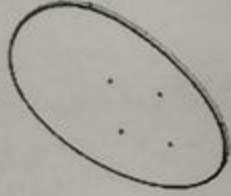


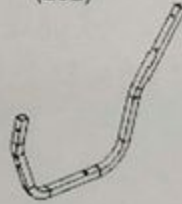
A1 : Main Reflector
(1ea)



A2 : Sub Reflector
(1ea)



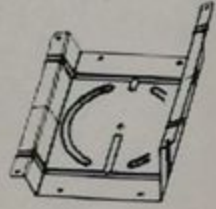
A3 : Support Arm
(2ea)



A4 : LNBF Guide
(1ea)



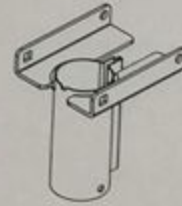
A5 : Back Mount Tilt
(1ea)



A6 : Back Mount Elevation
(1ea)



A7 : Weaving Tube
(1ea)



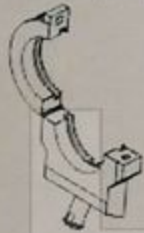
A8 : LNBF Guide Seat
(2ea)



A9 : Holder Supporter
(5ea)



A10 : LNBF Ku Band
Holder (5ea)



A11 : LNBF Ku Band
Adapter (5ea)



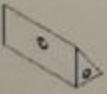
A12 : Support Arm Cap
(4ea)



A13 : BKT (2ea)



A14 : BKT
(1ea)



A15 : M16 T-Bolt
(1ea)



B1 : M6x12
(6ea)



B2 : M6x35
(4ea)



B3 : M6x35
(4ea)



B4 : M6x37
(2ea)



B5 : M5x15
(2ea)



B6 : M5x15
(15ea)



B7 : M8x15
(1ea)



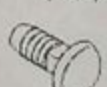
B8 : M8x15
(6ea)



B9 : M10x140
(2ea)



B10 : M10x20
(2ea)



B11 : M6 NUT
(18ea)



B12 : M8 NUT
(7ea)



B13 : M10 NUT
(4ea)



B14 : M16 NUT
(2ea)



B15 : M10 SPRING
WASHER
(4ea)



B16 : M10
WASHER (6ea)



B17 : M16
WASHER (2ea)



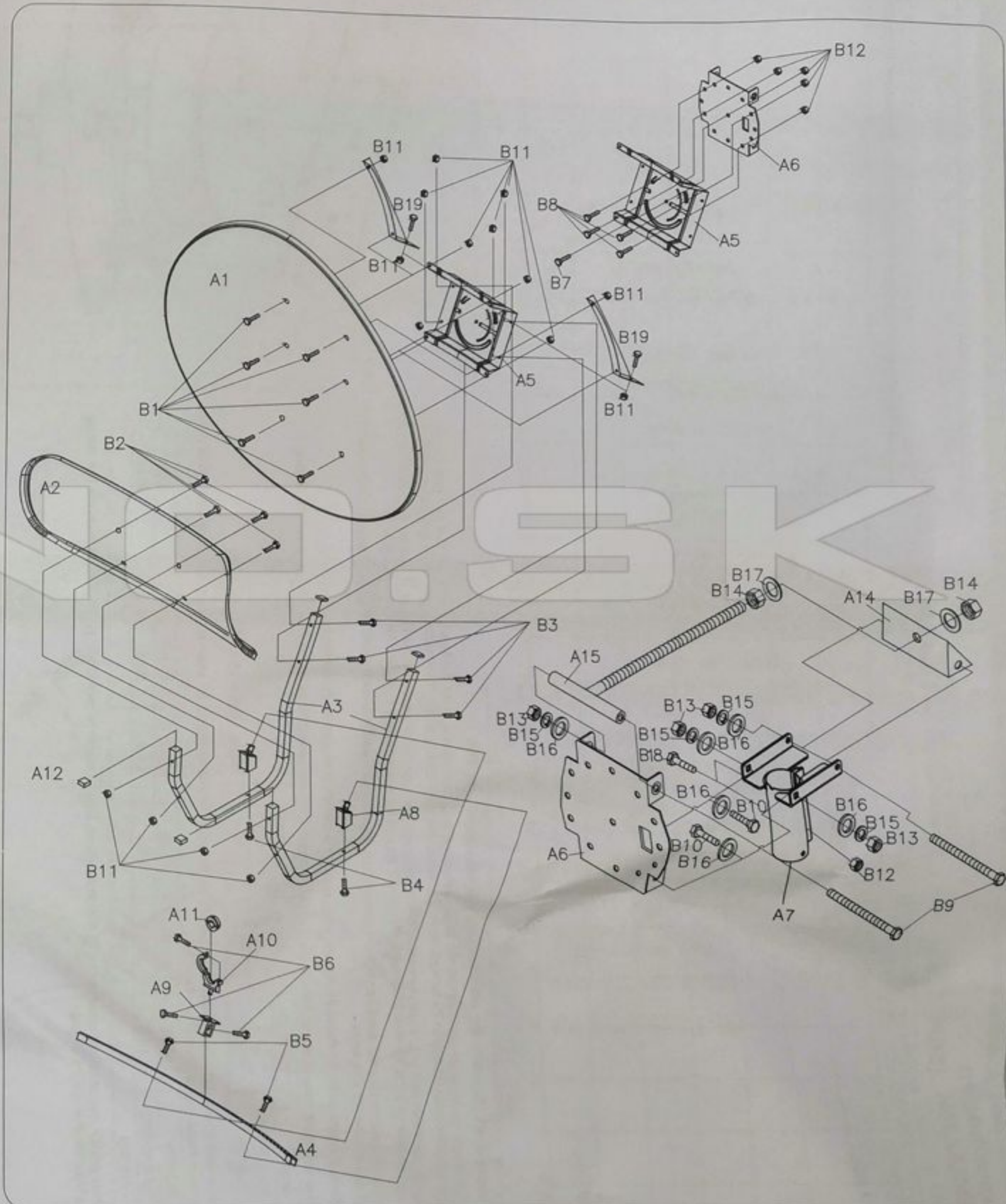
B18 : M6x25 (2ea)



B19 : M6x12 (2ea)



Assembly Diagram



Finding Angles for Your Location

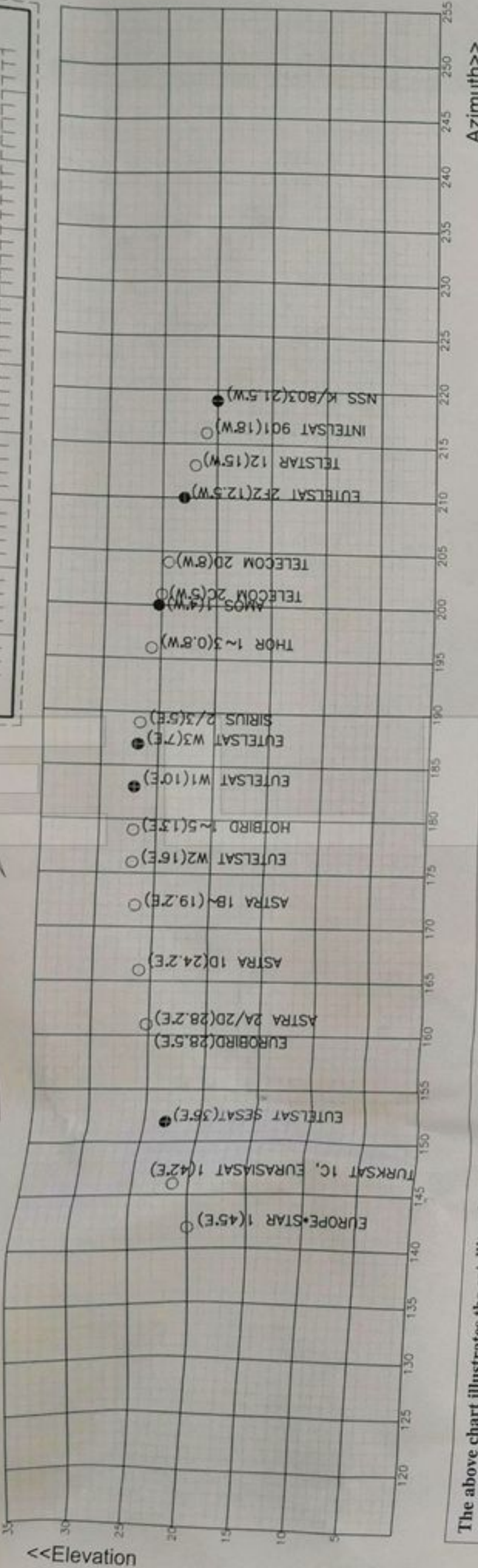
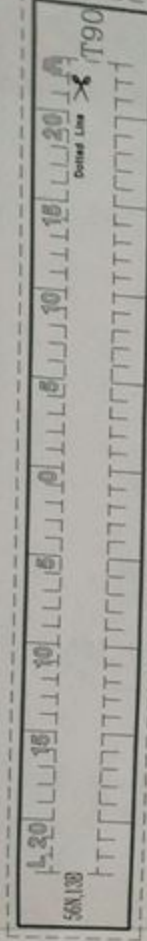
T90

Copenhagen

DENMARK (56N, 13E)

Receivable satellites by 55cm : ○
Receivable satellites by 90cm : ●

Cut off the scale on the right and use to find Elevation, Skew & Azimuth Angles.

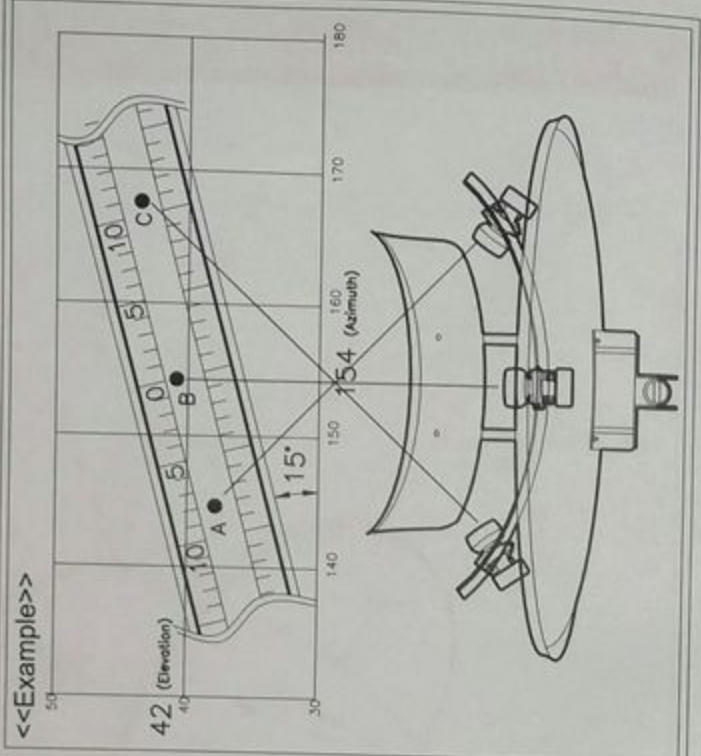


The above chart illustrates the satellites that you can receive with T90.

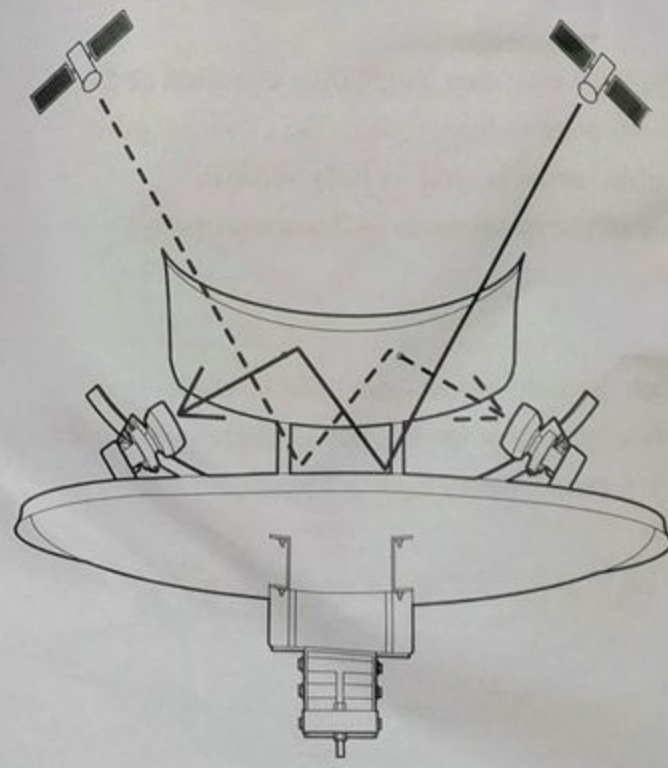
1. Cut out the paper scale provided in this page and cut off the center-piece along the dotted line. Note that this paper scale has measurement from 0 to 20 to both ends, this coincides with measurement imprinted on the LNBf guide (see parts list).
2. Select satellites that you want to receive. When you place the paper scale over satellite line on the chart, the satellites you want to receive must be visible through the cut-off area of the scale as shown on the example to the right.
3. Now you are ready to determine your center-satellite. The nearest satellite from 0 point on the scale is your center-satellite (B satellite on the example).
4. From the zero point on the scale, record your azimuth & elevation angles on the table provided below.
5. Use any angle measurement device, measure skew angle from the table. On the example, skew angle is *105 degree.
6. Now you are ready to find position for LNBfs on the guide (Refer to page 5 for more information). Note how LNBf guide is positioned on the illustrated example.
7. Your angles are estimated numbers using the chart above. Due to nature of multi dish, you will need to do the fine tuning as illustrated in Step 4 in page 7.

Angle	Elevation	Skew	Azimuth
Your Setting	27.0	89.6	180.9
Example	42	*105	154

*Note : 105 = 15 + 90(Horizontal)

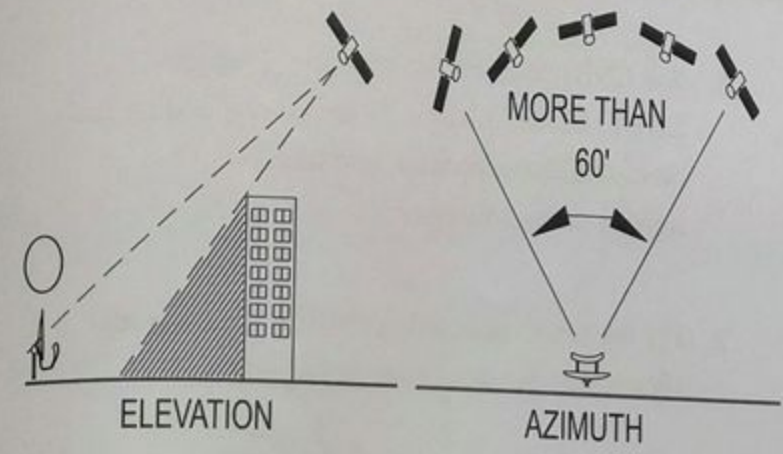


Position of LNBf with Satellite Location



1. A given signal from a satellite is reflected by the Main-reflector directly, then reflected again on the sub-reflector. Finally the signal reaches the LNBf.
2. To receive the signal from the right upper satellite, you install the LNBf on the left side of the TOROIDAL 90.

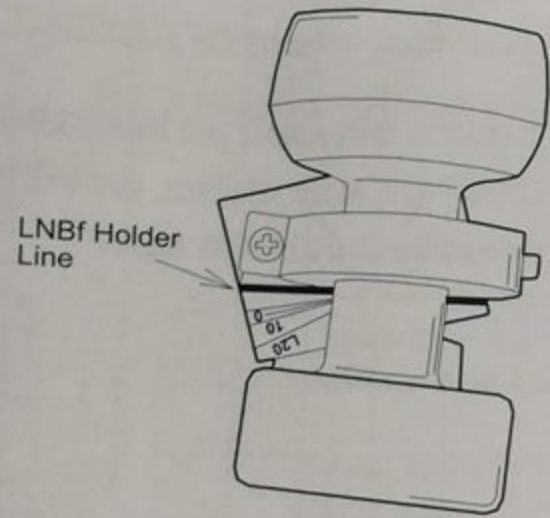
Mounting Location



1. Decide where to mount the TOROIDAL 90.
2. In order to determine if you have a clear line-of-sight to the satellites, you will need the azimuth and elevation angles.

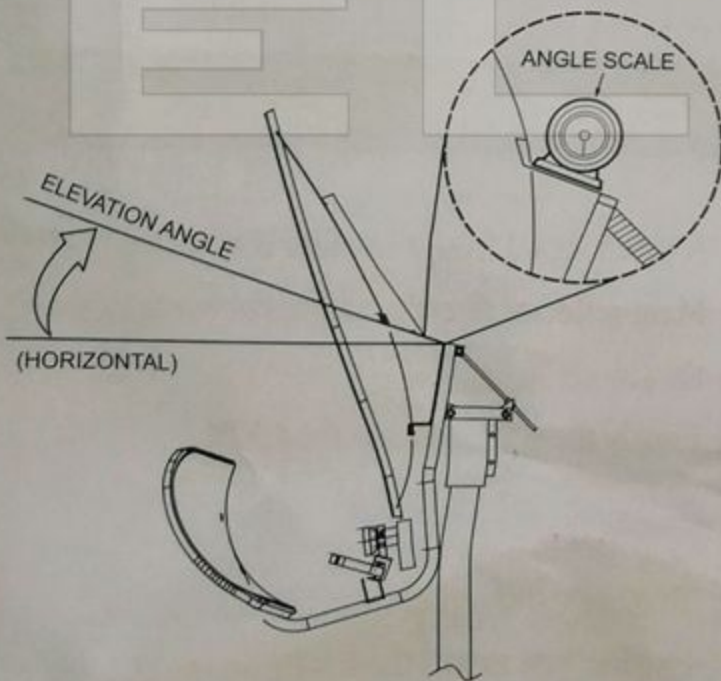
T90

Step 1. LNBf and LNBf Holder Installation



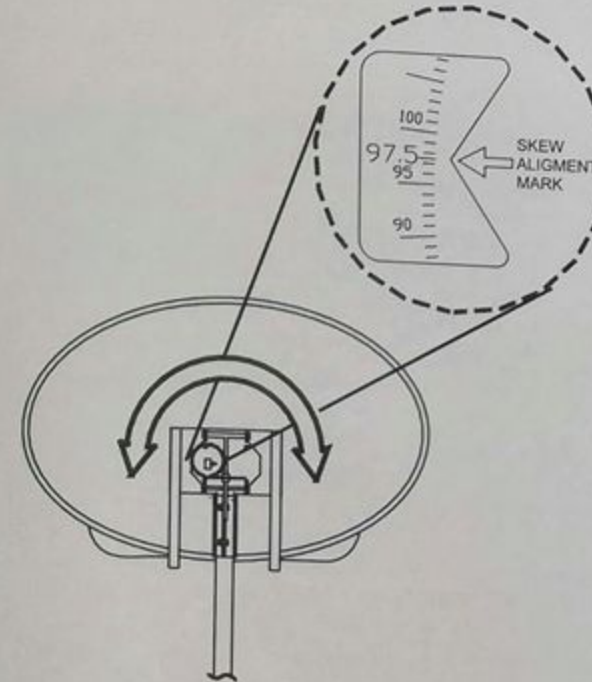
1. See LNBf position data on page 4, align **LNBf Holder Line** with the corresponding scale on the holder supporter, and then tighten those 2 pieces.
2. Fix the upper assembled LNBf body on guide (See LNBf position data on page 4)

Step 2. Elevation Angle setting



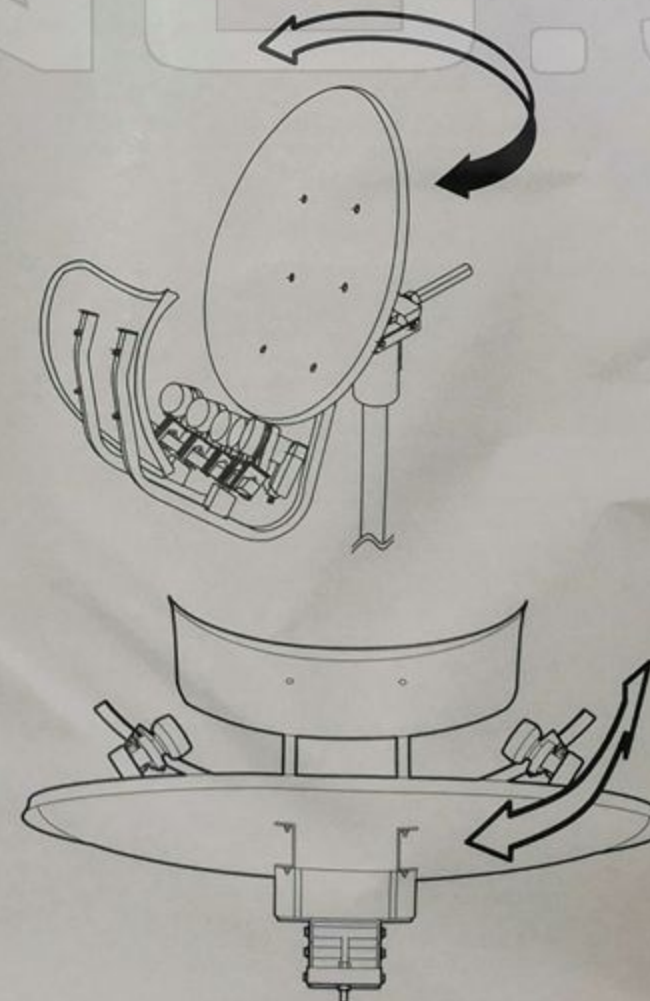
1. Install the pole mount vertically at exact right angles to the ground. This step is very important.
2. Adjust the elevation angle (See elevation angle data on page 4) then, tighten the elevation nut. (If pole mount is not precisely vertical, none of the adjustments will work properly)
3. When the pole mount's not been installed vertically at right angles, put an angle scale on the back mount, and try Step 2-2 again.

Step 3. Skew angle setting



1. Adjust the skew angle (See skew data on page 4), then tighten the skew nut.

Step 4. Azimuth angle setting



1. See azimuth data on page 4. Turn the dish horizontally until your receiver shows the greatest signal strength for the satellite corresponding to the center-installed LNBf and then tighten the dish.
2. Now you have a strong signal for the center-installed satellite, adjust other LNBfs to get the greatest signal strength.
3. Even after Step 4-1 & 4-2, you are satisfied with signal strength, please adjust the Elevation angle setting within about 1 degree to upward or downward. Then, repeat Step 4-1 & 4-2.
4. Tighten LNBf holders when all LNBf maintain a satisfactory signal.