



DIRECTIVE SYSTEMS

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DS 88-8 FM BROADCAST BAND YAGI ANTENNA

The DS 88-8 eight element high performance FM yagi has been designed to complement the capabilities of modern FM stereo tuners and minimize any reception problems due to heavy overcrowding of stations, the norm in most areas of the country. A good antenna, like a good tuner, can make a tremendous difference in your FM reception.

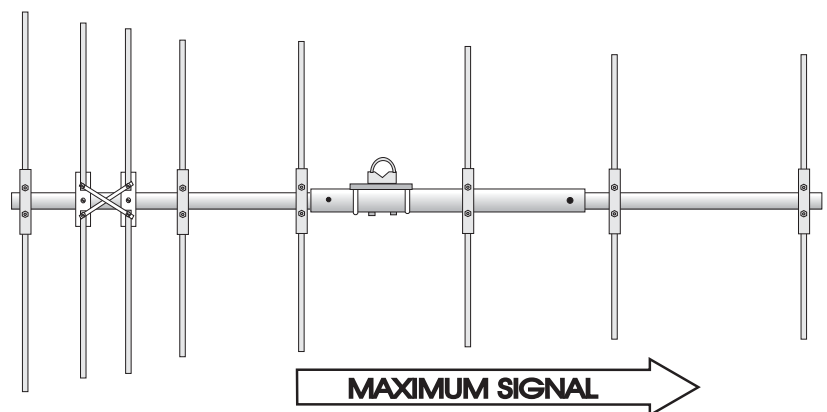
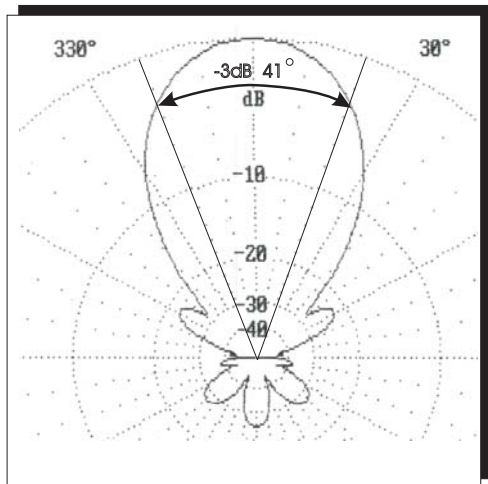
The DS 88-8 has been computer optimized for the best possible pattern and gain characteristics from 88 to 92 MHz to help alleviate interference from stations broadcasting on the same frequency or channel from different directions. The use of a rotator, is a must with this antenna. and will illuminate the amazing flexibility that the DS88-8 will add to your reception capabilities.. A high gain rating provides about thirteen times (11 dBd) the improvement over simple dipole antennas. Improved signal to noise ratio for stereo signals will result.

In short, the DS 88-8 has been designed to meet every severe FM reception problem likely to be encountered by the discriminating listener. Other models are available to cover other band segments above 92 MHz. Models are also available for full band coverage. Call the factory for details.

The DS 88-8 is constructed of high strength 6063-T832 seamless aluminum tubing. All elements are thick walled high strength construction with stainless steel hardware throughout for long life. Compare the construction with other FM broadcast antennas on the market and you will be convinced of our commitment to value, performance and quality.

SPECIFICATIONS

| | |
|----------------------|---|
| FREQUENCY: | 88 -92 MHz (88-108 useable) |
| FORWARD GAIN: | 13.1 dBi (11.0 dBd) |
| IMPEDANCE: | 75 ohms balanced feed |
| BEAMWIDTH: | 41 degrees |
| FRONT TO BACK RATIO: | 20+ dB |
| BOOM LENGTH: | 17.25 ft. |
| ELEMENTS: | 8 |
| WEIGHT: | 13.5 lbs (assembled) 17 lbs. Shipping wt. |



DS88-8



ASSEMBLY INSTRUCTIONS DS 88-8

1. Observe the parts list and diagrams (fig 1 thru 4.) below, and verify that all parts required for assembly are included. The hardware is packaged in a separate plastic bag. all elements and mounting blocks are supplied ready for assembly.

2. observe Figure 1 & 2, and identify each element. Elements are marked with black marker for proper position on the boom. Assemble the boom as shown in FIG #1. Insert tubing to the alignment marks provided. Use 2" machine screws and worm clamps to attach boom sections. Start assembling the elements in accordance with figure 1, and fasten the #1, and 4 thru 8 elements to the boom as shown. Use 1/4-20 U bolts and 1/4" hardware with element bracket. Start from the rear, locate el #1 1" from the end of the boom. The two holes drilled in the boom are for elements 2 & 3. These holes should be nearest the longest element. The remaining element locations

3. Assemble the two driven elements as shown in figure 3 and place them on the boom as well. These two elements are connected together with the two 3/8" wide x 10 3/4" long PHASING STRAPS as shown in figure 4. Note that your lead in wire will connect to element #3. (toward the front)

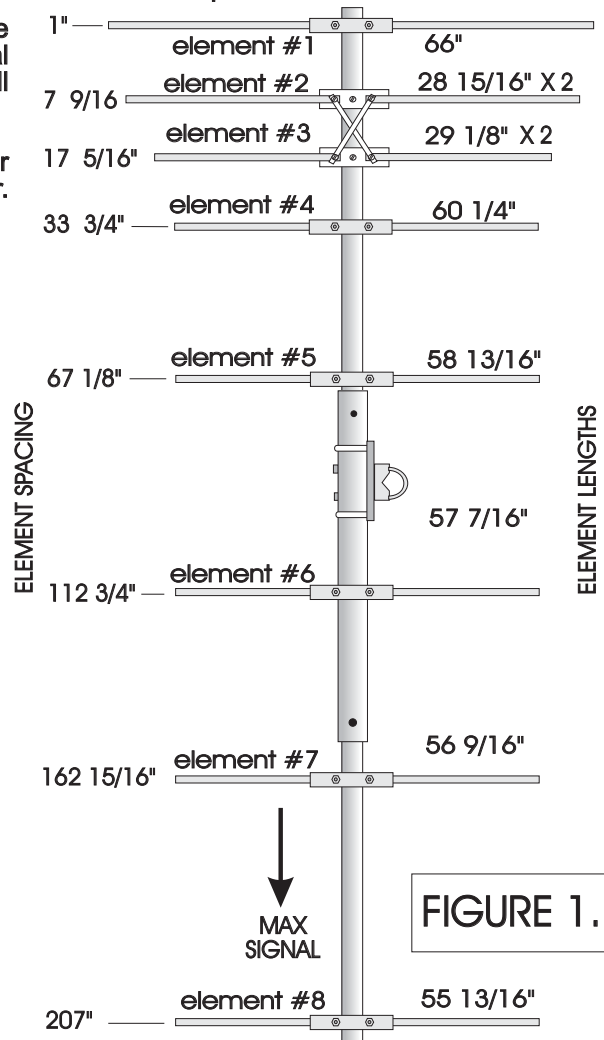
4. Attach the boom to mast plate at the balance point of the antenna. (See FIG 2.) Attach a 75 ohm coaxial lead in cable to the #8-32 machine screw terminals on element #3 (See Fig. 4). Prepare the cable as shown, and tape the cable to the supporting mast to avoid movement in windy weather. Place the antenna on your support mast and tighten U-bolts to lock antenna in position. The antenna elements should be parallel to the horizon for proper horizontal polarization. Maximum pickup will be as shown in Fig #1, in the direction away from the coax cable attachment point.

At this time, check all elements for tightness and position. Seal the end of the coax cable with RTV. Locate the antenna away from metal objects, otherwise some de-tuning and loss of performance will result.

5. If you are using a rotator, be sure that you align the front of your DS 88-8 to coincide with the indication on your rotator controller. Maximum signal is shown in Figure 1. at right.

PARTS LIST

| DESCRIPTION | QUANTITY |
|---|----------|
| Boom, 1 3/8" x 72" (Rear section drilled 3X) | 2 |
| Boom, 1 1/2" x 72" (Mid section) | 1 |
| Element block (aluminum) | 6 |
| Insulator block | 2 |
| Phasing strap, 3/8" x 10 3/4" long | 2 |
| Aluminum half washer | 4 |
| 8-32 x 2" machine screw | 4 |
| 8-32 X 1 1/2" machine screw | 4 |
| 8-32 hex nut | 8 |
| #8 lock washer | 8 |
| #8 Solder lug | 2 |
| 1/4-20 x 1 1/2" U-bolt | 8 |
| 1/4" lock washer | 16 |
| 1/4-20 Hex nut | 16 |
| 5/16 X 2" U bolt | 2 |
| 5/16 Hex nut | 4 |
| 5/16 Lock washer | 4 |
| Boom to mast bracket 3" X 5" | 1 |
| Element #1 (Reflector) 1/2" OD X 66" | 1 |
| Element #2 (Dipole 1) 1/2" OD X 28 15/16" | 2 |
| Element #3 (Dipole 2) 1/2" OD X 29 1/8" | 2 |
| Element #4 (Director 1) 1/2" OD X 60 1/4" | 1 |
| Element #5 (Director 2) 1/2" OD X 58 13/16" | 1 |
| Element #6 (Director 3) 1/2" OD X 57 7/16" | 1 |
| Element #7 (Director 4) 1/2" OD X 56 9/16" | 1 |





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Direction sheet continued:

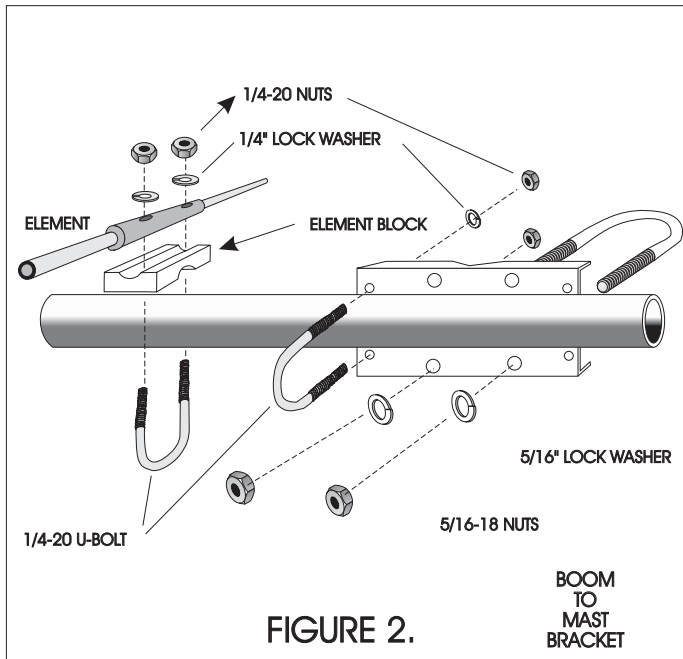


FIGURE 2.

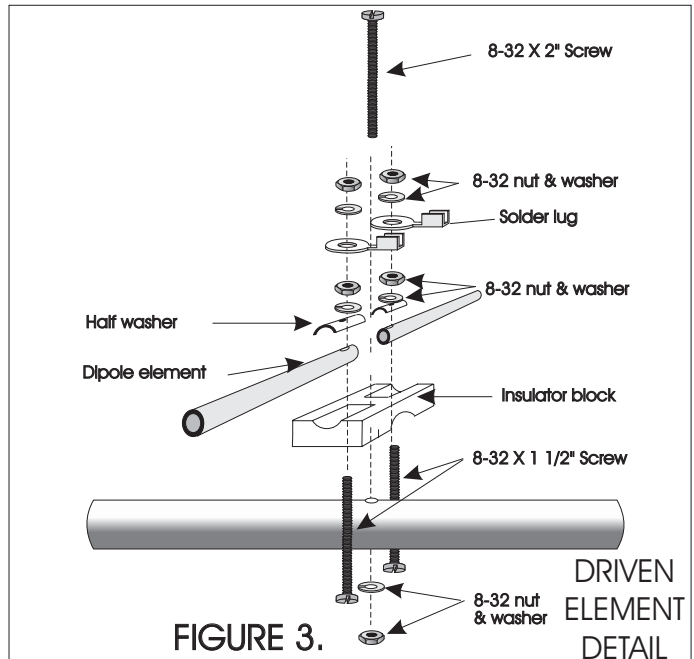


FIGURE 3.

The driven element section as shown in Figure #4, is the most critical area of the FM yagi antenna. Observe the drawing for correct assembly. Note that the longest driven element (29- 1/8") is toward the front of the antenna. Be sure to place the phasing straps so that they will not touch each other. Form the straps with your hand so that a 1" (approx) space is evident where the straps cross each other. The antenna has been designed for a direct 75 ohm feed impedance. The coiled coaxial cable serves as an effective "balun" to maintain proper electrical performance. Do not fail to coil the coax. Improper antenna pattern may result! Have fun with your new antenna!

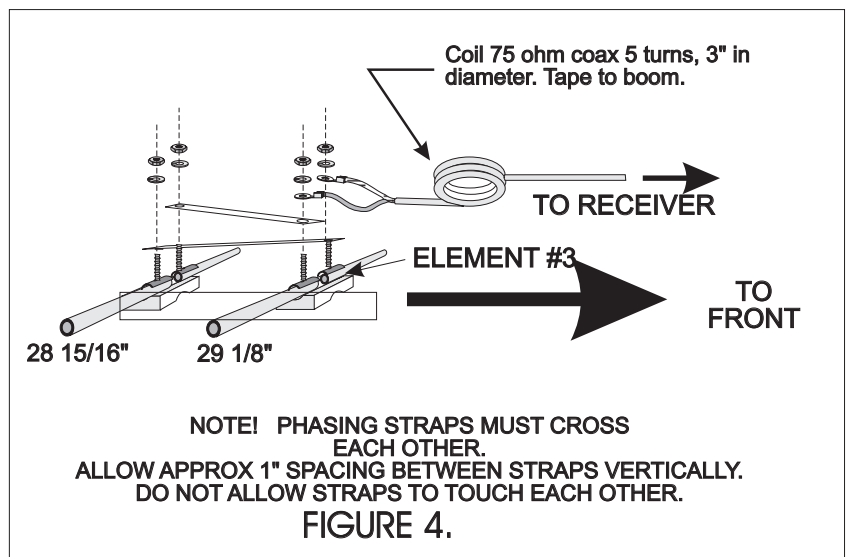


FIGURE 4.

Two antennas may be "stacked" for higher gain. The vertical separation should be between 10 and 13 feet. For stacked antennas, the feed cable must be installed uniformly on both antennas. The "hot" lead must connect to the same side (for instance: right side.) on both antennas.