

GELOSO 4/101

V. F. O. Unit

General Description:

The *GELOSO 4/101* exciter v.f.o. unit is a compact Clapp oscillator and frequency multiplier of exceptional stability. The *GELOSO 4/101* is manufactured by *GELOSO S.P.A.* of Milan, Italy—one of the largest producers of radio, radar and electronic equipment on the European continent. You will find *GELOSO* products used throughout the entire world in both Ham and commercial installations.

The *GELOSO 4/101* uses American tubes and all components are interchangeable and/or replaceable with American parts. The *GELOSO 4/101* is completely wired, aligned and tested before shipment. It is ready to operate as soon as power is connected and the tubes are plugged in. It is not a kit.

This exciter is designed to provide ample grid drive for an 807, or similar beam tube, on 80, 40, 20, 15 and 10 meters.

The main tuning condenser of the *GELOSO 4/101* consists of four gangs. The plates of the tuning condenser are so shaped as to provide almost linear bandspread across the various amateur bands. The tuning condenser is directly attached to the pointer of the dial, thus eliminating

slippage and calibration error. The pointer and tuning condenser are driven by a 7:1 ratio pulley and cable from the tuning knob—located to the left of the bandswitch.

Circuit Description:

The Clapp oscillator in the *GELOSO 4/101* is a 6J5 triode. As shown in *Figure 1*, switch section, *Sw1a*, selects the proper combination of oscillator coils and silver mica condensers to provide full bandspread on five different Ham bands. The oscillator works from 3.5 to 4.0 Mc. for 80-meter operation, 7.0 to 7.45 Mc. for 40 and 10 meter operation, and 3.5 to 3.6 Mc. for 20 and 15 meter operation. Drift is kept to a minimum through the use of midget air padding condensers in these important *L/C* circuits.

The output of the Clapp oscillator is taken from the cathode and fed to a 6AU6 isolation stage. This tube was selected because of its low grid-plate capacity and inherent stability. On 80 and 40 meters, the 6AU6 functions as an aperiodic amplifier with a 5000 ohm resistor as the plate load. On 20, 15 and 10 meters, the 6AU6 operates as a doubler with correct coils being selected by switch section, *Sw1b*. These two coils are slug tuned and broad enough to cover the entire band.

The 6AU6 isolation stage is capacity coupled to a 6V6 (or 6T) output tube. This tube acts as a straight amplifier on 80 and 40 meters. The stage will not self-oscillate. On 20, 15 and 10 meters the 6V6 is utilized as a doubler. The plate coils (*L7* through *L11*) are slug tuned and are broadly

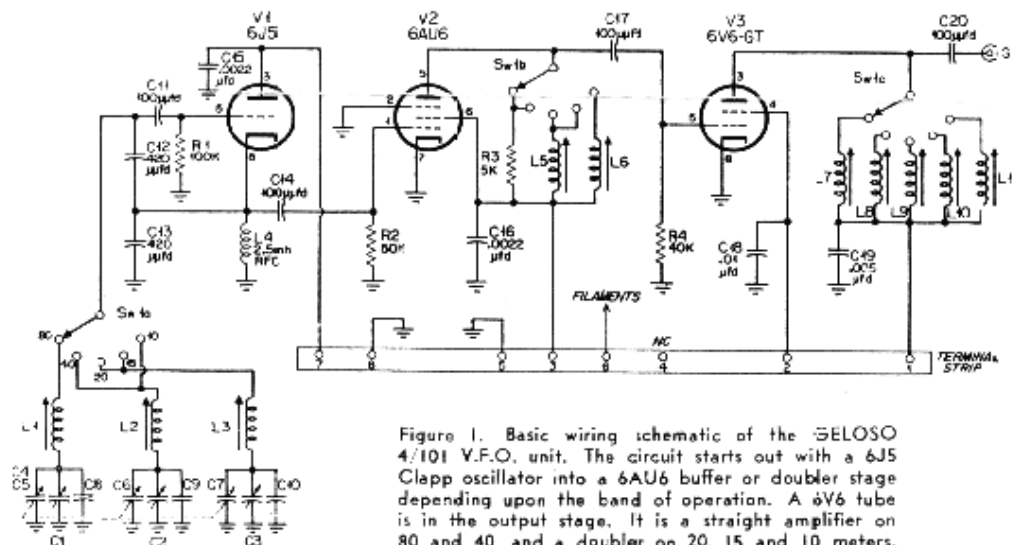
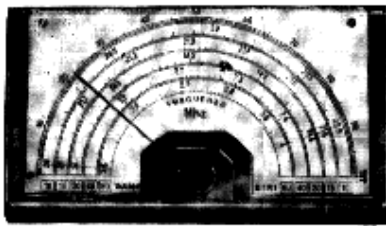


Figure 1. Basic wiring schematic of the *GELOSO 4/101* V.F.O. unit. The circuit starts out with a 6J5 Clapp oscillator into a 6AU6 buffer or doubler stage depending upon the band of operation. A 6V6 tube is in the output stage. It is a straight amplifier on 80 and 40, and a doubler on 20, 15 and 10 meters.

- C1, C2, C3—10 μ fd., air wadlers.
- C4/C5/C6/C7—3.5 to 50 μ fd., 4 section tuning condenser.
- C8—115 μ fd., silver mica.
- C9—150 μ fd., silver mica.
- C10—280 μ fd., silver mica.
- C11, C14, C17, C20—100 μ fd., silver mica.
- C12, C13—420 μ fd., silver mica.
- C15, C16—0.022 μ fd., ceramic.
- C18—0.01 μ fd., paper
- C19—0.005 μ fd., ceramic.
- R1—100,000 ohms, $\frac{1}{2}$ w.
- R2—47,000 ohms, $\frac{1}{2}$ w.
- R3—5000 ohms, 1w.
- R4—40,000 ohms, 2w.
- L4—2.5 mh., r-f choke.



The GELOSO 4/101 is shipped complete with this calibrated dial that is fully enclosed in a plexi-glass housing.

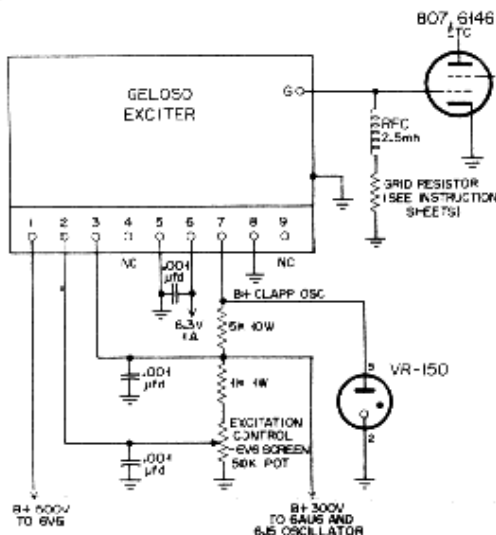
on the chassis, and the panel has been attached to the chassis, the pointer may be slipped over the drive shaft of the 4/101. When the cover plate is put on, the pointer is protected from accidental damage. Care should be taken during the assembly to prevent scratching the surface of the dial plate.

GELOSO 4/101 Alignment:

The 4/101 is shipped factory aligned and tested. However, the alignment may be altered or checked in the following fashion:

Oscillator Alignment

The purpose of these adjustments is to correctly align the Clapp oscillator to conform with the dial readings. The



NOTES: GROUND TERMINALS 5, 3 & 8. TERMINAL "G" IS ON REAR DECK OF BANDSWITCH. TERMINAL 1 OF MAIN TERMINAL STRIP IS BELOW 6V5 SOCKET. DO NOT CONNECT ANY WIRES TO TERMINAL 9.

Suggested power connections to the GELOSO 4/101 V.F.O. unit. Note the use of an "Excitation Control" in the screen of the 6V6 output stage.

oscillator frequency may be checked with a frequency meter, or a receiver of good calibration. The oscillator inductances of the 4/101 are adjusted for alignment at the low end of the spectrum, and the capacitors are adjusted for alignment at the high frequency end of the band.

- On 80 meters: Adjust *L1* for alignment at 3600 kc.
Adjust *C1* for alignment at 3900 kc.
- On 40 meters: Adjust *L2* for alignment at 7100 kc.
Adjust *C2* for alignment at 7400 kc.

On 20 meters: Adjust *L3* for alignment at 14,100 kc.
Adjust *C3* for alignment at 14,300 kc.
(The 15 and 10-meter bands are automatically properly aligned by the above adjustments)

Buffer and Amplifier Alignment

The slug tuned coils of the buffer (6AU6) and amplifier (6V6) stages are aligned next. This is most easily done by measuring the grid current of the stage following the 4/101. A point of maximum grid current may be taken as the resonant point of the circuit to be tuned.

Band	6AU6 Stage	6V6 Stage
80	—	3.8 Mc. (1.7)
40	—	7.25 Mc. (1.8)
20	11.3 Mc. (1.5)	14.2 Mc. (1.9)
15	21.15 Mc. (1.5)	21.25 Mc. (1.10)
10	29.5 Mc. (1.6)	28.4 Mc. (1.11)

Stage Function:

The function and frequency range of each stage for operation in the various amateur bands is as follows:

Band	Oscillator Range	6AU6	6V6
80	3.5-4.0 Mc.	untuned	3.5-4.0 Mc.
40	7.0-7.45 Mc.	untuned	7.0-7.45 Mc.
20	3.5-3.6 Mc.	7.15 Mc. (doubler)	11.0-14.4 Mc. (doubler)
15	3.5-3.6 Mc.	7.15 Mc. (doubler)	21.0-26.6 Mc. (tripler)
10	7.0-7.45 Mc.	14.3 Mc. (doubler)	28.0-29.8 Mc. (doubler)

Amateur Net Price \$34.95

(New York, N.Y.)

All shipments will be made "Express Collect" unless instructions are sent with your order to the contrary. Shipments of GELOSO components and equipment arrive in the United States each month. An immediate order insures priority delivery.

GILFER ASSOCIATES

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