

## SENCORE BIG MACK/SUPER MACK ADAPTERS

### INTRODUCTION

OK, so you own one of the CRT testers/Rejuvenators listed above, or you just bought one on ebaY. And you want to test the picture tube in your computer monitor, or recently made TV, but the adapter socket listed in the setup book is NOT one of the ones you have. Now what?

Well, you COULD watch and wait for one to come up on ebaY, but you might grow old waiting. That's because SENCORE no longer stocks or manufactures these adapters, and the "popular" ones: sockets 17, 20, 23, and 24 – are as rare as hens' teeth. Socket 23 covers almost ALL GE/RCA CRTs made after 1980, and 24 handles the Sony in-line Trinitrons. About the only way to get one of these is to buy a tester that has these sockets with it. Even if you buy one of the many Sencore CR-70 CRT testers online, there's no guarantee you'll get one with the adapter socket you need.

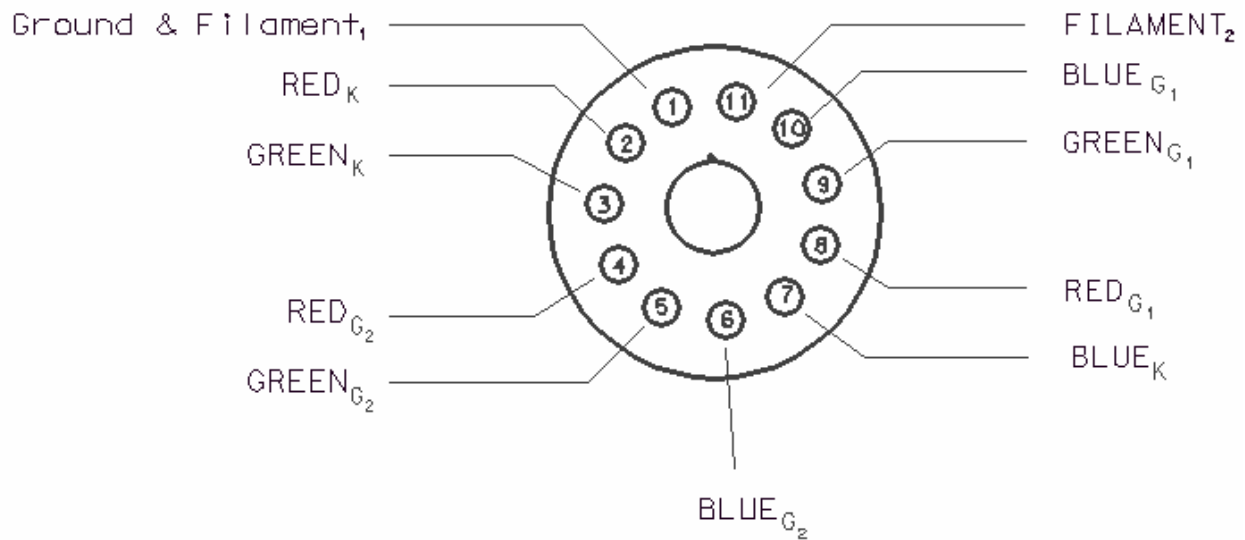
A more practical solution is to BUILD your own. It's NOT hard to do. All you need is an Amphenol 86-CP11 plug, a foot or so of 11-conductor cable with color-coded wires, the proper wiring diagram for your tester and the socket you need, and the socket for the picture tube you want to test. All a CRT tester does is generate the proper bias for the red, blue, and green cathodes (K) and screen grids ( $G_1$  &  $G_2$ ), and the heater voltages, and output those through a cable and adapter setup to the picture tube under test. In the case of the Big Mack and Super Mack, the adapters plug into an 11-pin socket made by Amphenol.

ANOTHER way to do this is to find the right adapter for another brand of tester, like the B&K 400 series, cut off its proprietary plug, and properly wire this into an Amphenol 86-CP11 plug. But FIRST, you need some wiring diagrams!

### JUST THE FACTS, MAAM

Figure 1 below shows the Amphenol SOCKET on the Sencore units, with the holes facing TOWARD you. It was hand-drawn with CADD, so please forgive me if it's not exactly to scale, etc.

FIGURE 1: Amphenol 86-CP11 Socket



An important point to remember is that this layout is also the proper arrangement when you are looking at the BACK SIDE (the WIRE side) of an Amphenol PLUG.

By now a little light bulb may be glowing over your head. That's because if you have the adapter socket you need but it's another brand, such as B&K Precision, AND you have the wiring diagram for that adapter, ALL you need is the Amphenol PLUG and shield, and a soldering iron or gun, and you're in business. Even if you don't have the wiring diagram, you can use a continuity tester or a digital multi meter to create your own wiring diagram.

But let's say you DON'T have such an adapter. So now, it's up to you to build one. To do that, you need the correct socket for the CRT under test, a length of 12-pair Belden multi-conductor wire, and the Amphenol plug.

So, now it's on to the Parts List! (next page)

## PARTS LIST

<b>Part &amp; Number</b>	<b>Description</b>	<b>Source</b>
Amphenol 86-CP11	Plug	Leeds Electronics 68 North 7th Street Brooklyn, NY 11211 Phone: 718 963-1764 email: sales2@leedselect.com
Belden 8457 or 8466 or 9457 or similar	12-conductor cable	Cumberland Electronics www.cumb.com
HPS1600, etc *	CRT sockets:	Cumberland Electronics www.cumb.com

\* The socket you need will vary. The HPS1600 corresponds to socket 23, which is probably the one you'll use the most for post-1985 TV picture tubes.

The CRT sockets are the toughest. Leeds only carries the older ones, and if you own a Big or Super Mack, you probably have sockets 1 through 16, or even 17 and 18 already. Cumberland Electronics carries the most useful one, which is HPS1600, at a cost of a little under \$4. The base on this is a JEDEC B10-277 pattern. If that means nothing to you, don't worry, you're not alone.

With respect to the wire, almost ANY 12-conductor, 18 to 22 gauge, 300 – 600V, unshielded cable will do. I say UNSHIELDED, because the shield is unnecessary, and it just gets in the way – you'll have to cut it way back, anyway. So why pay extra for it? And obviously, since the Amphenol plug is only an 11-pin plug, you'll end up wasting one conductor. But it's better than not having enough conductors.

A word about the colors in the wire you selected. Since I don't know what wire you're using, I can't select them for you. But BLACK is typically the ground in electronics, so I would use that for the Ground/Filament 1 connection (pin 1). Since there is NO Orange color gun, I would use that for filament 2 (pin 11). From there, the rest is up to you. You will probably have one each of red, blue, and green jacketed wires, and I recommend them for the red, blue, and green Cathodes (k).

Let's look at Belden 8466 cable. This is a 300-volt, 18-ga., unshielded audio cable, and the larger gauge makes it a bit more inconvenient to work with. But the colors are very convenient!

## Belden 8466 Color Codes

1	BLACK	2	WHITE
3	RED	4	GREEN
5	ORANGE	6	BLUE
7	WHITE/BLACK	8	RED/BLACK
9	GREEN/BLACK	10	ORANGE/BLACK
11	BLUE/BLACK	12	BLACK/WHITE

You could use the red, blue, and green wires for the respective cathodes (K), the red/black, green/black, and blue/blacks for the 1<sup>st</sup> color grids (Red G<sub>1</sub>, etc), and three of the remaining four wires for the second grids (G<sub>2</sub>).

From here, it's time to get to the wiring. DON'T forget to slip the protective shell over the wire before you solder your wires to the Amphenol plug, and some heat-shrink tubing will make the CRT socket end more manageable. The odds are, you WON'T be able to find enclosed CRT sockets, ala the B&K series adapters.

Here's a tip! If you're an experienced hobbyist or technician, you COULD bring the 11-conductors from the plug into a small, plastic "Radio Shack" project box, with a 12-terminal solder lug in it. Then, you could wire several different CRT sockets into the terminal strip. If you make the wires from the Amphenol Socket to the box 12"-18", and the wires to the individual sockets about the same length, it would make a big but easy-to-use adapter. In any case, make the Belden cable long enough to make the whole setup convenient to use, but don't go overboard, either. 12" to 18" is long enough.

As an aid, I've figured out the wiring diagrams for sockets 17, 18, 19, 20, 22, and 23 with my DMM, and I've included them on the following pages. I don't have adapter socket 21 in my collection, so it's not there. But it's not real common, anyway.