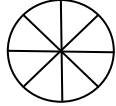


CRITICAL FACTORS INSTALLING A DH ANTENNA

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



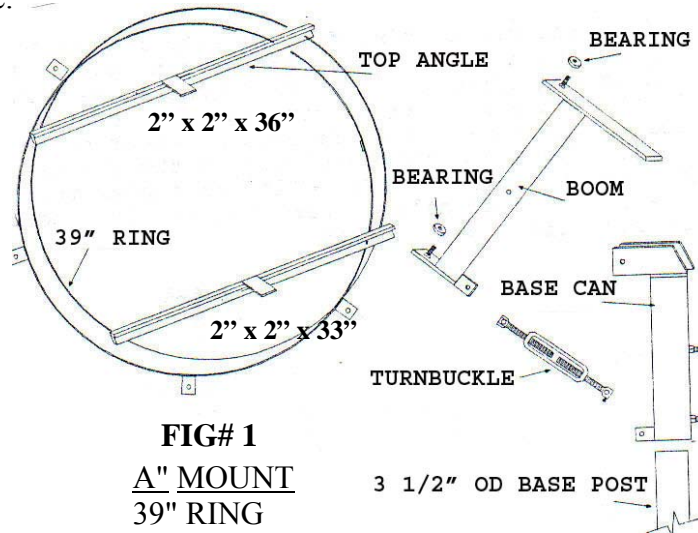
39" POLAR/AZ-EL MOUNT INSTALLATION INSTRUCTIONS

This manual covers both the 39" Polar and AZ-EL Mount

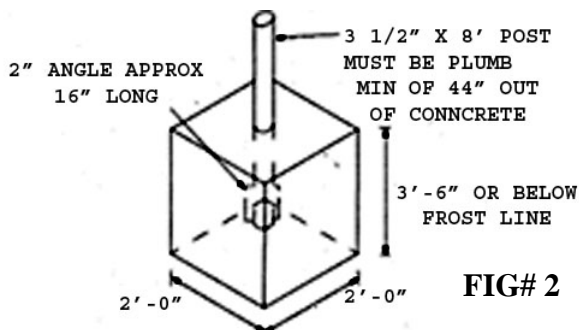
DH antenna is the largest selling antenna in the United States with over 200,000 installations to date. It is important to follow the instructions carefully to insure the optimum performance of your system. Any minor variation can significantly affect your picture.

PARTS LIST

- 1- DH Spun Aluminum Antenna
- 1- DH Mount: 39" Round Frame
Base Can Boom
- 3- Feed Struts for 6 Tab Ring
- 4- Feed Struts for 8 Block Ring
- 1- Locking Bar
- 1- Feedhorn Collar
(C13F or KU3FL 1PC Antenna)
(C14F, C14F2018 or KU4FL 4PC Sectional Antenna)
- 1- Base Post (Optional)
- 1- Bolt Bag to include all Hardware
(see page 11)



INSTALLATION OF BASE POST



A hole approximately 18" in diameter and 3 1/2" deep (more for 10' post) should be dug. With the post in the hole and perfectly plumb, pour cement so that 44" of the pipe protrudes above ground. Cement may be poured into the post as well for more rigidity. Let set overnight. Remember post must be exactly plumb!

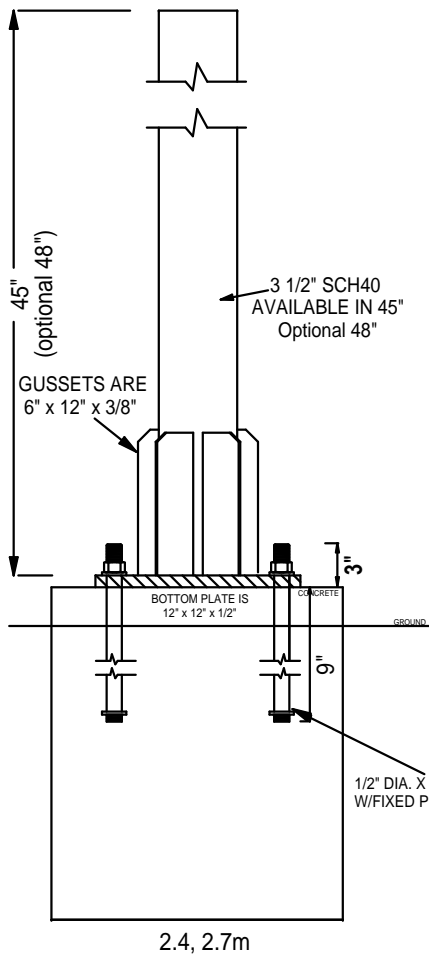
DH SATELLITE
P.O. BOX 239
PRAIRIE DU CHIEN WI 53821
PH: (608) 326-8406
FAX: (608) 326-4233
8 A.M. TO 5 P.M. C.S.T.

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

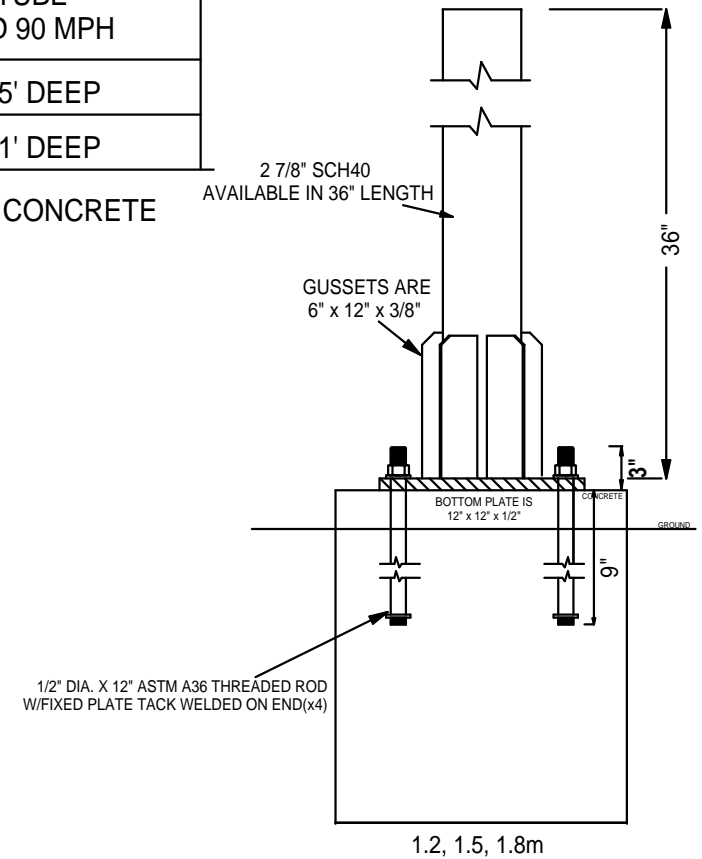
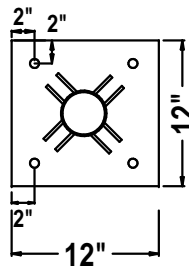
TX BASE STAND 1.2 to 2.7 METER


| FOUNDATION REQUIREMENTS SOIL TYPE: 3500-4000 PSF | | |
|---|-----------------------------|----------------------------|
| ANTENNA SIZE | SQUARE PAD WIND LOAD 90 MPH | SONO TUBE WIND LOAD 90 MPH |
| 1.2, 1.5, 1.8 | 2.5' x 2.5' x 2.5' DEEP | 1.5' DIA X 3.5' DEEP |
| 2.4, 2.7 | 3' x 3' x 3.7' DEEP | 1.5' DIA X 5.1' DEEP |

PLEASE NOTE: AREAS WITH FROST MUST POUR THEIR CONCRETE BELOW FROST LEVELS FOR YOUR AREA



TOP VIEW



| | | |
|--|------------------|----------------------------------|
|  DH SATELLITE P.O. BOX 239 PRAIRIE DU CHIEN, WISCONSIN 53821 PHONE (608) 326-8406 | | |
| DESCRIPTION: TX BASE STAND 1.2, 1.8, 2.4, 2.7 | | |
| DRWN BY: GILBERTS | DATE: 4-4-13 | DRWGF: |
| SCALE: NOT TO SCALE | REVISED: 1-15-15 | TX BASE STAND 1.2, 1.8, 2.4, 2.7 |

Assembling the Ring to the Base----- 39" Fixed Az-El assembly instructions

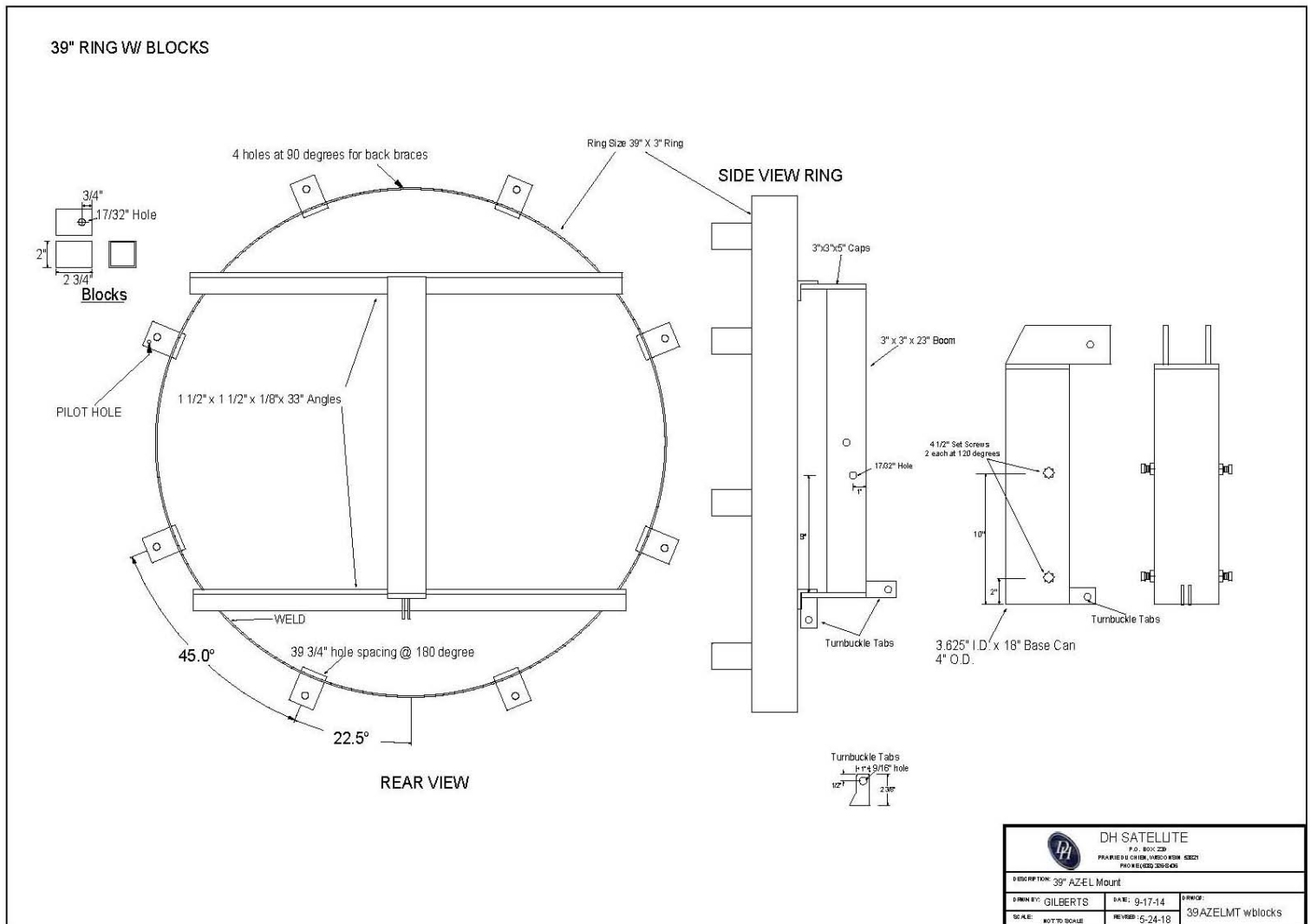
Assembling the 39" AZ-EL Mount is very easy (familiarize yourself with the Figure below). This mount has three pieces: 1. Base can 2. 39" Ring and boom 3. Turnbuckle.

1. First take the base can with the front of the saddle with the ears facing south or toward the satellite you will be looking at and set it on the base post. Tighten it with the 1/2" set screws. Do not over tighten at that time. Tighten to hold to the base post so that you can reposition as you aim the antenna to your satellite.
2. Take the boom that is running vertical on the ring and is attached to the 39" ring and place the boom between the ears on the saddle. Insert the 1/2" x 5" bolt through the saddle through the boom, put the lock washer on the bolt, put the nut on, but not tight. You will need to make adjustments for your look angle to obtain the best signal before tightening. See the "Base can to mount" details on the bolt bag page of this manual for details.
3. Place the "turnbuckle assemble" on the front tab of the base can and attach to the correct positioned tab on the boom. There are two sets of tabs that you may use on the boom depending on your look angle.

Now you may proceed to place the one piece DH 2.4m or 2.7m or sectional 2.4m or 2.7m on the ring.

Because we do not need back braces when assembling the sectional antenna you may find it to be easier to put the antenna together on the ground and lift as a one piece. **PILOT holes are the key to making sure you line up the antenna to the ring correctly. The ring will have a pilot hole on one block and the antenna will have a pilot hole drilled very near one of the holes for the blocks to mate to.**

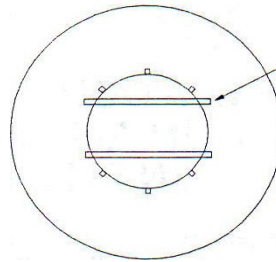
(see instructions on the following pages which will cover both 1 piece and sectional antenna assembly)



ATTACHING BACK FRAME TO 1PC ANTENNA

Place antenna face down on flat surface and lay the 36" ring on top, approximately centered. Center frame by measuring four directions from center hole. Bolt thru the six tabs using rubber washers on both sides of the dish. **NOTE; Steel tabs may need to be bent slightly for perfect alignment.**

ALSO NOTE: THREE OF THE BOLTS MUST BE REMOVED TO ALLOW FOR AFFIXING FEED STRUTS TO DISH



TOP CROSS BAR HAS ADJUSTABLE DECLINATION & LONG BEARING PLATE

6 TAB 1PC ANTENNA

SECTIONAL ANTENNA ASSEMBLY

(On Ground: Lift as One Piece Antenna)

See page 5 for installing antenna as sections to the ring

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 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. Continue on to the next panel in the same manner until finished with all panels. Now tighten all hardware.

Pilot holes are markers used for proper orientation of the first panel. There is a small reference pilot hole next to one of the ring bolt holes on one of the panels. Place the panel with the pilot hole so that ring bolt goes through the reference ring block that has a corresponding pilot hole. Looking from the rear, the mount pilot hole will be in the ring block second from the left of the ring weld.

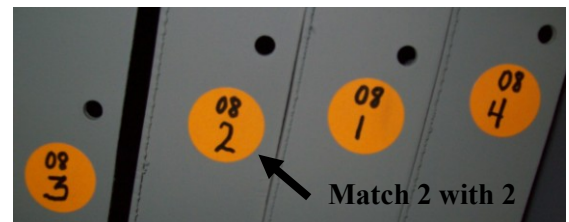


FIG. #9

NOTE:

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

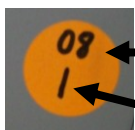
The number stamped on the rib reflects the antenna as a whole for bulk shipping. Each section has one rib stamped. The number will be the same on all ribs making it one complete antenna.



Rib



FIG. #10



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 2.7m 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.

“SECTIONAL ANTENNA ASSEMBLY METHOD”

(Install by Sections to ring: Using 2-3 People)

Assemble mount and put mount in birdbath position.

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. The pilot hole is located on the 2nd block from the left of the weld on the ring from the back view of the antenna. The pilot holes are used for a starting point only (see picture D).**

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 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. #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 or C14F2018) into the feed struts. Secure with 8- 1/4” x 1 1/2” bolts and 1/4” lock washers and nuts. Your next step is to tighten the 8 bolts that secure the dish to the ring. **DO NOT OVERTIGHTEN.** This is also addressed in Preparing the Feed Assembly on page 6.

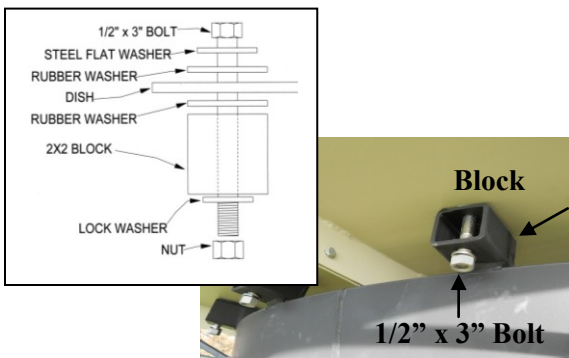


FIG. #9

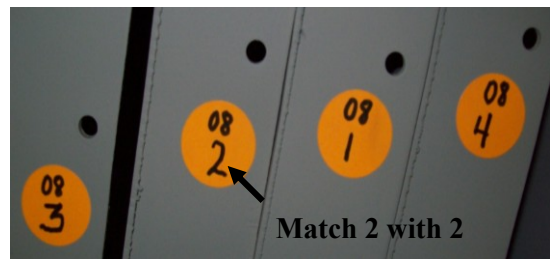
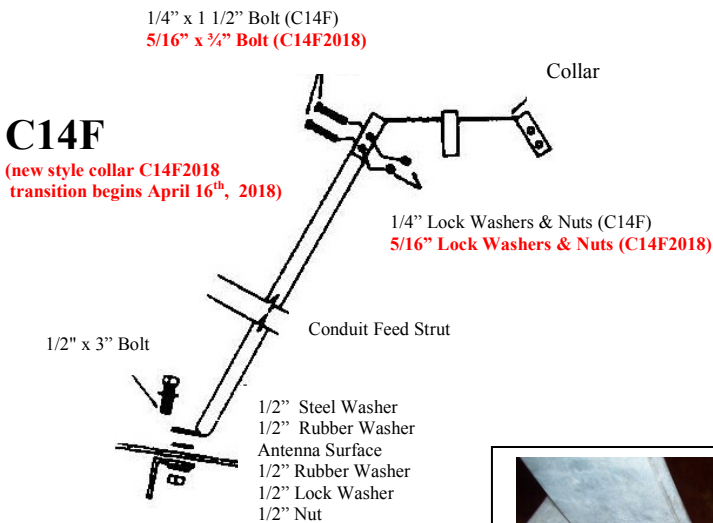


FIG. #10

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.



Alignment Punch

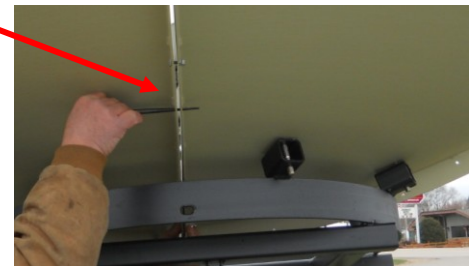
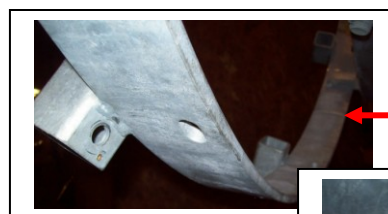
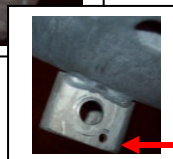


FIG. #11



PICTURE D

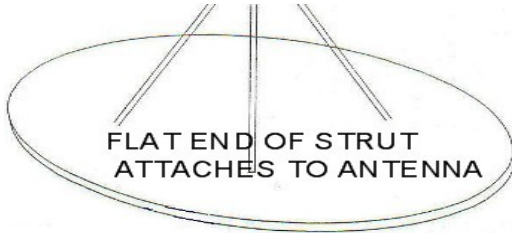


Pilot Hole

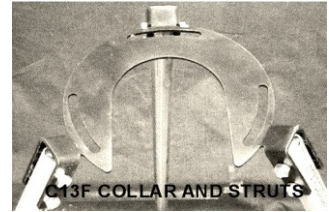
PREPARING FEED ASSEMBLY

Adjust the scalar ring for the proper wave-guide setting according to the focal length chart on the next page. Take the open end of the strut and slide it into the C14F or C14F2018 feed collar. Align the holes. Insert the 1/4" x 1 1/2" bolts through the C14F collar and strut, fasten with the 1/4" nuts. **If you have a C14F2018 collar you will insert 5/16" x 3/4" bolts through the collar and strut, faster with 5/16" nuts.** Bolt the feedhorn onto the collar with 1/4" x 3/4" bolts, not supplied by DH. Most feeds have a 3-bolt pattern on the scalar just for attaching to the collar.

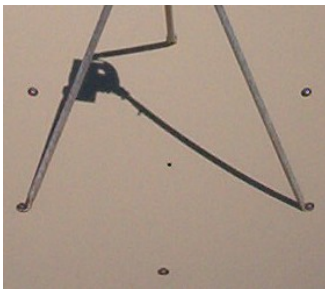
Place the flatten end of the struts onto the antenna and use the bolts supplied. Use 1/2" x 1 1/2" bolts to fasten the feed to the dish if you've purchase a 1PC antenna with 6 tab ring. **If you've purchase a 4PC antenna with an 8 block ring you will use 1/2" x 3" bolts to fasten the feed to the dish.** See diagram below. Use every other hole. Check with a focal finder to be sure the feedhorn is at the proper focal length and pointed directly at the center of the antenna.



C14F COLLAR AND STRUTS



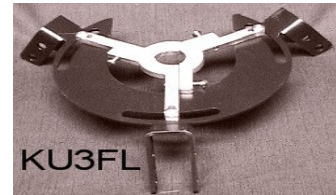
C13F COLLAR AND STRUTS



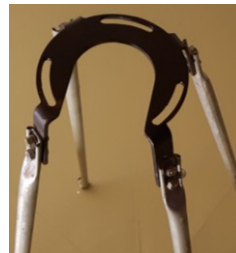
Strut Local on Ring Face of 1PC Antenna 6 Tab Ring



KU4FL



KU3FL

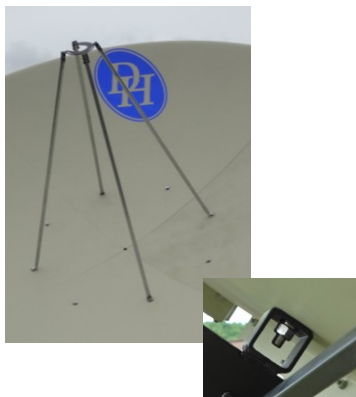


C14F2018 COLLAR AND STRUTS

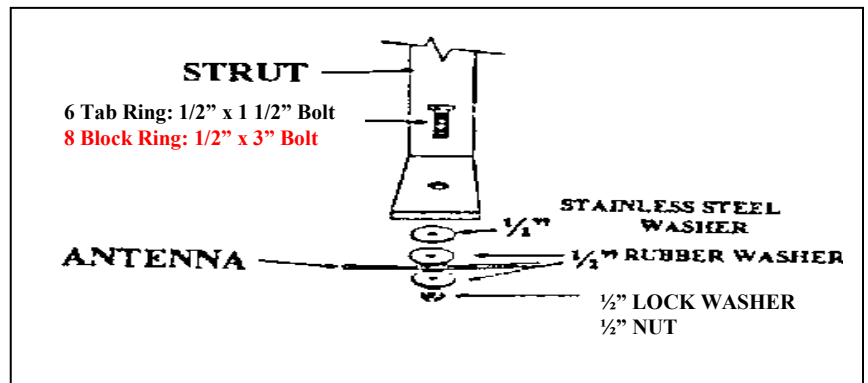


KU4FL USING C14F2018 COLLAR

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



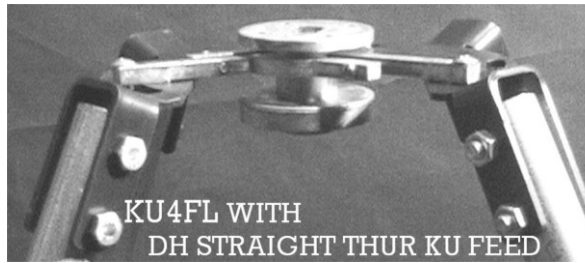
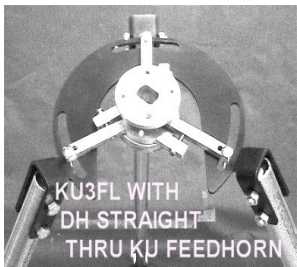
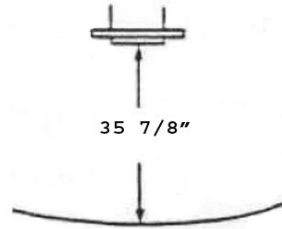
Strut Local on Ring Face of 4PC Sectional Antenna 8 Block Ring



Normally almost an Inch of the wave-guide will protrude past the ring for an F/D ratio of .3. Slightly more than 1/2" for an F/D ratio of .375 and less than 1/4" for an F/D ratio of .44. The F/D ratio is obtained by dividing the diameter into the focal length. An 8" antenna (96") divided into a focal length of 36" equals .375 F/D ratio.

On DH dishes 1M – 10 7/8" f/l
 On DH dishes 1.2m, 1.5m, 1.8m – 21 7/8" f/l
On larger DH dishes – 35 7/8" f/l

7'7" 35 3/4" Focal Length - .39 F/D - Wave Guide 3/8"
 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"

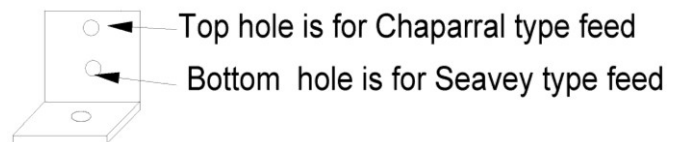
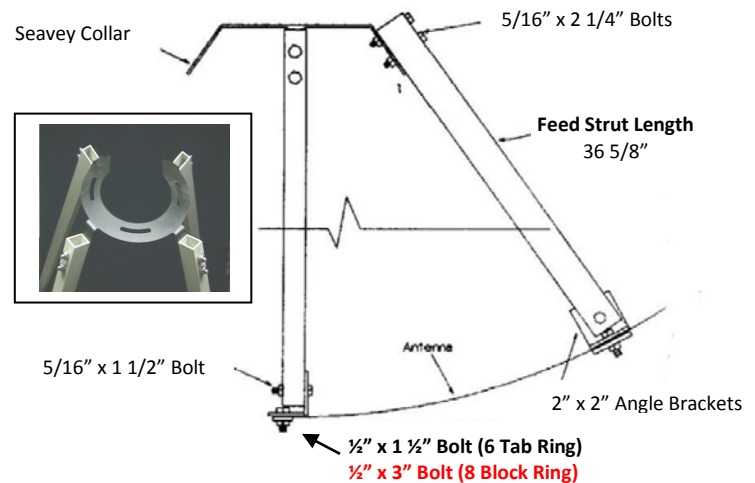


KU4FL W/ DH STRAIGHT THRU KU FEED USING C14F2018 COLLAR

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. You will use 1/2" x 1 1/2" bolts if the ring of the antenna has 6 tabs. **If the ring of the antenna has 8 blocks you will use 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 sealer rings. (Seavey recommends f/l is measured to front of scalar ring.)

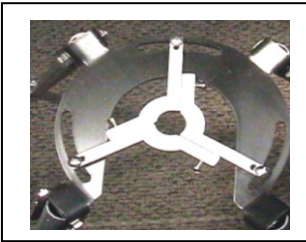
Figure #12



Ku Band Feed Assembly-----

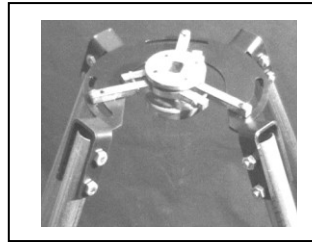
When using the Ku only feeds, you will be using the C14F or C14F2018 feed plate and tri-collar. See Figure 13 and Figure 15 below. First, **attach the flat tri-collar to the feedhorn** as follows: attach the first two pieces by using the 8-32 x 1" screws provided. Now slide the collar onto the feedhorn and add the third piece; tighten evenly. Attach the tri-collar to the larger horseshoe collar by the 8-32 x 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 for C14F feed plate and Figure 16 for C14F2018 feed plate. (Fig#14, Fig#16 shows a single Ku feed inserted in collar)

Figure #13



C14F with Ku tri-collar

Figure #14



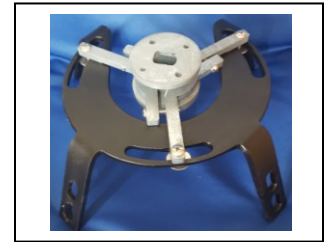
C14F with single Ku feed

Figure #15



C14F2018 with Ku tri-collar

Figure #16



C14F2018 with single Ku feed

NOTE: New Style Collar C14F2018 Transition Starts April 16th, 2018

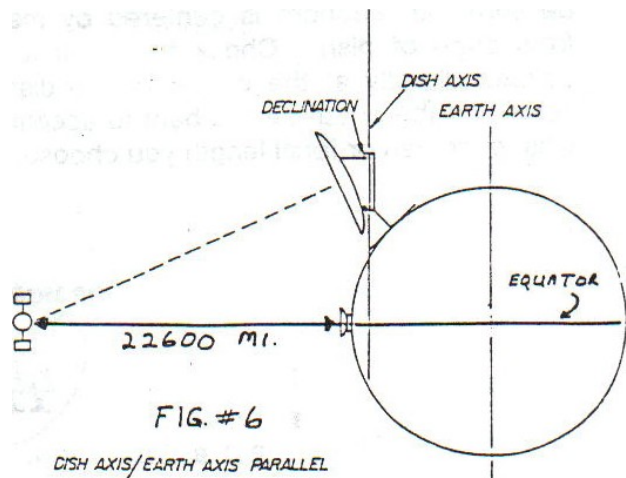
Fine Tuning the Antenna-----

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 ASSEMBLY OF ANTENNA AND MOUNT

Lift the main body of the mount onto the base post and turn so that bearing plates face approximately south. Lift the dish with frame attached up onto the main body so that the bearing bolts go through the frame bearing plate holes. (Fig. 1 page 1) The longer frame plate is the top one. Hold the dish steady while attaching either the locking bar or the actuator. Snug tighten the nuts.

A brief explanation of polar mounts: The satellite is in an orbit over the equator and appears to be stationary because it goes around the earth in exactly 24 hours. To track it, our dish must pivot on an axis that is parallel to the earth's (because we are not pivoting from the center of the earth an adjustment is made to the calculations). At the equator there is no declination adjustment, at other latitudes because the satellite is at the equator and not parallel with you, the dish must tip forward to see the satellite. This is declination.



FINAL ASSEMBLY OF ANTENNA AND MOUNT

Set the axis (mount boom) the approximate same degrees as your latitude. See chart. The dish is tipped forward the amount of declination (from chart). The mount must point south. Some things should be set and some adjusted. The following should be set and then left alone, dish front surface must be flat. Feed should be centered and have the proper focal length. Declination angle should be set. There are only two adjustments to polar track - 1 is elevation (latitude) the other is pointing south (very critical and very small movements are involved).

Have a TV by the dish to set up. You need an inclinometer to set declination and boom angle and also a compass to find south.

Find a satellite the closest to the south of you. Get a picture, adjust elevation. Try a satellite east or west and if your arc does not match the polar arc, you must move the apparatus east or west. If you go west and are under the satellite, do not raise elevation. Move the mount slightly west, also *the* same for east.

| Site Latitude | Declination (Offset Angle) | Inclination | Zenith | Site Latitude | Declination (Offset Angle) | Inclination | Zenith |
|---------------|-------------------------------|-------------|--------|---------------|-------------------------------|-------------|--------|
| 5° | 0.75674° | 5.13° | 5.89° | 39° | 5.44034° | 39.70° | 45.15° |
| 10° | 1.50699° | 10.26° | 11.77° | 40° | 5.55596° | 40.71° | 46.27° |
| 15° | 2.24524° | 15.37° | 17.62° | 41° | 5.66969° | 41.71° | 47.38° |
| 20° | 2.96550° | 20.47° | 23.45° | 42° | 5.78151° | 42.72° | 48.50° |
| 25° | 3.66193° | 25.57° | 29.23° | 43° | 5.89173° | 43.72° | 49.61° |
| 26° | 3.79780° | 26.58° | 30.38° | 44° | 5.99987° | 44.72° | 50.72° |
| 27° | 3.93257° | 27.59° | 31.53° | 45° | 6.10625° | 45.71° | 51.82° |
| 28° | 4.06606° | 28.61° | 32.68° | 46° | 6.21808° | 46.71° | 52.92° |
| 29° | 4.19816° | 29.62° | 33.82° | 47° | 6.31344° | 47.70° | 54.02° |
| 30° | 4.32124° | 30.63° | 34.96° | 48° | 6.41412° | 48.70° | 55.12° |
| 31° | 4.45864° | 31.64° | 36.11° | 49° | 6.51227° | 49.71° | 56.21° |
| 32° | 4.58675° | 32.66° | 37.25° | 50° | 6.60936° | 50.69° | 57.31° |
| 33° | 4.71344° | 33.67° | 38.38° | 55° | 7.06154° | 55.66° | 62.72° |
| 34° | 4.83835° | 34.67° | 39.52° | 60° | 7.45937° | 60.59° | 68.06° |
| 35° | 4.96207° | 35.68° | 40.65° | 65° | 7.80106° | 65.52° | 73.32° |
| 36° | 5.08401° | 36.69° | 41.78° | 70° | 8.08352° | 70.43° | 78.52° |
| 37° | 5.20452° | 37.69° | 42.90° | 75° | 8.30517° | 75.33° | 83.64° |
| 38° | 5.32327° | 38.70° | 44.03° | 80° | 8.46446° | 80.22° | 88.69° |

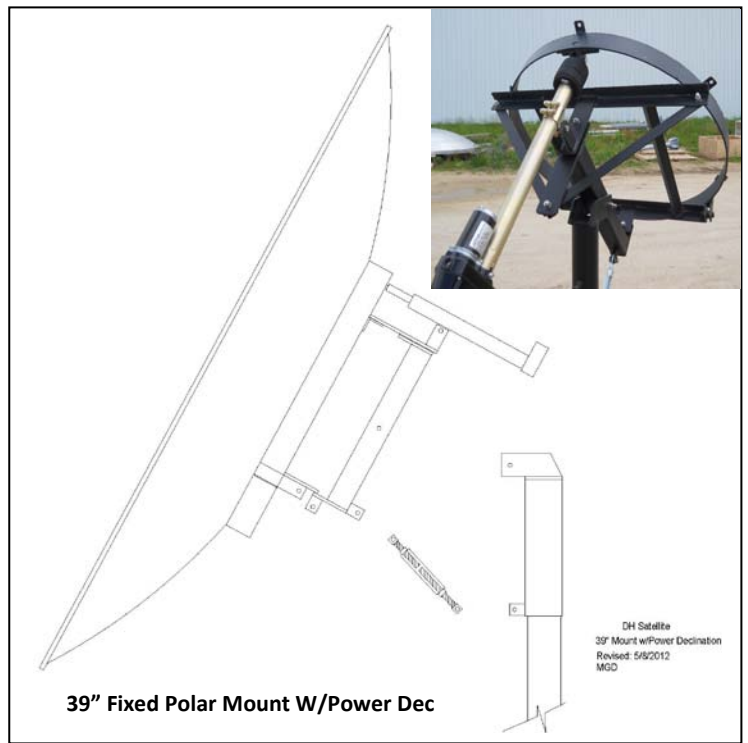
A WORD ABOUT KU FREQUENCY

Installing the feed for 12 Gig is more critical than on C-Band. This is why DH has a special feed collar and struts just for the KU application, (see Fig. 7 for KU3FL and see pg 7 for KU4FL). The center of the feedhorn must be exactly at the focal length. Also check to be sure the feedhorn is centered by measuring from edge of dish. Check to see that feed is pointed directly at the center of the dish. The f/l can be adjusted by sliding the feedhorn closer or farther away from the antenna through the three-piece collar. Major adjustments can be made by placing the three-piece collar on either side of the horseshoe collar.



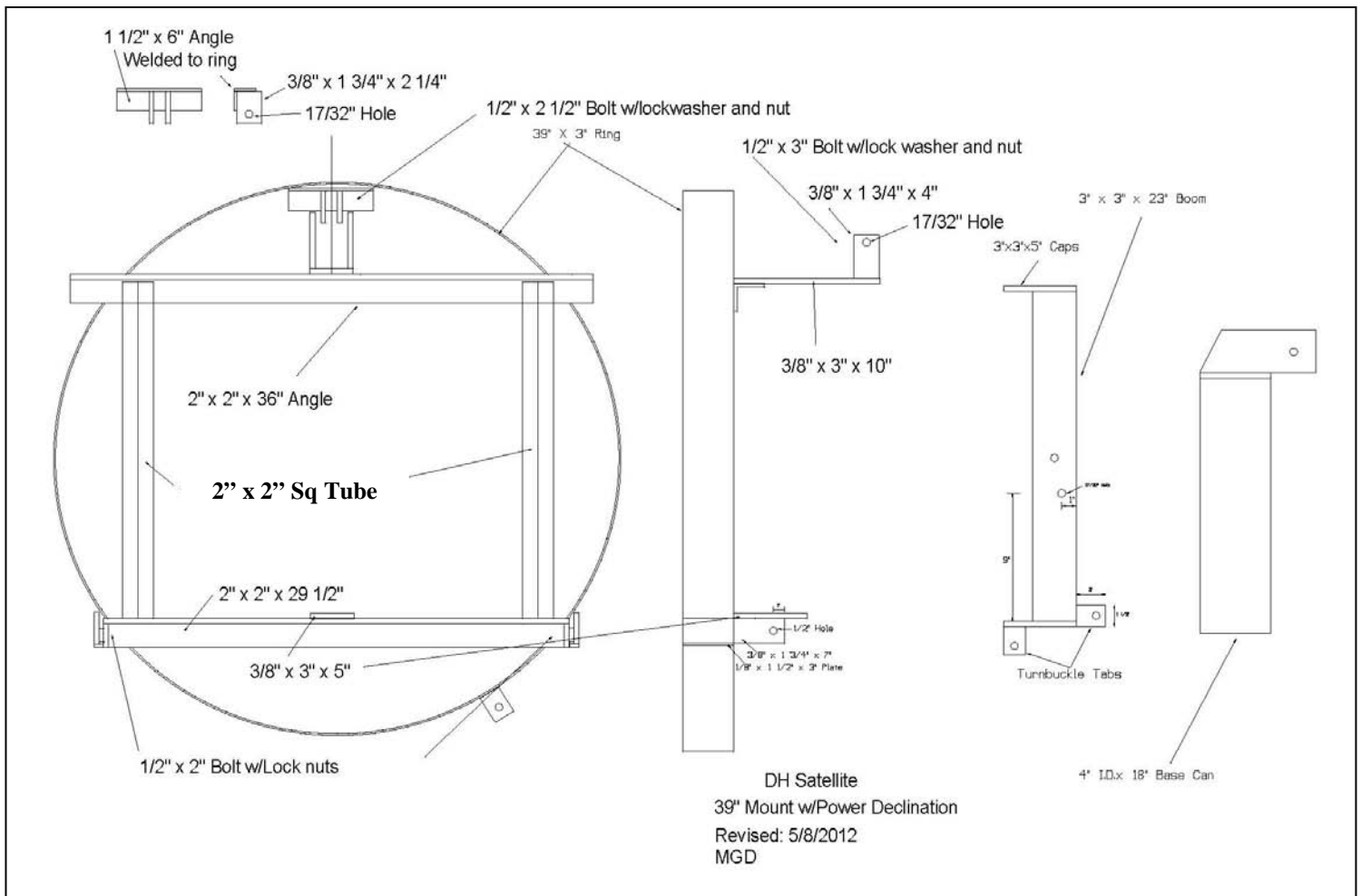
PO BOX 239 PRAIRIE DU CHIEN WI 53821 USA
DHSAT@MHTC.NET 1(608) 326-8406

Polar Mount with Power Declination (1PC Antenna Only)



Look at the drawing above. This may not be exactly your system but the working is the same. With the polar mount you will have one actuator for the Azimuth movement and the other for the Elevation movement. Unless otherwise ordered, both actuators will come with reed sensor motors. Typically this system is assembled but if yours, for shipping purposes, is in parts, you can assemble according to the photos below. The 1/2" Bolts are supplied with the washers and nuts for assembly.

The following pictures show the assembly of the 39" ring with the power declination and the bolts are labeled. To set the system up, set the boom to your latitude and move the power declination to the offset angle for your location. This should be your start position for tracking.



Polar Tracking a DH Antenna

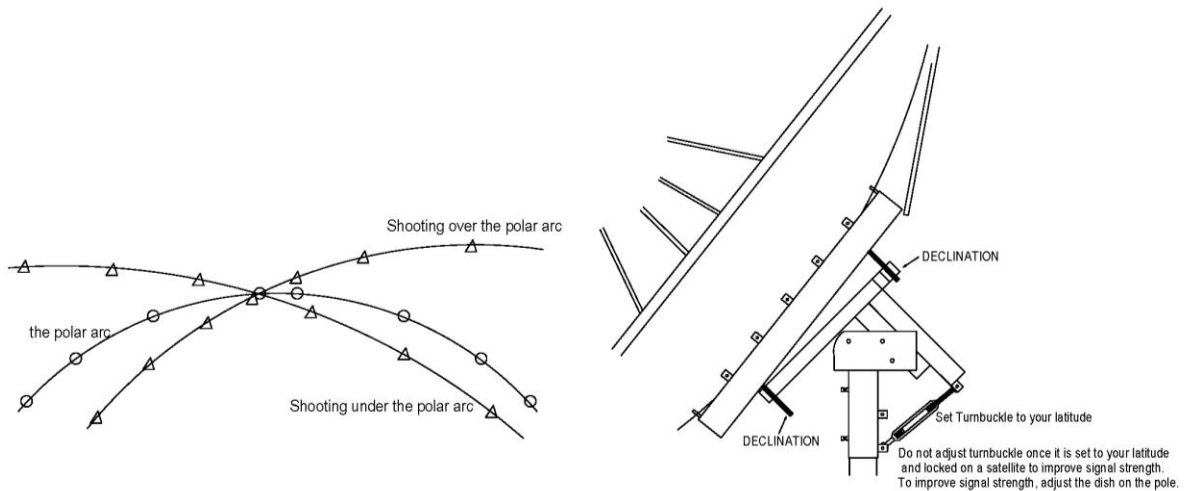
1. Point the Antenna system at your most direct southern satellite for your longitude.
2. Set the boom at your site's latitude.
3. Ensure that the top cross bar of the mount is directly horizontal with the boom and that the boom is pointed north to south.
4. Measure the off-set for your site latitude: (if the site is at 43 deg. Lat and 91 deg. Long): Set the boom to 43 degrees and ensure the top bar is horizontal with the boom, measuring the rings position with a digital inclinometer. This particular site would have a 6 degree off-set. This means the ring should be around 49 degrees. (if you need to make adjustments to the offset, use the declination adjustment on the left and right side of the ring near the top of the ring and the bar).
5. Aim the antenna at the most southern satellite and then peak the signal from this satellite with the Applied Instruments Turbo S2 or your test instrument. Then you will need to move the base can on the pole very slightly to the left or right to peak the signal even further.
6. Once you are satisfied with the location of the base can, mark the base can and base post to reference your spot. This will also be your reference satellite that you will return to in the next steps.
7. Track to the next satellite using the drill to motor the antenna over east or west. Once a signal is obtained on the Turbo S2 or other instrument, slightly move the antenna east or west with the drill. Once this signal has peaked, choose another satellite that is 10 to 20 degrees further and motor over to its position to see if a signal can be obtained (for the site referenced 43 deg. Lat and 91 w long, the most southern satellite used was 91 deg, then the next satellite used to peak was 97 deg. Moving 10 or 20 degrees AMC11(131 deg.) was used.) Peak this satellite signal until you are happy with the signal.
8. Once you have peaked, make a slight turn on the turnbuckle, slightly moving the dish up and down. Using your Turbo S2 or other testing device, note if these adjustments make the signal better or worse. This will indicate if you are over or under the polar arc. Remember where the turnbuckle position started as you will need to put it back to this position.
If you increased the signal strength lowering the dish, this indicates that you were shooting over the arch. If you increased the signal by raising the dish, this indicates you were shooting under the arc. The following will correct that.

Adjusting arc

1. First, adjust the turnbuckle back to where it was before you made the move either up or down. Drive the dish back using a drill back to the most southern satellite that you started on and peak this signal out. Note: you must be peaked on your most southern satellite signal.
Looking at the mark that was previously made on the can/pole, rotate the dish assembly and base can.
2. If the last satellite you attempted to peak the signal on had a better signal by turning the turnbuckle and dish down, you will need to move the base can to the East about 1/8". If the signal was stronger when you raised the dish, you will need to move the base can to the West about 1/8".
3. Tighten down a set screw and mark on the can and pole where you just moved it. Motor the dish slightly east or west to repeak the southern most satellite you used as your reference satellite. Slightly adjust the turnbuckle if needed to peak the signal even further.

4. Once you obtain the best signal strength, drive the dish over with a drill to the last few satellite signals that you had done previously. Note if the signal strength has improved from the adjustments that were just made.

5. Peak the satellite signal out on the farthest satellite you are trying to obtain (we used 131W). Note the signal and then adjust the turnbuckle again either up or down seeing if this increases or decreases the signal strength. If it does, you will need to repeat the steps under **Adjusting arc** until you are satisfied with the signal strengths with the satellite signals you are trying to obtain.



BOLT BAG: FOR 39" POLAR/AZ-EL MOUNT

**C14F
Chaparral
Feed Assembly**
1- Set of 4 Struts
1- Collar (C, Ku)
8- 1/4" x 1 1/2" Bolts
8- 1/4" Lock Washers & Nuts

**C13F (1PC ANTENNA)
Chaparral
Feed Assembly**
1- Set of 3 Struts
1- Collar (C, Ku)
6- 1/4" x 1 1/2" Bolts
6- 1/4" Lock Washers & Nuts

**Heavy Duty Feed Struts
C14F or C24**
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 1/2" Bolts
8- 5/16" x 2 1/4" Bolts

**Ku4FL/Ku3FL 3PC
Add to C14F/C13F**
3- Section to 3pc collar
3 8-32 x 1" Bolts

**3PC Collar for Ku4FL/Ku3FL
Use to Attach to Horseshoe of C14F/C13F**
3 8-32 x 3/4" Bolts
3- #8 Fender Washers
3 8-32 Nuts

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

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



1PC DH Antenna W/39" Ring (Old Style-6 Tab)

**Antenna to Ring
(8 Block)**
8- 1/2" x 3" Bolts
8- 1/2" Lock Washers
8- 1/2" Nuts
8- 1/2" Steel Washers
16- 1/2" Rubber Washers

**Back Braces
(Optional on 2.4M & 2.7M)**
4- Back Braces
4- 1/2" x 1 1/2" Bolts
12- 1/2" Nuts
4- 1/2" Lock Washers
4- 3/8" x 2" Bolts
4- 3/8" Lock Washers & Nuts
8- 1/4" x 3/4" Bolts
8- 1/4" Lock Washers & Nuts
4- Bent Tabs
4- Brace Clips

Angles to Ring
8- 1/2" Nuts

**Antenna to Ring (1PC ANTENNA)
(6 Tab)**
6- 1/2" x 1 1/2" Bolts
6- 1/2" Lock Washers
6- 1/2" Nuts
6- 1/2" Steel Washers
12- 1/2" Rubber Washers

Base Can to Mount
1- 1/2" x 5" Bolt
2- 1/2" Bearings
3- 1/2" Lock Washers
3- 1/2" Nuts

Turnbuckle
1- Turnbuckle
2- 1/2" x 1 1/2" Bolts
2- 1/2" Lock Washers
2- 1/2" Nuts

Locking Bar
2- 1/8" x 1 1/2" x 25" Flat Lock Bars
3- 1/2" x 1 1/2" Bolts
3- 1/2" Nuts
3- 1/2" Lock Washers

**NOTE: SECTIONAL ANTENNAS INCLUDE ADDITIONAL HARWARE,
SEE TABLES BELOW**

| Template Rib Hardware: Sectional | | | |
|---|--------------------------|--------------------------|------------------|
| Antenna Size | 1/4" x 3/4" Bolts | 1/4" Lock Washers | 1/4" Nuts |
| 2.4M | 36 | 36 | 36 |
| 2.7M | 40 | 40 | 40 |

| Splice Straps: Sectional | | | | |
|---------------------------------|----------------------|--------------------------|--------------------------|------------------|
| Antenna Size | Splice Straps | 1/4" x 3/4" Bolts | 1/4" Lock Washers | 1/4" Nuts |
| 2.4M | 4 | 8 | 8 | 8 |
| 2.7M | 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.

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: _____