

25500860 Rev A1 0923

Introduction

This instruction sheet describes how to assemble the OMNI-B Series Antenna Kit. For more information, see the Yagi and Omni Antennas Installation manual at <http://www.fedsig.com> (part number 25500445).

⚠ WARNING

INSTALLATION PRECAUTIONS: *Installation should be performed by an experienced electrician or qualified radio technician. Keep antenna away from metal objects and power lines.*

BURN HAZARD: *Antennas may cause severe burns. Do not touch the antenna while the radio is transmitting.*

NOTICE

INSTALLATION PRECAUTIONS: *Radio and antenna installation must conform to the system's FCC (or equivalent) license, which specifies the RF frequency, modulation, RF power, antenna location, and mounting height. Do not operate the radio system until the installation has been confirmed to comply with the license.*

The following table list the common components included in the kit.

Table 1 Contents

Item	Qty	Description
1	1	Antenna Base with Gasket
2	1	NMO Mount/Adapter
3	1	O-ring
4	1	Die-cast Antenna Bracket
5	4	8-32 Stainless Steel Socket Self-lock Set Screw
6	4	Radial, GND Plane
7	1	Lockwasher, Internal Tooth
8	1	5/8" Flat Washer
9	1	Lockwasher, Internal Tooth, Thin
10	1	5/8"-24 Hex Nut
11	1	5/16"-18 Stainless Steel Self-lock Set Screw
12	4	Protective Rubber Cap
13	1	Radiator Whip
Not Shown	2	15/16" Heat Shrink Tubing
Not Shown	1	Dielectric Grease Tube
Not Shown	1	5/64" Hex Key
Not Shown	1	5/32" Hex Key
Not Shown	1	3/32" Hex Key

Tools Required

The following tools are required for assembly:

- 3/4 inch or 19 mm deep well socket and wrench

Assembling the OMNI-B Series Antenna Kit

- Flat file or rotary cut-off wheel. (Only needed for shortening the whip on the OMNI-BVH when using frequencies > 168-174 MHz).

Assembling the Antenna

To assemble the antenna:

1. Open the parts bag and locate the five set screws (Items 5 and 11). Using the supplied hex keys, thread the set screws into the die-cast bracket with just a couple of turns. You will tighten the screws fully in a later step.
2. Apply a thin coat of grease to the unpainted surface at the center of the bracket shown in Figure 1, Detail A.
3. Assemble the NMO mount and hardware (Items 2, 3, 7, 8, 9, and 10) to the die-cast bracket, as shown in Figure 1, Detail B. Tighten the hex nut with a 3/4 inch or 19 mm socket wrench to approximately 50 in-lb.
4. Apply a small amount of grease to the threads on the antenna base, as shown in Figure 1, Detail C. Attach the antenna base to the NMO mount and tighten it securely by hand.
5. See Figure 1, Detail A. Apply a small amount of grease to each of the four radial mounting locations on the bracket. See Figure 1, Detail D. Slip the rubber caps onto one end of each ground radial. See Figure 1, Details B and E. Insert the GND radials into the bracket and tighten the 8-32 set screws to approximately 15 in-lb.

NOTE: The OMNI-BUH Model has a mix of long and short length radials. The short radials are located on the side with the Federal Signal logo.

6. When the OMNI-BVH Model is used for frequencies > 168-174 MHz, the 14-inch whip included in the kit must be trimmed to 13 inches.

To trim the whip:

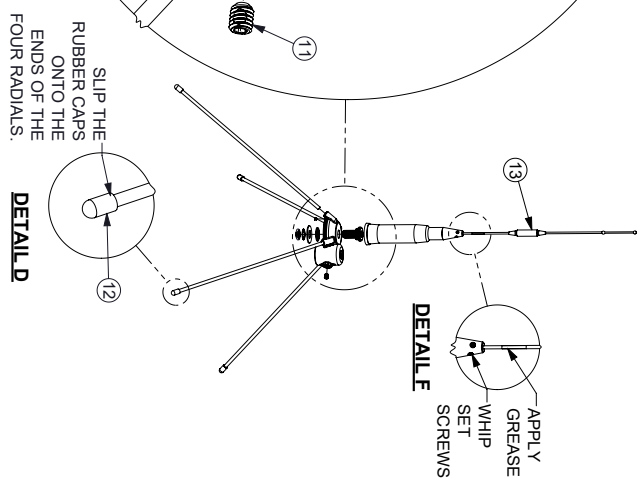
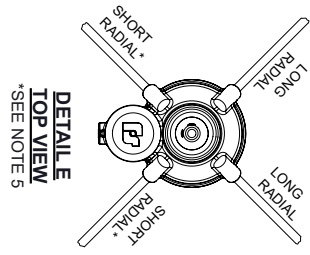
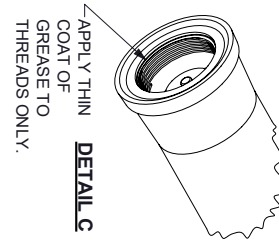
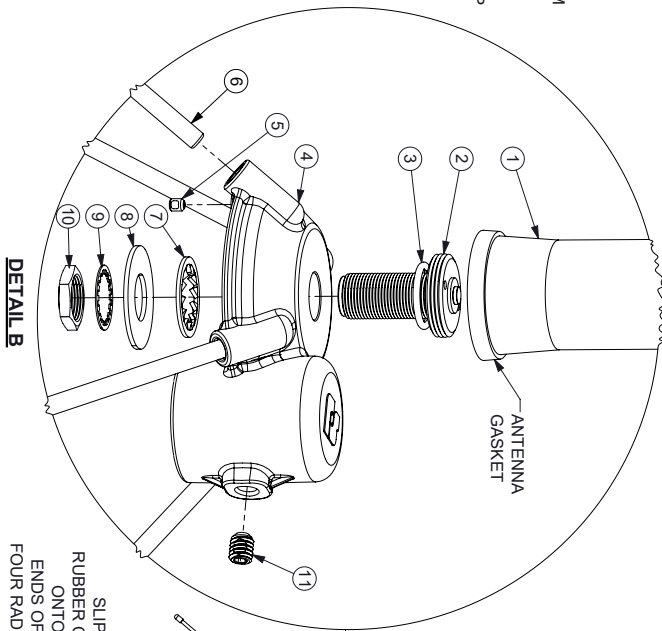
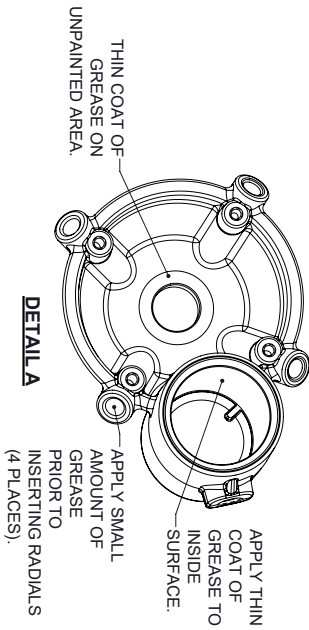
- Use a flat file or a rotary cut-off tool to make a nick in the whip 13 inches from the tip of the ball end. (This should be right at the start of the unpainted part of the whip.)
 - Grab the whip on each side of the nick and snap the end off.
 - File the end smooth to remove any burrs.
 - Scrape the paint from the end of the whip to expose 1 inch of bare metal.
7. See Figure 1, Detail F. Apply a small amount of grease to the end of the whip and then insert it into the antenna base. Tighten both the set screws to approximately 15 in-lb.
 8. See Figure 1, Detail A. Apply any remaining grease to the inside surface of the bracket.

The antenna is ready for installation.

Figure 1 Exploded View

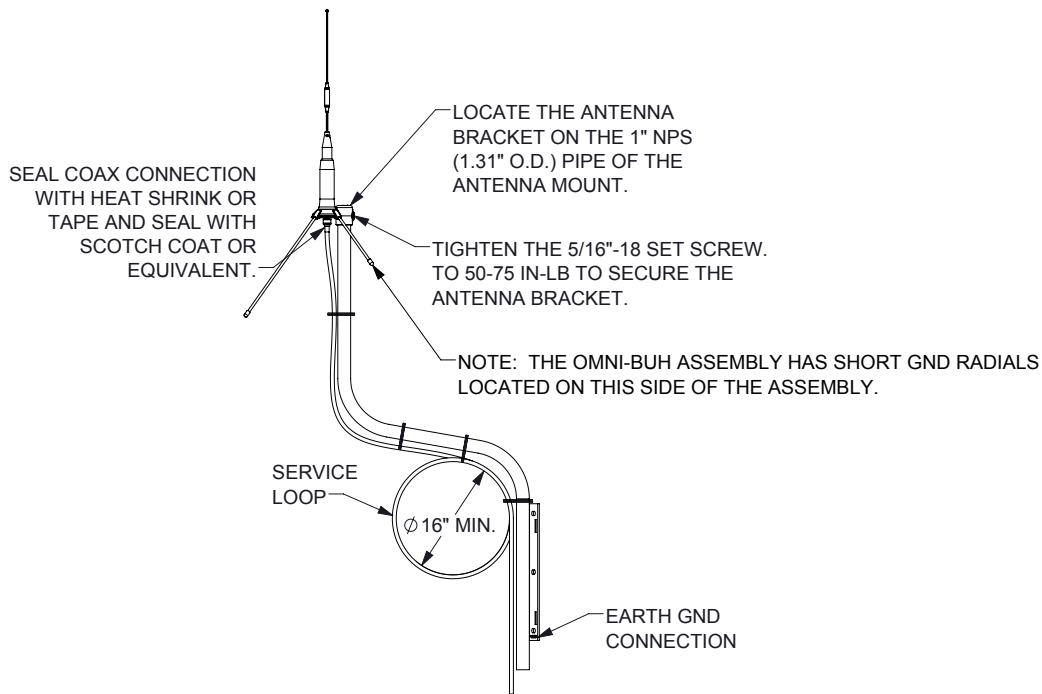
ASSEMBLY STEPS:

1. OPEN PARTS BAG AND LOCATE THE FIVE SET SCREWS (ITEMS 5 AND 11), USING THE SUPPLIED HEX KEYS, THREAD THE SET SCREWS INTO THE DIE-CAST BRACKET JUST A COUPLE OF TURNS. THEY WILL BE FULLY TIGHTENED LATER.
2. APPLY A THIN COAT OF GREASE TO THE UNPAINTED SURFACE AT THE CENTER OF THE BRACKET AS SHOWN IN DETAIL A.
3. ASSEMBLE THE NMO MOUNT & HARDWARE (ITEMS 2, 3, 7, 8, 9, AND 10) TO THE DIECAST BRACKET AS SHOWN IN DETAIL B. TIGHTEN HEX NUT WITH 3/4" OR 19MM SOCKET WRENCH TO APPROXIMATELY 50 IN-LBS.
4. APPLY A SMALL AMOUNT OF GREASE TO THE THREADS ON THE ANTENNA BASE AS SHOWN IN DETAIL C. ATTACH THE ANTENNA BASE TO THE NMO MOUNT AND TIGHTEN IT SECURELY BY HAND.
5. SEE DETAIL A. APPLY A SMALL AMOUNT OF GREASE TO EACH OF THE FOUR RADIAL MOUNTING LOCATIONS ON THE BRACKET. SEE DETAIL D. SLIP THE RUBBER CAPS ON TO ONE END OF EACH GROUND RADIAL. SEE DETAIL VIEWS B & E. INSERT THE GND RADIALS INTO THE BRACKET AND TIGHTEN THE 8-32 SET SCREWS TO APPROXIMATELY 15 IN-LBS. *NOTE THAT THE OMNI-BUH MODEL HAS A MIX OF LONG AND SHORT LENGTH RADIALS. THE SHORT RADIALS LOCATED ON THE SIDE WITH THE FS LOGO.
6. A SPECIAL STEP IS REQUIRED WHEN THE OMNI-BVH MODEL IS USED FOR FREQUENCIES >168-174MHZ. SKIP THIS STEP FOR ALL OTHER APPLICATIONS. THE 14" WHIP WILL NEED TO BE TRIMMED TO 13". TO TRIM THE WHIP, USE A FLAT FILE OR ROTARY CUT OFF TOOL TO MAKE A NICK IN THE WHIP 13" FROM THE TIP OF THE BALL END (THIS SHOULD BE RIGHT AT THE START OF THE UNPAINTED SECTION). GRAB HOLD OF THE WHIP ON EACH SIDE OF THE NICK AND SNAP THE END OFF. FILE THE END SMOOTH TO REMOVE ANY BURRS. SCRAPE THE PAINT FROM THE END OF THE WHIP TO EXPOSE 1" OF BARE METAL.
7. SEE DETAIL F. APPLY A SMALL AMOUNT OF GREASE TO THE END OF THE WHIP AND THEN INSERT IT INTO THE ANTENNA BASE. TIGHTEN BOTH SET SCREWS TO APPROXIMATELY 15 IN-LBS.
8. SEE DETAIL A. APPLY ANY REMAINING GREASE TO THE INSIDE SURFACE OF THE BRACKET. ANTENNA IS READY FOR INSTALLATION.



ITEM	QTY.	DESCRIPTION
1	1	ANTENNA BASE WITH GASKET
2	1	NMO MOUNT/ADAPTER
3	1	O-RING
4	1	DIE-CAST ANTENNA BRACKET
5	4	SCREW, SET. 8-32, SS, SELF-LOCK
6	4	RADIAL, GND PLANE
7	1	LOCKWASHER, INT TOOTH
8	1	FLAT WASHER, 5/8
9	1	LOCKWASHER, INT TOOTH, THIN
10	1	HEX NUT, 5/8-24
11	1	SCREW, SET. 5/16-18, SS, SELF-LOCK
12	4	PROTECTIVE RUBBER CAP
13	1	RADIATOR / WHIP
NOT SHOWN	2	HEAT SHRINK TUBING, 15/16" ID
NOT SHOWN	1	DIELECTRIC GREASE TUBE

Figure 2 Typical Antenna Pole Mount Installation



Getting Service

If you are experiencing any difficulties, contact Federal Signal Customer Support at 800-548-7229 or 708-534-3400 extension 7511 or Technical Support at 800-524-3021 or 708-534-3400 extension 7329 or e-mail at techsupport@fedsig.com. For instruction manuals and information on related products, visit <http://www.fedsig.com>.

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



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