CIRCUIT DESCRIPTION

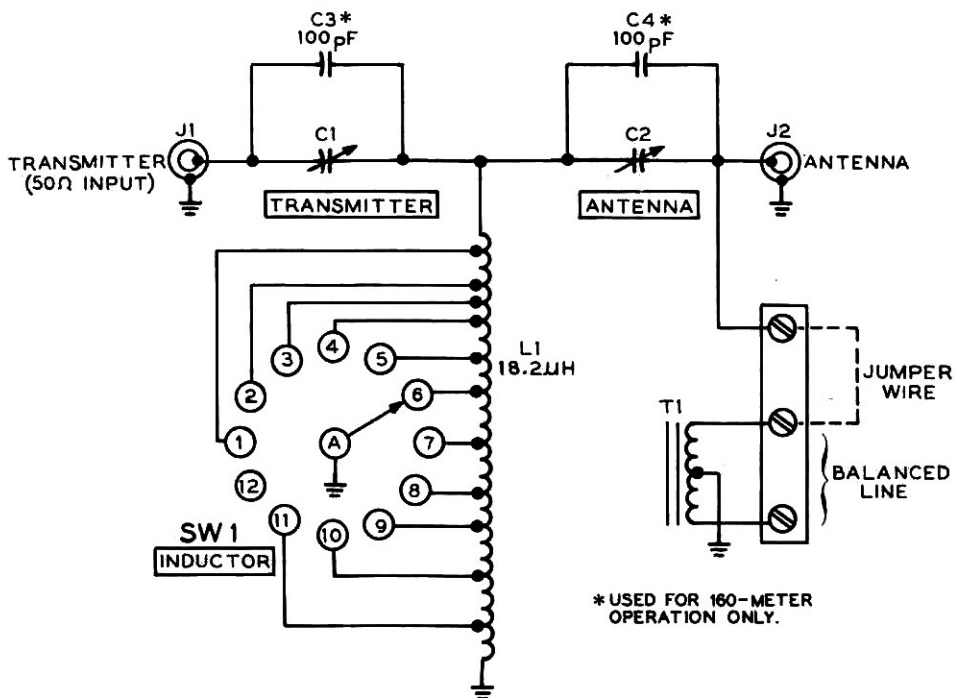
Refer to the Schematic Diagram while you read this "Circuit Description."

The Antenna Tuner is an adjustable RF transformer that matches an unknown load, presented by an antenna and its feedline, to the required 50-ohm transmitter impedance.

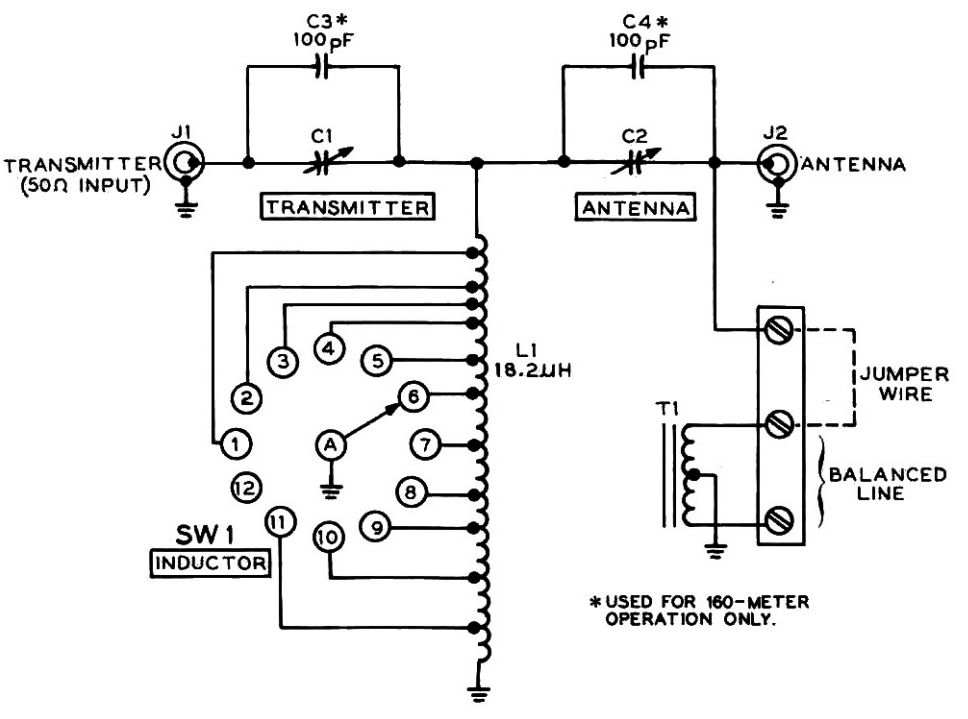
Coupling capacitor C2 matches the load impedance fed back to the tuned circuit formed by capacitor C1 and inductor L1. The total resonant impedance across the tuned circuit depends upon the L/C ratio of C1 and L1, and the load impedance as transformed by C2. Capacitor C1 performs capacitive tapping and results in a 50-ohm impedance at Transmitter input connector J1.

Capacitors C3 and C4 extend the frequency range down to 1.8 MHz. These capacitors should not be installed unless you use the Antenna Tuner on the 160-meter band and cannot obtain the proper results without them. Installation of these capacitors may restrict the upper end of the frequency range to something less than 30 MHz.

A 4:1 balun coil, T1, is provided so you can use the Antenna Tuner with balanced lines.



Schematic of the Heathkit® Antenna Tuner Model HFT-9


C3*
100pF
C4*
100pF
J1
C1
C2
J2
TRANSMITTER
(50Ω INPUT)
ANTENNA
TRANSMITTER
ANTENNA
L1
18.2μH
1
2
3
4
5
6
7
8
9
10
11
12
A
SW1
INDUCTOR
T1
JUMPER
WIRE
BALANCED
LINE
*USED FOR 160-METER
OPERATION ONLY.