

## Information about C3g and C3m

*These were low noise audio tubes, made by Valvo and Siemens, exclusively for the German post. They were not for sale for other customers. They were used in audio repeater amplifiers for long distance.*

If there is one enemy of long distance calls, it's signal loss, and noise. So what they needed was high amplification and low noise. Since amplification and low noise are no friends of each other, such tubes were hard to find. In the end, the German post just defined their own tube specifications, and let the tube factories compete for good quality. That worked perfect!

These German post tubes were first designed in the heads of the amplifier engineers, that finally wanted to have something without compromise. The engineers just said, what must an ideal tube have, and then let the tube factories try to make it.

- Highest amplification
- Lowest low noise
- Lowest microphonic effects
- Higher lifetime than commercial tubes
- Metal shielding
- Must be a penthode, but will give also a perfect tube when triode connected
- When used as triode, must have triode curves that look like a real triode.
- Fully complete datasheet, leaving NO DATA out.
- Optional: Individual series number on each tube

Check for a 16 pages (!! ) Datasheet at [www.4tubes.com](http://www.4tubes.com)

I guess they came up with some more nasty things, that the tube manufacturers all had to comply with. Just look at how nice the triode connected curves are. These curves are so linear, I think there are very few triodes existing with such nice curves!

### **1) What to do, if you don't like the metal cap?**

You can take off the metal housing, and inside is a very nice glass tube!



**C3g with cap**



**C3g Inside.**

Look at the two round plates above the pins. The lowest is a metal shield (outside connected) for lower hum. The other is the mica. The anodes are open from the sides. This open construction is the best for finest linearity. It allowed plate distance adjustments after the tube was assembled. This non-commercial construction was used already in DHT post tubes from the 1930's.



Removed cap



You can glue the metal base on the tube. Put two components glue on the sides. Do not fill glue in the center adjustment hole. That could break the glass pipe in the middle. Note that one pin hole has a different shape, and is used for positioning.

**2) What to do if you don't like the original sockets?**

I have not many pictures of this yet, but it is very easy to replace the tube base by an Octal base (base = the part on the tube). We sell new production brown octal bases for 1 Euro. With those, the tube will look similar like a 6SN7.

Here are the steps:



1. Remove the cap and the original metal base (see above)
2. Clean the gold plates wires with a sharp knife. Just scratch the gold shiny, but don't remove it.
3. Solder a 1" (25mm) long, wire on each pin. The wires must be as thick as possible, BUT must fit through the new octal tube base! Solder each wire in the SIDE of each pin, so the eight wires form a circle with the same diameter as the gold pins had. This make sure they fit right into each hole of the socket without bending them.
4. Tighten the wire on the pins with shrink sleeve. The shrink sleeve must have the same length as the gold pins, not longer. This is to make sure the wire won't come off when soldering the tube base.
5. Now put on the tube base. Decide for yourself how far you want the tube to come out of the tube base. When it comes out very far, it looks very nice, but then you need to glue the glass. When you put it further, or as far as it will go, you won't need any glue compound.
6. Check the positioning of the tube base. Look in the above picture at the metal cap. One pin hole is square. On the glass it's square also. Use this as a reference, and give the octal base the same positioning! Double check this before you take any glue.
7. When you decide to glue the glass, you can use any stiff glue two components glue, but don't take that cheap stuff, that looks like honey, and will drip slowly. That gives a mess. It must be a stiff compound, like a filler. Don't fill in so much that it touches the pins. Only glue the glass on the base side. When the glue is still soft, you can nicely clean the tube with alcohol or "spiritus". Mind that a 6SN7, for instance is normally not glued. So glueing is no "must".
8. Solder the pins. Use *very little solder* in the beginning. Just enough to make good thermal contact to the soldering iron. Wait long enough, until the pins get really hot, and suddenly you will see the solder will be absorbed by the pins. Now you can put in more, in small bits. Only like this, the solder will not drip along the pins outside. In case this happens, keep the tube upright, and you can clean it with de-solder litz, or better with our de-soldering tool (see price list)
9. Cut off the wires with a side cutter, and give them a short re-solder tip, so the ends look professional.
10. Clean off any solder residue with alcohol. It's important to take this off, because it can smear the tube socket, and give bad contacts.
11. Now your C3g-Octal is finished!

---

### Good applications for these tubes are:

- **Build-in tubes for active microphones**
  - **Low microphonic applications**
  - **triode connected, or penthode connected**
  - **driver or pre-amplifier stages**
  - **phono amplifiers. Finally.... LOW NOISE!**
-