



Model GRK-88

Ground Radial Kit For The DX-88 Antenna

INSTRUCTION MANUAL

GENERAL INFORMATION

This radial kit consists of 4 sets of 4 radial wire assemblies (16 total). Each radial is made from 7/23 copperweld and is 14 feet (4.3 m) in length. A bracket and U-bolt is supplied for attachment of the radials at ground level. This permits the radial wires to lie at ground level so that you may mow the grass over the radials, and not trip over them. Two pigtail wires are supplied to attach the bracket to the base assembly of the OMNI DX-88 vertical antenna. This ensures a higher conductive path from the antenna base to the radial assembly.

This kit also contains a DC shorting coil which can also be used to obtain a better match on the 80 meter band.

INSTALLATION

The OMNI DX-88 vertical, when mounted on the ground, should be mounted in the clear, at least 20 feet from buildings, metal fences, metal masts or flag poles and other metallic

WARNING

Installation of this product near power lines is dangerous! For your safety, follow the installation directions.

Do not install this antenna near any power line. Not only is it dangerous to put up and take down, the power lines could cause excessive noise to be received by the radio connected to

When the DX-88 is installed on the ground, a radial system is normally required. The minimum recommended radial system consists of 16 radials, each 14 feet (4.3 m) long. See Figure 1.

Since the radials of a ground-mounted vertical are actually on, if not in, the ground, they are coupled by capacitance or conduction to the ground, and thus resonance effects are not important. Basically, the function of ground radials is to provide a low-loss return path for ground currents. Longer radials and more radials will reduce the ground losses and effectively increase the gain of the antenna. See the article entitled "Radial Systems for Ground-Mounted Vertical Antennas" by Brian Edward, pages 28-30, QST magazine, June,

The radial length of 14 feet (4.3 m) is approximately 0.1 wavelength at 7 MHz. With poor earth conditions (dry, rocky soil), the gain of this vertical antenna system will be approximately 3 dB below the gain from a perfect earth or 120 radials. With good earth conditions (agricultural land, low hills), the gain of this vertical antenna system will be approximately 2 dB below the gain from a perfect earth or 120 radials.

SHORTING/MATCHING COIL

This coil may be added to the DX-88 as shown in Figure 2. It will provide a DC ground for the antenna, which may help to reduce precipitation static.

The coil may be adjusted by altering the number of turns or the length of the coil. This will allow you to obtain a nearly perfect 1:1 match on the 80 meter band.



OX 88 GROUND MOUNT RADIAL SYSTEM

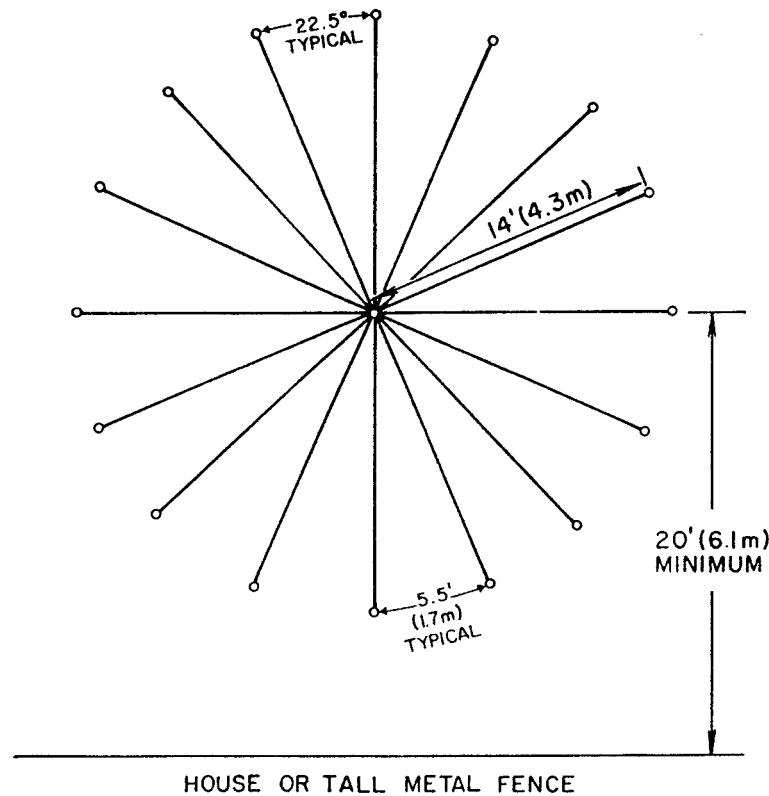


Figure 1 Ground Mount Radial System

ASSEMBLY

After selecting the antenna site, drive the support mast into the ground. Allow approximately 18 inches (0.46 m) exposed above ground level. At least 36 inches (0.91 m) of the mast should be below ground level. A 1 5/8 inch O.D. by 54 inch long (41 mm x 1.37 m) heavy-walled pipe is ideal. If the prevailing winds are always from the same direction, you may wish to tilt the support mast a few degrees into the wind. This will allow the antenna to look "straight" even with moderate winds. Otherwise, use a

Assemble the bracket, U-bolt, and pigtail wires as shown in Figure 2. Slide this assembly over the support mast to ground level. Place the OMNI DX-88 vertical antenna on the support mast so that the top of the mast bracket is even with the top of the mast. Tighten the top U-bolt.

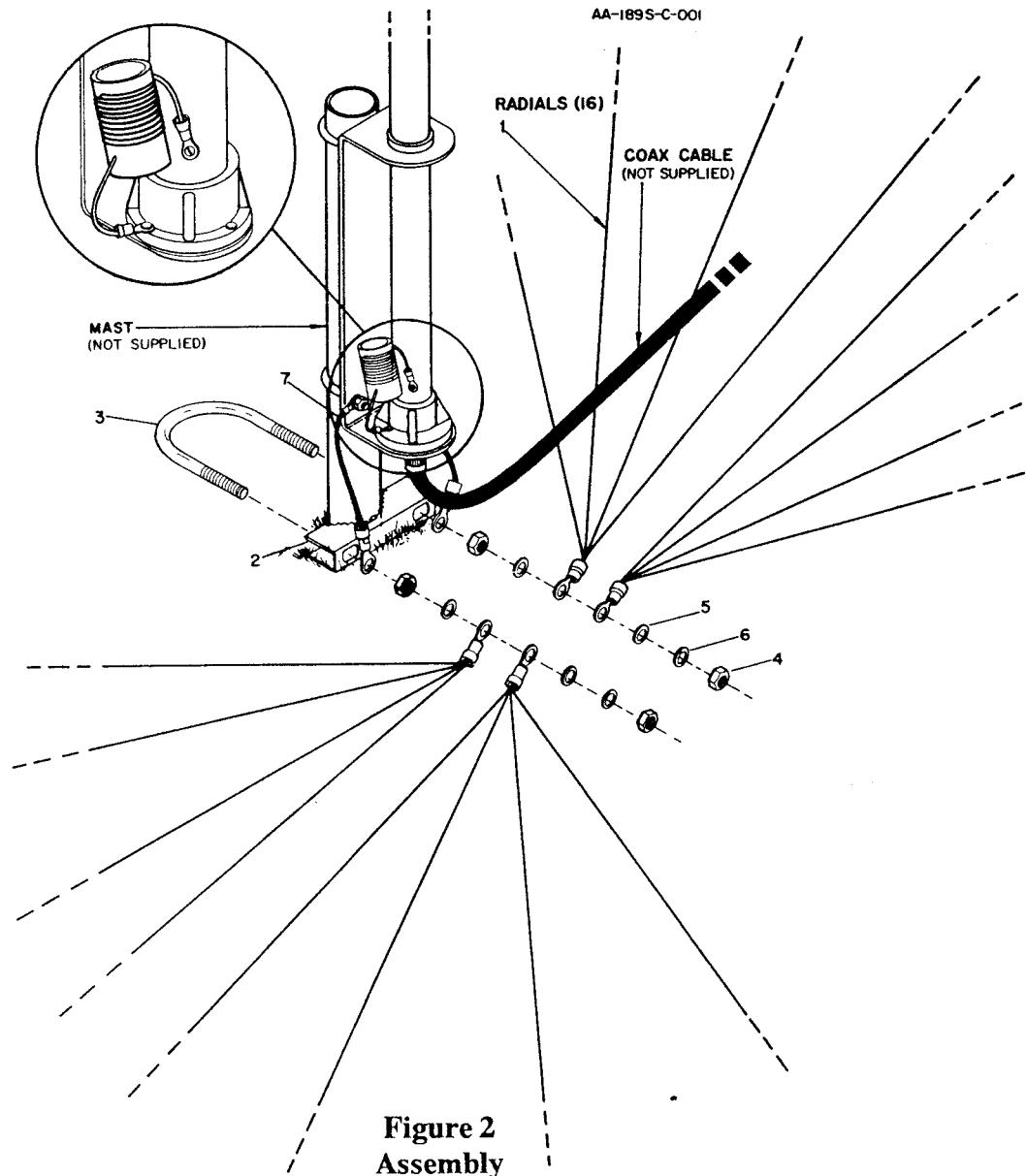
Attach the pigtail wires to the bottom U-bolt, then tighten. -

Unwind the radial wires and straighten. Attach two sets of radial wires to each side of the radial bracket and spread out as shown in Figure 2. Slide the radial bracket as close to the ground as possible and tighten.

The ends of the radial wires have solder lugs attached. These may be staked to the ground with long nails or wire bent in an "L" shape. The radial wires, themselves, may also be staked to the ground to permit the grass to grow over them.

More radial wires may be added for greater efficiency and gain.

Refer to the OMNI DX-88 vertical antenna instruction manual for information on tuning and operating this antenna system.



**Figure 2
Assembly**

PARTS LIST

Item No.	Part No.	Description	Qty
1	878549	Radial Assy, 4 x 14 ft.....	4
	878693	Parts Pack, DX-88 Radial kit	1
2	17966	Clamp, U-Bracket	1
3	54006	U-Bolt, 5/16" - 18 x 3 5/8•	1
4	55574	Nut, 5/16"-18 hex	4
5	56002	Flatwasher, 5/16•	4
6	56479	Lockwasher, 5/16" split	2
7	87854	Wire, pigtail	2
8	878576	Matching Coil, DX-88	1