YP2 Yagi Portable 2 element
Element Tuning Length Chart

(obsolete product)

Band-By-Band Boom and Element Measurements

Use the boom and element figures for guidance in establishing measurements. All dimensions in the set-up table are in inches. All measurements presume that the antenna is set up from 20' to 1 wavelength above ground and is in the clear, relative to potential surrounding objects. See the notes at the end of the table for adjustments where surrounding objects affect antenna tune-up.

6 Meters

Boom			Element				
Hole		1/2"	Inner	Coil	Tip	Outer	Half
Set		Len.	Len.	Color	Len.	Len.	Len.
1-1	Dr.	21.5	52.0	N/A	N/A	N/A	53.5
	Ref.	26.5	57.0	N/A	N/A	N/A	58.5

Note: On 6 meters, use only the 5/8" and 1/2" tubes, with no coil, coupler, or smaller element parts. Count the length of the threads on the 1/2" tube as part of the element length.

10 Meters

Boom			Element				
Hole		1/2"	Inner	Coil	Tip	Outer	Half
Set		Len.	Len.	Color	Len.	Len.	Len.
2-2	Dr.	27.0	57.5	Coupler	15.5	40.0	99.875
	Ref.	27.0	57.5	Coupler	25.0	49.5	109.375

Note: Use the long tip rods and the coupling (not either of the loading coil sets).

12 Meters

Boom			Element				
Hole		1/2"	Inner	Coil	Tip	Outer	Half
Set		Len.	Len.	Color	Len.	Len.	Len.
2-2	Dr.	1.5	32.0	Gray	3.375	27.875	64.125
	Ref.	1.5	32.0	Gray	3.75	28.25	64.5

Note: Use the short tip rods.

15 Meters: CW End

Boom			Element				
Hole		1/2"	Inner	Coil	Tip	Outer	Half
Set		Len.	Len.	Color	Len.	Len.	Len.
3-3	Dr.	1.5	32.0	Gray	17.875	42.375	78.625
	Ref.	1.5	32.0	Gray	19.0	43.5	79.75

Note: Use the long tip rods.

15 Meters: SSB End

Boom			Element				
Hole		1/2"	Inner	Coil	Tip	Outer	Half
Set		Len.	Len.	Color	Len.	Len.	Len.
3-3	Dr.	1.5	32.0	Gray	16.875	41.375	77.625
	Ref.	1.5	32.0	Gray	18.0	42.5	78.75

Note: Use the long tip rods.

17 Meters

Boom Hole Set		1/2" Len.	Inner Len.	Coil Color	Element Tip Len.	Outer Len.	Half Len.
3-3	Dr.	23.75	54.25	Red	2.625	27.125	86.625
	Ref.	23.75	54.25	Red	3.5	28.0	87.5

Note: Use the short tip rods.

20 Meters: CW End

Boom Hole Set		1/2" Len.	Inner Len.	Coil Color	Element Tip Len.	Outer Len.	Half Len.
4-4	Dr.	24.25	54.75	Red	26.0	50.5	110.5
	Ref.	24.25	54.75	Red	27.5	52.0	112.0

Note: Use the long tip rods.

20 Meters: SSB End

Boom Hole Set		1/2" Len.	Inner Len.	Coil Color	Element Tip Len.	Outer Len.	Half Len.
4-4	Dr.	24.25	54.75	Red	25.0	49.5	109.5
	Ref.	24.25	54.75	Red	26.5	51.0	111.0

Note: Use the long tip rods.

Field Adjustments for Non-Standard Conditions

If surrounding objects affect the tuning of the antenna so that the desired operation is not obtained, you may adjust the element tips to compensate. First, determine approximately how far off in frequency the initial tuning may be. If you have an antenna analyzer, you may compare the SWR curve of your set-up to the ideal one in the charts in the technical section of these instructions. If you have only your operating rig, then track the SWR over the bandwidth on which you can operate to see where on the curve your set-up fits.

Second, take the ratio of two frequencies on corresponding parts of the SWR curve. For example, use the frequency where you hit 3:1 SWR--using the proper part of the curve according to whether SWR rises or falls with a rising frequency--and the frequency where the ideal curve hits 3:1. If your frequency is low, then you will increase the element lengths. If your frequency is high, then you will shorten the element lengths. A hand calculator is useful for arriving at the new element half-lengths based on the ratio that you have derived.

Third, adjust the driver and reflector tips so that the overall element half-lengths are your calculated figures. The reflector should grow or shrink more than the driver.

a. If you must increase element lengths, be sure the reflector is at least as long as your calculation. Then, adjust the driver length for best resonant SWR. If you must increase the driver length so that the reflector is not the proportional amount longer that you calculated, then increase the reflector length slightly (in increments of about 1/8" per try), and readjust the driver for the ideal SWR curve. Your Yagi will now be close to optimally adjusted.

b. If you must decrease element lengths, use the same procedure as above, but be certain that the reflector is not decreased by too great an amount. If the reflector is too short--especially on 20 through 15 meters--you may experience a reversal of the pattern, with stronger signals off the rear of the antenna. The SWR curve of the readjusted antenna should parallel very closely the ideal curve.