Inductor calculating.

A practically formula, to use, when you have an air inductor is:

$$L = \frac{n^2 \times D^2}{100 \times l + 43\, D} \times 10^{-6}$$

Where:

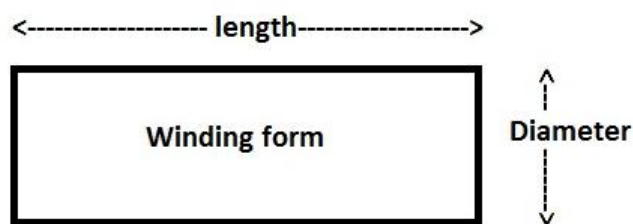L is the inductor value in Henry

n is the number of windings

D is the diameter of the inductor in Cm

l is the length of the inductor in Cm

This is a way to use the formula:

1. Draw the inductor form, and decide the length and diameter of the inductor.

<------------------ length------------------>

Winding form   Diameter

2. The formula is reorganized to:

$$n^2 = \frac{L(100 \times l + 43 \times D}{D^2 \times 10^{-6}}$$

And

$$n = \sqrt{\frac{L(100 \times l + 43 \times D}{D^2 \times 10^{-6}}}$$

3. Calculate the number of windings and round it to a **whole** number.

4. Is the number realistic? (Can it be on the wind form?)

5. The coil can now be wounded; and remember **the wire diameter have NO influence** on the inductors self induction!

The self induction is **not** depended of the diameter of the wire.

The diameter of the wire has only influence on the Q.

(Q is the Quality of the inductor.)

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