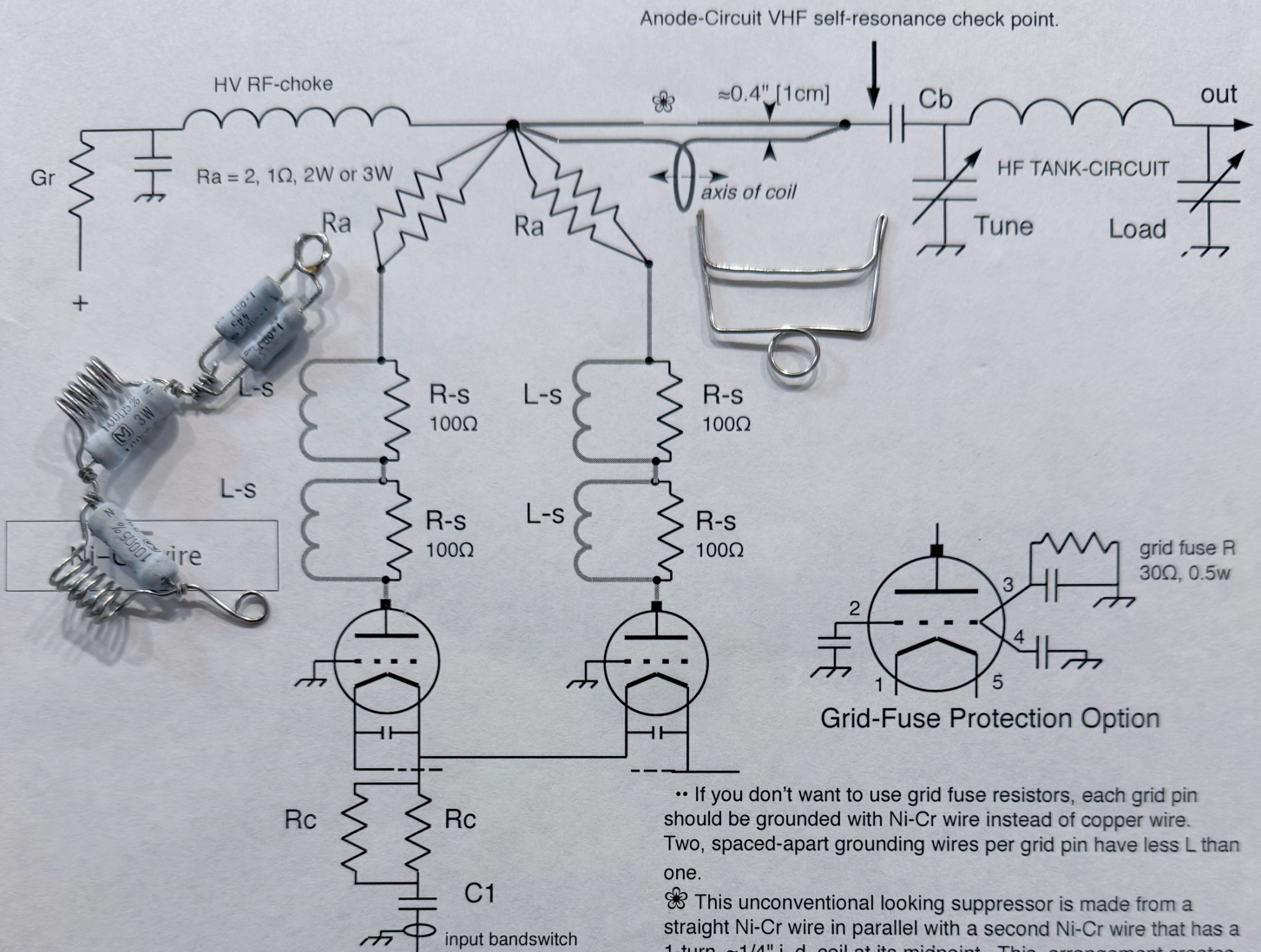


# Double, Low Rp/Low-Q VHF Parasitic Suppressors For Two 3-500Zs



**Ls:**  $\approx 100\text{nH}$ , c. 6-turns wound on 1/4 inch [6.3mm] rod, turns spaced  $\approx 1\text{mm}$ .

**R-s:** 100Ω, 3W, metal{oxide}film [MOF] resistor.

**Ra:** 1.0Ω, 2W or 3w. In the event of a problem, Ra will open as a somewhat noisy fuse.

**C1** .005μF to .02μF,  $\geq 500\text{V}$ . (original coupling cap.)

**Rc:** Cathode circuit Q-dampening resistor, 10Ω, 3W MOF.

**Gr:**  $\approx 10\Omega$ , 10W, wirewound. This resistor is useful during a glitch. It limits the peak discharge current from the HV filter capacitors. For  $\geq 3\text{kV}$ , use two such resistors in series. Do not mount Gr near the chassis.

-- The grid may be RF and DC-grounded through a R/C parallel network.  $R=30\Omega$ , .25w - .5W,  $C \geq 1800\text{pF}$  total per 3-500Z. The C is distributed among 2 or 3 grid-pins per socket. More than one cap may be used per pin. The bypass C protects the resistor from RF-voltage. The resistor acts as a fuse, protecting the grid from excessive current during a glitch. The grid resistors also help to equalize the signal condition currents in two, unmatched 3-500Zs. If your amplifier has a grid to chassis RF-choke, such as in the SB-220, L4B, TL-922, etc., one 30Ω resistor replaces each RF-choke. The supplied capacitors are added to the existing grid capacitors (usually  $\approx 200\text{pF}$  units) to bring the total C up to at least 1800pF per socket.

•• If you don't want to use grid fuse resistors, each grid pin should be grounded with Ni-Cr wire instead of copper wire. Two, spaced-apart grounding wires per grid pin have less L than one.

✿ This unconventional looking suppressor is made from a straight Ni-Cr wire in parallel with a second Ni-Cr wire that has a 1-turn,  $\approx 1/4''$  i. d. coil at its midpoint. This arrangement creates a staggered double, instead of a single, VHF resonance in the anode-circuit which lowers the VHF-Q and improves stability. In the Heathkit SB-220, this conductor is a piece of copper braid that is 3 inches long. In the TL-922, this conductor is the #12ga. buswire that connects the white, ceramic, blocking capacitor at the rear of the tune-capacitor to the top of the HV-RFC. If the amplifier has a  $\geq 20\text{mm}$  [ $\geq 0.8''$ ] length conductor between the blocking capacitor, Cb, and the tune capacitor, it should be replaced with a 2-wire suppressor. NOTE: These 2-nichrome wire suppressors substantially improve amplifier stability. They often contribute as much to VHF stability as do the Ls/Rs anode parasitic suppressors.

SB-220 NOTE: The Ls/Rs suppressors can be isolated better if the left 3-500Z's suppressor is placed in front of the tube and the other 3-500Z's suppressor is placed between the tubes. In multitube amplifiers, if two Ls coil-inductors are in close proximity to each other, they should be positioned perpendicular to each other.

•• For more information, see *Improved Anode Circuit Parasitic Suppression For Modern Amplifier Tubes* in the October 1988 issue of *QST Magazine*. A 2-part follow-up article, *Parasitics Revisited*, was published in the September and October 1990 issues of *QST*. Rich, AG6K