

## Toroid Transformer Construction

Here's a good link for surplus Toroidal Transformers:

[http://www.partsexpress.com/webpage.cfm?WebPage\\_ID=3](http://www.partsexpress.com/webpage.cfm?WebPage_ID=3)

and one for other surplus parts:

<http://www.partsexpress.com/>



1. This is one heavy beast. This came from Marlin P Jones in Lake Park, FL. It is advertised as having a shipping weight of 40 pounds.



2. This what it looks like when unboxed. It weighs 33 pounds with the metal frame attached.



3. Top cover removed.



4. Toroid removed from the frame.

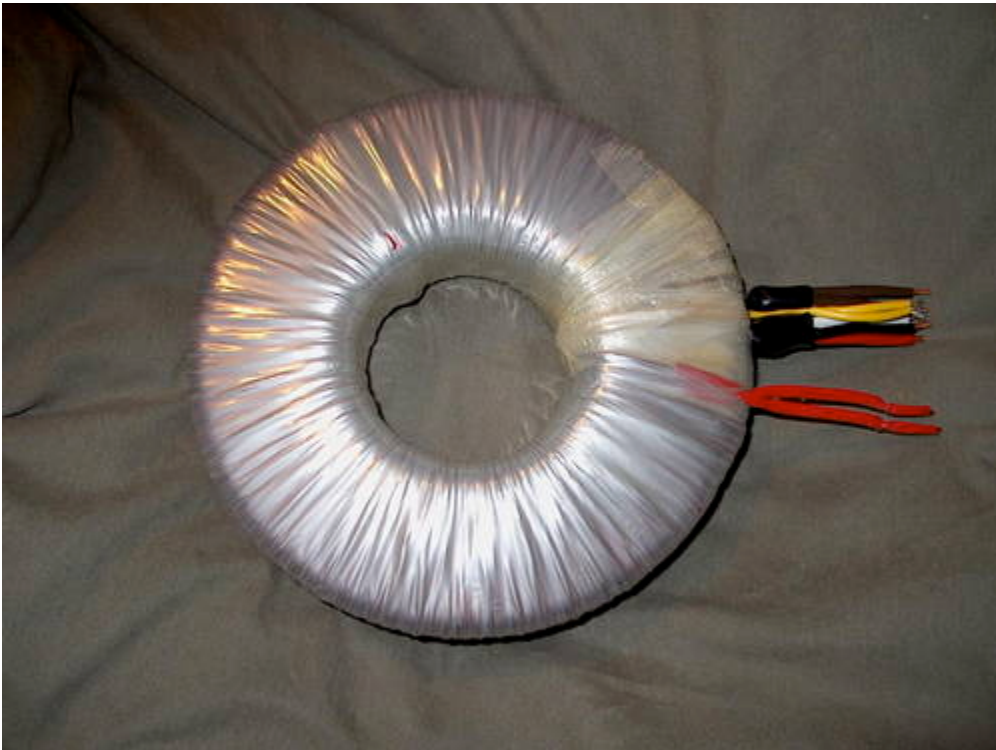




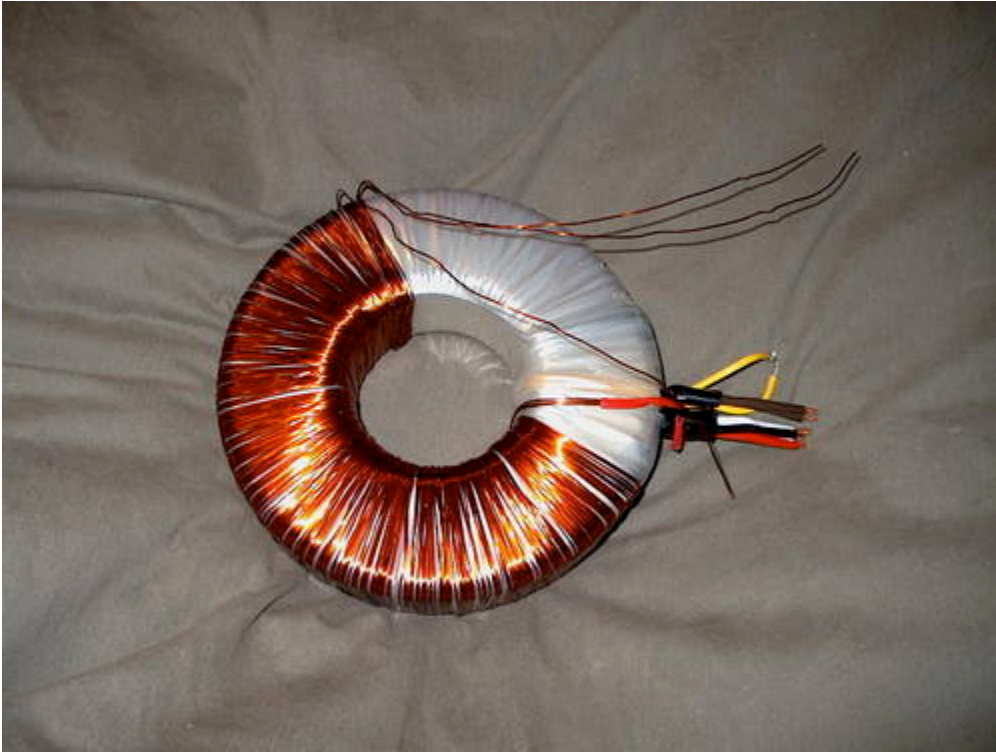
5. It weighs in at 30 pounds when removed from the frame.



6. Wiring harness connectors and outer plastic wrap removed.



7. Outer winding removed. Another layer of plastic wrap to remove.



8. That layer of plastic wrap removed and removing the next winding.



9. Another layer of plastic wrap to remove. The yellow leads are for a temperature sensor that is buried in the plastic wrap, creating a visible bump inside the hole of the toroid below where the wire leads are dressed. This must be removed as well.





10. After removing the temperature sensor, there is even more plastic wrap to remove.





11. Finally through all the plastic wraps, and down to the last 3 windings. Two of these are single layer, and one is a double layer.



12. This shows the last winding coming off. The hole is big enough to roll these windings into somewhat of a ball as I remove them, so they will pass through the center hole.



13. Finally down to the bare core. I will leave the final wrap of plastic wrap to protect the core and windings from each other. This core weighs in at 20 pounds now.



14. I laid in a secondary winding of 144 turns of mil-spec wire. This is 16-gauge solid wire, made of silver plated copper with Teflon insulation. I performed a sweep test of the core to check for bandwidth. Too bad it turned out to be made of laminated iron. Needless to say, this will not work very well for a high-end resonance drive system. I will be saving this core for lower frequency alternative energy experiments.



15. This is one of the 350-watt surplus toroids with a set of triple primaries wound over the outside. The wooden disks clamp those windings in place. To avoid future confusion, these windings are 10 turns of #16 wire each. This provides a 7.5:1 secondary to primary ratio. This unit is wound to power a large 290 VDC welder sized unit, not the smaller units pictures in my other project folder pages. The normal primary would be #20 or #22 wire with far more turns.

With 3 primary coils of 10 turns each wrapped around the secondary and a 7.5:1 secondary to primary turns ratio, this should come out to 225 turns on

the secondary of mil-spec wire. This is 16-guage solid wire, made of silver plated copper with Teflon insulation.