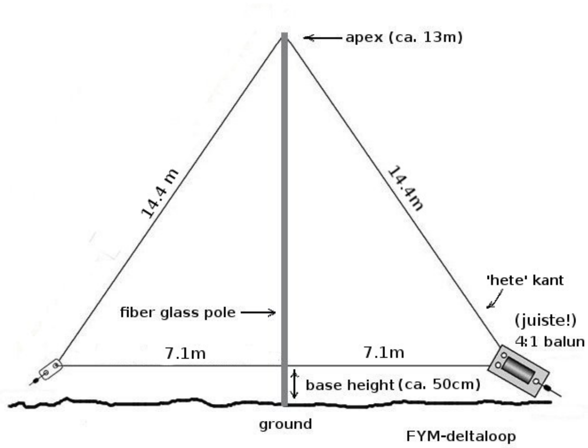
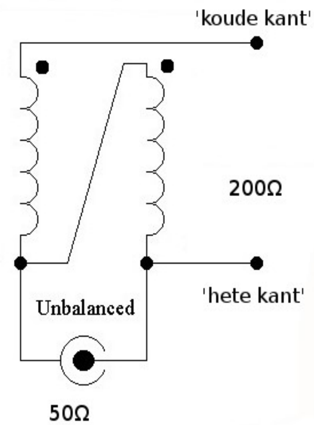
# Cookbook recipe 40m-deltaloop. PA3FYM, August 2013.

1. Take **43** m wire (diam. ca. 2 mm). Important: measure the length!
2. Connect the 'hot side' of a (good!) 4:1-voltage balun to the leg going towards the apex and the 'cold side' to the horizontal leg. See figures below.
3. It may be handy to mark the corner sides of the wire with a marker or tape.

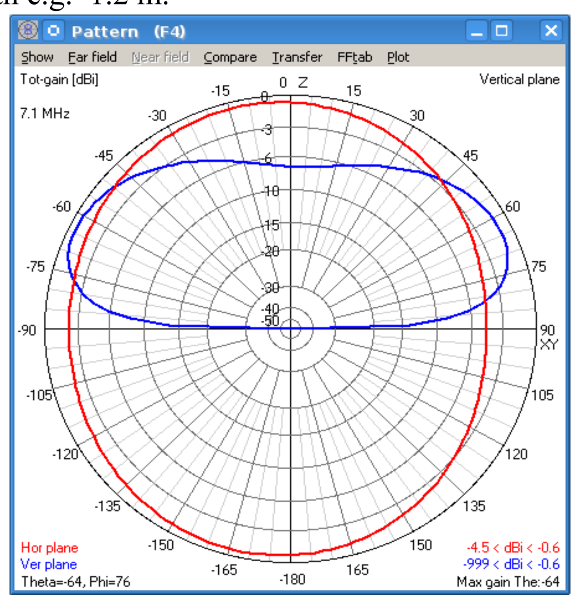



The horizontal leg runs around 45cm above ground with an apex of ca. 13m and ca. 30cm if the apex is 12m high.

**Note**: the combination of apex and base height determine the impedance of the loop (in this case 200Ω)

4. Determine the frequency with VSWR50 = 1.
5. **Suppose . . .** this is 6.8 MHz. The loop is too long, which is expected.
6. Make the loop around 7.1 MHz resonant by shortening it with:
   **43** - [**43** * (6.8/7.1)] = 1.8 m. But.. start safely with e.g. 1.2 m.
7. Cut 1.2 m of the 'cold' side of the loop and connect it to the cold side of the 4:1-balun. Is the VSWR50 dip still too low in frequency, remove another 50cm from the cold side of the wire. When properly dimensioned the VSWR1.5-band width of the loop is ca. 6.8 – 7.3 MHz with a broad dip around 7.1 MHz.
8. The radiaton pattern of the loop is depicted on the right. The loop is deliberately fed from a corner (and not ¼λ from the apex) so it has a 'donut' shape, which means local/nearby stations can be worked conveniently. Another advantage is very convenient mounting of the coax feed line. Ideal for holiday/portable use!




9. It is common practice to use a common mode choke for the feedline at the antenna side. The impedance of the common mode choke has to be ca. 10X the connected impedance, in this case 10 x 50 = 500Ω. This can be achieved easily with ferrite clamps around the coax.