

# ASSEMBLY INSTRUCTIONS



## BA 1

### Balcony Antenna



Maco Antennas - a Division of Charles Electronics, LLC

302 S. East St.

Mt. Carroll, IL 61053

815-244-3500

[www.macoantennas.net](http://www.macoantennas.net)

# MACO® BA1 BALCONY ANTENNA

## PACKING LIST

<u>PART</u>	<u>QTY</u>	<u>O.D.</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>DESCRIPTION</u>	<u>CHECKLIST</u>
T28	1	1-1/2"	.050	72"	ALUM TUBING	___
T11P	1	5/8"	.050	72"	ALUM TUBING SLTD BOTH ENDS	___
T04	2	1/2"	.050	80 1/2"	ALUM TUBING	___
P01P	1		1/4" x 5"	5"	PLATE 1-1/2" BOOM TO 1-1/2" MAST	___
G01P	1				GAMMA MATCH	___
Z08P	2				GAMMA STRAPS F/COAX CONNECTS	___
S42	1				FEMALE COAX CONN W/MOUNTING	___

### HARDWARE BAG #1

U02	5		1-1/2"		PLATED U-BOLTS	___
S02	3		1-1/2"		PLATED SADDLES	___
N03	10		5/16"		LOCK NUTS	___

### HARDWARE BAG #2

BE1P	1	1-1/2"			BOOM TO ELEMENT MOUNT	___
W58P	2	5/8"			EXTRUDED ALUM CLAMPS	___
S21	7		10-24	1/2"	MACHINE SCREWS	___
PL2	2		.437		PLASTIC ELEMENT CAP - BLACK	___
PL4	2				PLASTIC BOOM CAP - BLACK	___
N11	7		10-24		SQUARE NUTS	___
Z02P	2		1/2"		GAMMA STRAPS	___
N12	4		#10		LOCKWASHER	___
S30	4		#12	1"	SHEET METAL SCREW	___
GH14	4	1/4"			FLAT WASHER	___
	1				INSTRUCTION SHEET	___
	1				WARRANTY SHEET/SAFETY SHEET	___
	1				TIP SHEET	___
	1				MACO FLYER	___

# MACO<sup>®</sup> BA1

## 10/11 METER BALCONY ANTENNA

### ASSEMBLY INSTRUCTIONS

#### Figure 1 General Instructions

This drawing shows a view of the antenna assembled. The Maco Balcony Antenna may be used in the vertical or horizontal mode. These instructions and Figures 1 through 5 show the correct assembly procedures. It is highly recommended that rope be put in the element to prolong element life if the antenna is to remain assembled and not taken apart frequently. This is done to reduce harmonic vibration from the wind.

#### Figure 1 Element Assembly and Mounting

Fasten the boom to element mount (BE1P) onto the end of the boom as shown in figure 5 using U bolt (U02), Saddle (S02) and Nuts (N03). Do not tighten the boom to element mount at this time. Insert 5/8" element (T11P) into the boom to element mount (BE1P) and center the element in the mount. Loosely tighten the boom to element mount at this time. Insert a length of the 1/2" OD tubing (TO4) into each end of the center element (T11P). Adjust each element (T03) with the dimensions shown in Figure 3 for the frequency you are going to use the antenna on. After the correct element length is set install the element clamp (W58P), screw (S21), and nut (N11) as shown in Figure 4.

#### Figure 2 Mounting the Antenna

To mount the Balcony Antenna to a wrought iron railing, use the u-bolts (U02) and nuts (N03) provided, according to Figure 2. To mount the Balcony Antenna to a wooden railing, use the screws (S30) and washers (GH14) provided in place of the u-bolts.

#### Figure 5 Gamma Match Mounting

Mount the gamma match (G01P) to the driven element, using the gamma straps (Z02P, Z08P) and attaching hardware as shown in Figure 5. Make sure the gamma mounting bracket (Z08P) is touching the boom to element mount (BE1P). The (Z08P) brackets must remain in this position at all times. They should not be moved for SWR adjustment.

#### Figure 5 Adjusting the Standing Wave Ratio (SWR)

Refer to Figure 5. The dimensions given are approximate and should be used as a starting point. The gamma match has two adjustments. First is the capacitor adjust and second is the slider adjust. Connect an SWR meter between your transmitter and the antenna and check the SWR. If adjustment is required, loosen the clamp on the gamma match and the screws holding the slider gamma straps (Z02P). Next move the capacitor adjustment first one direction, then the other direction until a minimum SWR reading is obtained. If the SWR is not yet satisfactory, move the slider out 2" away from the boom. If the reading has gone up move the slider (Z02P) back to the original position and then 2" towards the boom.

Now readjust the capacitor for minimum SWR. You should now be able to determine which direction to move the slider. Repeat the above procedure moving the slider in smaller increments until a satisfactory SWR is obtained. Tighten all hardware.

# MACO BALCONY MOUNT ANTENNA

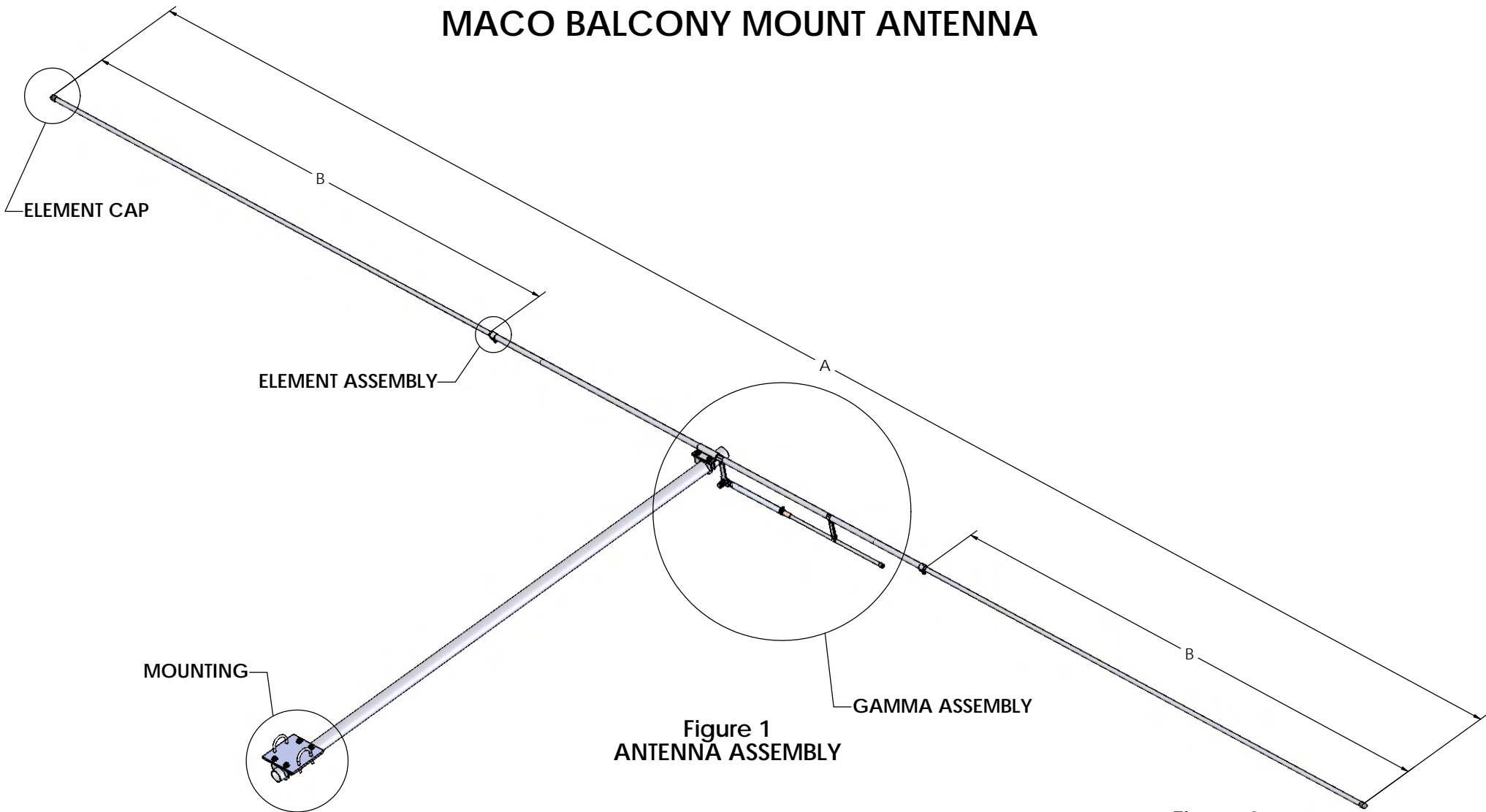


Figure 1  
ANTENNA ASSEMBLY

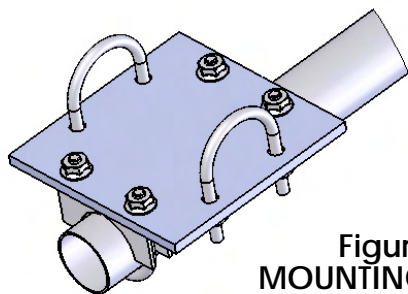


Figure 2  
MOUNTING DETAIL

Figure 3

	A	B
10M	206"	67"
11M	210"	69"

# MACO BALCONY MOUNT ANTENNA

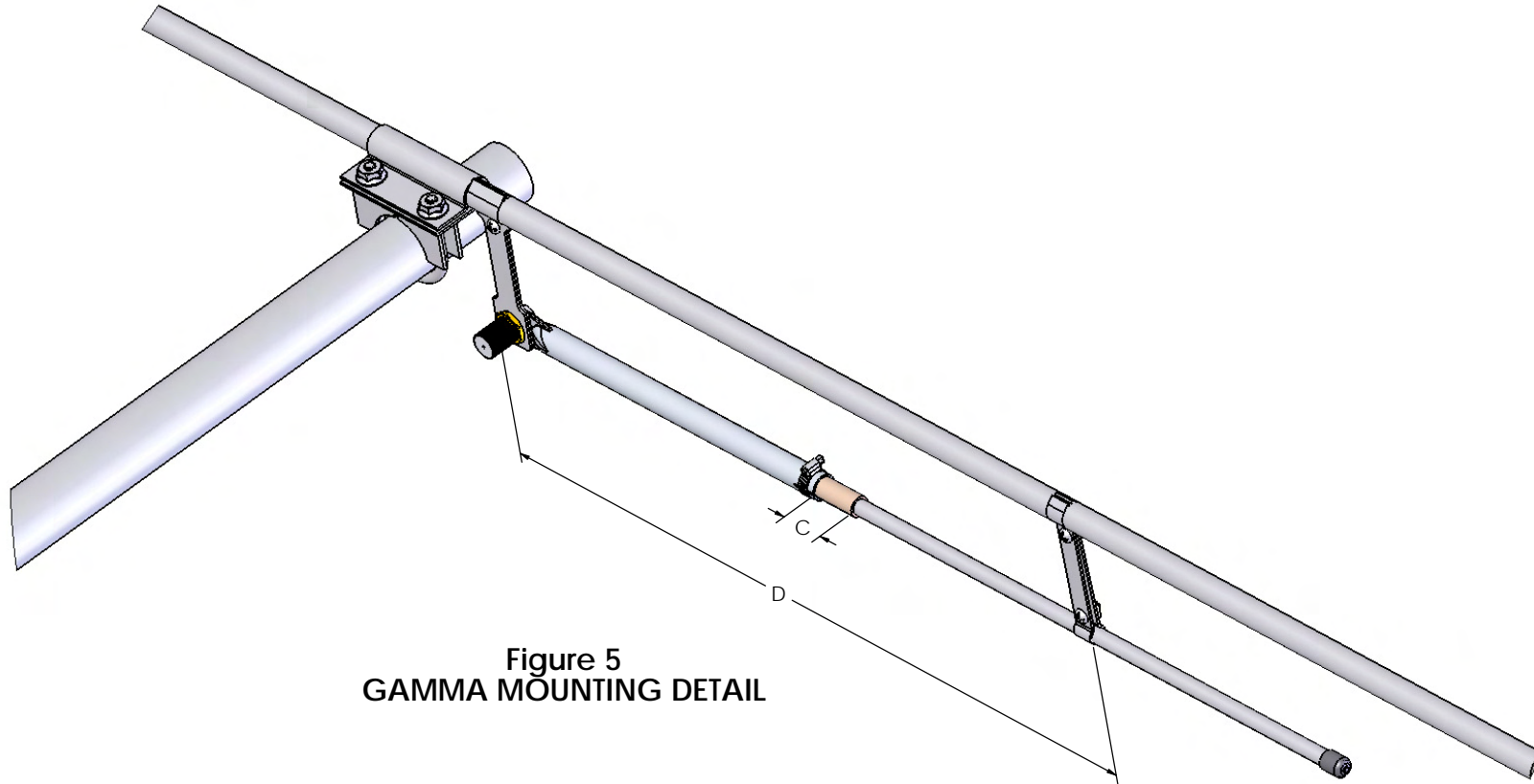


Figure 5  
GAMMA MOUNTING DETAIL

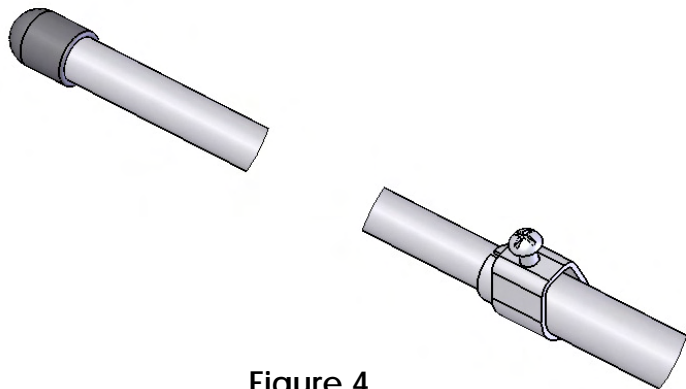


Figure 4  
ELEMENT DETAIL

	C	D
10M	2.0"	24.0"
11M	1.5"	24.0"