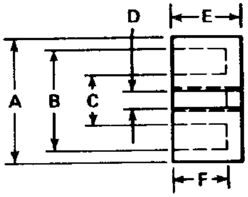
FERRITE POT CORES

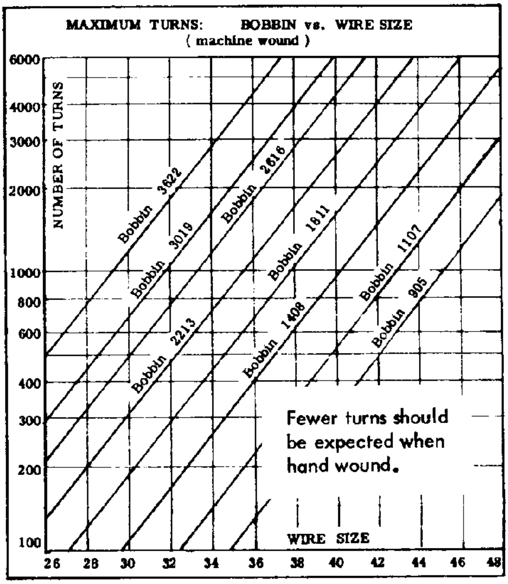
The pot cores listed here are of the #77 manganese-zinc ferrite material which has a permeability of 2000. This material has high saturation flux density at high temperatures. Core losses are very low in the 1 KHz to 1 MHz frequency range. Further specifications of #77 material on other pages .

Here are some of the advantages pot cores can offer: (1) A large amount of inductance can be obtained with a relatively small core size. (2) They are completely self-shielding which will eliminate all interference from adjacent RF fields. (3) Pot cores are very easily and speedily wound, thereby reducing assembly time to a minimum.

The pot core assembly is supplied complete with the two pot core halves, a nylon mounting bolt, and a single section nylon bobbin.



$$\text{Turns} = \sqrt{\frac{\text{desired } L \text{ (mh)}}{A_L \text{ (mh/1000t)}}} \times 1000$$

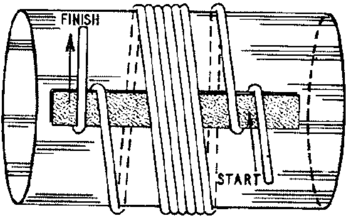


Part number	Physical dimensions (mm) A	B	C	D	E	F	Magnetic dimensions l_e (mm)	A_e (mm)^2	A_L mh / 1000 t
PC-1107-77	11.10	9.20	4.60	2.10	3.21	2.27	15.9	15.9	1420
PC-1408-77	14.05	11.80	5.90	3.10	4.18	2.90	20.0	25.0	1960
PC-2213-77	21.60	18.70	9.25	4.55	6.70	4.70	31.6	63.0	3660
PC-2616-77	25.50	21.60	11.30	5.55	8.05	5.60	37.2	93.0	4700
PC-3019-77	30.00	25.40	13.30	5.55	9.40	6.60	45.0	136.0	5900
PC-3622-77	35.60	30.40	15.90	5.55	10.85	7.40	52.0	202.0	7680

l_e - Magnetic path length (mm) A_e - Cross sectional area (mm)^2 A_L - mh / 1000 turns

EXPERIMENTAL COILS

This method of winding makes it easy to change the number of turns on experimental coils. Wind the coil with a thin strip of plastic or Bakelite between the winding and core. Anchor



the ends with one turn around the strip as shown in the drawing. After the exact number of turns has been determined, the ends can be anchored with a drop of cement and the leads soldered to lugs or pins on the form. —*Capt. Daniel Nof*

SERVICE LIGHT HOLDER

No technician's tool kit is complete without some sort of trouble light for illuminating the dark corners of a chassis. To save space in my tool kit, I just carry a small penlight, but often I have found jobs where an extra hand is needed to hold the light. I solved this problem by screw-fastening two spring clothespins back to back. With the light clamped in the jaws of one pin and the jaws of the other pin clamped to a pair of pliers or other heavy tool, I find that the light can be angled to nearly any position with very little difficulty.—*Scott Mack*

NICHROME ELEMENTS

When the nichrome element in an electrical appliance breaks, twist the ends of the broken section together in a loose joint. Then sprinkle a little borax over it and turn on the juice. The resulting spark will fuse the connection and save the element.—*Harvey Muller*

PHONE PLUG SWITCH

MULTI-TURN AIR-CORE COILS

Specific values of inductance are often required by speaker crossover networks. The following formula gives the inductance of a closely wound, multi-layer, air-core coil with a rectangular winding cross-section. Accuracy is within 1 or 2%.

$L = [(2m)^2 / (b + 1.5t + r)]\, F^1 F^2 \times 10^{-9}$ H

where r is the mean radius of the inductor in cm, b is the axial length of the inductor in cm, t is the radial thickness of the winding in cm, and n is the total number of turns. F_1 and F_2 are correction factors which depend on the shape of the inductor. Thus,

$F_1 = (10b + 13t + 2r)/(10b + 10.7t + 1.4r)$

$F_8 = 0.5 \log_{10} [100 + (14r + 7t)/(2b + 3t)]$

The equations can re rearranged to solve for any variable, of course.—*Bill Shellorne*

INDUCTANCE FORMULA

Q. ***I need a formula relating the number of turns, spacing, and diameter of a home-wound coil to its inductance.***

—*David Gardner, Baltimore, MD*

A. The inductance of a coil is influenced by many factors, including what type of core it is wound on, its proximity to other inductors, etc. For single-layer, air-core inductors, the following approximation is useful:

$$L = a^2n^2/(9a + 10b)$$

where L is the inductance in microhenries, a is the coil radius in inches, b is the coil length in inches, and n is the number of turns. The use of ferrite cores will cause this expression to be multiplied by a constant.

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