

20 Foot Portable PVC Tower

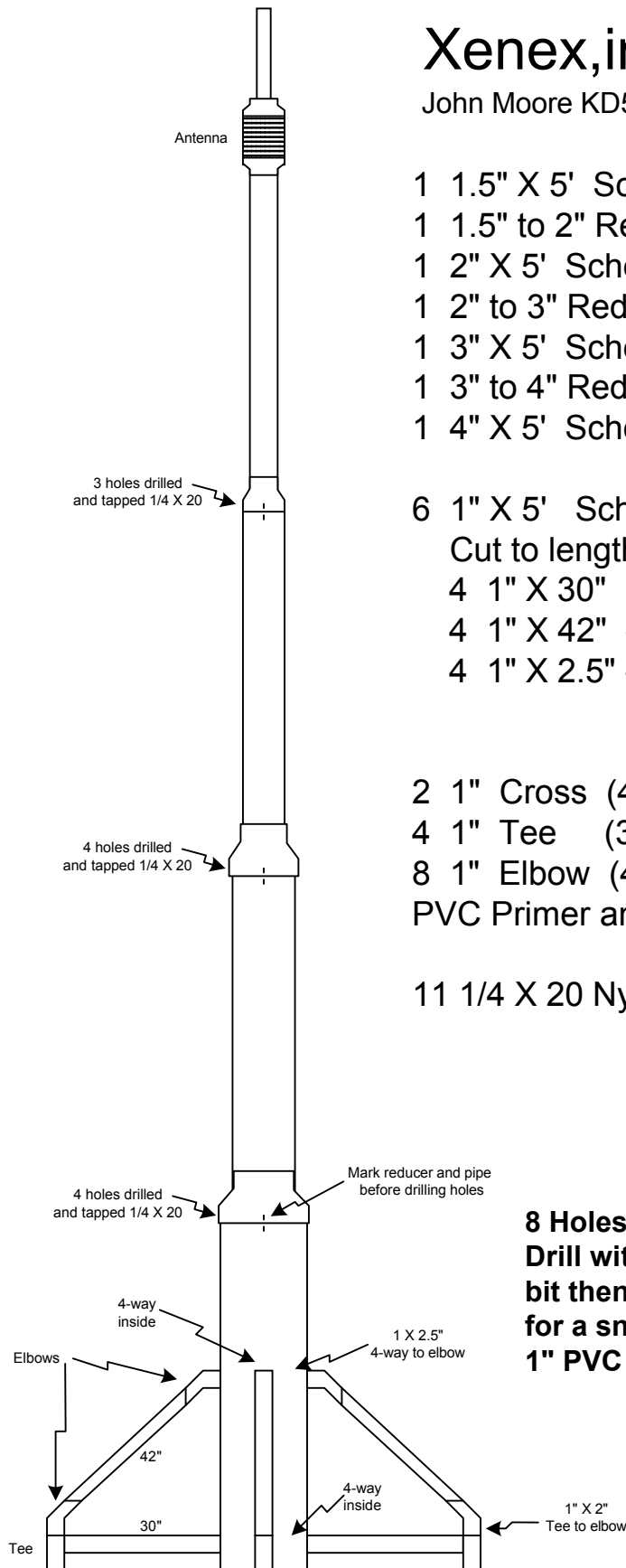
Xenex,inc.

John Moore KD5RVX

Height: 20 Ft.

Weight: 25 lbs.

Cost of materials: 50 \$



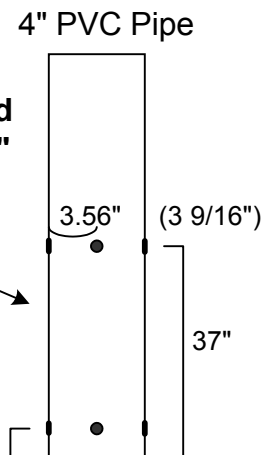
- 1 1.5" X 5' Schedule 40 PVC
- 1 1.5" to 2" Reducer -- glue to 1.5" pipe
- 1 2" X 5' Schedule 40 PVC
- 1 2" to 3" Reducer -- glue to 2" pipe
- 1 3" X 5' Schedule 40 PVC
- 1 3" to 4" Reducer -- glue to 3" pipe
- 1 4" X 5' Schedule 40 PVC

- 6 1" X 5' Schedule 40 PVC (or 3 10' sections)
- Cut to lengths:
 - 4 1" X 30" -- lower 4-way to tee
 - 4 1" X 42" -- lower elbow to upper elbow
 - 4 1" X 2.5" -- upper 4-way to upper elbow
- Tee

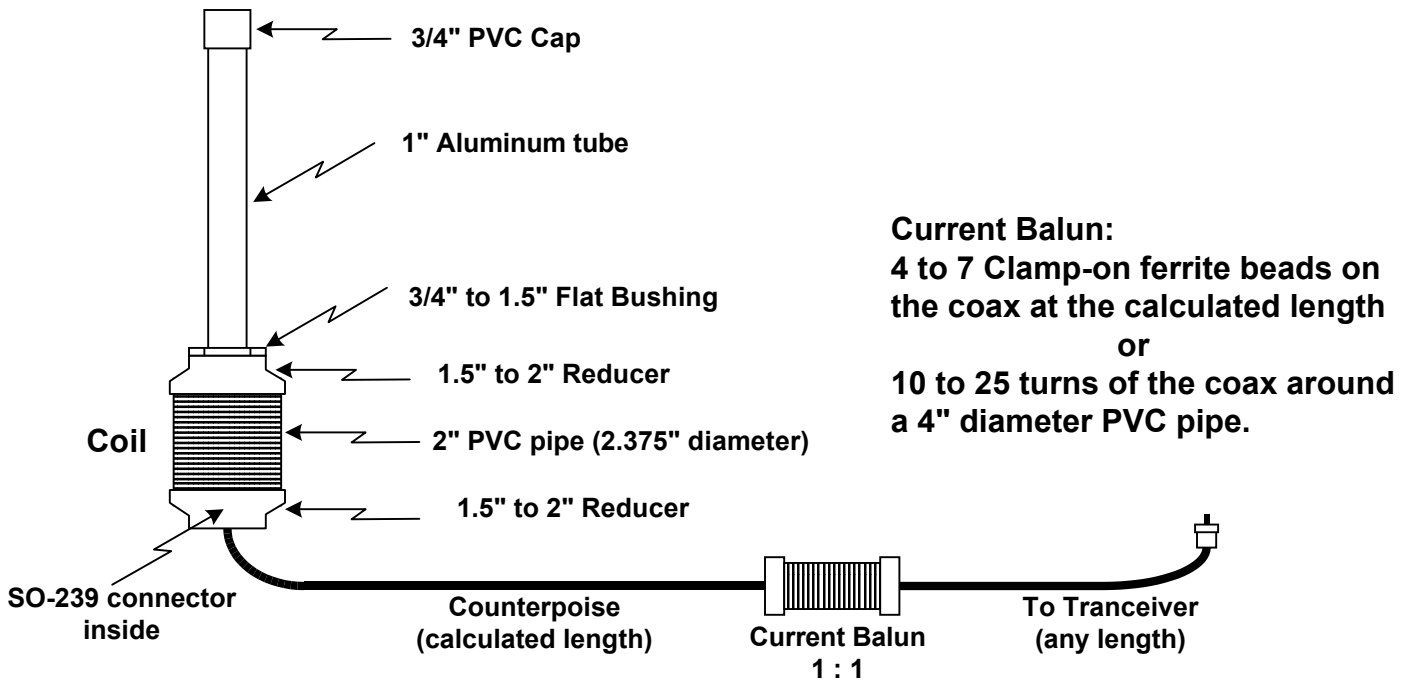
- 2 1" Cross (4 Way Coupler)
- 4 1" Tee (3 Way Coupler)
- 8 1" Elbow (45 degree)
- PVC Primer and cement

- 11 1/4 X 20 Nylon screws 1/2" long

8 Holes -- 1-5/16"
Drill with 1-1/4" wood
bit then file to 1-5/16"
for a snug fit of the
1" PVC pipe.



KD5RVX MicroVert Antenna



Current Balun:
 4 to 7 Clamp-on ferrite beads on the coax at the calculated length
 or
 10 to 25 turns of the coax around a 4" diameter PVC pipe.

Formulas

$$L_s = 185 / F$$

Where:

L_s = radiator length in inches

F = freq in megaHertz

$$C_s = 0.485 L_s (1 / \log (0.575 (L_s/d)))$$

Where:

C_s = radiator capacitance in pF

L_s = radiator length in inches

d = radiator outside diameter in inches

$$L = (159 / F)^2 / C_s$$

Where:

L = inductance in microHeneries (uH)

F = Freq in megaHertz

C_s = radiator capacitance in pF

Coil Winding

$$L = \frac{d^2 t^2}{18d + 40b}$$

Where:

L = inductance in uH

d = coil diameter in inches

t = number of turns

b = coil length in inches

Coax Counterpoise Length

$$L_x = 190 / F$$

Where:

L_x = counterpoise length in feet

F = freq in megaHertz

Juergen Schaefer , DL7PE, is the author and designer of the "DL7PE Microvert "antenna. This information is restricted to the private and personal use of radio amateurs. Commercial use is not permitted.

References:

- [1] Jurgen Schaefer
 DL7PE-Microvert
 AntenneX.com , 2001