

## Transformer and Wire Color Standards for Tube amps

From the ARRL handbook:

BLA - grounds, grounded elements, returns  
BRO - heaters/filaments, off ground  
RED - power supply B+  
ORA - screen grids (and base 2 of transistors)  
YEL - cathodes (and transistor emitters)  
GRN - control grids, diode plates (and base 1 of transistors)  
BLU - plates (and transistor collectors)  
VIO - power supply, minus leads  
GRA - AC power line leads  
WHI - bias supply, B or C minus, AGC

### Is there a standard scheme for power transformer wire colors?

From Orr's Radio Handbook:

Primary leads ----- black  
    (if tapped)  
    Common ----- black  
    Tap ----- black/yellow  
    End ----- black/red

High voltage secondary ----- red  
    Center tap ----- red/yellow

Rectifier filament winding - yellow  
    Center tap ----- yellow/blue

Filament winding No. 1 ----- green  
    Center tap ----- green/yellow

Filament winding No. 2 ----- brown  
    Center tap ----- brown/yellow

Filament winding No. 3 ----- slate  
    Center tap ----- slate/yellow

I have seen primaries with other color schemes; if it includes black it should be a primary lead of some sort. I've seen transformers with only one filament winding that was brown. I've seen high voltage secondaries with red/white centers. And on old transformers, the colors may have faded to the point brown looks black or green looks black or brown, and so forth. I'm not aware of any standard for filament winding numbering, so if there is more than one, verify the voltages. The rectifier winding will normally be 5 volts, but again, verify it. If you have an old tranny with odd or indistinguishable colors on the leads, verify them. In fact, it's a good idea to verify any PT before using, just to be safe. Miswirings are, AFAIK, rare, but do occur, as do shorts.

### **Is there a standard scheme for output transformer wire colors?**

Derived from the ARRL Radio Amateur's Handbook:

Single-ended transformers:

Plate lead (pri.)	-----	blue (or brown)
B+ (power supply) lead	-----	red
speaker (typ. +) (sec.)	-----	green (or yellow)
speaker return (sec.)	-----	black

Push-pull transformers:

Plate lead (pri.)	-----	blue (start)
B+ (power supply) lead	-----	red (center tap)
Plate lead (pri.)	-----	brown (finish)
speaker (typ. +) (sec.)	-----	green (or yellow)
speaker return (sec.)	-----	black

Ordinarily the black side should also be grounded, if the speaker is grounded. Replacement transformers are not always identical, so if you get squeals or other odd sounds when hooking up a new output transformer, try reversing the output leads. "Start" and "finish" are arbitrary terms with respect to this configuration.

**Is there a standard scheme for interstage coupling (such as phase inverter)  
transformer wire colors?**

From the ARRL Radio Amateur's Handbook:

Plate finish lead (pri.)	-----	blue
B+ (power supply) lead	-----	red (whether center tap or not)
Plate start lead (pri.)	-----	brown
Grid finish (sec.)	-----	green
speaker return (sec.)	-----	black (whether center tap or not)
Grid start (sec.)	-----	yellow