

A Powerful Stun Gun

Updated "Feb 16 2005"

Latest Update "Nov, 8 2009"

The version is Quite Powerful, IF T1 and T2 are made Correctly.

"I DO NOT RECOMMEND ANYONE BUILD THIS DEVICE".

**This Is Presented HERE, Only for the Purpose of Demonstrating:
"How Simple a Deadly Device can be Constructed".**

And If you do NOT Understand the Construction Details Give Below, You are DEFINATELY Not Understanding enough to Even Attempt Making it.

**I WILL NOT Offer any Further Construction Details.
NOR WILL I ACCEPT RESPONSIBILITY FOR THE STUPIDITY
OR INJURIES, RESULTING FROM PERSONS ATTEMPTING
TO BUILD OR USE THIS DEVICE.**

BUT IF YOU DO SO, IT IS TOTALLY AT YOUR OWN RISK.

"T1" Was Home Built using a "Magnetics" Ferrite Core # "42620" and a Bobbin # "PCB2620-12".

**The Primary Consists of a Dual 18 Turn Bifular wound coil using #26 AWG Wire.
It requires 2 layers, with "Nomex" Insulation between them, As well as a layer of Nomex over the Primary.**

**The Secondary Consists of 8 Layers of 40 AWG Double Insulated Enamel wire with aproximately 40 turns per layer,
Centered on each layer so there is a dead space on either side. This Prevents possible arcing.**

Additionally a .003 Inch thick "Nomax Paper Insulation" is Placed between each layers. Before Assembly, the Ferrite core is Gapped to 5/1000 of an inch.

**"Nomex:" Is one of many Special Insulator types of paper used in the Transformer Winding Industry.
Alternately you can use other Insulators such as "Fish Paper", Although they are Not as Good.**

With this Transformer Connected In the Circuit as Shown, Current draw is about 250 Ma at 12 volts With NO LOAD.

With the Diodes, Caps, SCR and T2 connected in a Compete Circuit, "The Current draw can Exceed 2 Amps".

**EVEN MORE POWER: A Bigger T1 Can be made Using a 42625 Core and a PCB2625 Bobbin.
The Primary Consists of 14 Turns Bifular Wound on Two Layers.
Change the Secondary Wire to a 38 AWG, Double Insulated Wire and use about 45 turns per layer.**

Fill the Bobbin with as Many layers as Possible, leaving a bit of Clearance between the last layer and the ferrite core.

The Gap Remains the Same at 5/1000 of an inch.

This Results in a Faster Charging Time and a Higher Supply Voltage.

"T2" Was Wound on a "Fair_Rite" Rod, # "4077375211". It Measures .375 OD by 2 inchs long.

"ANOTHER T2" Was Wound on a "Fair_Rite" Rod, # "4077312911". It Measures .315 OD by 1 1/2 inchs long.

Both these are Material 77 and it worked EQUALLY WELL.

But If you think All Ferrite Rods are the same and you can Just use Any Ferrite Rod,

THINK AGAIN, "YOU ARE BADLY MISTAKEN".

I Stock Both these Rods, But I Only have a few of the first one above.

And Lots of the second one.

First Apply a layer of .003 Nomex Paper Insuation. Now wind a Primary of 25 Turns, 22 AWG wire in a single Layer.

It is than covered with a .005 or .008 Nomex Paper insulation.

The .008 Nomex is a bit better to keep this Layer more even to wind over.

The Secondary is wound over this with 40 AWG, Double Insulated Enamel Wire and aproximately 180 turns in the first layer

and than LAYER Wound in declining layers at about 10 turns per layer. A layer of .003 or .005 Nomex is placed between Each Layer

1) 400

2) 390

3) 370

4) 360

5) 350

6) 340

7) 330

8) 320

9) 310

10) Final Layer about 125 Turns with the Output taken off Directly in the Middle, Lenghtwise.

And a Final Couple of layers of Nomex are placed over top and Taped in place.

Total Turns, About 3,675 turns. But the Exact number of turns is Not All that Critical.

The Absolute Ideal is to "Pi" Wind the Secondary, But this Results in a Different number of turns and only a few layers.

This Completed Transformer is than Submersed in Epoxy, (Ideally in a Plastic Form to contain it around the transformer.)

and than placed in a "VACUUM CHAMBER" and Subjected to a high Vacuum of at least 25 inches of Hg. for at least 10 Minute. I usually Repeat this Vacuum Process Two or 3 Times.

The Reason for this is to Remove all Air Bubbles and have the Epoxy Totally Penitrate between the Windings. The Epoxy Surrounding the transformer sould be at least 1/4 inch thick over the Outer layer and 3/8 inch over the Ends.

Spark Gap Distance

The Correct Spark Gap Distance is Essential in the Completed Unit.

The Maximum Distance is a Function of How Well You Made T2.

Too Great of a Spark Gap Distance and T2 Shorts Out, Internally or Externally

NOTE: Some Info May have been Omitted in the Above!
This was My Prototype and I am Not Responsible for any Errors or Omissions.

A Real Misconception about Stun-Guns, Is the Voltages.

It Sound Good in the Advertisements, But it is Current that does the damage.
The Pulsing Effect of the Stun Gun adds Enormously to the Effect, But any spark capable of penetrating through the clothing and Surface Skin is totally sufficient to do the job of Penetration.

A blue spark looks pretty, but a yellow spark is
"Much Higher Current" and REALLY MORE DANGEROUS.

MORE People are Killed by Relatively LOW Household Voltage than any other electrical supply.

Points to Ponder,

REMEMBER: In Reality, the spark gap determines the "Actual Voltage Available at the probes".
With a spark gap of 1 to 2 inches or so, it may be No-where near the 100,000 Volts
And DEFINATELY NEVER the 750,000 volts that these manufacturers make claims of.

IF YOU REMOVE THE SPARK GAP, it MAY Attempt to Attain these Voltages
But in the Process it will short out across the surface of T2.

 **GRAPH for Arc-Voltages/Distances, for Various probe shapes.**

Since Most Stun Guns are Point to Point Arcing,
It is Highly Unlikely any of these can Exceed 80 KV.

This Arcing "Acts like a Zener", Holding the Voltage near this level of Arc Voltage, Especially when there is a Relatively limited amount of Current. In the Hydro Electric Industry, Some Lightning Arresters use this very same method to help Protect against "Lightning Strikes".

In Addition, Using this Graph, You can Roughly Determine the "Actual Output" of a Commerical Built Stun Gun.

"IMPORTANT NOTE": In most countries throughout the world,
It is "Illegal" to "Make", and/or "Possess", and/or "Use" This device

**SO CHECK OUT YOUR LAWS AND IF YOU PLAN TO PLAY,
"PLEASE, PLAY VERY CAREFULLY"**

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The Schematic.

NOTE: The Actual Schematic Varies Somewhat from this Design!

Like I Said, I didn't Intend this as an Actual Construction Article.

But If your Good Enough to get the Transformers Right,
and you have a good understanding of the Circuit

You should be able to Complete it and make it operational.

"T1 and T2 Pictures.

T2 Verses the Spark Gap.

There is A Direct Relationship here and it is Important.

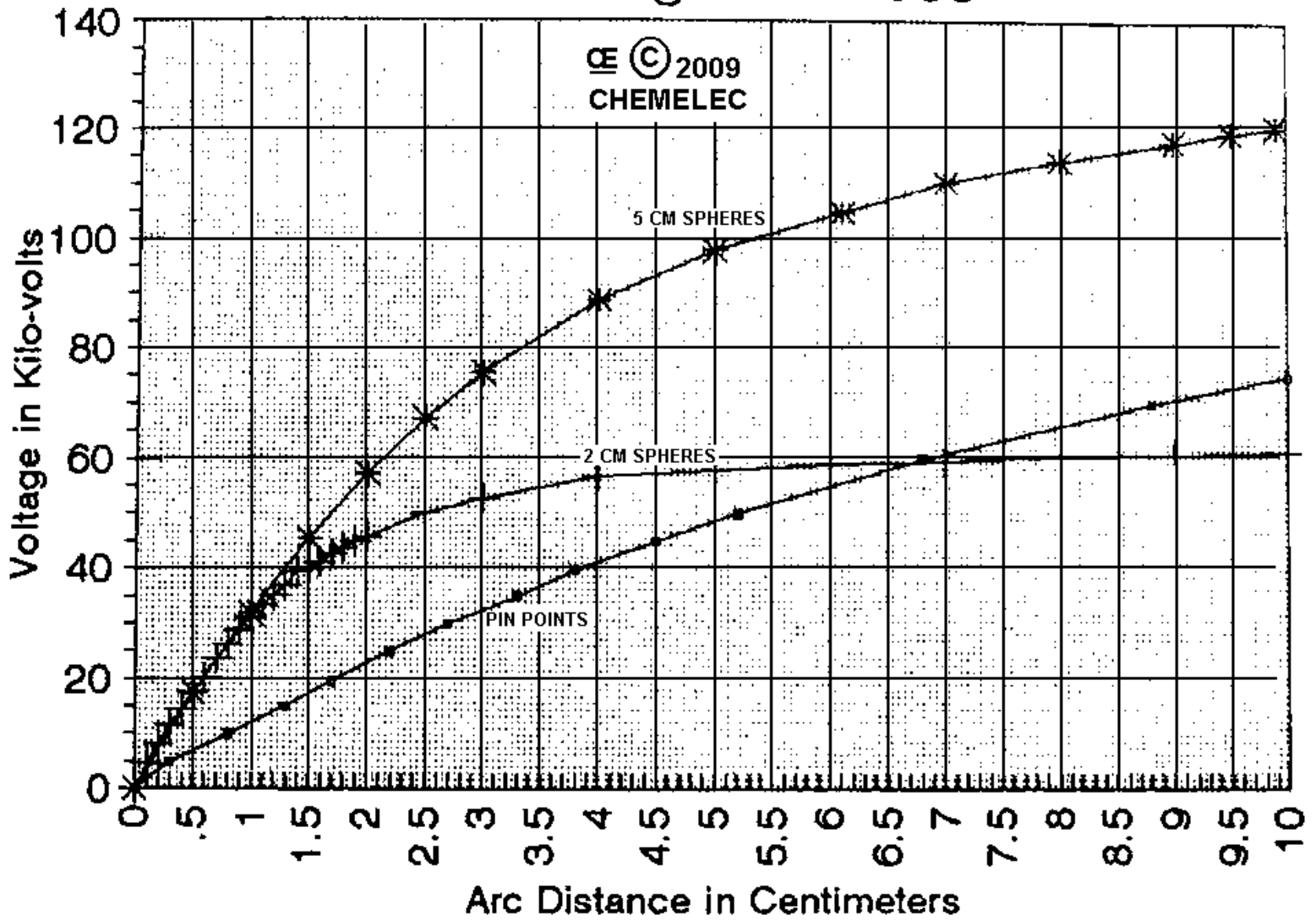
The PCB Will Not be Shown.

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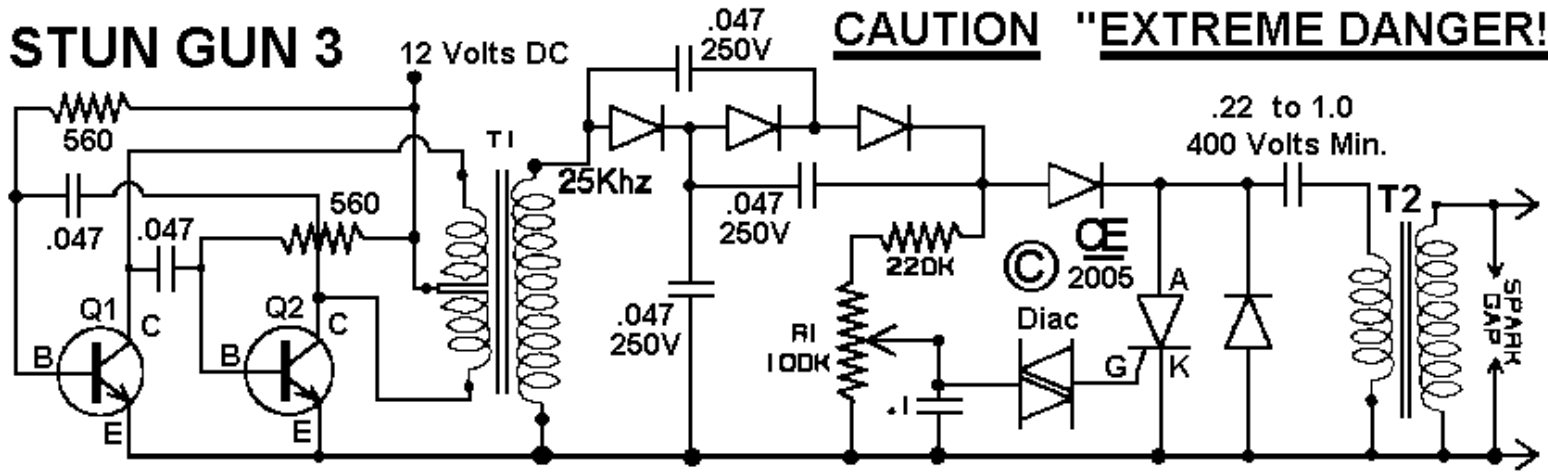
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Three Arcing Distances



STUN GUN 3

CAUTION "EXTREME DANGER!"



T1 = **SEE TEXT**

T2 = **SEE TEXT**

ALL DIODES = 1N4005 OR BETTER YET "1N4937"

ALL CAP's ARE MYLAR TYPES. Values in uF.

Q1 AND Q2 = "2SD401A", "K Series"

Diac = 36 Volts or almost any General Purpose one.

SCR = EC104M (.8 Amp @ 600 Volt)

R1 IS SET FOR BEST REPETITION RATE OF THE SPARK.

12 Volts DC, 10 NiMh Batteries

Q1 and Q2 Require Heat Sinks

