Payphone Controller Installation

Keep in mind that over the last 30 years most 3-slot payphones have been converted for home use.

Their coin mechanisms were removed because they could not be made to work, and took up space that was used for networks and ringers.

The payphone you connect to the controller must be in *original condition*.
If it isn't, you will have to make it that way.

Warning!

This warning was in the original Ebay auction but it bears repeating.

The controller generates and stores high voltage.

Never work on the inside of the payphone with it plugged into the controller.

Never plug an un-terminated modular cable into the controller.

The output of the controller is in excess of 150VDC.
This voltage could appear on the ends of the un-terminated leads just waiting for you to put your hands on it.

Don't let the controller's small size or the fact that there's only a 9VDC power supply powering it fool you.

The controller's output voltage to the coin relay can be LETHAL!

THIS IS NOT A JOKE!

The controller uses two relays that have weighted floating armatures.

The armatures hit the inside of the relay cases when you shake them.

If you shake the controller and hear something rattling around don't worry, it's OK.

Setting Dial Tone Acquisition

**Prepay Automatic Electric payphones differed from Western and Northern Electric
in the way they acquired dial tone.**

**Before the advent of 'Dial Tone First', in order to receive dial tone on a Western
or Northern Electric 3-slot, the initial deposit had to be made.**

**Automatic Electric prepay 3-slots operated differently.
You heard a dial tone whenever the handset was lifted.**

**It didn't make any difference if you made a deposit or not.
However, unless you made the initial deposit your
ability to dial a number was disabled.**

The controller allows you to choose either dial tone after initial deposit or dial tone whenever the handset is lifted.

—

**Your choice of dial tone acquisition is set by the position of two
DIP switches that are accessed through an opening in the back
of the controller.**

**The switch assembly has a rubber gasket around it and against
the back of the enclosure.
Keeps dust out and the electrons in.**

**With the switches in the ON (up) position you will receive dial tone whenever the
handset is lifted (Automatic Electric operation).**

**With the switches in the OFF (down) position you will receive dial tone only after
the initial deposit is made (Northern and Western Electric operation).**

Single Coil Coin Relay Contacts

Below is a close-up of the terminal numbers of a single coil coin relay.

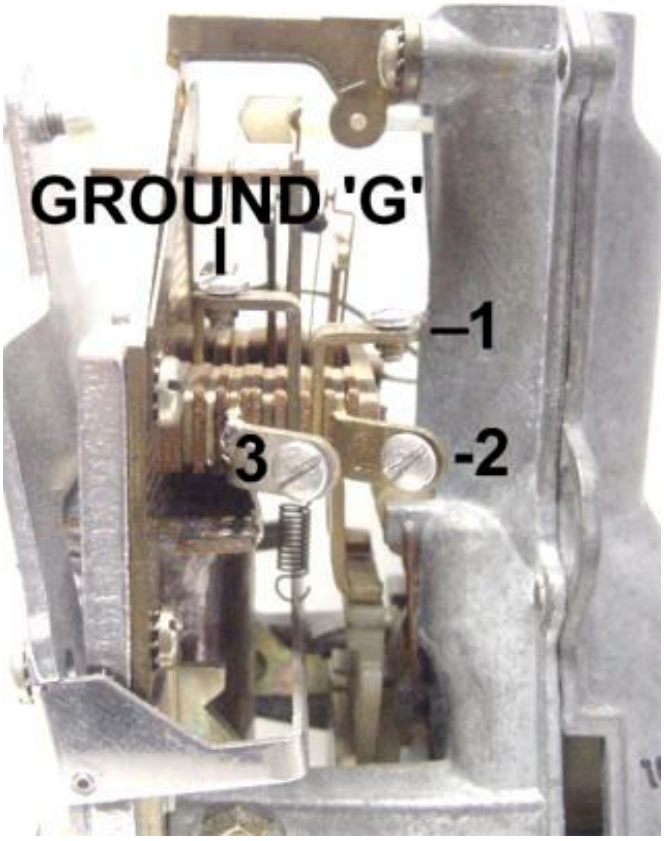
On some early coin relays the ground ‘G’ terminal is labeled ‘4’.

In some model Western and Northern Electric 3-slots there is a junper between the 'G' ground terminal of the coin relay and the chassis of the payphone.

The jumper was originally used for lightening protection.

This jumper should be removed.

You want the case of the payphone to be electrically isolated from all its internal wiring and the controller to prevent false triggering of the inbound call detector caused by static electricity when you touch the case of the payphone while depositing a coin.



Western Electric

There are basically five types of prepay Western Electric 3-slots.

1- The models 181G and 191G
These were built in the 1940s with internal 101 induction coils.
The 181G is a 5 cent payphone.
The 191G is 10 cent initial deposit.

2- The models 223G, 233G and 234G
These are 10 cent handset payphones.
These require a subset.

3- The model 236G
These are handset payphones with an internal network.
They do not need a subset.

4- The model 1234G 10 button Touch Tone
These also require a subset.

5- The models 50G, 150G, 155G and 161C
These are rare, vintage 2 piece payphones with a separate transmitter and receiver.
They require an older subset with an induction coil.

A subset is a separate box that contains a network and a ringer.
If you choose, you may use a small printed circuit network that will fit inside a flip top cigarette box, instead of the large subset.
The cigarette pack sized network will fit in the coin compartment and makes for a neater appearance.
Of course, you loose the ringer but in most cases there will be other phones connected to the line that will ring.

The terminal designations for hooking up either a subset with a 425 network or a pc network are exactly the same.

2 piece payphones with separate transmitters and receivers used an older subset with an induction coil and a capacitor.

I would not use any type of internal 'talk circuit' with these payphones.

The large metal subset box mounted below them is historically correct and adds to their great vintage appearance.

Incoming Calls

The controller has an 'in-bound call detector' that is enabled when Western or Northern Electric dial tone acquisition is chosen.

This circuit disables coin control while your phone line is being called, allowing you to answer incoming calls with the payphone.

Aside from having to answer *during the ring*, you answer incoming calls with the payphone just like any other telephone.

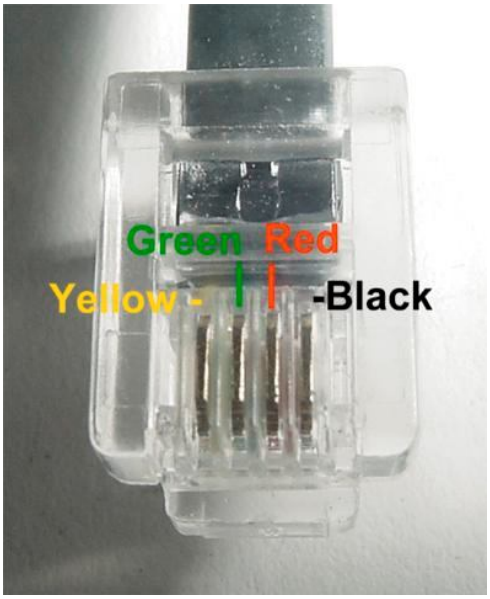
If Automatic Electric dial tone acquisition is chosen, the in-bound call detector is disabled, allowing you to answer incoming calls with the payphone like you would with any telephone.

Modular Cables

Modular plugs can be put on the flat cable in two ways.

You must make sure that any modular cable you connect to a payphone and plug into the controller has been manufactured properly.

Below is a close-up of a plug that was put on properly.



This view is looking at the top (contact) side.
The locking tab is underneath.

Always mount the controller as close to the payphone as possible. That way you won't have to extend the gray cable between the controller and the payphone with an extension device.

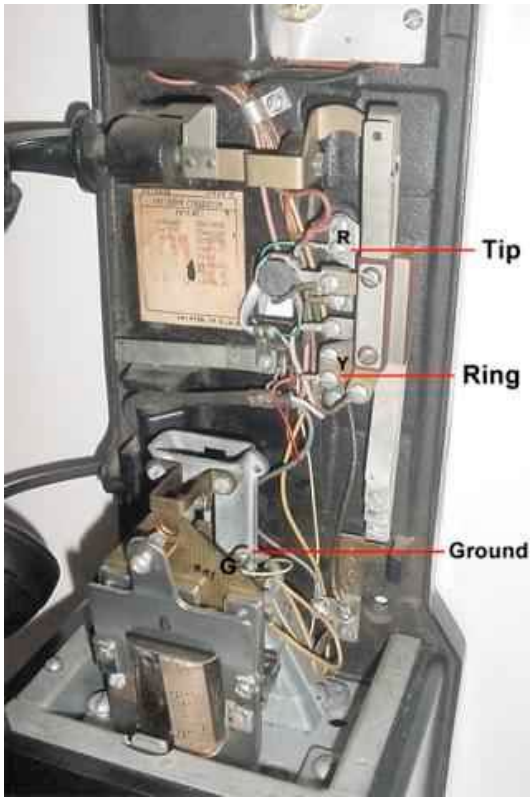
These extensions usually reverse the position of the outside black and yellow connections.

It's OK to use an extension cable on the black cord coming out of the controller.
Only the RED and Green are used on that cable to connect to the phone line.

181G And 191G

Below is a picture of the controller's cable connected to a 191G

with a single coil coin relay.



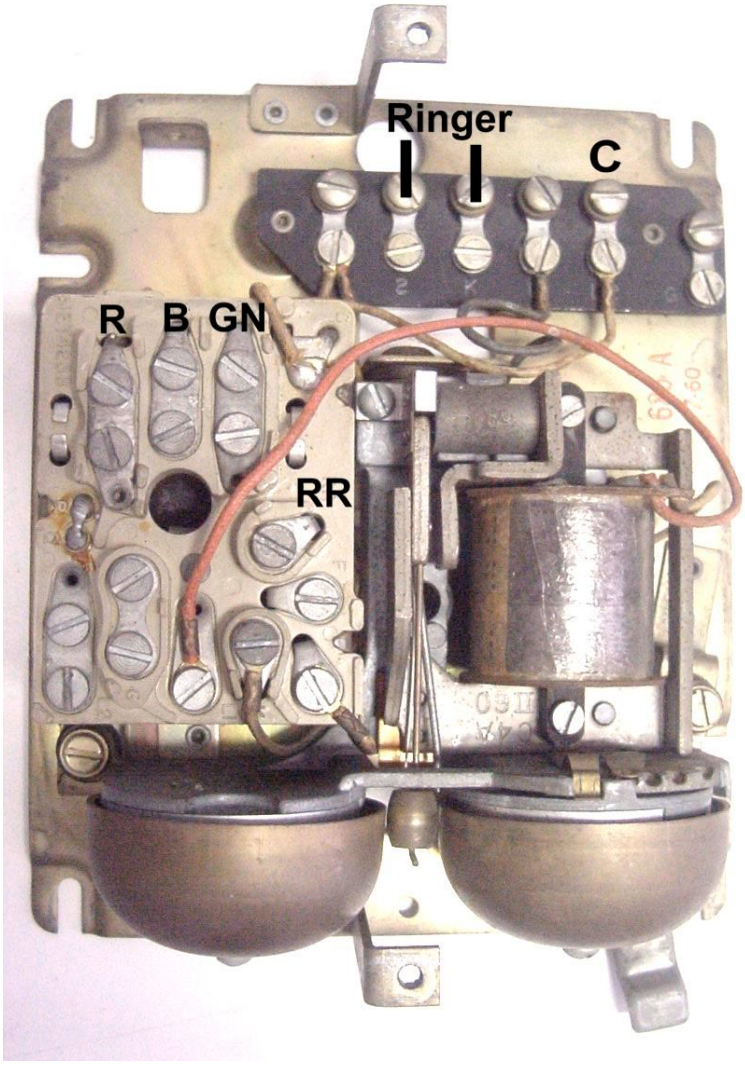
The Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.
The Green (Tip) lead connects to the (R) terminal of the switchhook/transfer contact assembly.
The Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

If your 191 has a double coil relay or your are fortunate and have a 181G, the Yellow (Ground) lead connects to the coin switch - see below.

The 223G, 233G and 234G

This is a Western Electric 685A subset.

It is the proper subset for 220 and 230 series 3 slots.



Connecting a 233G or 234G

The Ringer

If you want the ringer in the subset to work you will have to run two wires from the screws labeled (2) and (K) directly to the Tip and Ring of the phone line BEFORE the controller.

Take the Red (R) wire from the ringer that's on terminal (L2) of the network and put it on screw terminal (2) of the phenolic terminal board.

Take the Black (BK) wire that's on screw terminal (L1) of the phenolic terminal board and move it to screw terminal (K).

Leave all the other wiring as it is.

Get a modular cable and connect the Red and Green wires from the cable to screw terminals (2) and (K) of the phenolic terminal board.

Plug the modular cable directly into your phone line where you've got the controller plugged in.

—

If you would rather use the pc board version and mount it inside the payphone rather than an external subset, detailed instructions on preparing and packaging the 1427 network are shown below.

The TIP, RING and GROUND connections from the controller are shown on the left side of the illustration.

The Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.

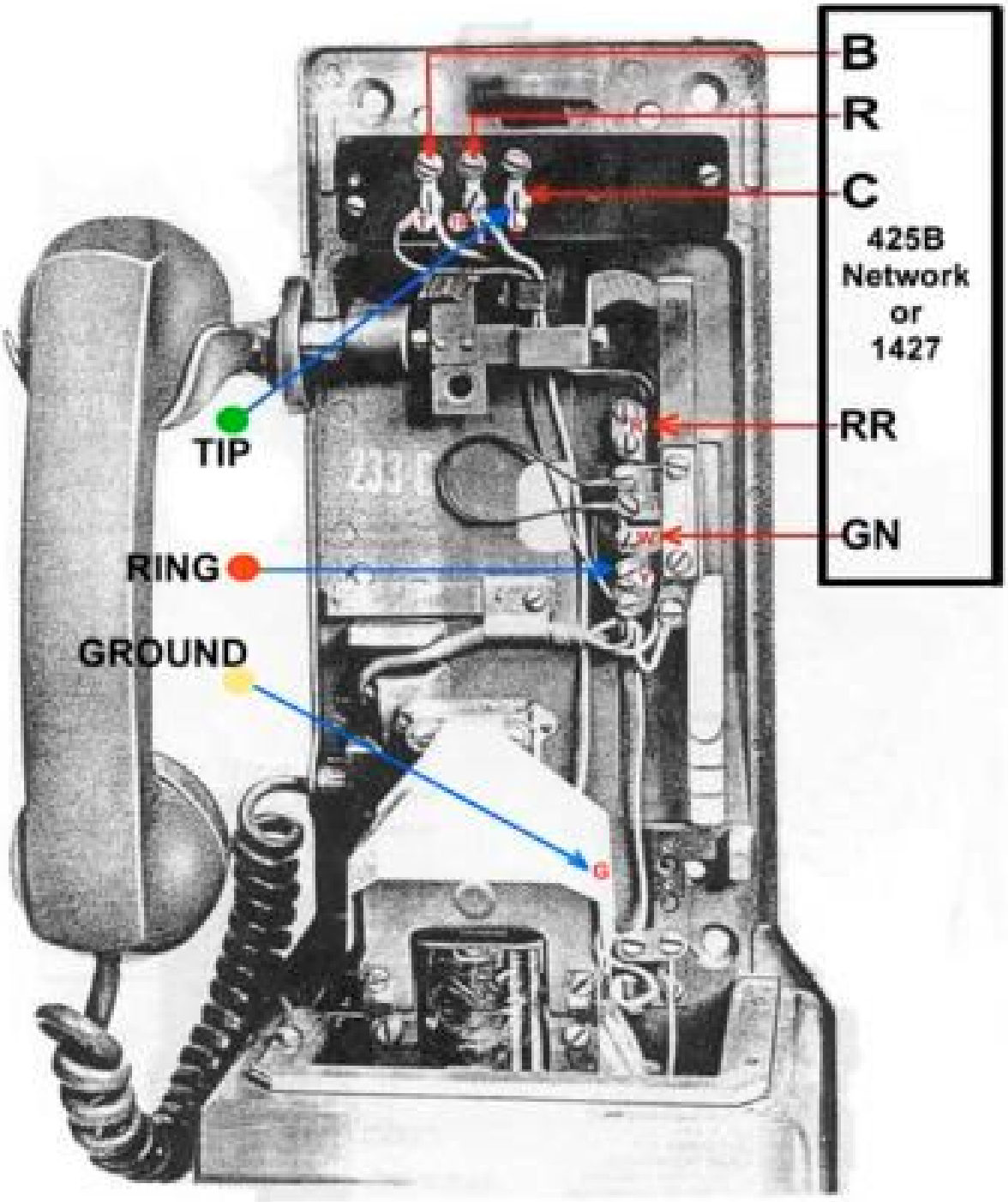
The Green (Tip) lead connects to (L) on the phenolic terminal board.

The Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

Strain relieve the cable from the controller on the screw that mounts the equalizing spring, like it’s done in the picture of the 191 above.

Run it and all the wiring for the subset out of the oblong hole in the back casting.

The 234G is connected the same way.


B
R
C
425B
Network
or
1427
RR
GN
TIP
RING
GROUND

The 223G

Connecting a 685 subset to a 223G is identical to a 233 except that the 'L' terminal was relocated on a separate board mounted under the equalizing spring below the oblong hole of the back casting.

Except for the location of the 'L' terminal, connecting the controller to a 223 is identical to a 233.

The Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.

The Green (Tip) lead connects to (L) on the phenolic terminal board.

The Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

The 1234G

The illustration below shows a 685 subset wired to a Western Electric 1234G 10 button Touch Tone 3-slot.

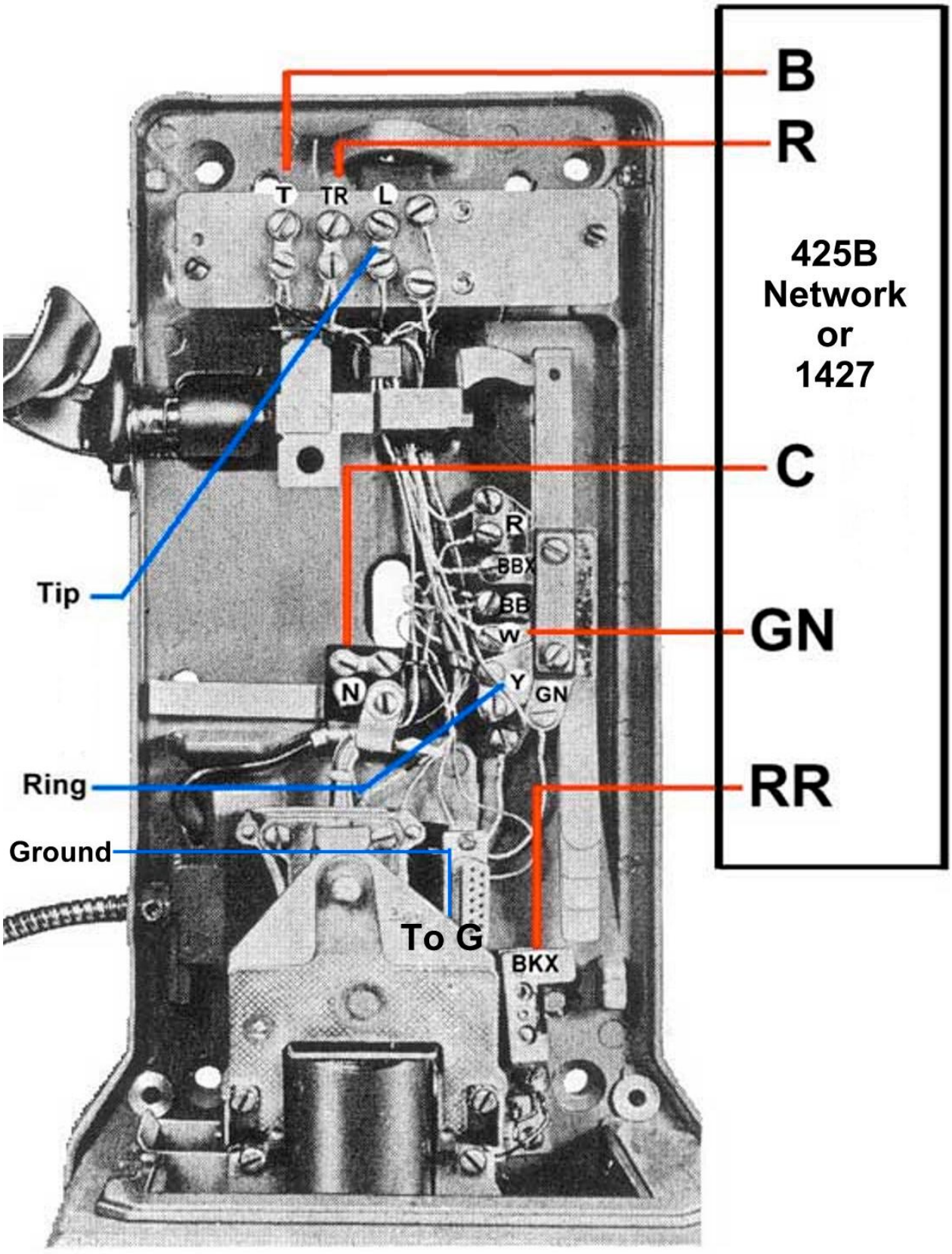
The Tip, Ring and Ground connections to the controller are shown on the left side.

The controller's Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.

The controller's Green (Tip) lead connects to the (L) terminal on the green board.

The controller's Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

Note: Some single coil coin relays are labeled #4 instead of 'G'


B
R
425B
Network
or
1427
C
GN
RR
T
TR
L
Tip
Ring
Ground
To G
R
BBX
BB
W
N
Y
GN
BKX

ITT 1427 Printed Circuit Network

If you don't like the look of a subset, you can use an internal printed circuit board replacement.

A good choice is the ITT 1427.

Two versions with harnesses connected are shown below.

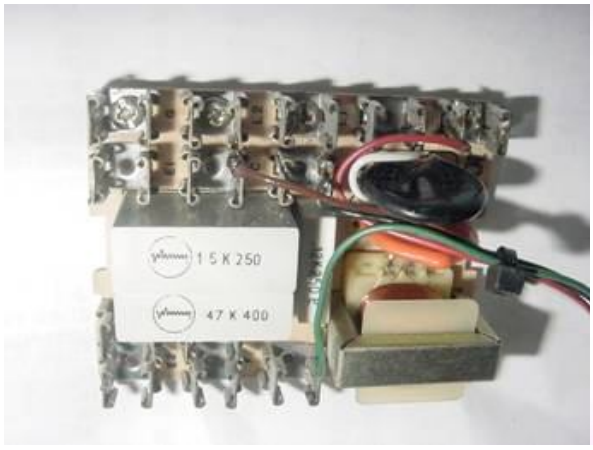
The wires are soldered to terminals B, R, C, RR and GN.

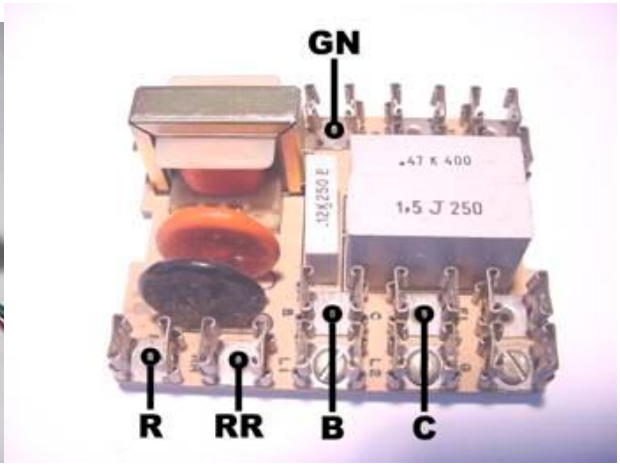
The lengths given are for models 223G, 233G and 234G payphones.

Solder the wires to the terminals on either side of the pc board. Electrically, it makes no difference.

These are the wire lengths:

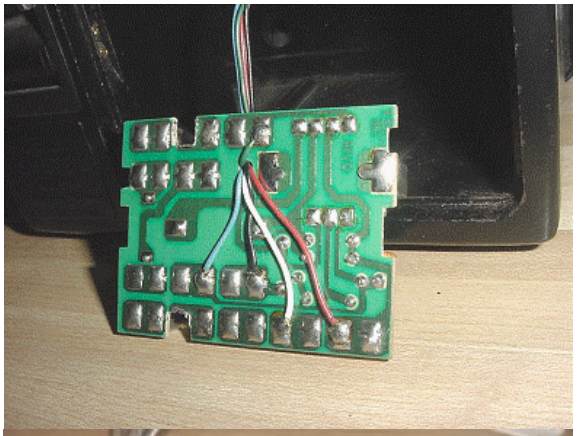
B, R, C = 23 inches
RR = 16 inches
GN = 14 inches





The pc board slides into a flip top cigarette box.

The wires run through a hole in the side of the box.
The box is taped closed.
You can spray paint it if you wish.



This is how the harness is routed out of the coin vault, up through the payphone and connected to the terminals.

The 236G

The 236G has an internal network mounted in the top.

This model is very easy to work with.

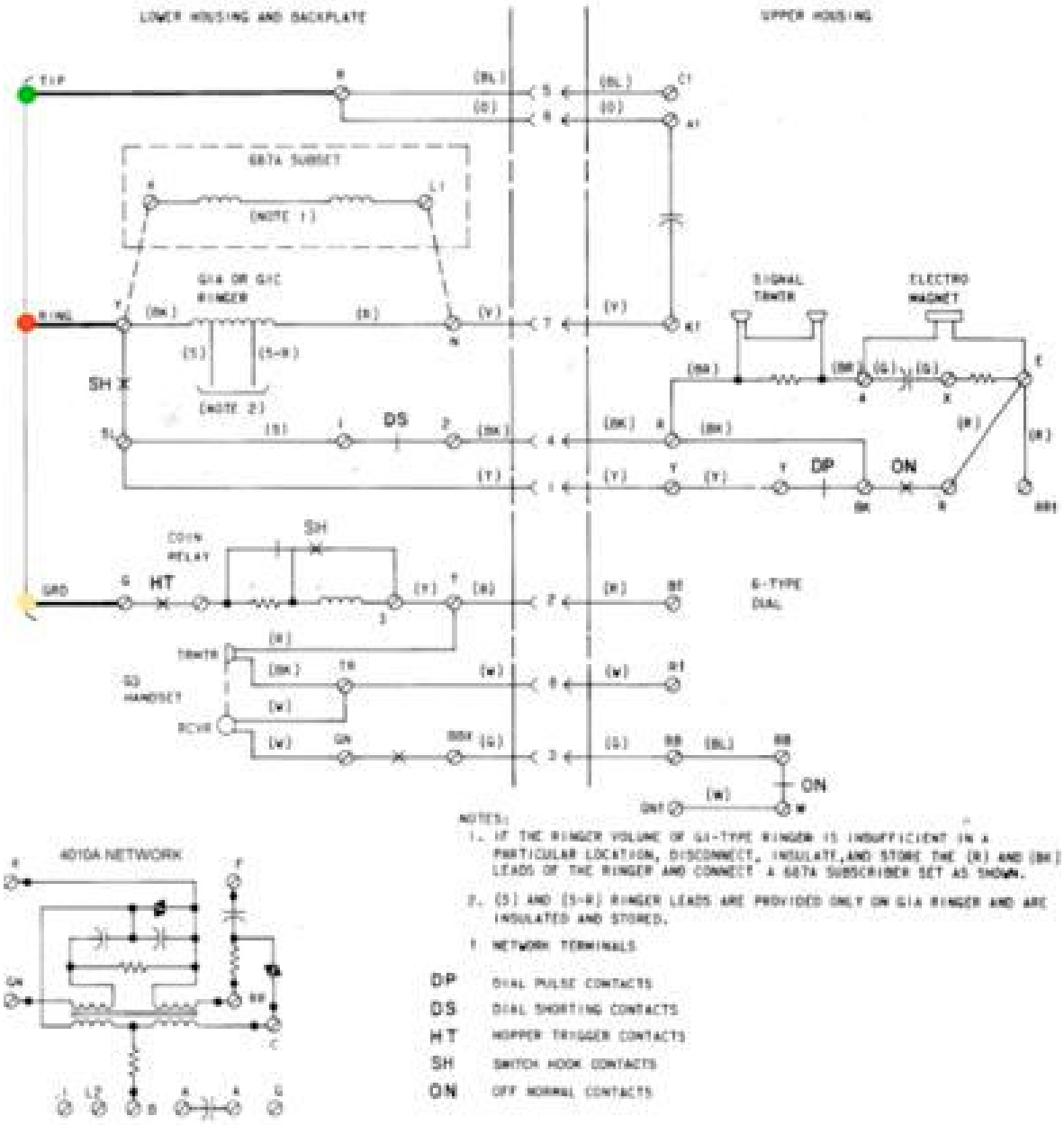
Strain relieve the modular cable the same way it's done in the models above.

The Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.

The Green (Tip) lead connects to (R) on the switchhook/transfer contact assembly.

The Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

Note: Some single coil coin relays are labeled #4 instead of 'G'



236G Coin Collector, Connections

2 Piece Payphones

Two piece payphones used subsets with induction coils.

If there are 3 connections made between the payphone and the subset, it is a "sidetone" payphone.

A model 534 is a sidetone subset that is the proper vintage for a 5 cent 50G or 10 cent 55G 3-slot.

If there are 4 connections made between the payphone and the subset, it is "anti-sidetone".

A model 634 is the proper subset to use with a 150G, 155G or 161C anti-sidetone 3-slot 2 piece payphone.

It is in the same metal box as a 534.

Both of these subsets look great mounted under 2 piece payphones.

The diagrams below are easy to follow.

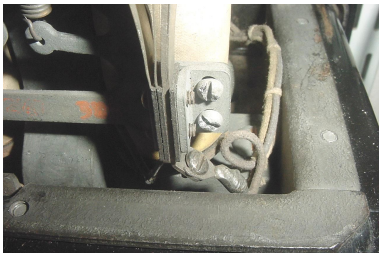
All these early payphones originally had double coil coin relays with flat permanent magnets.
Hopefully yours still does.

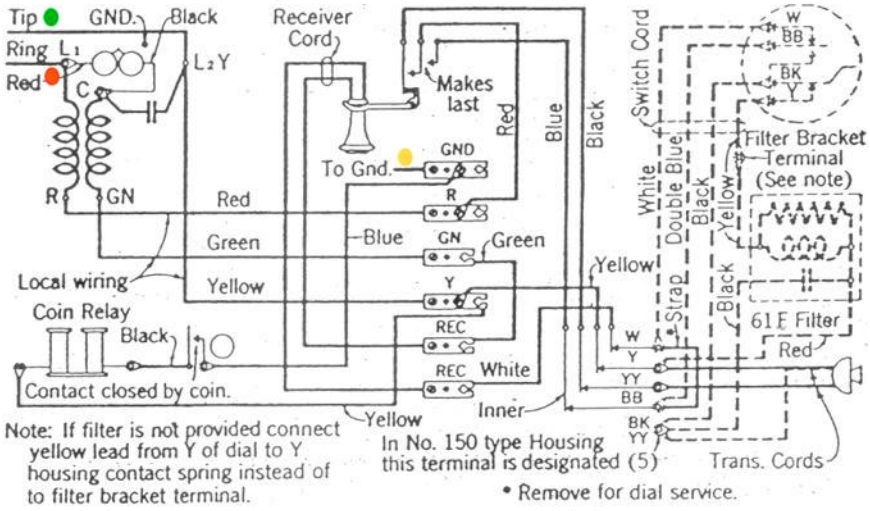
'Ring' in all the diagrams is the RED lead from the controller.

'Tip' in all the diagrams is the GREEN lead from the controller.

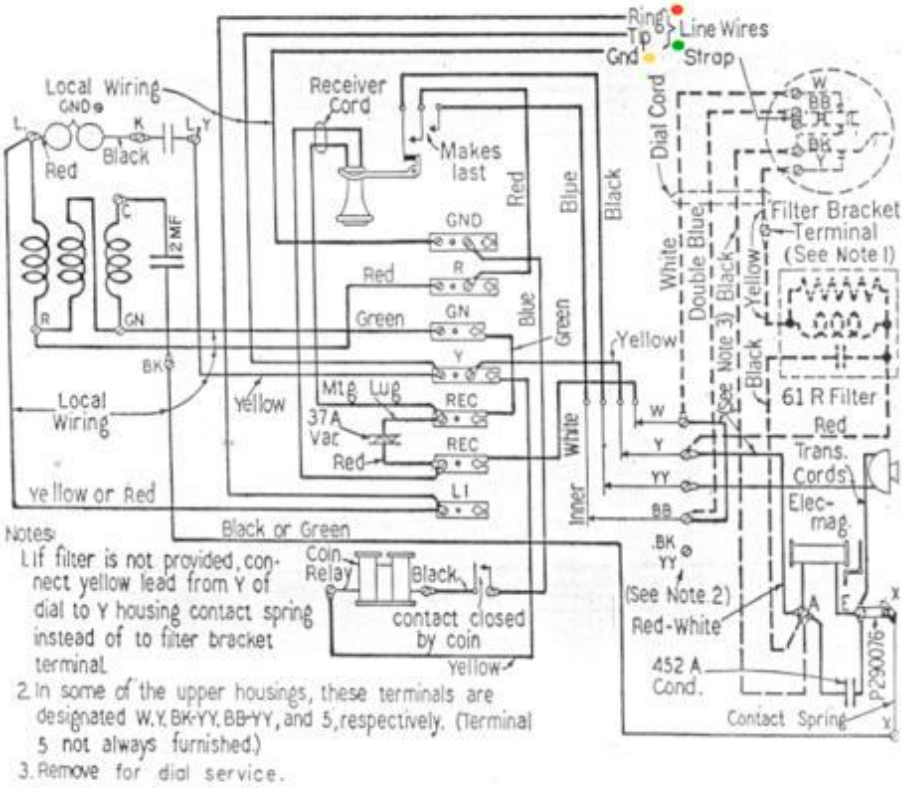
The Yellow (Ground) connection from the controller goes to the screw on the coin trigger switch.
See below.

In some instances there is a wire from that screw to a terminal labeled "GND" on a wood strip.
In this case the Yellow wire connects to the GND terminal on the strip.

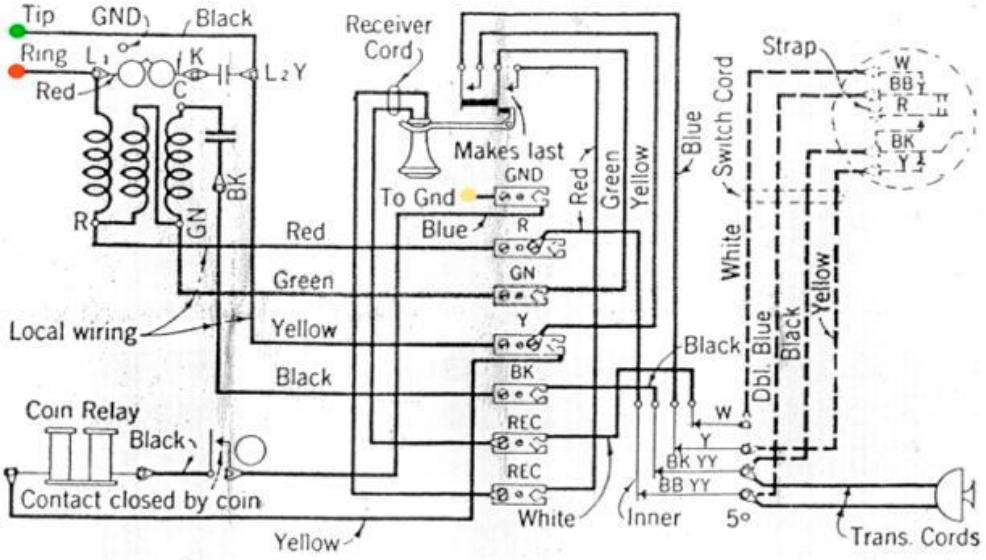




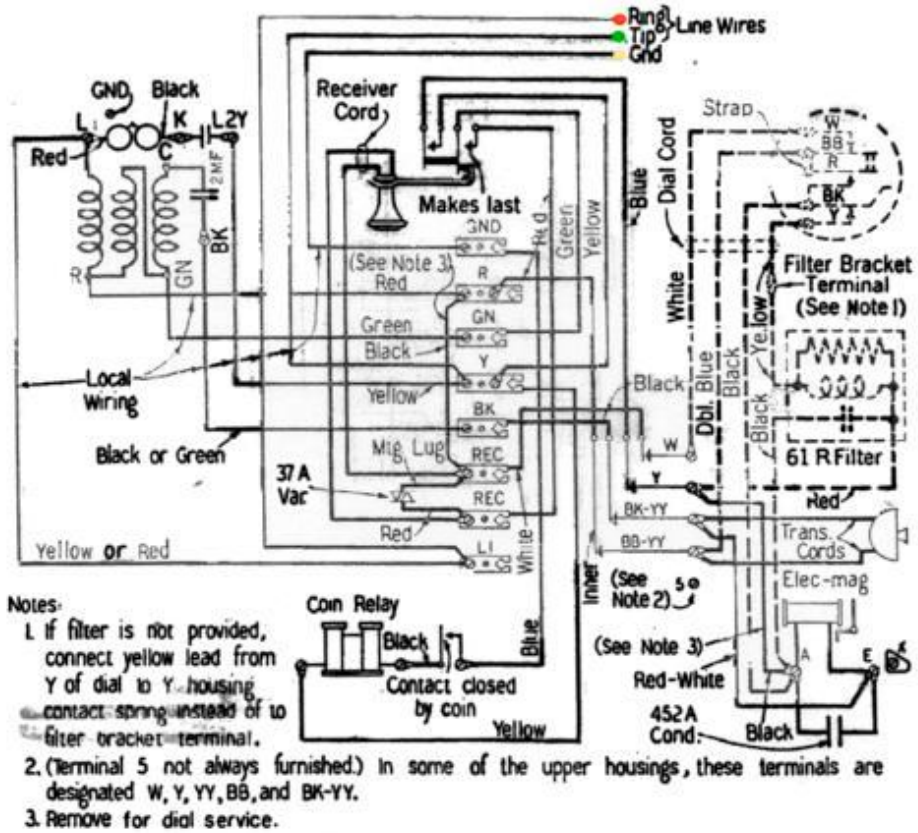
50G or H Coin Collectors—For Manual



55G Coin Collector



THE GRAY TELEPHONE PAY STATION COMPANY
AND WESTERN ELECTRIC CO. INC., MAKERS
150 G COIN COLLECTOR



Notes:
1. If filter is not provided, connect yellow lead from Y of dial to Y housing contact spring instead of to filter bracket terminal.
2. (Terminal 5 not always furnished.) In some of the upper housings, these terminals are designated W, Y, YY, BB, and BK-YY.
3. Remove for dial service.

155 G Coin Collector

7A and 7J Coin Collectors

These 5 cent coin collectors can be used with any type of wall or deskset of the proper vintage.

The coin collector is connected to the Tip (Green) and Ground (Yellow) wires from the controller.

Tip is labeled ‘Line’ in the coin collector.

The telephone you use is connected to the Tip (Green) and Ring (Red) wires of the controller.

The neatest way to do this is to run the three wires from the controller into the subset or telephone you are using.

Connect the Tip and Ring wires to the phone and find an unused terminal and connect the Ground (Yellow) wire to it.

(There are a few unused terminals in most subsets and phones.)

Then run a 2 conductor cable from the phone with the Tip and Ground connections to the coin collector.

Remember, Tip in the coin collector is labeled ‘Line’.

Northern Electric

All Northern Electric prepay 3-slots (both rotary and Touch Tone) connect to the controller as follows:

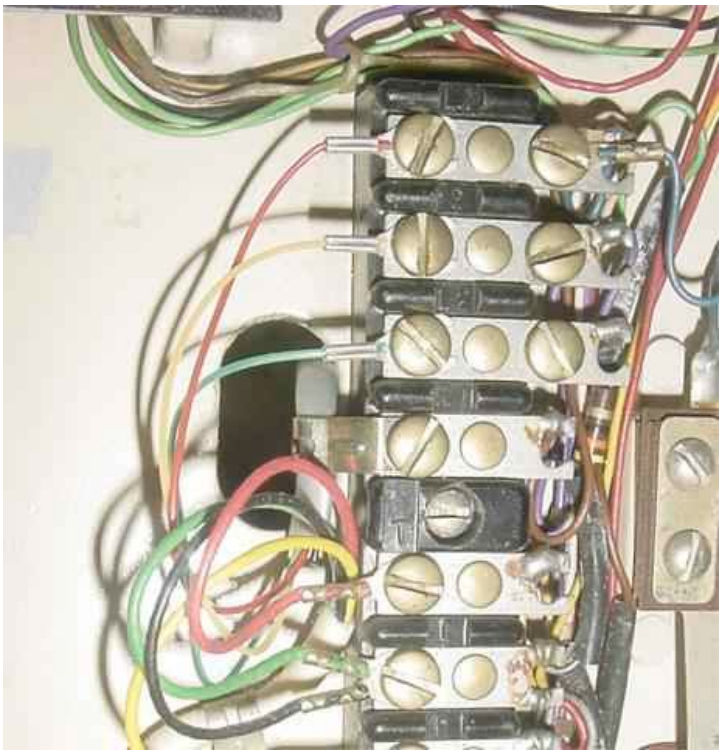
The Red (Ring) lead connects to the (Y) terminal of the switchhook/transfer contact assembly.

The Green (Tip) lead connects to (L) on the phenolic terminal board.

The Yellow (Ground) lead connects to the (G) ground terminal of the coin relay.

Automatic Electric

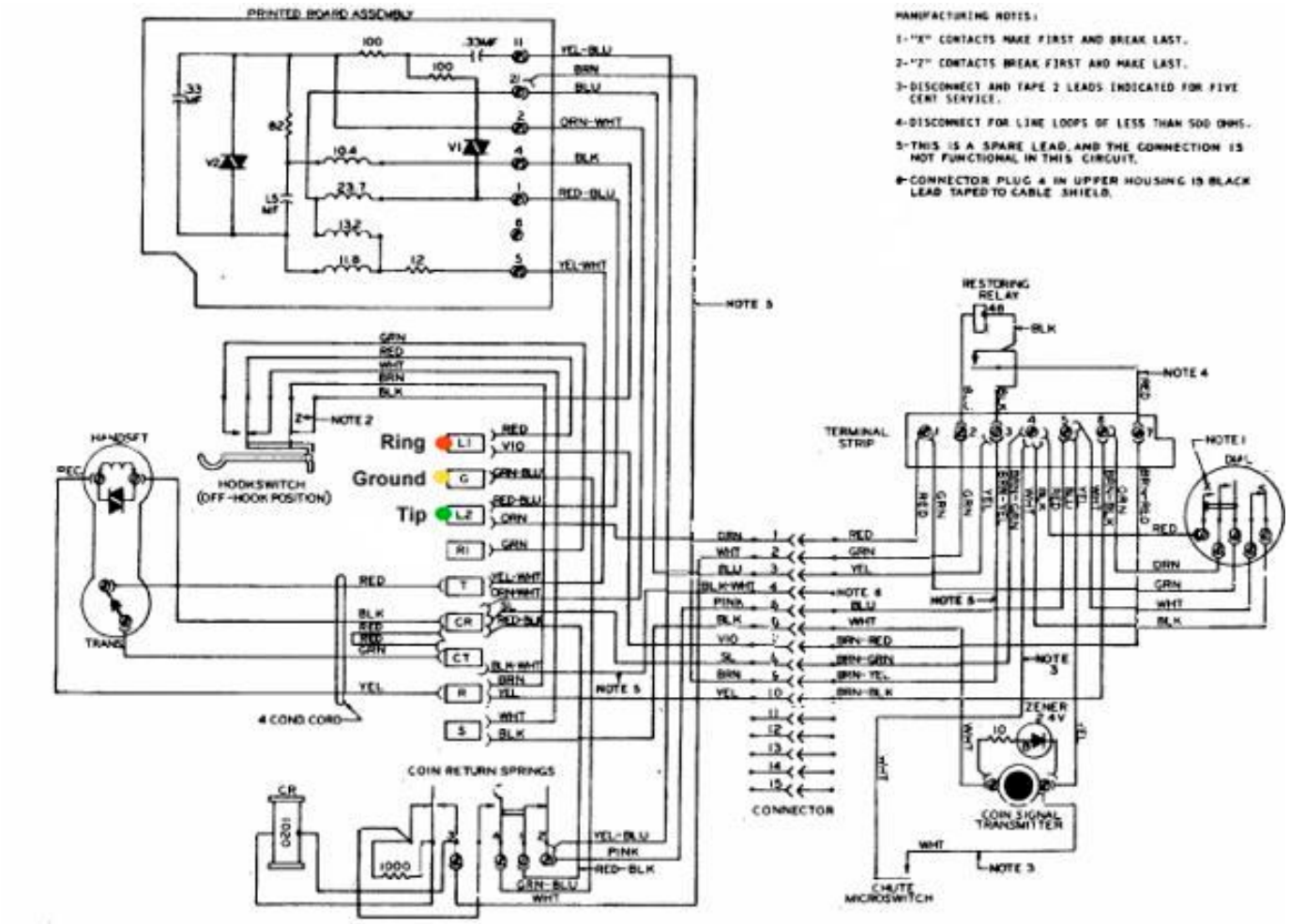
All the prepay Automatic Electric 3 slots are connected to the controller the same way.



The lugged wires in the modular output cable from the controller connect to the top three screws of the terminal strip.

Red (Ring) to L1
Yellow (Ground) to G
Green (Tip) to L2

The cable is strain relieved on the forth screw.



Wiring Diagram, LPC82-55 Coin Telephone Set

Single Slot Payphones

The following information is for Western Electric or equivalent single slot payphones that ONLY use a 1A coin relay.

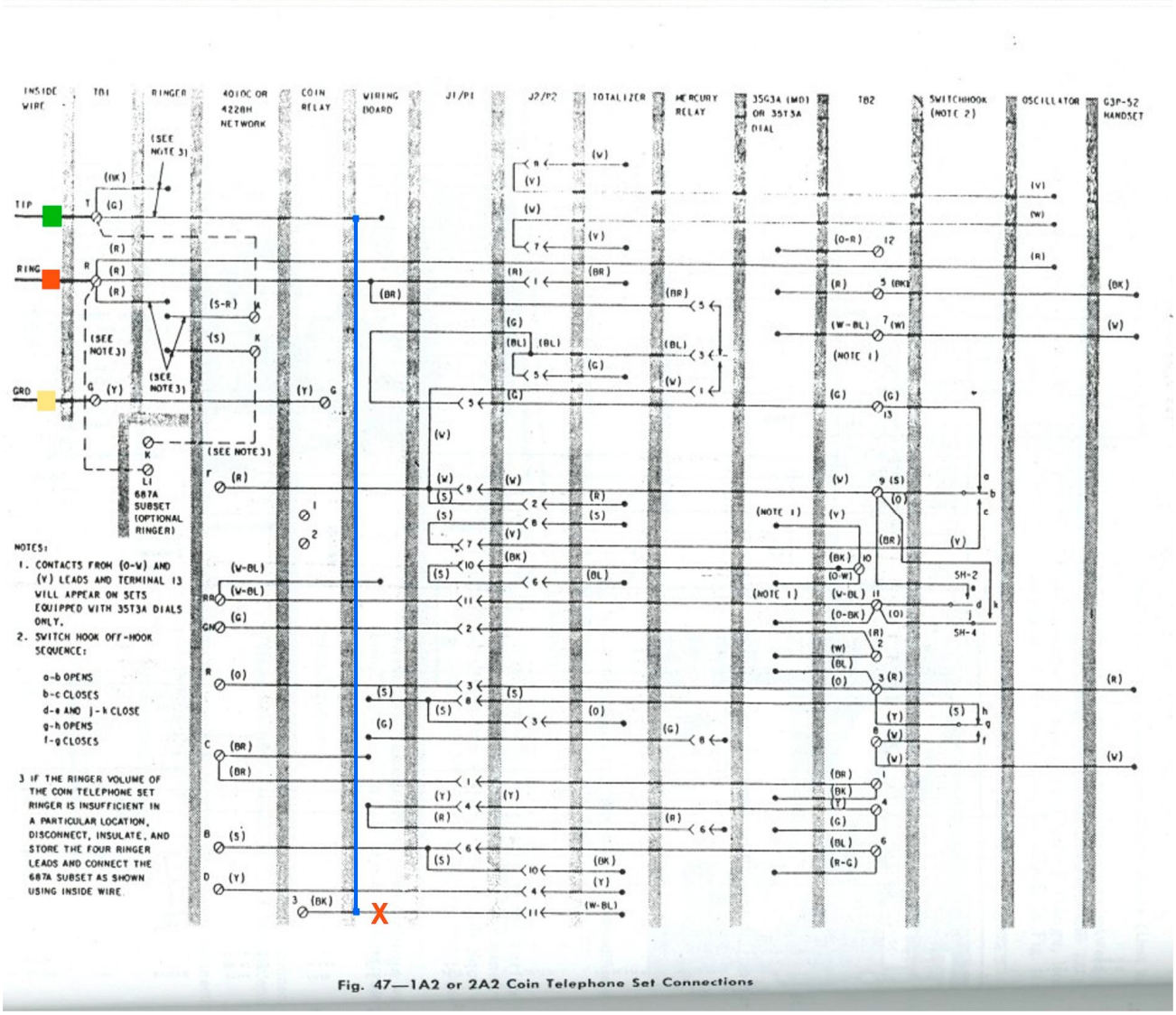


Fig. 47—1A2 or 2A2 Coin Telephone Set Connections

1- Disconnect the lead going to terminal 3 of the coin relay. The other end of this lead comes from the totalizer.

2- Install a jumper between terminal 3 of the coin relay and the TIP screw on the line input strip of the payphone.

Remember that the controller has no way of knowing if a nickel, dime or quarter has been deposited in the phone, so any coin deposited will bring up a dial tone.

A Few Final Points

Remember that the controller generates and stores high voltage.

Never work on any payphone without first unplugging it from the controller.

Never plug an un-terminated modular cable into the controller.

On an incoming call if 'dial tone after the initial deposit' was chosen, you must answer the call WHILE the phone is ringing.

If you answer between rings you will have to hold the receiver to your ear and wait till the next ring.
You will hear a click and the call will be answered.

WARNING!

Never leave the handset of any payphone connected to the controller off hook and unattended.

If a handset is off hook, any incoming call will be automatically answered by that payphone.

That means the calling party will be able to hear everything being said within the vicinity of the payphone and you won't know it.

That could prove to be very embarrassing.

MAKE SURE EVERYTHING IS ALWAYS LEFT ON HOOK!!!