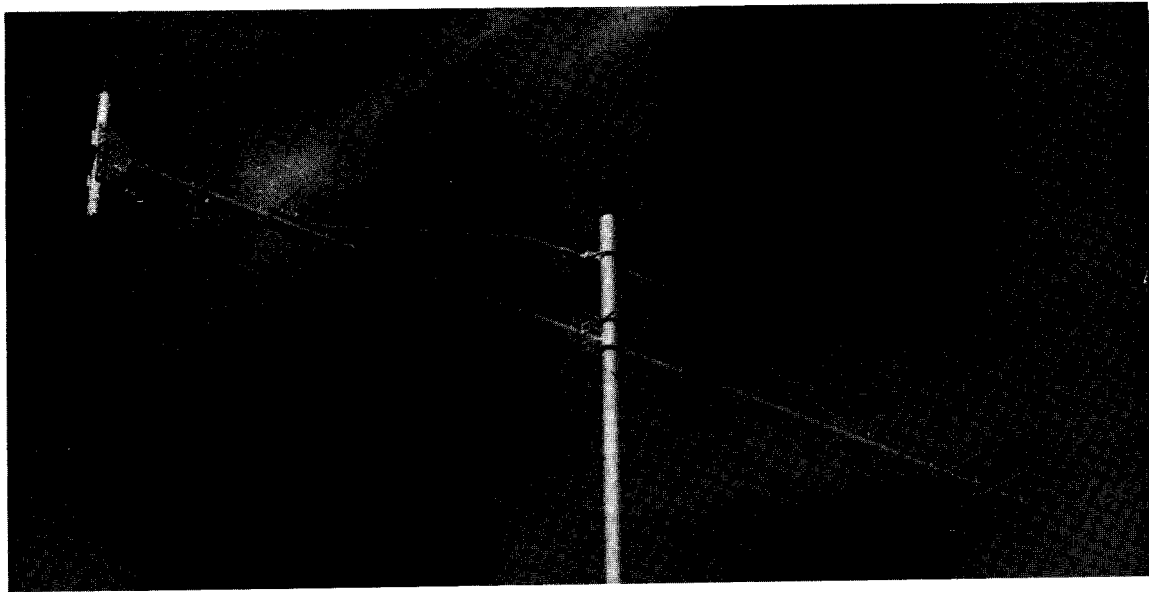


# ASSEMBLY AND INSTALLATION INSTRUCTIONS



**Cushcraft**  
CORPORATION

**Boomer**

**2 Meter Yagi A32-19**

FORM A13219479

## SPECIFICATIONS

Frequency range	144-146 MHz
Forward Gain	16.2 dBd
Front to Back Ratio	24 dB
E-Plane beamwidth	2x14 deg
H-Plane beamwidth	2x17 deg
Side lobe attenuation	greater than 60 dB
SWR less than	1.2:1 typical
Impedance:	50 Ohm
Recommended stacking distance	E-Plane 14 ft. H-Plane 12 ft.
Weight	12 lbs.
Length	22 ft.
Longest element	40 3/8 in
Turning radius:	11 ft.
Windload	3.5 sq. ft.

## PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
BA	12" x 1 1/4" (30.5 x 3.18cm) .058 wall tubing	1
BB	72" x 1 1/8" (182.9 x 2.86cm) .058 wall tubing	2
BC	72" x 1" (182.9 x 2.54cm) .058 wall tubing	1
BD	60" x 1" (152.4 x 2.54cm) .058 wall tubing	1
BE	78" x 3/4" (182.9 x 1.59cm) .047 wall bent tubing	2
BR	12" x 1" (30.5 x 2.54cm) .058 wall tubing	2
BF	15" x 7/8" (20.3 x 2.54cm) .049 wall notched tubing	1
ED	38 1/4" x 1/2" (97.2 x 1.27cm) .042 wall tubing	1
ET	7" x 3/8" (17.8 x .95cm) .028 wall tubing	2
BS	3" x 5" (7.6 x 12.7cm) reflector support brackets	2
DC	Connector bracket with connectors	2
	4" x 6" (10.2 x 15.2cm) aluminum mast plate	
	Balun with vinyl	

**ELEMENTS:** 3/16" solid aluminum rod cutting tolerance 1/16" (1.59mm)

### BUNDLED TOGETHER

- 1 & 2 Reflector 39 1/8" (99.4 cm)
- 3 Reflector 40 3/8" (106.2 cm)
- 4 & 5 Director 37 1/16" (94.1 cm)
- 6 Director 36 5/8" (93.0 cm)
- 7 Director 35 15/16" (91.3cm)
- 8 Director 35 3/8" (89.9cm)
- 9 Director 35 1/8" (89.2cm)
- 10 Director 34 7/8" (88.6cm)

### BUNDLED TOGETHER

- 11 through 19 Director 34 5/8" (87.9cm)

## PARTS PACKAGE

PART NO.	DESCRIPTION	QUANTITY
25	7/8" Formed aluminum bracket	19
28	Aluminum half washer	18
10	#8 Internal-tooth lock washer	73
104	1/4" (.64cm) stainless steel flat washer	4
84	1/4" (.64cm) stainless steel lock washer	4
119	5/16" (.79cm) stainless steel lock washer	6
120	8/32 x 2" (5.0cm) stainless steel machine screw	27
123	1 1/2" (3.8cm) 8-32 stainless steel machine screw	6
9	8/32 x 5/8" (1.6cm) RH stainless steel machine screw	4
11	8/32 stainless steel hex nut	40
85	1/4" (.64cm) stainless steel hex nut	4
118	5/16" (.79cm) stainless steel hex nut	6
38	1" (2.54cm) plastic cap	4
53	1/2" (1.3cm) plastic cap	2
12	3/4" (1.9cm) plastic cap	2
77	3/8" (.95cm) plastic cap	2
HSS-10	1 3/8" (3.5cm) stainless steel worm clamp	4
HSS-6	3/4" (1.9cm) stainless steel worm clamp	2
121	2 1/8" x 3" (5.5 x 7.6 cm) stainless steel U-Bolt	3
122	1 1/2" x 3" (3.8 x 7.6cm) stainless steel U-Bolt	2
124	Connector strap	1
125	3/8" (.95cm) tuning strap	2
115	Vinyl boot	1
116	Package Silicone	2

Your Cushcraft antenna is manufactured to give top performance and trouble free service. The antenna will perform as specified, if the instructions and suggestions are followed, and if care is used in assembly and installation.

**MASTING:** The A32-19 mast mount bracket will take us to a 2" O.D. mast. Because of the large antenna size, we recommend a heavy gauge 2" O.D. steel tubing. Before deciding on the location and height of your antenna you should check with your local building department for zoning and building regulations pertaining to antenna installations.

**ROTATOR:** Use a good quality rotator designed for use with amateur radio stations.

**LOCATION:** Location of the antenna is very important. Surrounding objects such as trees, power lines, other antennas, etc. will seriously reduce efficiency. To minimize the effects of surrounding objects, mount the antenna as high and in the clear as possible. If metal guy wires are used, they should be broken with strain insulators. **WARNING: THIS ANTENNA IS AN ELECTRICAL CONDUCTOR, CONTACT WITH POWER LINES CAN RESULT IN DEATH, OR SERIOUS INJURY. DO NOT INSTALL THIS ANTENNA WHERE THERE IS ANY POSSIBILITY OF CONTACT WITH OR HIGH VOLTAGE ARC-OVER FROM POWER CABLES OR SERVICE DROPS TO BUILDINGS. THE ANTENNA, SUPPORTING MAST AND/OR TOWER MUST NOT BE CLOSE TO ANY POWER LINES DURING INSTALLATION REMOVAL OR IN THE EVENT PART OF THE SYSTEM SHOULD ACCIDENTALLY FALL. FOLLOW THE GUIDE LINES FOR ANTENNA INSTALLATIONS RECOMMENDED BY THE U. S. CONSUMER PRODUCT SAFETY COMMISSION AND LISTED IN THE ENCLOSED PAMPHLET.**

Plan your installation carefully. If you use volunteer helpers be sure that they are qualified to assist you. Make certain that everyone involved understands that you are the boss and that they must follow your instructions. If you have any doubts at all employ a professional antenna installation company to install your antenna.

#### ASSEMBLY INSTRUCTIONS

Assemble the boom as shown in figure 1. The boom sections are aligned with 8-32 machine screws. The sections are held securely in position with the HSS-10 telescope clamps. The Trigon reflector assembly mounts on section BD, as illustrated.

The boom braces are assembled after mounting the elements.

Assemble the T match to the dipole as illustrated in figure 2. The sliding strap positions are marked on tube ED. The flattened end of tube ET attaches to a connector as illustrated. The connecting strap 124 must be attached as illustrated between the upper and lower connector. The feed line is connected to the upper connector and the balun to the two lower connectors. **Mount the dipole to the boom position illustrated in figure 4.**

When connecting the balun, coat the outside of the aluminum connector threads and the PL-259 with silicone grease provided. Do not coat the connector center pin and socket with silicone. Slide the vinyl boots over the connectors and against the plate for a good weather tight connection, figure 7.

Follow the same procedure for your 50 ohm coaxial feed cable and be sure to slide the vinyl boot over the cable before attaching the PL-259 connector.

The solid rod elements are packaged in two separate bundles. Director elements 11 through 19, which are all the same length, are in one bundle. They should be assembled to their proper position on the boom as illustrated in figures 3 and 4. The remaining elements are progressively longer toward element 3, which is the longest element. Mount them in their proper positions on the boom. Mount the two remaining equal length elements (taped together) on the Trigon reflector supports. It may be necessary to individually align the elements when tightening them.

Assemble the boom to mast bracket to the boom as illustrated in figure 5. The diagonal braces BE may be mounted above or below the boom. Attach them to the boom as illustrated in figure 1. They should be allowed to slide freely in tube BF.

Mount the antenna and the diagonal braces to your support mast as illustrated in figures 5 and 6. After tightening the boom/mast U-Bolts slide the brace U-Bolt up or down on the mast, if necessary, to straighten the boom. Tighten the U-Bolt and brace clamps.

**TUNE UP PROCEDURE:** The A32-19 Yagi does not normally require tuning after assembly. If you wish to check the VSWR before installation, please observe the following procedures. Mount the antenna clear of surrounding objects. Keep all metal obstructions such as guy wires and other antennas at least 25 feet away.

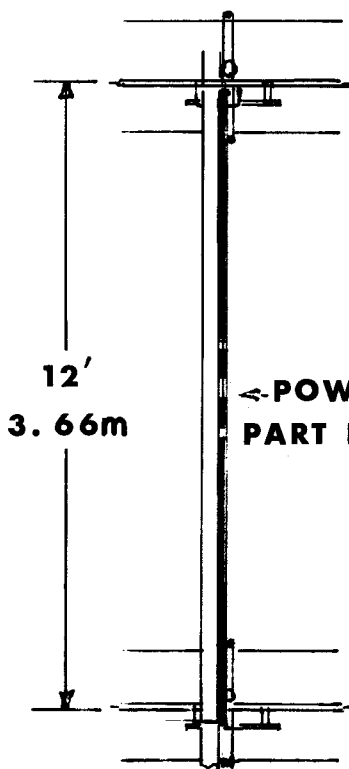
Attach a good quality SWR bridge in the coaxial cable as close to the antenna as possible and note the VSWR at your operating frequency. Move the sliding straps on either side of the driven element out towards the end of the dipole by an equal amount of 1/4". Check the VSWR. If the VSWR deteriorated, move the straps back to their original position and go 1/4" beyond towards the center of the driven element. Check the VSWR again. If the reading improved, keep moving both straps equally in the same directions until no further improvement is observed. Tighten all connections on the T-Match/Driven Element assembly.

Do not attempt to tune this Yagi by other methods. Ground effects will nullify any adjustments and degraded performance will result.

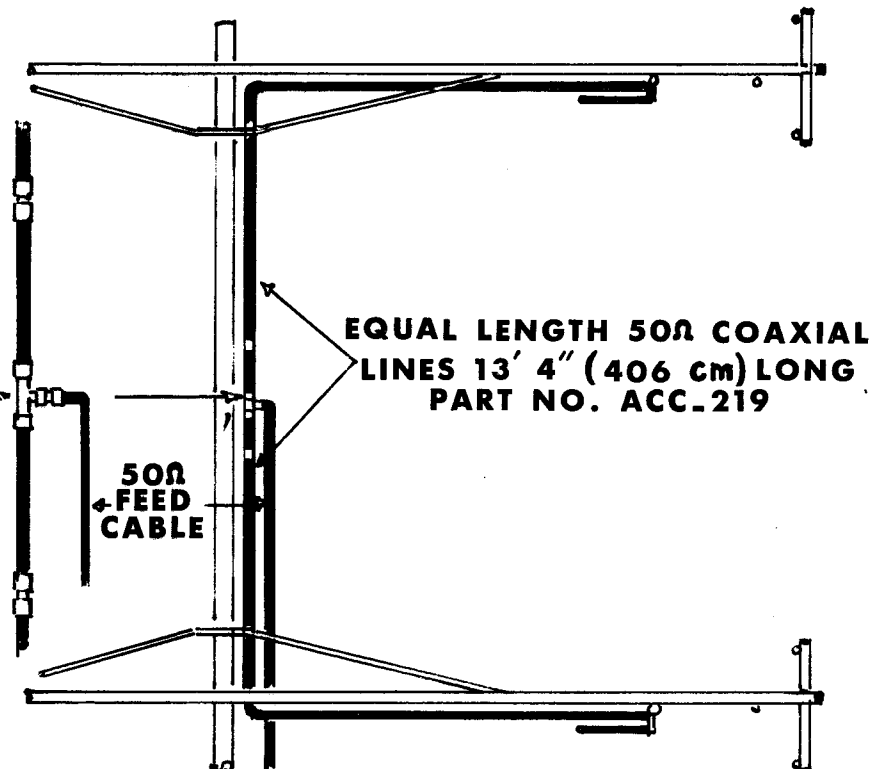
**STACKING:** Two A32-19 antennas may be stacked (for higher gain) on the same vertical mast. This can be easily accomplished by using the A19-2SK stacking kit.

Assemble the two antennas, connect the balun to each antenna. Space the antennas 12 feet (3.66 m) apart, center to center on your mast, figure 8.

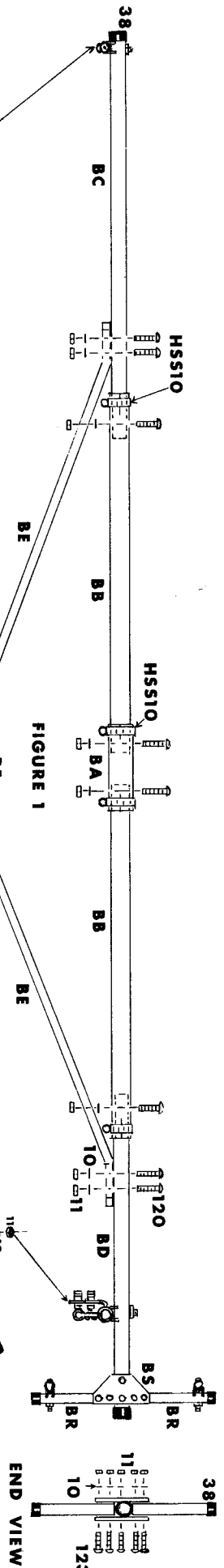
The stacking harness consists of two equal length RG-8 cable sections, illustrated in figures 8 and 9. Connect one end of a cable to each antenna. See the antenna assembly text for information on weatherprotecting with the vinyl boots. Place the cables along the booms and mast with tape to hold them in position. Connect your 50 ohm coaxial feed cable to the power divider T fitting, use the vinyl boot to weather protect it. Tape all cables tightly to the mast.



**FIGURE 8**



**FIGURE 9**



END VIEW

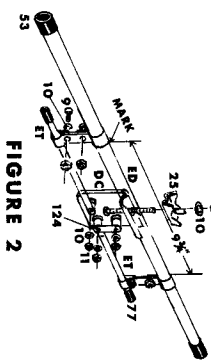


FIGURE 2

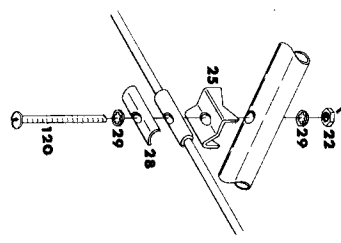


FIGURE 3

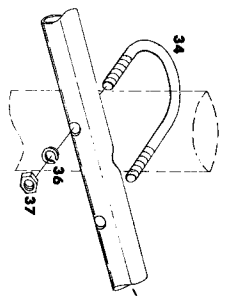


FIGURE 6

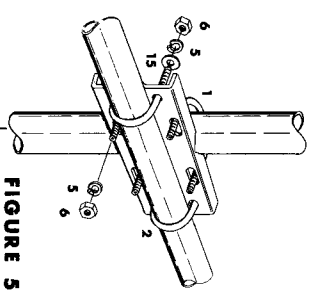


FIGURE 5

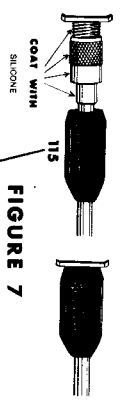


FIGURE 7

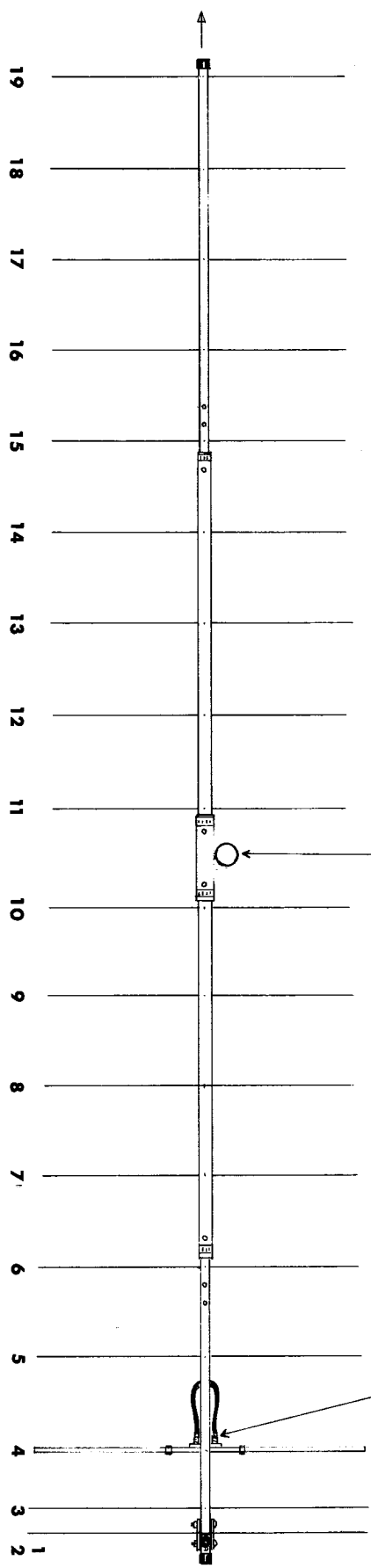


FIGURE 4

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