

# LEKMEK RADIO LABORATORIES

## TECHNICAL DATA

Model No. 601

( 2 Sheets)

Sheet No. 1.

### SERVICE NOTES.

#### MODEL 601 BATTERY OPERATED RECEIVER.

The model 601 Battery Superheterodyne is the result of patient experimenting and research by the engineers of Lekmek, in an endeavour to design a Battery superhet which would overcome the known difficulties in Battery Superheterodynes.

With the earlier type of Battery super, humid conditions were found seriously to upset the operation of receivers using an autodyne oscillator system. Therefore the 6F7 type valve has been adopted, used as a first detector and also as a separate oscillator, giving most gratifying results. The use of the 15 type valve which is of the cathode heater type in the R.F. I.F. 2nd Detector and driver stage has further eliminated the possibility of valve trouble, owing to the robust construction of the 15 type valve. The output of the 601 remains the same as our 63B, using a type 19 valve in B class.

The total A and B drain are remarkably low, the A Battery being .75 amps and the B Battery drain is from 9 to 12 m.a. -- depending on the volume used.

CIRCUIT. A glance at the circuit diagram (Fig.2) and it will be seen that the valve filaments have been connected in series parallel. Therefore when replacing the pilot lamp, the replacement lamp must not exceed 6V at 100 m.a. drain.

The circuit arrangement is rather straightforward and is briefly as follows:- The first stage is tuned Radio frequency, a type 15 valve being used, and is followed by the 6F7 type valve which is so arranged that it acts both as first detector and also as a separate oscillator, the output from this stage is fed to the intermediate frequency section which is tuned to 186KC, A 15 type valve is used in this stage. The second detector is of the conventional anode bend type, the plate circuit of which is decoupled from the main plate drain to prevent feedback. The audio section of the receiver consists of a 15 type valve as a driver to a type 19 valve through a Lekmek Class B audio transformer. The output from the set is handled by an Amplion Permagnetic Speaker.

VALVES The valves required for the 601 are:

- 4 type 15 valves
- 1 type 6F7 valve
- 1 type 19 "

Valve positions are clearly shown in Fig. 1.

#### BATTERIES REQUIRED.

- 3 45V extra heavy duty B Batteries. (C Battery is not required)
- 1 6V 90 ampere hr A Battery.

See Fig. 2 for the colour code of the battery leads, two of which are used for the A Battery, and two for the B Batteries.

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Sheet No.2

**NOTE: BATTERY SWITCH.** The Battery switch shown in the circuit diagram open circuits both A & B circuits. This switch should be in the off position (which is to the left) before any adjustments or connections are made to the batteries.

**ALIGNMENT OF GANG & PADDER.** Each chassis is carefully aligned and balanced before leaving the factory, and the lining should not be interfered with. If, however, someone unauthorised has de-lined the trimmers on the condenser gang, the following simple method should be followed by those who must depend on the regular broadcasting stations for lining. Firstly, unscrew the trimmer as far as possible on the oscillator section (nearest the back) of the gang condenser. Now proceed to line the tuning unit or units of the gang condenser in the usual way, on a station about 250 metres, or as low as possible. If trimmers will not peak, screw in the trimmer on oscillator gang a very little at a time until you can get the tuning trimmers to peak (the idea is to work with as little trimmer capacity as possible on the oscillator gang).

The padding condenser is sealed and it is unlikely that anyone will break the seal to interfere with it, but if this has happened, tune to a station on the upper end of the band and adjust the padder condenser trimmer for maximum sensitivity. Take care to vary the tuning condenser slightly in either direction concurrently with the padder trimmer adjustment. With the volume control turned right up, noise level will usually serve as a means for lining, if no station is available. Under no circumstances should the setting of the coils or intermediate frequency transformers be altered, as these have been very carefully checked and set by the Lekmek Radio Laboratories. If I.F.T's have been interfered with, they should preferably be returned to the factory for re-tuning, unless an accurate oscillator is available. The intermediate frequency adopted in the 601 is 186KC.

If the set has been working O.K. for a while and stops or partially stops, the coils and gang condenser are almost sure to be O.K. and it is reasonably certain to assume that the trouble will be due to valves, batteries, resistors or fixed condensers. A careful check should be made of voltages and plate currents, so as to ascertain if there is any variation from standard.

Attached is a table of voltages for the 601 measured with a 1000 ohm per volt meter. These values may vary slightly with individual Receivers according to condition of batteries and the slight variations in characteristics of individual valves.

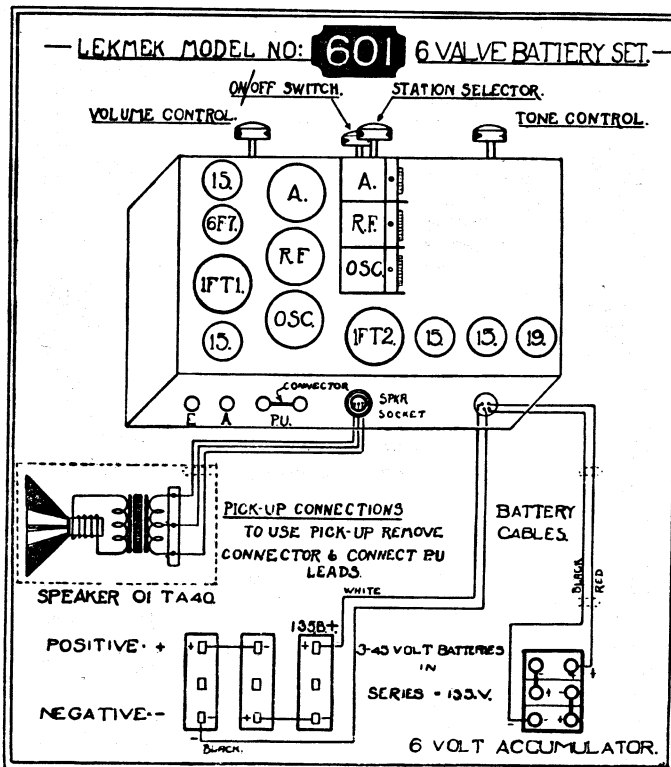
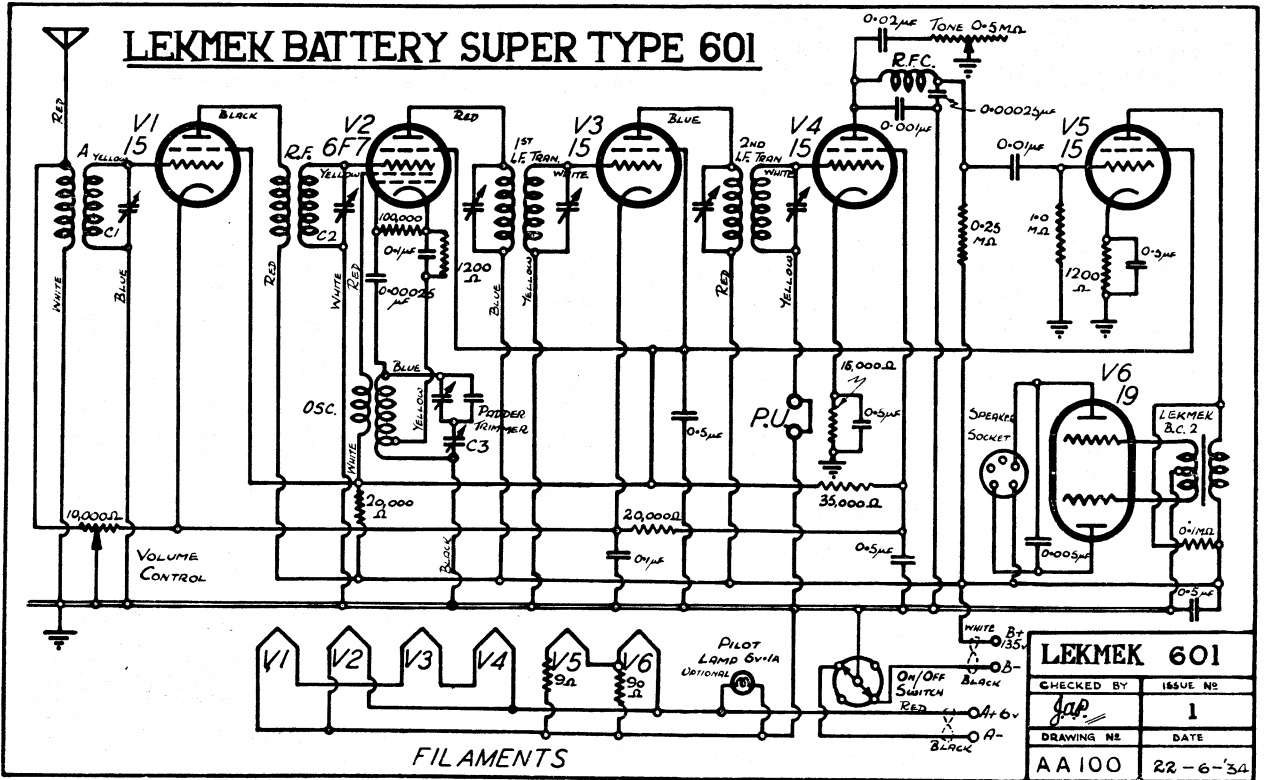
Valve Function	Valve Type	Plate Volts	Screen Volts	Bias Volts	Fil. Volts	Plate Current
Output	19	135	---	4	2	8 m.a.
Driver	15	135	60	2	2	1 m.a.
2nd Dep't	15	30	15	1.5V	2	---
I.F. Amp.	15	135	60	0.9V	2	1.5m.a.
Det. & Sep. Osc.	6F7	135	60	3V	6	2 m.a.
R.F. Amp.	15	135	60	0.9V	2	1 m.a.

All readings with volume control full on

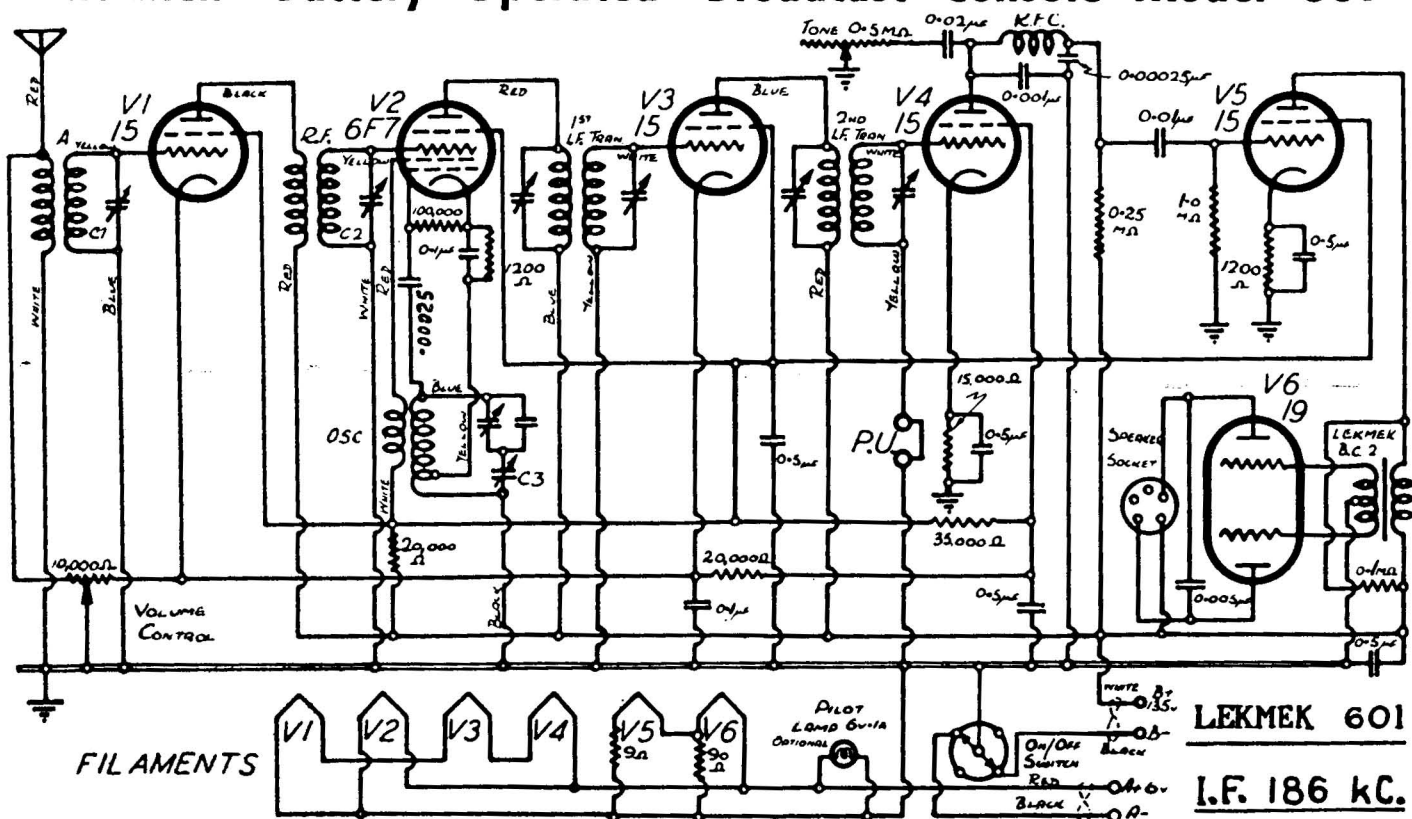
# LEKMEK RADIO LABORATORIES

## TECHNICAL DATA

Model No.  
( Sheets)  
Sheet No.



# "Lekmek" Battery Operated Broadcast Console Model 601



## LEKMEK "601" 1934 CONSOLE MODEL

Uses 8-inch, permanent magnet,  
loudspeaker.

### OPERATING VOLTAGES

All measurements were made with a "1,000 ohms per volt" meter, and voltages are those existing between the socket contact indicated and chassis. The volume control was in the "full on" position.

15, R.F. Amplifier: Plate, 135 v.; screen, 60 v.; cathode, 1 v. Plate current, 1.5 mA.  
6F7, Triode-Pentode Frequency Converter: Pentode plate, 135 v.; pentode screen, 60 v.; cathode, 3 v.; triode plate, 60 v. Pentode plate current, 2 mA.

15, 186 kc. I.F. Amplifier: Plate, 135 v.; screen, 60 v.; cathode, 1 v. Plate current, 1.5 mA.

15, "Anode-Bend" Detector: Plate, 30 v.; screen, 15 v.; cathode, 1.5 v.

15, Driver: Plate, 135 v.; screen, 60 v.; cathode, 2 v. Plate current, 1 mA.

19, Double-Triode, "Class B," Output: Each plate, 135 v.; negative filament to chassis, 4 v. Current each plate, 1.5 mA. (total, 3 mA.).