

## f/D calculations

### Focal Length, What?

The dish is actually a lens, just like in a camera.

The antenna is actually in the feed. Now called a "probe".

If you have no clear indication of where the original feed was located, You will have to calculate the focal length and f/D ratio

#### Determining the focal length of a parabolic dish (axi-symmetric, circular)

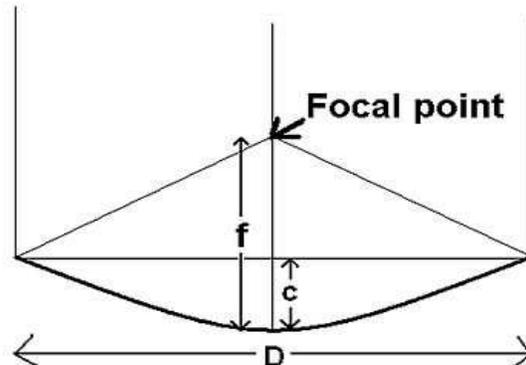
**Focal length = f**

**Depth = c**

**Diameter = D**

$$f = ( D * D ) / ( 16 * c )$$

Measure the depth using a tight fishing line across the dish and a rule to measure depth c.



f/D example: 10 ft dish, f calculates to 48 inches (4 ft)  $4/10=.4$

Assemble the feed scaler ring assembly aligning the f/D ratio you calculate, to the corresponding f/D mark on the feed, to the front, or rear face of the scaler. (Refer to mfg's instructions)

Now, Assemble your feed mount so that the distance from the center of the dish to the feed is the calculated Focal length, MINUS 1/4 inch.

Get it centered, as outlined on the previous page, If your dish is a "button-hook style, adding guy wires or struts may be necessary. Aim it for the center of the dish. We want to use all of the dish, Not just one side.

Refer to the feed manufacturers documents to properly set the skew.

Usually there is a mark on the feed to align vertical , or horizontal, with the dish.

Most feeds with a servo for polarity, require the servo to be 45 degrees to the west of vertical. in the northern hemisphere.( or 180 degrees from there) East of vertical in the southern hemisphere