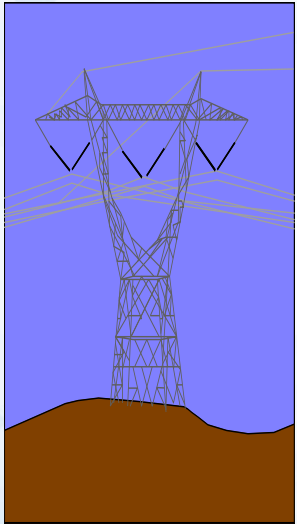


# Transformer Seminar



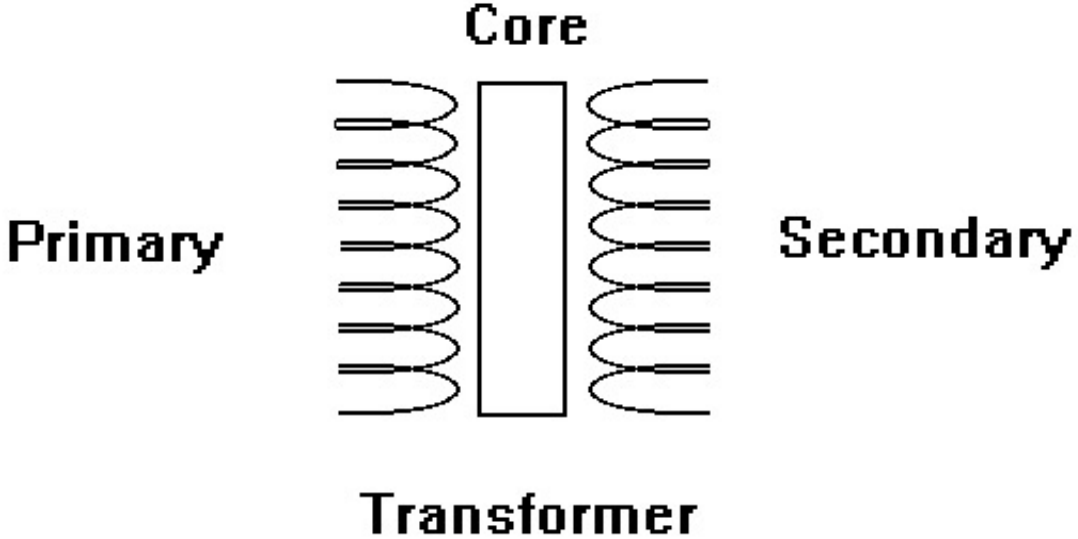
BASIC THEORY  
SIZING & SELECTION  
GENERAL PURPOSE TRANSFORMERS



**COMMERCIAL CONSTRUCTION**



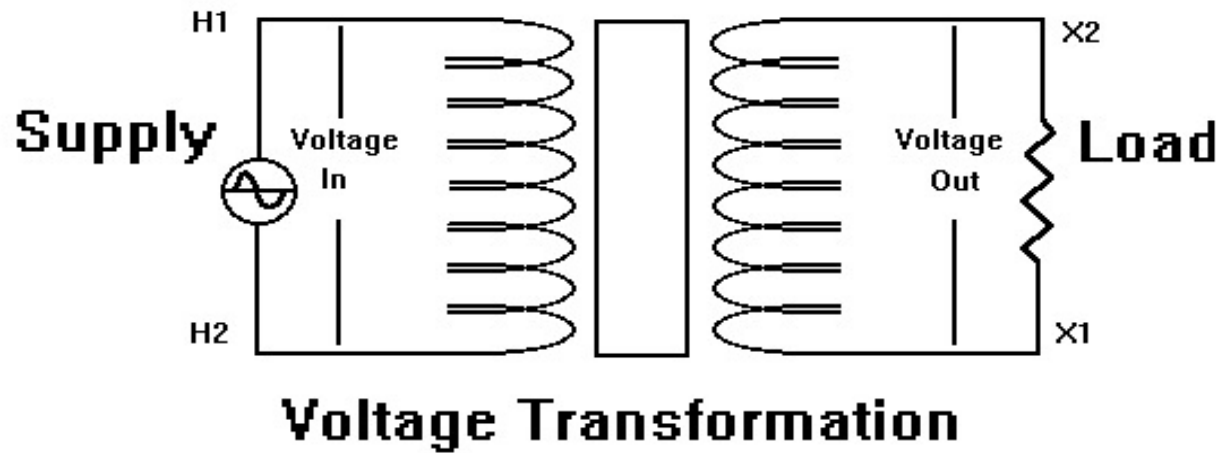
# Basic Transformer



COMMERCIAL CONSTRUCTION



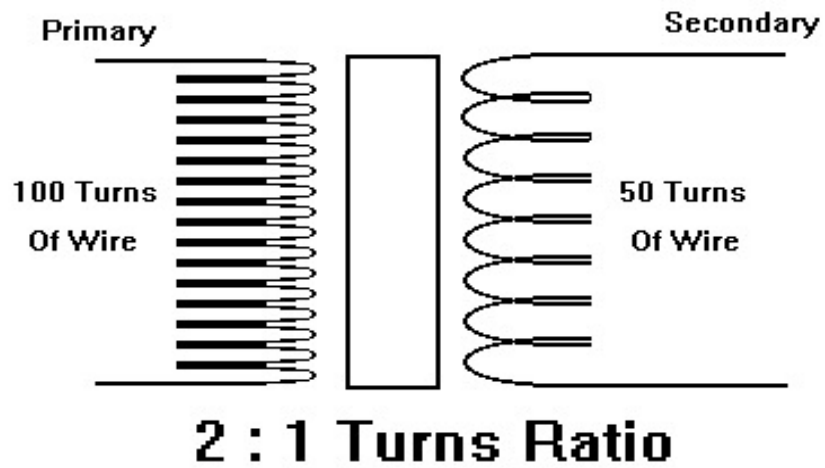
# Voltage Transformation



COMMERCIAL CONSTRUCTION



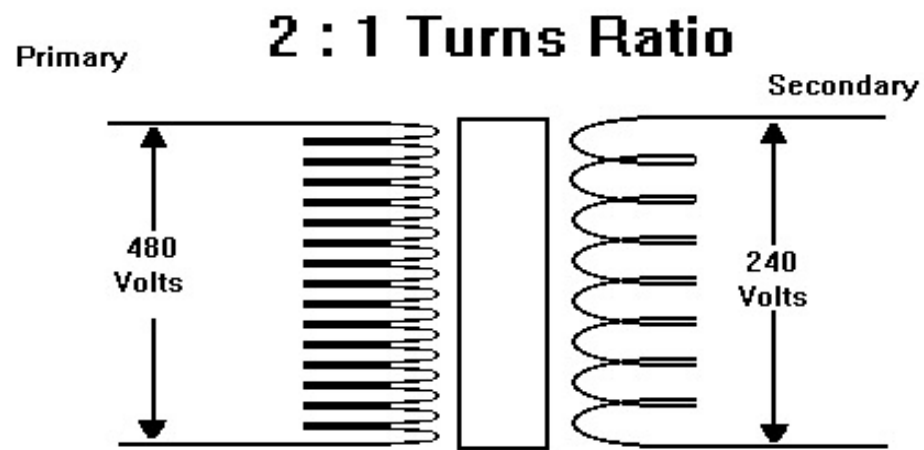
# Turns Ratio



COMMERCIAL CONSTRUCTION



# Voltage Ratio



COMMERCIAL CONSTRUCTION



# Three Basic Components

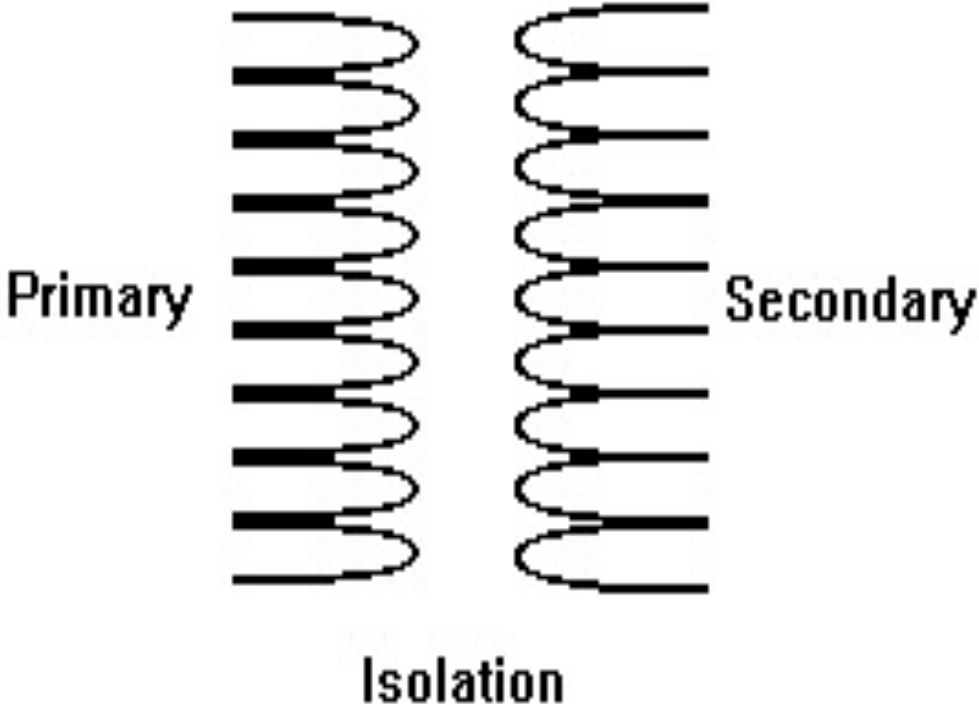
1. Core (magnetics)
2. Coils (conductors)
3. Insulation (paper, etc.)



COMMERCIAL CONSTRUCTION



# Electrical Types of Transformers

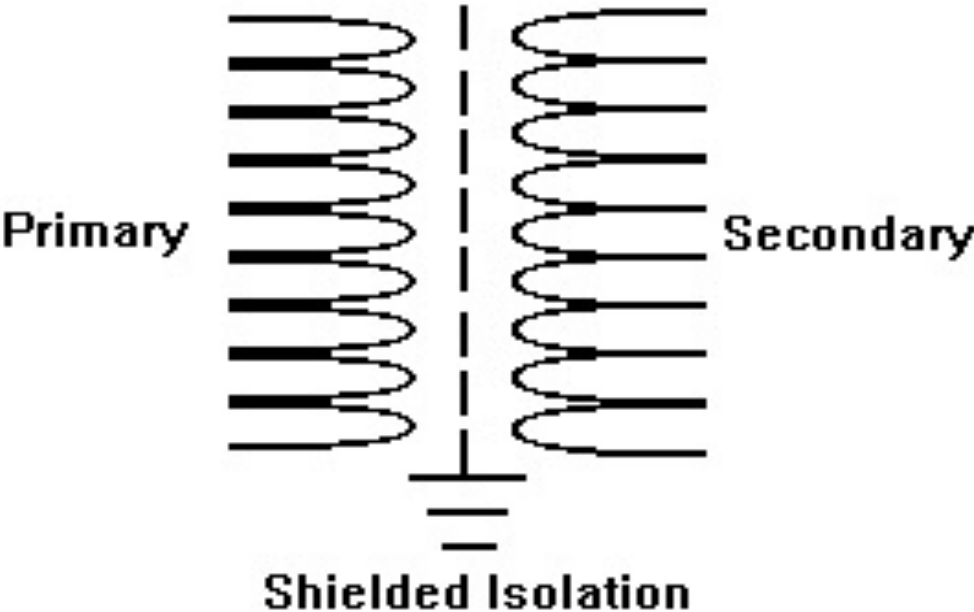


COMMERCIAL CONSTRUCTION



# Electrical Types, cont'd

## "SHIELDED ISOLATION"



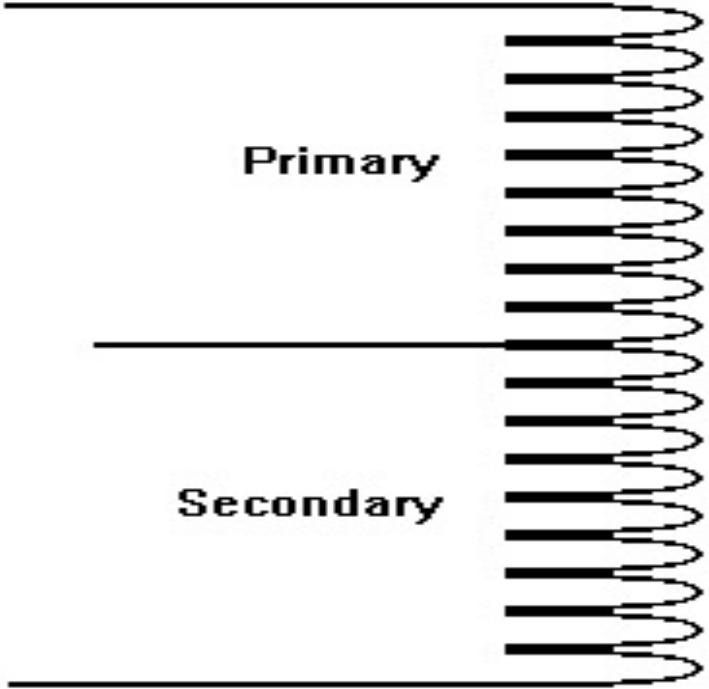
COMMERCIAL CONSTRUCTION





# Electrical Types, cont'd

“Auto-Transformer”



Autotransformer



COMMERCIAL CONSTRUCTION



# Transformer Taps

Taps are “typically” located on the Primary of the transformer.  
The NEMA designation for taps is:

ANFC - Above Normal Full Capacity

BNFC - Below Normal Full Capacity

Spacing of taps is usually 2 1/2 % or 5 % of rated voltage



COMMERCIAL CONSTRUCTION



# Numerical Example of Taps

480 volt Primary with 2-2.5% ANFC and 4 2-2.5% BNFC Taps  
(2.5% x 480v = 12v) Each tap will change by 12v.

- 504v (ANFC)
- 492v (ANFC)
- 480v (Nominal)
- 468v (BNFC)
- 456v (BNFC)
- 444v (BNFC)
- 432v (BNFC)



**COMMERCIAL CONSTRUCTION**



# Acme Standard Tap Chart

## Cat numbers no longer contain dashes

(For reference only)

### CATALOG NUMBER SUFFIX:

NO SUFFIX = NO TAPS

-S = SHIELDED BUT NO TAPS

-1S = 2 X 5% BNFC

-2S = 1 X 5% ANFC & 1 X 5% BNFC

-3S = 2 X 2.5% ANFC & 4 X 2.5% BNFC

-4S = 2 X 2.5% ANFC & 2 X 2.5% BNFC

-5S = 2 X 5% ANFC & 2 X 5% BNFC



**COMMERCIAL CONSTRUCTION**



# Agency Listings and Certifications

- UL
- CE
- CSA
- ANSI
- NEMA
- IEEE
- ISO 9001



**COMMERCIAL CONSTRUCTION**



# Questions or Comments

Tech Service contact number:  
800-334-5214 option 1



**COMMERCIAL CONSTRUCTION**

