- ½" SAE Washer for bent brace to ring

Back Brace Tube Length
3.0m- NONE
3.7m- 45" Long
3.8m- 47" Long
4.2m- 55 1/4" Long
4.5m- 62 1/2" Long
5.0m- 68 1/2" Long

Tool recommendation:
Cordless Drill:

Sockets:	Open/closed end Box Wrench
7/16"	7/16"
9/16"	9/16"
1/2"	1/2"
3/4"	3/4"
1 1/8"	1 1/8"

3mm Allen wrench
Flathead screwdriver
Philips screwdriver
2 sets of tapered punches

NOTE: SECTIONAL ANTENNAS INCLUDE ADDITIONAL HARDWARE, SEE TABLES BELOW

Template Rib Hardware: Sectional (TRH)				
Antenna Size	**3/8 x 1" Bolts**	**3/8" Lock Washers**	**3/8" Nuts**	**3/8" Washer**
3.0M	24	24	24	48
3.7M	28	28	28	56
3.8M	28	28	28	56
4.2M	64	64	64	128
4.5M	72	72	72	144
5.0M	72	72	72	144

Splice Straps: Sectional (BSP)				
Antenna Size	**Splice Straps**	**¼" x ¾" Bolts**	**¼" Lock Washers**	**¼" Nuts**
3.0M	4	8	8	8
3.7M	4	8	8	8
3.8M	4	8	8	8
4.2M	8	16	16	16
4.5M	8	16	16	16
5.0M	8	16	16	16

If you have upgraded to an 8PC 3.7M sectional antenna please refer to the tables below for additional hardware needed.

Template Rib Hardware: Sectional (TRH)				
Antenna Size	**3/8" x 1" Bolts**	**3/8" Lock Washers**	**3/8" Nuts**	**3/8" WASHER**
3.7M	56	56	56	112

Splice Straps: Sectional (BSP)				
Antenna Size	**Splice Straps**	**¼" x ¾" Bolts**	**¼" Lock Washers**	**¼" Nuts**
3.7M	8	16	16	16

Installation of Base----------

Look at the drawings below. Figure #1 shows a base plate using 18" anchors. This mount option can be used either with a square foundation or sono tube. **Please see drawing on page 4 for recommended concrete base.** In areas of deep frost, we recommend that this base go below frost levels. Rebar can be used to reinforce the structure. Please contact your local concrete contractor or a local Engineer to determine these needs. ***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 anchors as per Figure #2. Leave approximately 2" of the bolts out of the concrete. These bolts can be installed after the mount is delivered by drilling the holes in the concrete and using lead heads, Garonite or 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. (We recommend the bolts be installed prior to the delivery of the mount.) Our people have installed both lead heads and Garonite. DH does recommend the Garonite option. (**Be sure once you install the stand to cold galvanized or coat the extended threads to help prevent rust/corrosion)**

When **installing the Gibralter stand**; carefully lower it over the bolts and then tighten the nuts in place. 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 with 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.) The Gibralter mount, has over 200 +degrees of azimuth travel. It does not have a full 360 degrees of azimuth travel. This is mentioned for those of you who are installing the Gibralter to track things other than the Geosynchronous Satellite belt.

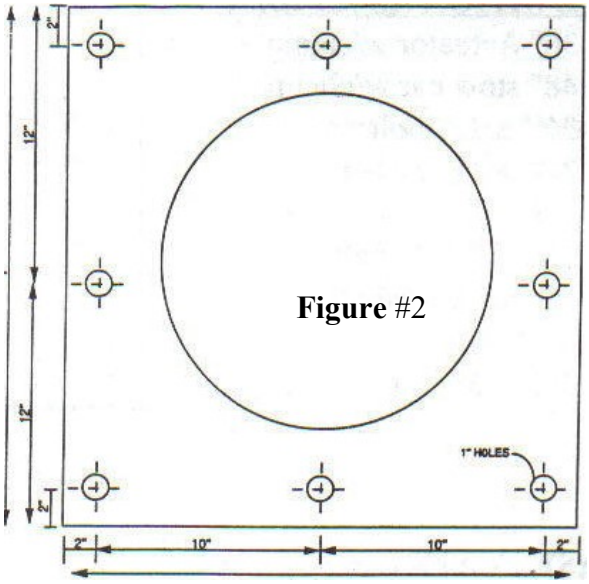
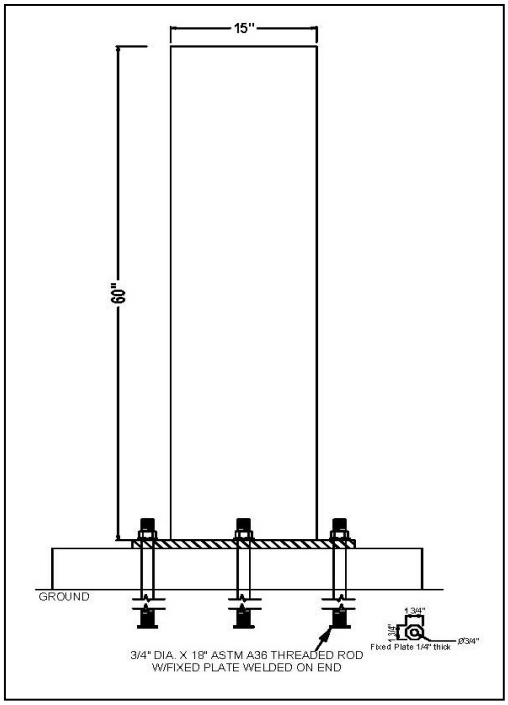
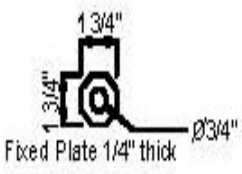
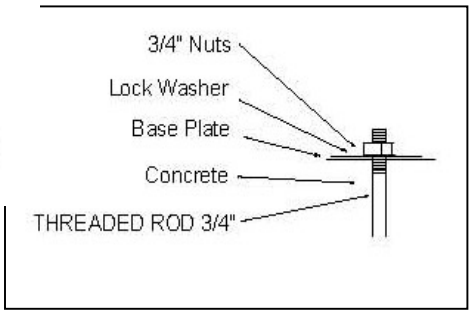


Figure #2

24″ x 24″ x 1/2″Base Plate







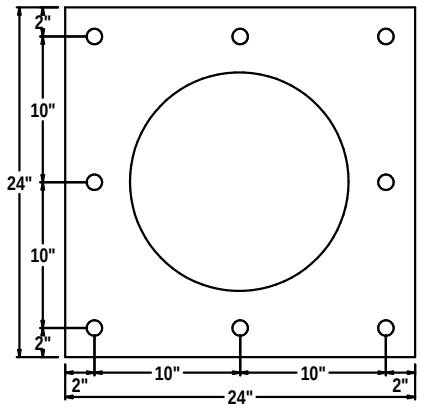
(18" Long)

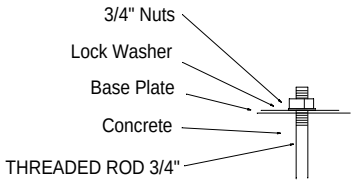
GIBRALTER BASE PADS

90 MPH REQUIRED FOUNDATION SIZE BASED ON SOIL CONDITION LATERAL SOIL BEARING= 400 PSF/FT ALLOWABLE FOUNDATION PRESSURE= 4,000 PSF		
Dish Size(in meters)	SONOTUBE DIMENSIONS	SQUARE PAD
3.0	3.5' DIA. X 4'-4" deep	3'-5" x 3'-5" x 3'-7" deep
3.7	3.5' DIA. X 4'-8" deep	4'-0" x 4'-0" x 4-0"' deep
3.8	3.5' DIA. X 5'-0" deep	4'-2" x 4'-2" x 4'-0" deep
4.2	3.5' DIA. X 5'-6" deep	4'-6" x 4'-6" x 4'-3" deep
4.5	3.5' DIA. X 5'-8" deep	4'-6" x 4'-6" x 4'-5" deep
5.0	3.5' DIA. X 6'-3" deep	5'-0" x 5'-0" x 4'-7" deep

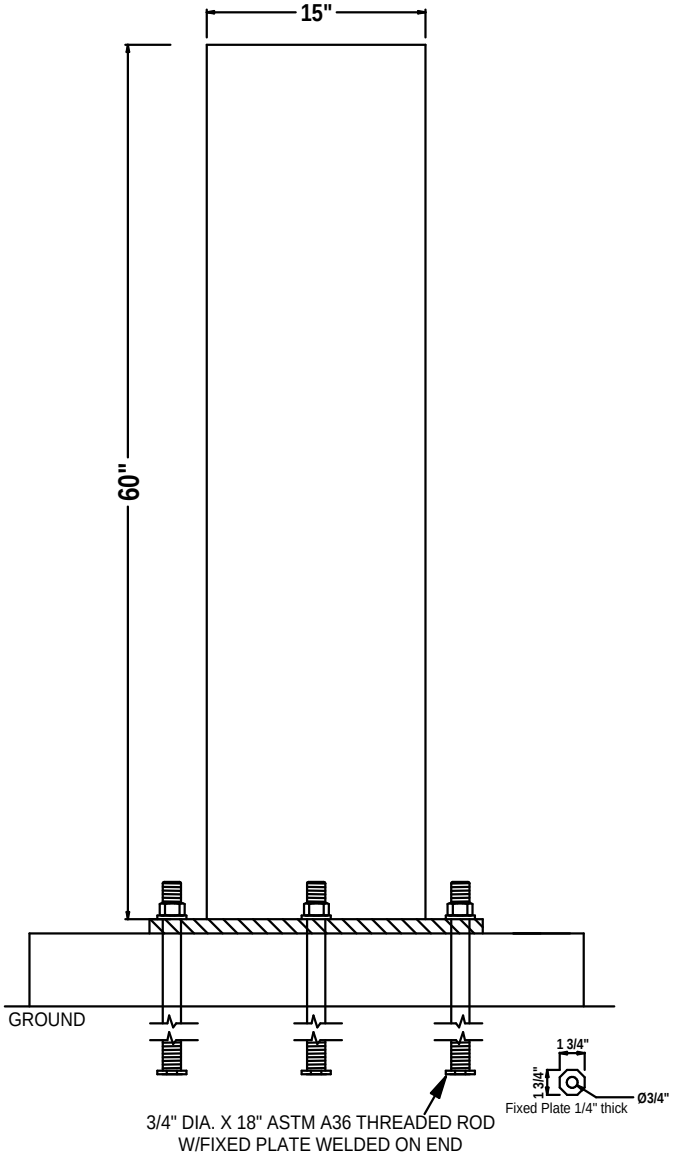
IF SOIL TYPE DOES NOT MATCH SOIL TYPE DESCRIBED, THE FOUNDATION SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER OR BUILIDNG OFFICIAL

TOP VIEW BASE PLATE





5-7 #3 REBAR USED IN FOOTINGS
REBAR DISTRIBUTED EVENLY IN TWO DIRECTIONS
CENTER OF REBAR SHOULD BE 2" ABOVE BOTTOM OF PAD
OUTSIDE OF BARS SHOULD BE 3" FROM EDGE OF PAD



DH SATELLITE
P.O. BOX 239
PRAIRIE DU CHIEN, WISCONSIN 53821
PHONE (608) 326-8406

DESCRIPTION: GIBRALTER BASE PADS		
DRWN BY: GILBERTS	DATE: 12-19-13	DRWG#: Gibralter Bases
SCALE: NOT TO SCALE	REVISED: 10-6-14	

Installation of Ring to Base----------

Line up the bottom framework of the ring with the swivel brackets, place brass bushings in holes, set in the bearing surface washers, place the two 1" x 3 1/2" bolts through the swivel brackets and tighten. The washers go between the ring and the tabs on the mount (**see Figure #5**).

Figure #5

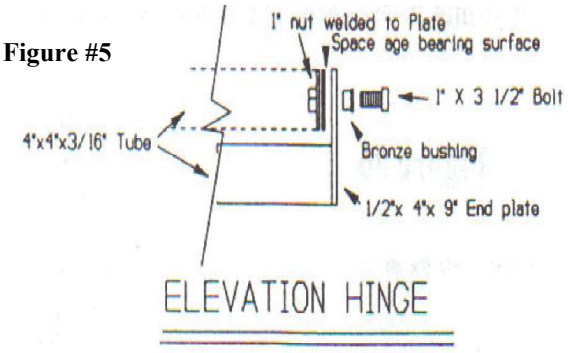


FIGURE 5

Installation of Elevation Assembly----------

1. Start by assembling the actuator clamp and sliding it about one-third of the way down the actuator. Tighten all the nuts.
2. Align the top eye of the 36" actuator with the right side brackets on the on the back of the mount. Use a ½" x 2" bolt; lock washer; and, nut to secure into place. (**SEE Figure #8**)
3. Take the ¾" x 10" bolt and attach the clamp to the left side rear of the 4" tube on the top of the base. (Use the supplied ¾" x 5/8" spacers to assist in alignment of the stow bar and actuator, to the top brackets.) Place ¾" lock washer and nut on bolt and tighten.
4. Slide the stow bar up through the clamp, making sure the end with the hole is up. The top of the stow bar will fit into the right-side brackets on the mount. Secure with 1 ½" x 2" bolt; lock washer; and, nut. **DO NOT TIGHTEN THE SET SCREWS THAT SECURE THE STOW BAR TO THE CLAMP.** (This is only done in case of high winds or severe weather.) **YOU MUST REMEMBER TO LOOSEN BEFORE YOU RESUME OPERATION.** (Damage to the motor could result if you fail to loosen stow kit.)
5. The 36" actuator will allow approximately 60 degrees of travel. By positioning the clamp on the actuator tube, you can determine where these 60 degrees are used: 0-60; 30-90; or, anything in between. The mount is designed to travel 0-90 degrees.

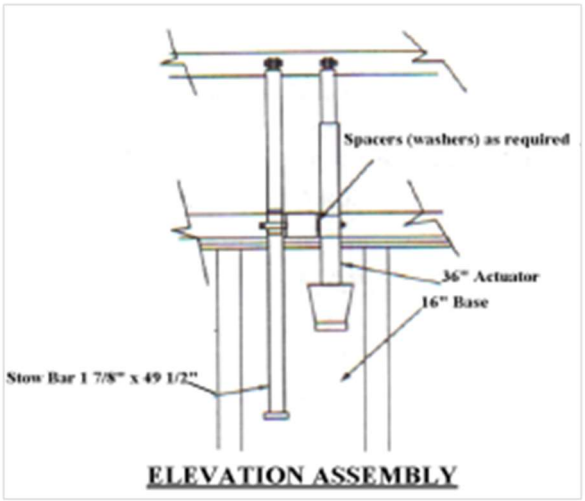


FIGURE 8

NOTE: ACTUATOR ON RIGHT WHEN VIEWED FROM REAR

“Build Antenna Section on the Ring” (DH preferred method)

(Install By Sections: Using 2-3 People)

Lay ring in birdbath position once assembled to the mount. **Lock the ring to the base of the mount with ratchet straps. (See picture C, birdbath below)**

Step 1: Install the 8 brace clips to the square ends of the back braces using 3/8” x 1 ½” bolt, 3/8” nut, and 3/8” lock washer. See brace clip and back brace photos below. (Picture B)

Step 2: Install the ½” nut on the threaded rod end of the back brace, threading it down approximately 4 to 4 ½” down the threaded rod (See Figure #15).

Step 3: Install the Bent Brace tabs to the 60” ring. These will support the threaded rod end of the Straight Back Braces. NOTE: The Back braces with the bent threaded rod will use the holes in the 60” ring and two ½” washers are installed, one on each side of the ring. (new step: 09/18/2023)

Step 4: Install the first panel. Be sure to find the pilot hole on the mount and on the antenna section, this is the start. 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 5: Insert ½” x 3” bolt (see FIG. #17 for washers and rubber placement) from the antenna to the mount. (TIP: USE AN ADHESIVE WIPE OR SPRAY ON THE RUBBER WASHERS WHEN INSTALLING THE ANTENNA TO THE RING, TO HELP HOLD IN PLACE.) 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 ½” nut on the threaded end about 4-4 ½” on the threaded rod and the bent tab already installed on the ring, see FIG. #15). Insert the threaded rod of the straight back brace into the bent tab and bolt brace clip on the edge of the antenna with ¼” x ¾” bolt, ¼” nut and ¼” lock washer. Make sure everything is finger tight.

Step 6: 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” bolts through the ribs of the antenna sections. Again, only finger tight. Continue for the next 6 panels. (TIP: Tapper punches work well for panel alignment!) See page 7 for additional photo helps and panel placement.

Step 7: You will notice all 16 bolts in the face of the antenna have been installed from the antenna to the ring. Remove the bolt next to the pilot hole and place 1 strut, skip the next three bolts, and place the next strut making an X pattern when you have installed all 4 of the struts. (See Feed Strut Assembly on page 10)

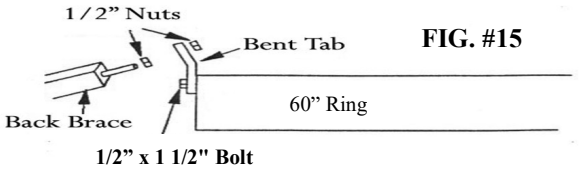
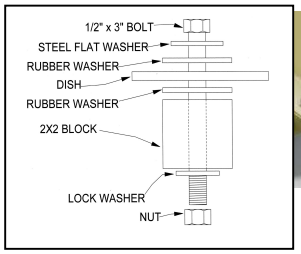


FIG. #15

Back braces are measured by tube length only.



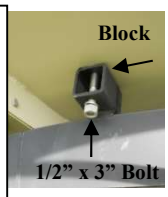
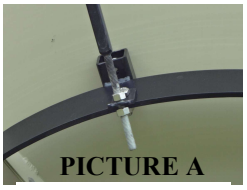


FIG. #17



PICTURE AA

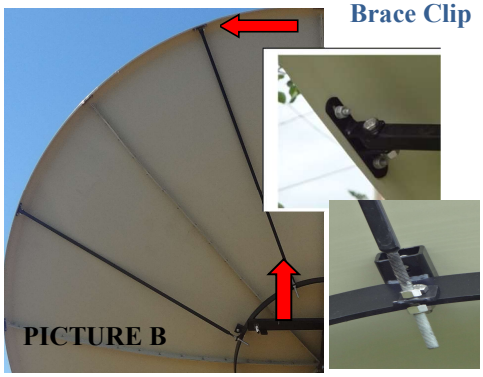
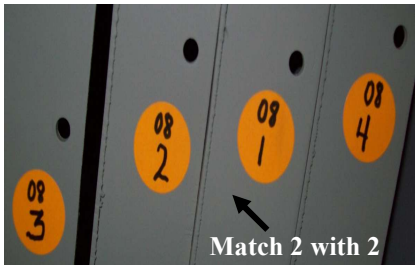
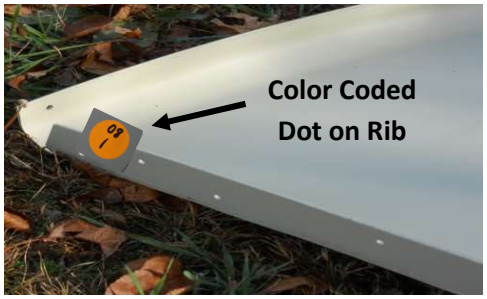
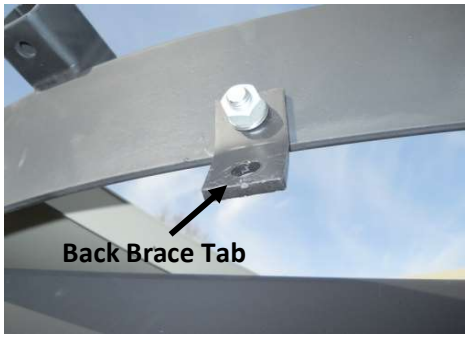


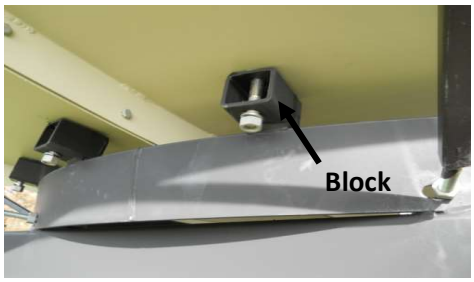
FIG. # 9



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



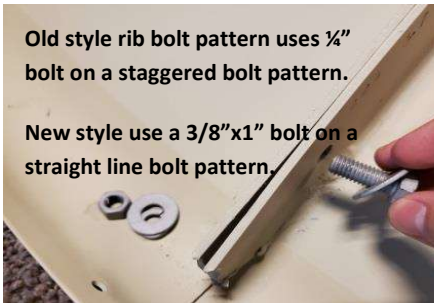


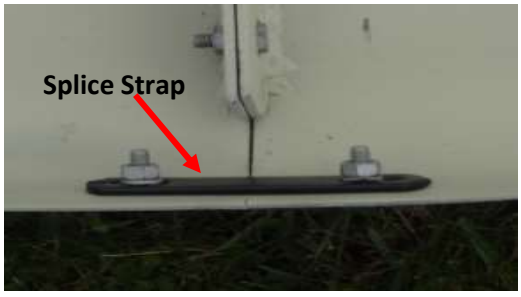


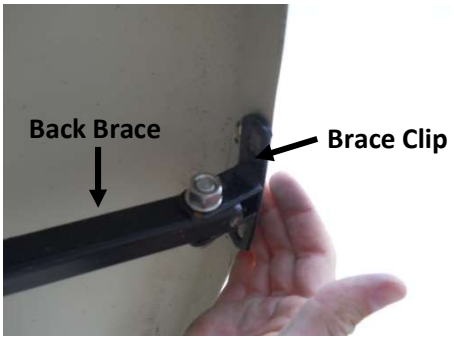
Make sure when you start, you start with the antenna section with the pilot hole and match that panel up to the block on the ring with the pilot hole or you will have problems with bolt holes being off. Match panel 1 to 1, 2 to 2, etc . Finger tight and once all installed go back over and retighten.

TIP: use self-adhesive spray on the rubber washers that go on the block between the ring and antenna. Use Tapered punches to help align the holes on the ribs when inserting the first few bolts.

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







Make sure when you start, you start with the antenna section with the pilot hole and match that panel up to the block on the ring with the pilot hole or you will have problems with bolt holes being off. Match panel 1 to 1, 2 to 2, etc. Finger tight and once all installed go back over and retighten.

TIP: use self-adhesive spray on the rubber washers that go on the block between the ring and antenna.

ASSEMBLY OF THE ANTENNA

(On Ground: Lift As One Piece Antenna)

IMPORTANT!!

Similar build as if you are installing on the ring except you support the center with a structure cut to correct antenna depth and lift as one piece. The ring is installed in bird bath on the mount prior to building the antenna.

The antenna will come in 4 or 8 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 ***(place a support cut to the depth of the antenna for the center to be supported when assembling panels)*** allowing for the installer to work on attaching the numbered ribs. The antenna must always stay in crate until assembled. (see FIG. #10). Take the panel labeled rib 08/1 & 08/2 and mate to panel with ribs labeled 08/02 & 08/3. Rib side 2 will mate to Rib side 2 of the corresponding panel. Mate the side rib on each to the corresponding number, example, side 2 to 2, 3 to 3, 4 to 4 and 1 to 1. (See photos below). Install 3/8" x 1" bolts in all holes, using a washer on each side along with a lock washer with the nut, finger tight. Continue on to the next panel in the same manner until finished with all panels.

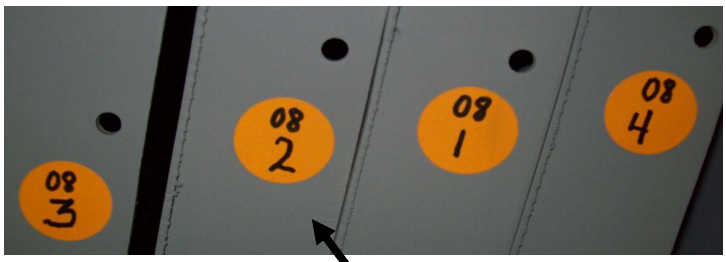


FIG. #9 **Match 2 with 2**

FIG. #10

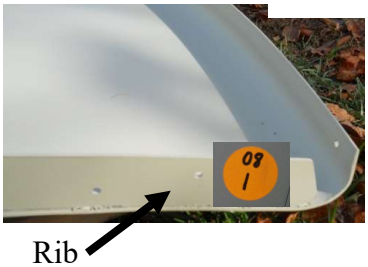
NOTE:

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

Lip stamp = panel position 1 to 1, 2 to 2, etc.

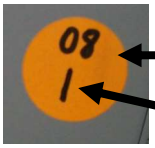
The number stamped on the rib reflects the antenna as a whole for bulk shipping. Each section has one rib stamped. The number will be the same on all ribs making it one complete antenna.

Rib stamp = Antenna number to make 1 antenna/example: 08 should be stamped on one rib meaning 4 sections make antenna #8



Rib

Notice below how you assemble 2 to 2, 3 to 3. **KEEP IN MIND:** WHEN LIFTING ANTENNA TO THE RING YOU NEED TO MACTH PANEL SECTION WITH THE PILOT HOLE ON IT TO MATE TO THE BLOCK ON THE RING WITH THE PILOT HOLE. Not doing this will cause an issue with holes not lining up. **You should not need to drill out the hole if properly installed.** Handle sections with care so not to distort the panel.

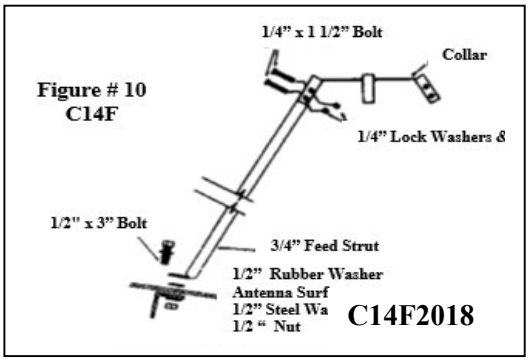


The top number represents the serial number of the antenna. ***Example:** In FIG. #9 you will see 4 sections with the top number 08. You will take all four pieces of 08 to make one complete antenna.

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.

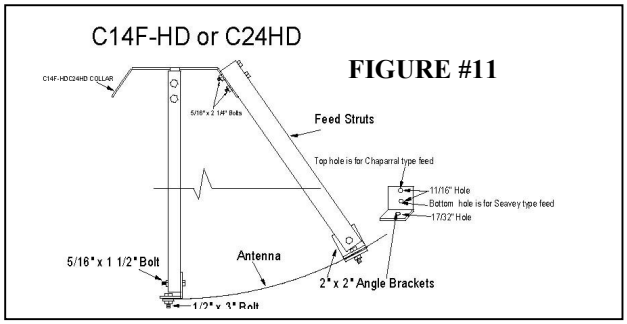
Standard Feed Struts----------

The Standard Feed Strut package includes four sections of pipe measuring 60-5/8" in length. *(The strut length includes the bend in the measurement.)* They have been configured to accept the feed collar on the crimped end, and attach to the antenna on the angled end. **(See Figure #10)** A DH C14F2018 Feed Collar is supplied as standard unless you have made a request for another style collar. Assemble struts and collar on the ground. Attach the feedhorn scaler plate to the collar, using the slotted holes. Lift assembly into place. Remove the ½" x 3" bolt near the pilot hole; align the feed strut assembly onto the bolt hole. Skip 3 bolts and repeat the procedure for the next feed strut. Repeat for all four struts. The focal length of 57.6" should be verified. Measure ¼" inside the waveguide to the center of the reflector. The collar is made with flex to allow you to pull the struts apart to place on the correct ring position and will stiffen the feed once installed and bolted in place.



Heavy Duty Feed Struts----------

The HD feed struts are designed to provide greater stability in feed configurations that are heavier or larger. This system utilizes the rectangular aluminum tubes for the feed struts. **Refer to the drawing Figure 11 for the bolt placement of a C14FHD, a C24HD or a C14FHDVK COLLAR.** Each strut has two - 5/16" x 2 ¼"bolts to attach to the feed collar. Attach one of the angle brackets (2" x 2") to the antenna with the ½" x 3" bolts. Notice that angle brackets have two holes. The bottom hole is for a Seavey type feed (C24HD). The top hole is for a Chaparral type feed (C14FHD). Next, attach the base of the strut to the angle brackets with the 5/16 x 1 ½" bolts supplied. Align the feed to point directly at the center of the antenna. Verify the focal length to the front of the scalar rings. **(ATCI and ADL f/l are measured to front of scalar ring. ATCI & ADL MOTO4 are the most common four port feeds on Dual Axis systems. Notice strut location on the ATCI 4 port feed.)**



Ku Band Feed Assembly----------

When using the Ku only feeds, you will be using the **C14F2018** feed collar and Ku tri-collar. See Figure 12 below. 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 ¾" bolts and nuts; tighten down. You can adjust polarity by loosening** these nuts and rotating the feed. Finish by assembling the struts to the feed collar as shown in Figure 13 for C14F2018 feed plate. (Fig#16 shows a single Ku feed inserted in a collar)

Figure #12

C14F2018 with Ku tri-collar

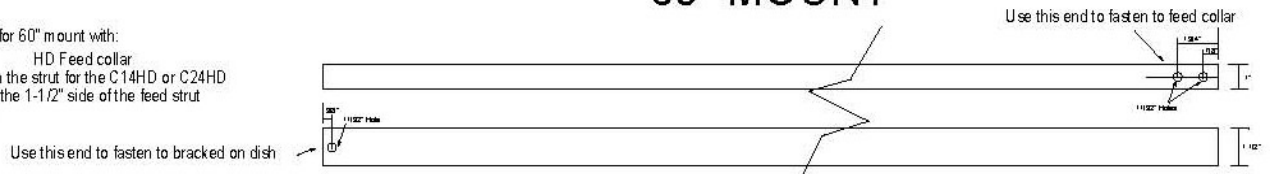
Figure #13

Only use with Fixed Gibraler Az-El

C14F2018 with single Ku feed

60" MOUNT

Notes
This strut is used for 60" mount with:
HD Feed collar
Use the 2 holes on the strut for the C14HD or C24HD
Bolt goes through the 1-1/2" side of the feed strut



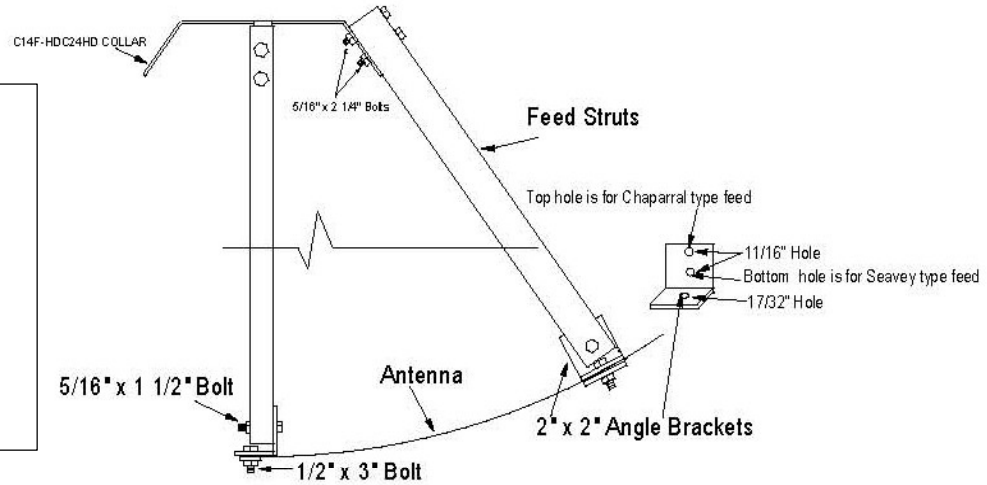
FOR ANTENNAS: 3.7m, 3.8m, 4.2m, 4.5m, 5m use 59"x1"x1.5" struts
FOR 3 METER Antenna use 39"x1"x1.5" struts

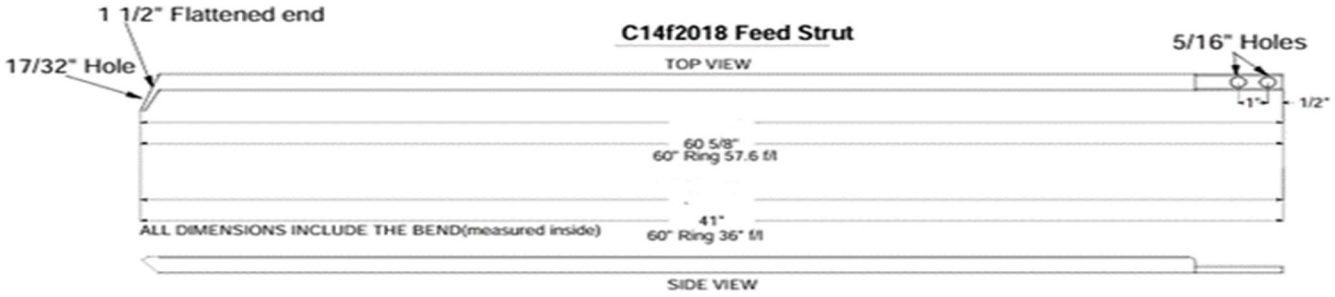
Back Braces/ Feed Struts

Dish Size	Focal Length	Tube Length	Standard Strut Length	Heavy Duty Strut Length
10' (3.0m)	36" f/l	None	41"	39"
12' (3.7m)	57.6" f/l	45"	60 5/8"	59"
12'4" (3.8m)	57.6" f/l	47"	60 5/8"	59"
14' (4.2m)	57.6" f/l	55 1/4"	60 5/8"	59"
14' 9" (4.5m)	57.6" f/l	62 1/2"	60 5/8"	59"
16' (5.0m)	57.6" f/l	68 1/2"	60 5/8"	59"

****All dimensions include the bend****

C14F-HD or C24HD





DH SATELLITE
P.O. BOX 229
PRAIRIE DU CHIEN, WISCONSIN 53821
PHONE (608) 326-8406

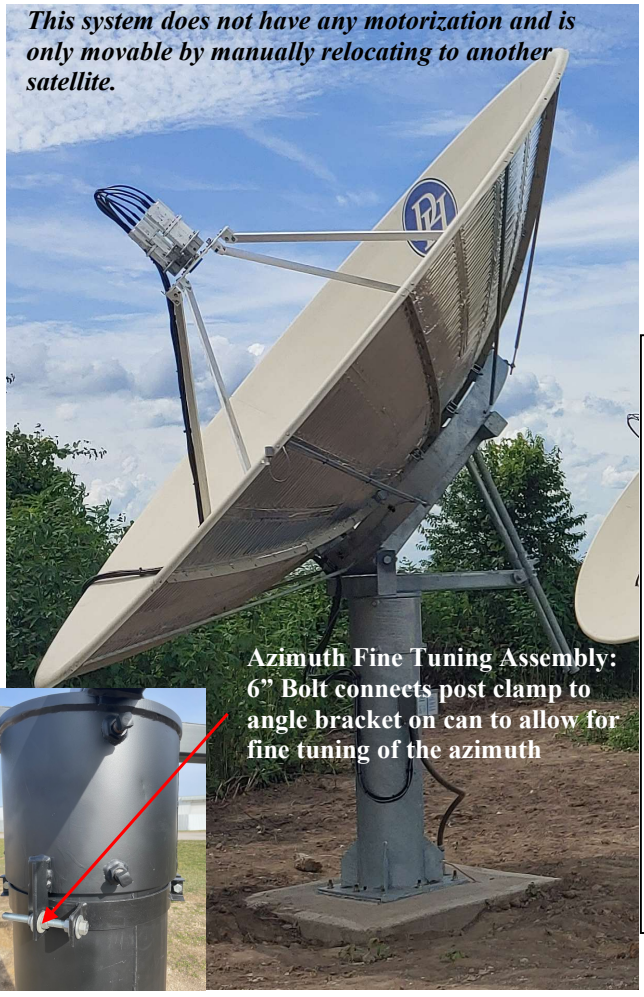
DESCRIPTION: FEED ASSEMBLY FOR C14F-HD & C24HD 60" RING		
DRWN BY: MD/GILBERTS	DATE: 12-15-14	DRWG#: C14HD feed for 60ring
SCALE: NOT TO SCALE	REVISED: 3-2-16	

Assembly Instructions
for the Fixed Dual Axis Gibralter Mount

The Fixed Gibralter mount is designed to be moved manually and will not accept motorization.

When setting up for the first time or when changing satellites, you will have to adjust in both azimuth and elevation.

1. Lift and set the Base of the Fixed Gibralter on the already installed anchors or to the roof location. Complete this by placing the flat washers, lock washers, and nuts on the 8 bolts to secure Gibralter base to the concrete pad or roof I beam or Baird stand.
2. Assemble the ring to the can as in the dual powered unit. The antenna, back braces and feed assembly are installed as listed in the complete installation manual.
3. Once you've determined the azimuth and elevation look angles, you're ready to complete your installation.
4. To move the unit in azimuth, loosen the six set screws and azimuth fine tune assembly. Rotate the basecan to the desired location. Use the azimuth fine tune to complete the peaking and once complete, tighten the set screws on the base can.
5. **To adjust or move in elevation, you will need help to raise or lower the dish manually. Be sure the ring is supported as this unit will drop quickly. Dropping the antenna will damage the reflector and you may cause injury to the installation team.** Elevation is adjusted by loosening the stow bracket and the fine tune assembly.
6. You can get close by manually lifting or lowering the antenna assembly, but to peak the satellite, you must tighten the fine tune assembly u-bolt and then use the threaded rod to tweak the unit. Refer to the next page for a parts list.



Parts List for: the Fixed Dual Axis Gibralter

Heavy Duty Feed Struts (BFSHD)
C14HD 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
8- 5/16" x 2 ¼" Bolts

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.

Ku4FL: 3PC
Add To C14F2018 OR C14HD
3- Section to 3pc collar
3 8-32 x 1" Bolts
3 8-32 x ¾" Bolts
3- #8 Fender Washers
3 8-32 Nuts

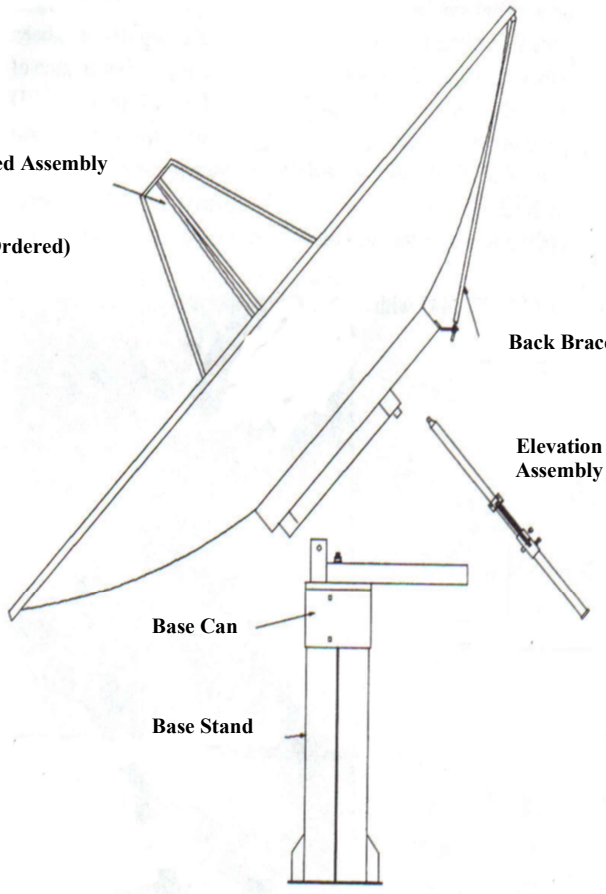
***C14F2018**
Feed Assembly (BFS)
1- Set of 4 Struts
1- Collar (C, Ku)
8- 5/16" 1" Bolts
8- 5/16" Lock Washers & Nuts

Feedhorn to Collar & LNB (When Ordered)
19-M6-1.0 x25mm Bolts (BFH)
19-M6 Lock Washers
19-M6 Nuts
3 – ¼" Flat Washers

Elevation Fine Tuning Kit
1- 5/16" x 2 U-bolt
2- 5/16" Lock Washers & Nuts
1- 3" x 2" x 2" Elev. Angle
1- 5/8" x 8" Eye Bolt
2- 5/8" Nuts
1- 1/2" x 1 1/2" Bolt
1-1/2" Nut
1- 1/2" Lock Washer

Azimuth Fine Tuning Kit
1-Gib Post Clamp
2- ½"x 2" Bolts
1- ½"x6" Bolt
4- ½" Flat Washers
2- ½" Lock Washers
5- ½" Nuts

Antenna To Ring (BAM)
(16 Block)
16- ½" x 3" Bolts
16- ½" Flat Washers
32- ½" Rubber Washers
16- ½" Lock Washers
16- ½" Nuts



Elevation Assembly (BEAFG)
2-48" Stow Bars w/Clamp
Fine Tune Clamp Kit
1- 3/4" x 8-1/2" Bolt
1- 3/4" Lock Washer
1- 3/4" Nut
3- 3/4" x 5/8" Spacers
2- 1/2" x 2 1/2" Bolts
2- 1/2" Lock Washers
2- 1/2" Nuts

Mount To Ring (BGB)
2- 1" Brass Bushings
2- 3" Dia. Bearing Plates
2- 1" x 3 1/2" Bolts

Back Brace Tube Length
3.0m- NONE
3.7m- 45" Long
3.8m- 47" Long
4.2m- 55 1/4" Long
4.5m- 62 1/2" Long
5.0m- 68 1/2" Long

Back Braces (BBF)
4- Bent Back Braces
4- Straight Back Braces
4- Bent Tabs
4- 1/2" x 1 1/2" Bolts
4- 1/2" Lock Washers
20- 1/2" Nuts
8- Brace Clips
16- 1/4" x 3/4" Bolts
16- 1/4" Lock Washers & Nuts
8- 3/8" x 2" Bolts
8- 3/8" Lock Washers & Nuts
8-1/2" SAE Washers for bent brace to ring

Template anchor Bolt Kit (When Ordered)
8- ¾"x18" Threaded Rod
16- ¾" Flat Washers
8- ¾" lock Washers
16- ¾" Nuts

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" Washers
3.0M	24	24	24	48
3.7M	28	28	28	56
3.8M	28	28	28	56
4.2M	64	64	64	128
4.5M	72	72	72	144
5.0M	72	72	72	144

Splice Straps: Sectional

Antenna Size	Splice Straps	¼" x ¾" Bolts	¼" Lock Washers	¼" Nuts
3.0M	4	8	8	8
3.7M	4	8	8	8
3.8M	4	8	8	8
4.2M	8	16	16	16
4.5M	8	16	16	16
5.0M	8	16	16	16

Tool recommendation:
Cordless Drill:

Sockets:	Open/closed end Box Wrench
7/16"	7/16"
9/16"	9/16"
1/2"	1/2"
3/4"	3/4"
1 1/8"	1 1/8"

3mm Allen wrench
Flathead screwdriver
Philips screwdriver

If you have upgraded to an 8PC 3.7M sectional antenna please refer to the tables below for additional hardware needed.

Template Rib Hardware: Sectional

Antenna Size	3/8" x 1" Bolts	3/8" Lock Washers	3/8" Nuts	3/8" Washers
3.7M	56	56	56	112

Splice Straps: Sectional (BSP)

Antenna Size	Splice Straps	¼" x ¾" Bolts	¼" Lock Washers	¼" Nuts
3.7M	8	16	16	16

Completing the Installation----------

Now that you've finished the assembly of the mount and reflector, let's optimize your antenna for peak performance.

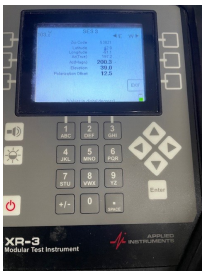
1. String the antenna surface. First, make sure all of the back braces are loose at their connection to the ring. Run a string from a back brace across the front of the antenna to the brace 180 degrees apart. Now do this with each brace. If the strings all meet in the middle and no pressure is on any 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. Make sure not to overtighten the nuts when complete.
2. Verify the focal length is set to 57.6". (3m reflector is set to 36")Using a tape measure to determine distance from dish to feedhorn. Consult feedhorn manufacturer to determine where to specifically measure. **(TIP: Chaparral and DH style feeds are measured to ¼' inside waveguide. ADL and ATCI feeds are measured to scaler ring surface)**
3. Verify the feedhorn is pointing at the center and is parallel to reflector surface. Use a focal finder tool, **(See Photo A)** or simply cut a 1"x4" board at 57.6". Held vertically against the feed, it should point at the center of the antenna. This will be true at the horizontal plane as well.
4. **Prepare and program Research Concepts RC2000 Controller**. Motorized systems include an application specific controller, a 36V elevation motor and 36V azimuth motor. Follow the provided manufacturer instructions for set up and programming.
5. **Set the Elevation look angle.** Verify what the elevation look angle should be using an AZ/EL calculator for the desired satellite, at your location. Place an inclinometer on the ring mount and move the reflector up and down while referencing the inclinometer, until you have reached the specified degrees. **(For a Fixed AZ/EL, snug down the stow clamp to hold reflector in place. Once you are on the satellite, use the Elevation Fine Tune Assembly to peak signal.)**
6. **Set the Azimuth.** Use a compass to visually align where the reflector should be pointed according to the AZ/EL calculator. Now move the antenna east and west slowly while referring to a spectrum analyzer or an Applied Instrument XR-3, or similar device, until you have reached the desired satellite. **(For a Fixed AZ/EL, use the Azimuth Fine Tune Assembly to peak signal.)**

PHOTO A Focal Finder to Locate Center of Antenna

APPLIED INSTRUMENT XR-3

AVCOM PSA2500C SPECTRUM ANALYZER

JOHNSON DIGITAL INCLINOMETER



XR-3 AZ/EL CALCULATOR

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 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.

Call us M-F 8:30 am to 3:00 pm CST 608-326-8406

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: _____ Mount type: _____
Feedhorn make: _____ Model: _____
LNB Make: Model: