Transformer Formulas

Here are some ***transformer formulas*** that may be useful.

Options:

- Useful Formulas
- Motor Formulas

To better understand the following formulas review the rule of transposition in equations.
A multiplier may be removed from one side of an equation by making it a division on the other side, or a division may be removed from one side of an equation by making it a multiplier on the other side.

1. Voltage and Current: Primary (p) secondary (s)

Power(p) = power (s) or Ep x Ip = Es x Is

A. $Ep = \frac{Es \times Is}{Ip}$ B. $Ip = \frac{Es \times Is}{Ep}$

C. $Is = \frac{Ep \times Ip}{Es}$ D. $Es = \frac{Ep \times Ip}{Is}$

2. Voltage and Turns in Coil:

Voltage (p) x Turns (s) = Voltage (s) x Turns (p)
or Ep x Ts = Es x Ip

A. $\mathbf{Ep = \frac{Es \times Ip}{Ts}}$ **B.** $\mathbf{Ts = \frac{Es \times Tp}{Ep}}$

C. $\mathbf{Tp = \frac{Ep \times Ts}{Es}}$ **D.** $\mathbf{Es = \frac{Ep \times Ts}{Tp}}$

3. Amperes and Turns in Coil:

Amperes (p) x Turns (p) = Amperes (s) x Turns (s)
or Ip x Tp = Is x Ts

A. $Ip = \frac{Is \times Ts}{Tp}$ **B.** $Tp = \frac{Is \times Ts}{Ip}$

C. $Ts = \frac{Ip \times Tp}{Is}$ **D.** $Is = \frac{Ip \times Tp}{Ts}$

For more Transformer Information Check out Useful Information.

Check out these Online Calculators!

If there is anything you would like to add or if you have any comments please feel free to email E.T.E.

Back to Main Page

Information found here was excerpted from *Electrical motor Controls* by Rockis & Mazur and *Ugly's Electrical Refernece* by Hart