Christy Electronic Tester

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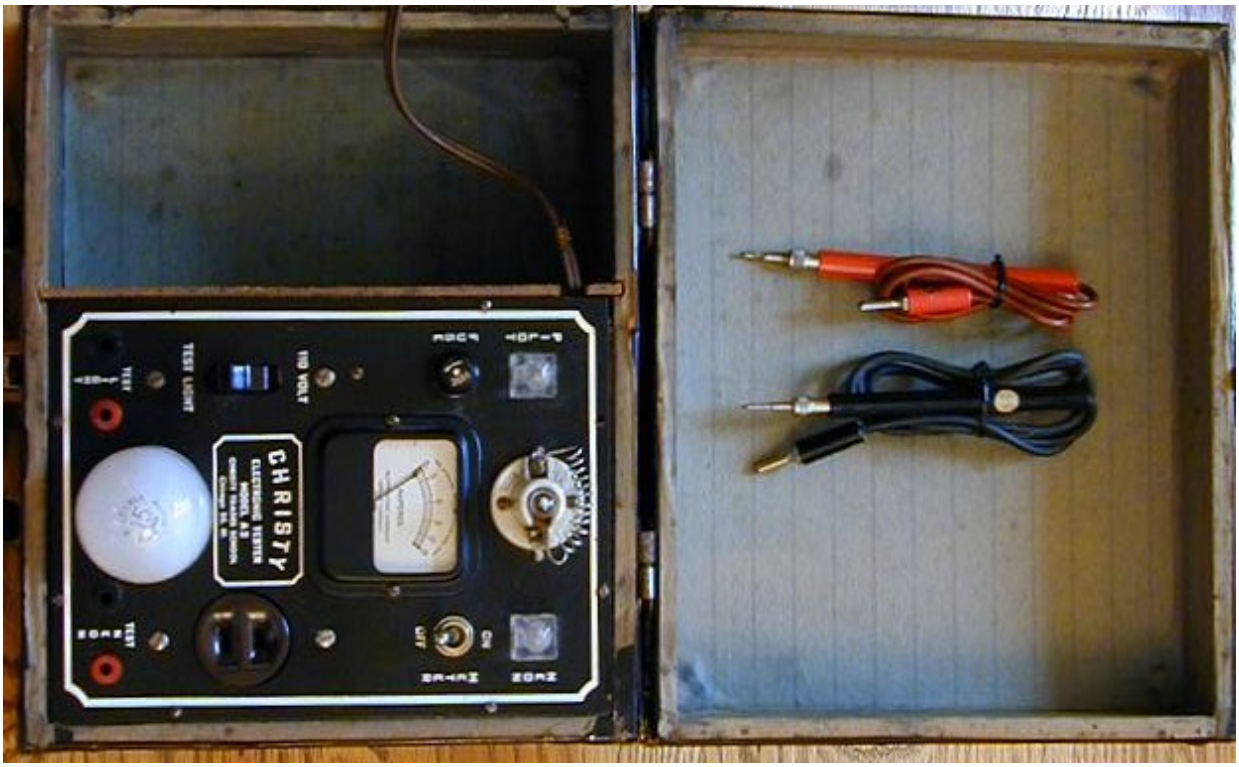
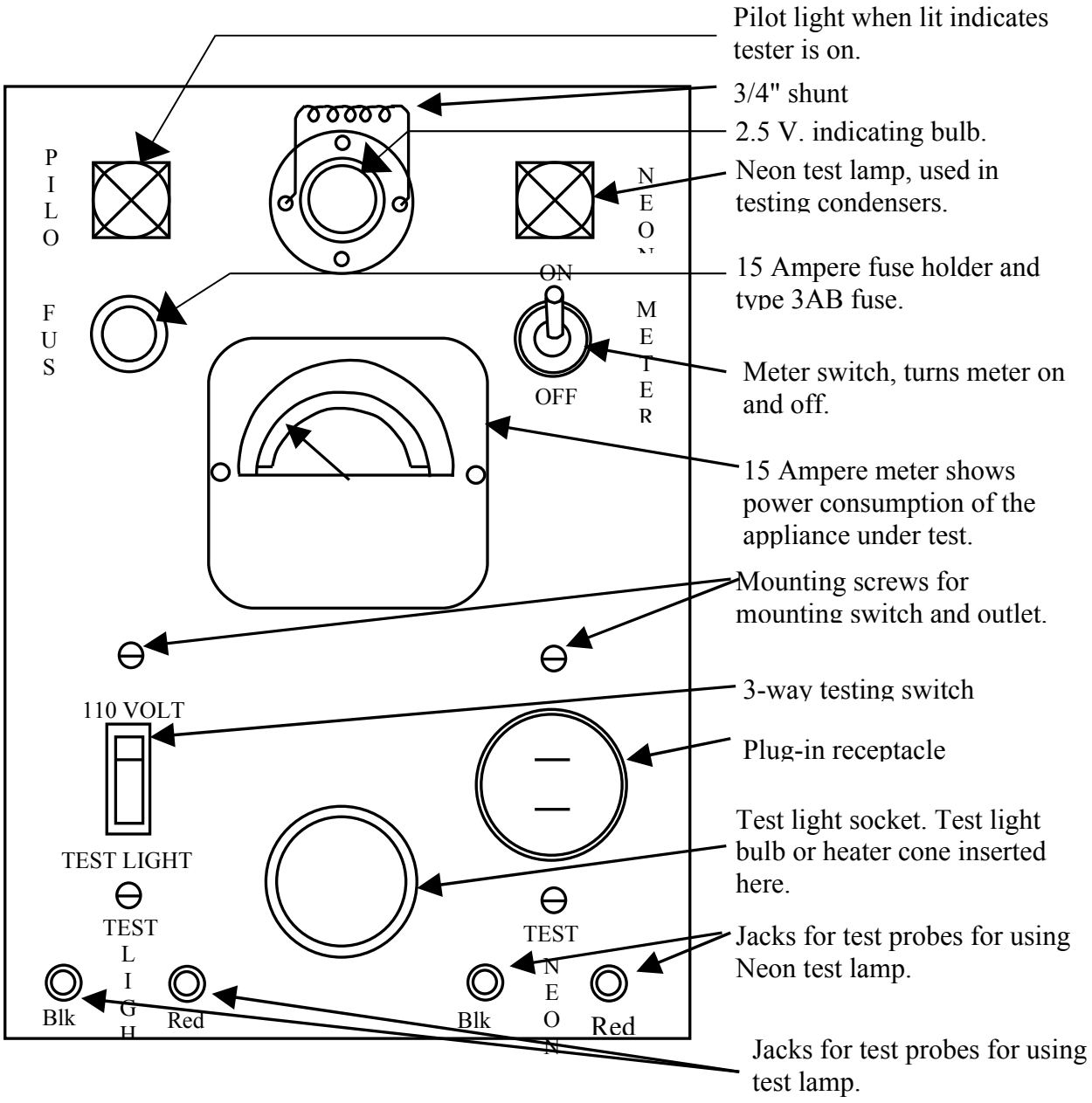


FIG. No. 4 View showing name and arrangement of parts.



OPERATING INSTRUCTIONS

Plug your tester into a 110 volt convenience outlet. The pilot light on your tester will glow indicating your Electronic Tester is ready for use.

The Fuse holder uses a type 3AB 15 ampere fuse. Do not use any larger fuse, this protects your meter.

1. TESTING FOR SHORTS:--

Appliances and electrical devices having low resistance, require a 100 watt or 200 watt bulb in the test light socket. These type of appliances are electric irons, waffle irons, toaster, motor fields, ets.

Appliances having high resistances, such as electric blankets, heating pads, etc., require a 25 watt bulb or less.

Throw 3-way testing switch (Fig. 4 above) to “Test Light” position. Plug appliance into plug-in receptacle. Now if appliance should NOT have a short, test lamp will now glow dim. If appliance should have a short, test light WILL glow brightly. To verify this, insert test probes into “Test Light” jacks and touch the tips together. Test light will glow full brilliance the.

2. TESTING FOR GROUNDS, CONTINUITY AND OPENS:--

Remove appliance plug from tester. With the 3_way switch in “Test Light” position, use your test leads for continuity checking. Touch one probe to either terminal of line cord of appliance and other probe to frame of appliance. If test light lights you have a ground indicated. The test lamp should not light on this test if appliance is well insulated and has no ground.

When the test light lights, this indicates there is a complete electrical circuit. Use a 7 1/2 or 25 volt bulb in this test.

CAUTION:--

Your test leads should be treated as “live” or “hot”. They are not in direct connection to the 110 volt line, but in series with the test lamp. If a 25 watt lamp or less is used as test light, there won’t be enough current passing thru the test leads to severely shock you or run a motor. But, should you have a heater cone or a 200 watt bulb in test light socket, a sufficient amount of current will pass thru the test leads to run a small motor and could cause you sever shock. So be careful in handling them.

3. TESTING LIGHT BULBS, FUSES, ETC.:--

Use your test leads for this. If the test light lights up, the circuit is good. Radio tube filaments, flashlight bulbs, mogul base light bulbs, etc., can be tested also.

4. ACTUAL OPERATING TEST:--

Set 3-way switch to test light position. Plug appliance into tester. Turn appliance switch “on” if equipped with switch.

Test light on instrument would light if appliance circuit is complete. Be sure meter switch is in “off” position.

Now set 3-way switch to 110 volt position. Appliance should run if O.K. On appliances of larger wattage the 2.5 volt indicating bulb will light, indicating current is passing thru appliance. Shunt will also get warm to hot.

Should appliance be equipped with automatic thermostat switch, such as an electric iron, toaster, etc., the indicating 2.5 V. bulb will go out when iron switch turns off. Will light up when switch turns on. This will indicate that automatic switch is operating.

Now by turning meter switch to “on” position the meter will show the actual current consumption of the appliance. This current consumption can be used to show the appliance owner what it actually costs to operate the appliance, by comparing it against the electric bill.

5. TESTING TWO OR THREE HEAT APPLIANCES:--

Most electric stoves, hot plates, etc., provide 3 or more degrees of heat.

Turn 3-way switch to "test light" position. Plug appliance into receptacle on tester. Now by inserting the proper wattage bulb into test light socket you can test the different heat positions of the appliance.

Use a 25 or 50 watt bulb. By turning the appliance switch to its different setting, such as "high", "medium: or "low", the brilliancy of the test lamp will decrease. If no variation in the test lamp brilliance occurs, then there is something wrong with the circuit in the appliance. Use your test probes to determine where the defect lies.

6. FIELD COIL TESTING:--

Dismantle motor completely. Now short the brush holders together by inserting the metal blace of a long slender screwdriver thru them. This will connect them together. If the line cord of the motor connects to the field coils, simply plug it into the receptacle on your Electronic Tester. Use a 100 watt bulb in the test light socket. The 3-way switch is in the "test light" position.

The 100 watt bulb will pass just enough current to magnetize the field coils. By holding a metal screw driver against each pole piece, test them for magnetic pull. The field poles should all have the same pull. Should you find one field pole which is weaker or with no pull this field coil will be defective and should be repaired or replaced. On small series motors always replace all the field coils when one proves defective.

7. MOTORS:--

Most motors have quite a surge of current when starting, so you may find it advisable to substiture a 6-8 volt bulb in the indicating bulb socket. This only when the 3-way switch is operated in the 110 volt position.

8. RADIO CONDENSERS:--

Insert test probes in "Test Neon" jacks.

Radio condensers suspected to be defective, should be disconnected from the circuit by disconnecting one end. Examine condenser for polarity markings. Most by-pass condensers used in radio circuits have a black ring printed around one end. This is the ground or negative side. Your black test lead should go to this side of the condenser. The red test lead going to the other end which is positive.

By touching the prod to this condenser, the neon glow lamp will glow, should condenser be shorted.

Neon lamp will glow and then go out should condenser be OK.

Should condenser be leaking Neon lamp will blink, that is go out and then on, out and then on, etc.

Should Neon lamp not even glow once when test lead is applied, this indicates an "open" condenser.

This test is accurate enough for condenser used in the ordinary radio circuit. For some large capacity condenser a more smooth source of C. C. voltage is required.

9. CONCLUSION:--

After a little use you will be able to determine many more tests you can put your tester to.

We are always interested in hearing from you, regarding your Electronic Kit tester and how it has helped you in your work. Write us and tell us about it, won't you?

--ASSEMBLING INSTRUCTIONS--

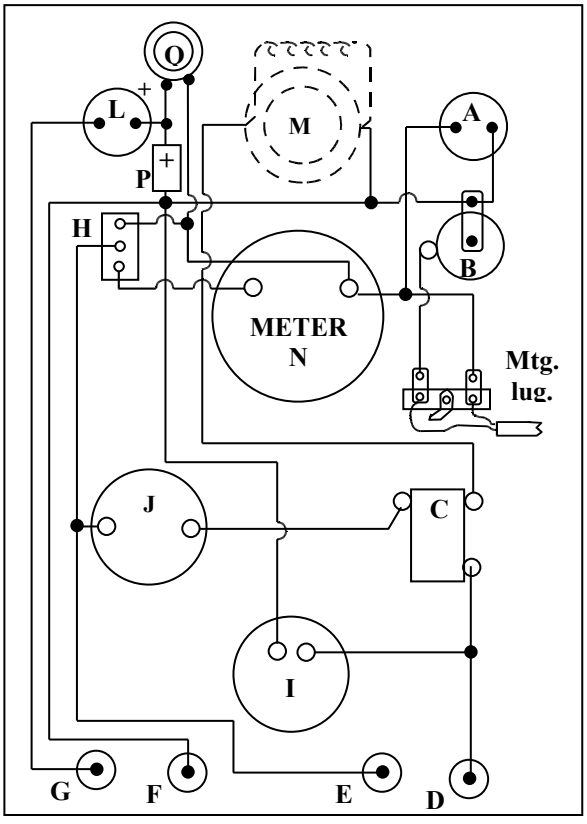
Check the items in your kit against this list. All items have been double checked, when packed, so examine all packing material carefully, before discarding.

You should have the quantities indicated of each item.

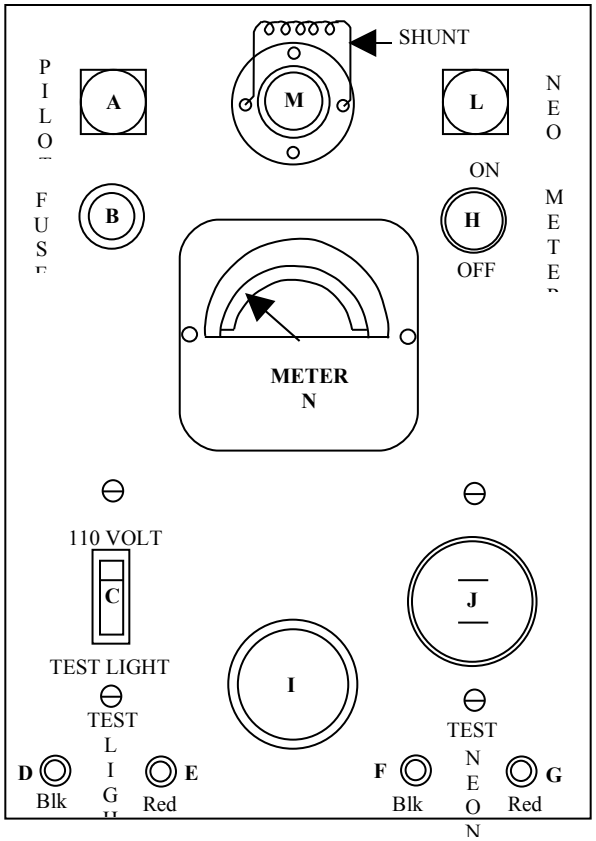
- H — One 3-way switch
- 2 Neon glow lamps A & L
- B — One fuse and holder
- M — One indicating bulb socket
- D, E, F & G — 2 Red & 2 Black
- R — 1 Red & 1 Black
- P — One condenser.
- I — One porcelain test light socket
- Also Required: From Heating Element Kit: Switch, line cord, male plug.
- S — Test probes 1 Red & 1 Black
- N — 1 ammeter.
- One 3/4" shunt
- J
- One receptacle set.
- 1 mounting lug.
- Q — One rectifier
- 1 Set instructions
- 1 Case & panel AND
- 8 Wood screws
- 8 Bolts & nuts
- 1 2.5 volt bulb
- 4' Hook-up wire
- 3' Red test wire.
- 3' Black " ".

Note:-- Check all packing Material carefully.

WIRING DIAGRAM….Looking up at bottom.
Fig. 2.



PANEL SET-UP….Looking down at panel top.
Fig. 1.



ASSEMBLING INSTRUCTIONS

Your first step in assembling your ELECTRONIC KIT is to check the materials and parts you received against your parts list. (Fig. 3)

Examine all envelopes and packing carefully, before discarding anything. These kits are double checked before being shipped, so you should have the materials as described in the parts list.

NOTE:-- Instead of a three piece receptacle socket as shown, you may have a one piece, that is the mounting flange is already mounted to the socket.

You need a few common tools for assembling your tester, such as a soldering iron, screw driver, pliers and side cutters.

Mount all the parts on the panel as shown in Fig. 1 or Fig. 4. Be sure that switches, sockets, and glow lamps, etc., are mounted securely, and that nuts & screws are tight.

When you have these parts mounted as shown in Fig. 1 or Fig. 4, you now mount the mounting lug, Rectifier and condenser on the underside of the panel as shown in Fig. 2

Remember that this view (Fig. 2) is the underside of the panel, the same as if you simply tipped the panel upside down and looked down at it.

The mounting lug is mounted to one of the mounting screws which hold switch C in place.

Notice that the condenser (P) and rectifier (Q) have a positive (+) side & a negative side (-). The positive sides of these two are connected together to the same mounting lug on the Neon glow lamp (L). This is very important to get connected properly, otherwise burn outs may occur at the condenser or rectifier.

The shunt will be the next thing you mount. This is the 3/4” coiled, spring like element wire, No. 18 gauge. First straighten out three full turns on each end of this shunt to provide connecting leads. When you have stretched these leads out straight, so they are at least 1” long or better you then stretch the shunt out. Grasp the two straightened ends of the shunt and pull them apart.

Stretch the shunt so there is at least 1/16” space or more between each coil. Now connect it to the two mounting screws which are located on the indicating bulb socket (M).

You are now ready to wire your set up.

In one of the envelopes you will find a four foot length of hook-up wire. If you use care in wiring and make each connection as short as possible, you should have 10” to 12” of hook up wire left.

The wiring diagram (Fig. 2) shows the proper connection of each part. In actual wiring you won’t splice your connections as shown by the dots, but will make your connections at the mounting lugs or connection screws on the respective part.

One point to remember now is that if you should get the top and bottom connections on meter switch (H) reversed, the meter will work only in the (OFF) position and will be disconnected in the (ON) position. If you find this to be happening, simply reverse the two connections, on this switch, that is, place the wire you have connected to the top connection on the bottom, and the wire from the bottom connection to the top. The center connection will not be moved.

Some of you having had experience with D. C. meters, will wonder shy there isn’t a positive and negative connection to this meter. This is an A. C. meter so therefore you need not worry about polarity.

On thing that may be advisable to do and that would be to anchor the line cord securely. A knot can be tied in the cord just before it comes thru the cord slot in the cabinet. This will prevent the cord from accidentally being jerked loose.

Next assemble your test probes. Notice that the probe tips (short ones) and the prods (long ones) are of the solderless type. You have on 3' length of black wire and one 3' length of red wire. Skin the insulation off approx. 1/2" on each end of these wires. On the long prods the knurled nut is loosened and the wire is fed down thru the insulated handle with the bare end of wire coming out in under the knurled nut. Now tighten nut and the prod is securely fastened.

When attaching the short probe tips, remove the plastic insulating handle. Push this handle over the wire. Now fasten the bare wire by inserting it in the lock nut provided and tighten. Screw plastic handle back onto the tip and your test leads are completed.

Use a red tip and prod with the red wire. Likewise black tip and prod with the black wire.

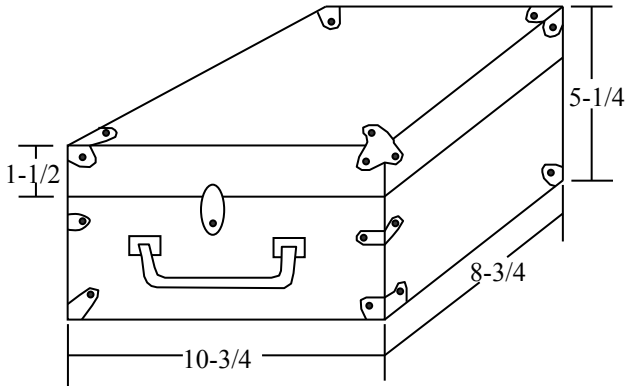
Make good clean connections. Do not leave any strands of wire hanging loose at connection points.

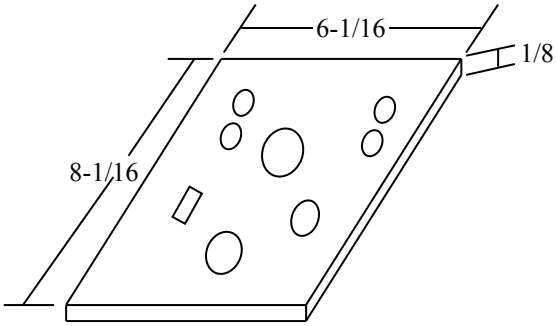
A good wiring job will pay you dividends in returned service and long operation satisfaction. Remember also that this is a testing instrument and as such should be handled with care and not dropped or banged around. We have tried to make this as rugged as possible, so it will withstand severe usage as found in ordinary service work.

The small 2.5 volt indicating bulb is mounted in socket (M). This bulb is used when you are testing the operation of automatic heat controls such as used in electric irons, or any appliance that will draw more than 5 amperes or approx. 550 watts or more.

Should this bulb glow too brightly while in use, try substituting a 6-8 volt bulb in its place. Simply shortening the shunt will also cause the bulb to glow dimmer. You will find, however that the 3/4" shunt will be correct size for all ordinary service.

CASE FOR TESTER



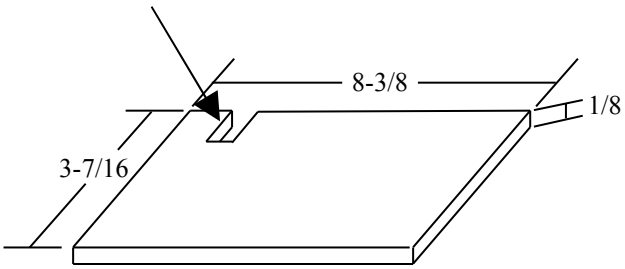


Front Panel Hardboard

CASE

Made from 5/16 wood
Exterior lined with thin sheet metal and painted black.
Interior lined with wallpaper

Notch for cord

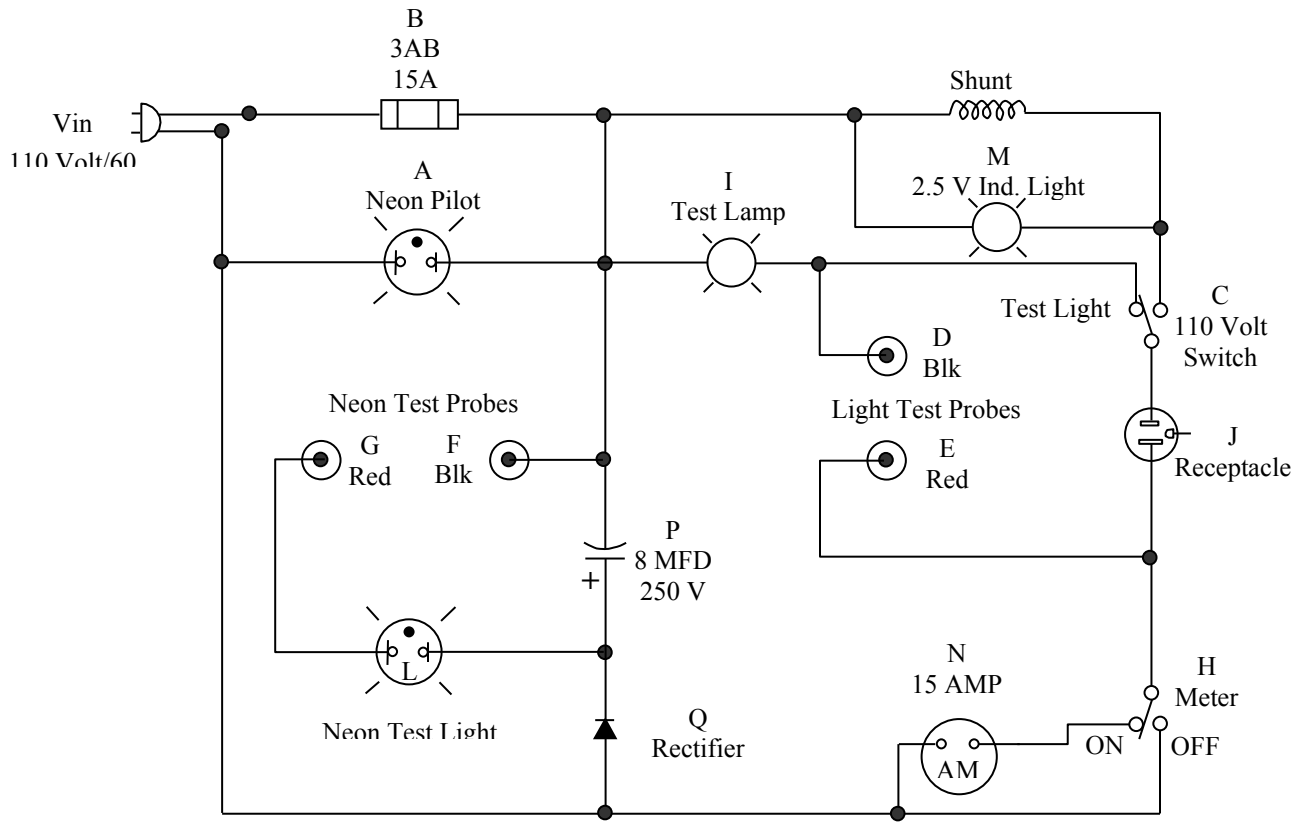


Divider Panel Hardboard

NOTE:

If making the case from material thicker than 5/16” adjust dimensions so that Front Panel will still fit.
3/8 X 3/8 strips nailed to case hold Front Panel flush to top

SCHEMATIC


B
3AB
15A
Vin
110 Volt/60
Shunt
M
2.5 V Ind. Light
A
Neon Pilot
I
Test Lamp
Test Light
C
110 Volt
Switch
D
Blk
Neon Test Probes
G
Red
F
Blk
Light Test Probes
E
Red
J
Receptacle
P
8 MFD
250 V
+
L
Neon Test Light
Q
Rectifier
N
15 AMP
AM
H
Meter
ON
OFF