

INSTRUCTION LEAFLET & SERVICE INFORMATION

—FOR THE—

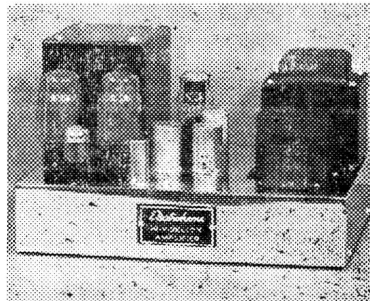
Electrohome Custom Built "PA-100"

Hi - Fi

5-TUBE POWER AMPLIFIER

—FEATURING—

- Direct Coupled Input Amplifier
- Push-pull Output
- True Williamson circuit with KT-66 tubes and original type Partridge Output Transformer.
- Nominal Output Impedance Taps for 4, 8, 16 ohms.



POWER SUPPLY

MODEL

PA-100

VOLTAGE

110-120

FREQUENCY

25-60 Cycles

Dominion Electrohome Industries Ltd.

KITCHENER - ONTARIO - CANADA

Other Products

Radios, Hi-Fi Phonographs and Radio Phonograph Combinations, Car Radios.

Custom-Built Radio Receivers, Tuners, Hi-Fi Amplifiers, Cabinets.

Fans, Heat Circulators, Small Electric Motors, Humidifiers,

Deilcraft Fine Furniture.

SPECIFICATIONS

Frequency Response — 1 W. level $\pm .4$ db, 20 cps to 100 Kc.

Harmonic Distortion — .3% at 10W. at 1000 cps.

Intermodulation Distortion — Less than .5% at 10 W. (60 and 7000 cps. 4:1)

Hum and Noise — 80 db. below rated output

Over-all Gain — 65 db.

Power Response — 20 cps. to 100 Kc. $\pm .5$ db at 10 watts

Voltage Input Required for 10 W Output Level — 1.5

Power Consumption — 125 watts

CHASSIS INSTALLATION

This chassis has been designed for mounting in custom cabinets, bookcases, wall panels, etc. in conjunction with other associated units, such as tuners, phono preamps., etc. It is important that it be located to insure proper ventilation, as the tubes and power transformer give off considerable heat which should be dissipated to insure normal life of the component parts used in the chassis.

The chassis must be mounted on the base plate supplied to meet CSA requirements but the feet may be removed and replaced by 6-32 screws to facilitate mounting of the chassis on a shelf.

NOTE: If the chassis is to be installed in a totally enclosed compartment, compartment MUST BE AT LEAST 3 CU. FT. to meet CSA requirements.

WARNING — POWER SUPPLY

This amplifier is intended to be operated only on the power supply specified on front page. Before connecting make sure that the voltage and frequency shown on the name plate correspond to those of your power company.

The Williamson Type Amplifier

The "Williamson" amplifier circuit was originated in England by D. T. N. Williamson and because of the quality of the reproduced output has attracted world-wide attention from high-fidelity enthusiasts. Its power rating of 10 watts at less than 1% intermodulation distortion proves ideal for home or small auditorium installations.

Many adaptations of the original "Williamson" circuit have been made using different output tubes, output transformers and circuit revisions, in a futile attempt to duplicate the superlative quality of the amplifier as conceived by Mr. Williamson.

The Electrohome "PA-100" Amplifier has however been designed to use the original type KT-66 Output Tubes and "Partridge" Output Transformer as designed and used by Mr. Williamson, and other components have been selected to retain the same hi-fidelity, high quality performance for which the Williamson Amplifier is justly world famous.

This Amplifier has "Presence". That elusive effect which is apparent when listening to an amplifier with low distortion, flat frequency response, and exceptionally low phase shift that enables speech and musical transients to be correctly reproduced.

With this amplifier, the bass response is solid and free from distortion produced by harmonics, and the highs are clean and crisp without the shrillness experienced with so many amplifiers.

The "PA-100" Amplifier has been designed as a companion piece for the Electrohome "VA-100" Preamp-Equalizer, the Electrohome "CHF142-515" AM-FM Custom Tuner plus the "VA-100" and any other high quality equipment, incorporating a preamplifier and controls, which can deliver two volts to the input of the amplifier.

See illustrations for specifications of the CHF142-515 Tuner and VA-100 Preamp-Equalizer.

A Word of Caution

No amplifier can give high-fidelity reproduction unless three precautions are taken:

- (1) The input to the amplifier must be of high-fidelity quality.
- (2) The speakers, whether single, dual, coaxial, with or without cross-over networks, must be properly matched and capable of reproducing the distortion-free output of the amplifier.
- (3) The speaker enclosure or enclosures must be properly designed and acoustically treated for true tonal reproduction.

The amplifier as received has the two output terminals connected for a nominal 16 ohms impedance but they may be connected for a nominal 4 or 8 ohms impedance if required. (See circuit diagram).

OFF-ON AC SWITCH

An AC OFF-ON Toggle Switch is located on the rear of the chassis. This switch is provided to permit the amplifier to be switched off, separate from other equipment. If the amplifier is used with equipment which has a switched AC receptacle, the amplifier line cord should be plugged into that receptacle and the toggle switch left turned on.

WARRANTY

The manufacturer warrants each new Custom Built Chassis for a period of ninety (90) days after delivery to the dealer's original customer, to be free from defects in material and workmanship under normal home use and service. This warranty shall apply only to the Custom Built Chassis which have not been repaired or altered in any way so as to effect their reliability. It shall apply only to Custom Built Chassis which have not been subject to misuse, neglect or accident, or which have not been connected or installed otherwise than in accordance with the manufacturer's instructions, and on which the Serial Number has not been altered, defaced or removed.

SERVICE POLICY

Other than the cost of replacement parts, supplied by the manufacturer, the dealer or service technician who sells the Custom Built Chassis will absorb all expense involved in maintaining the Custom Built Chassis in normal operating condition during the warranty period, and on any complete Custom Built Chassis returned to the manufacturer for repairs, a charge will be made for the labour involved in affecting necessary repairs or replacements.

All defective parts must be forwarded to the manufacturer, transportation charges prepaid, and should be accompanied with the following information,-

- Name and address of dealer,
- Model and Serial Number of Chassis,
- Date of Sale by the dealer,
- Nature of defect,
- Name and address of dealer's customer.

The manufacturer is not liable for damages incurred during transportation. All claims for said damages must be entered by the recipient of such merchandise with the carrier at its destination.

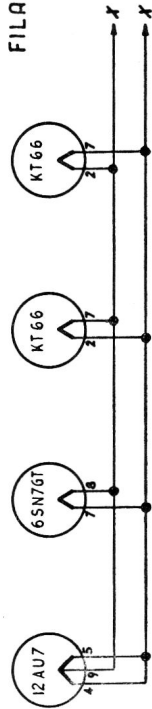
STATIC BALANCING

- 1) CONNECT A SUITABLE D.C. MILLIAMMETER IN THE LEAD TO THE CENTRE TAP OF THE OUTPUT TRANSFORMER PRIMARY AT POINT B OR D. ADJUST R_1 FOR .125 AMPS.
- 2) CONNECT A MOVING COIL VOLTMETER (0-10V approx.) ACROSS POINTS A + C. ADJUST R_2 FOR ZERO READING.

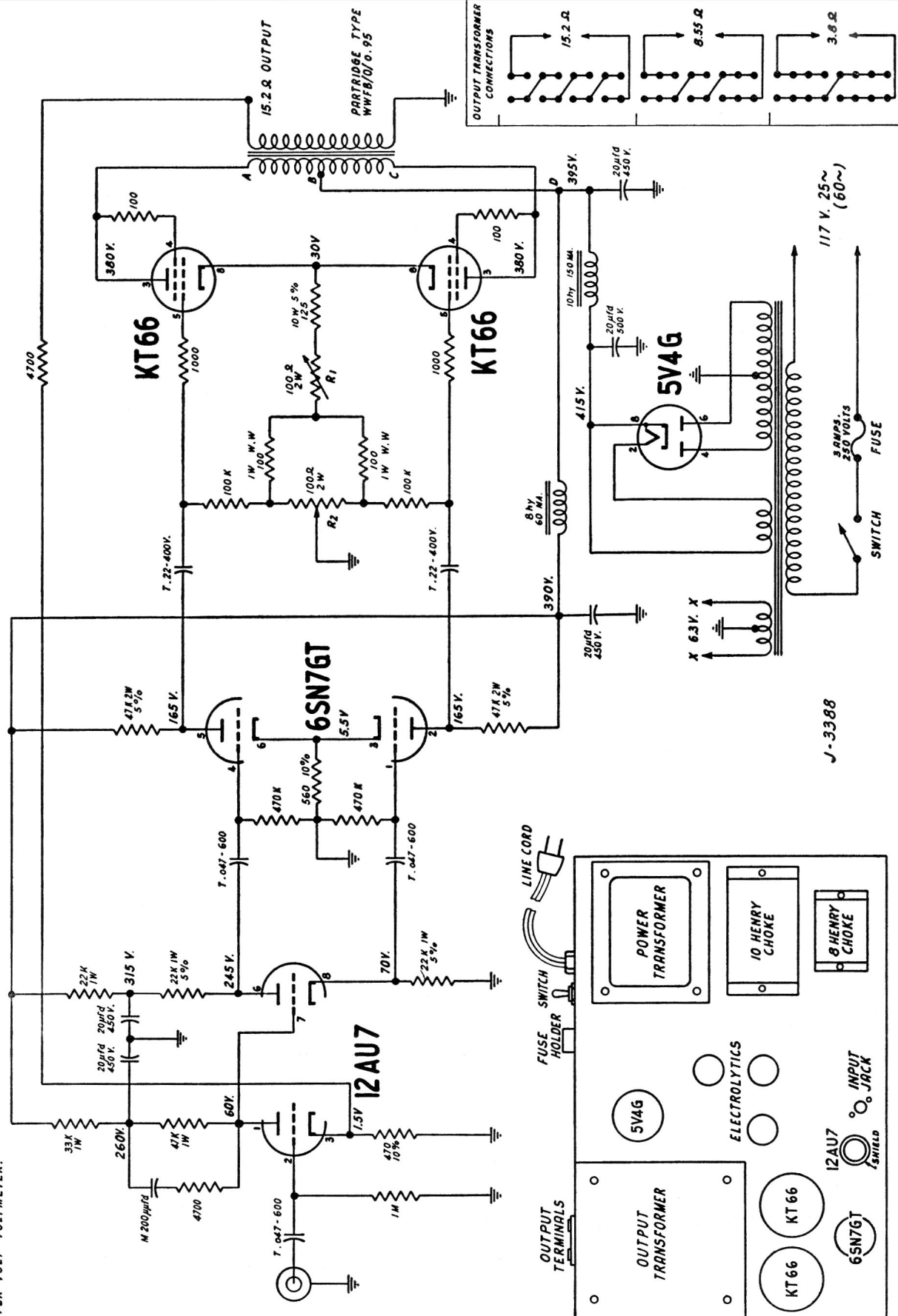
NOTE

VOLTAGE MEASUREMENTS TAKEN AT 117 VOLTS, 25 CYCLES WITH A 20,000 Ω PER VOLT VOLTMETER.

FILAMENT LEADS



J-3388



J-3388

SERVICE INFORMATION

When writing for service information or parts please quote model and serial number.

This amplifier has two balancing controls which are factory set when the KT-66 tubes are installed. Aging or replacing of tubes may require that these be reset. See information on schematic for balance adjustment.

A-2660—Rubber Feet with mounting screws

G-589—Single Electrolytic 20 ufd at 500 DC WV

G-590—Dual Electrolytic 20 ufd & 20 ufd at 450 DC WV

K-1657-6—Fuse 3 Amp. 250W 3AG

LK-534—Power Transformer 25/60 cycle.

LK-535—Output Transformer

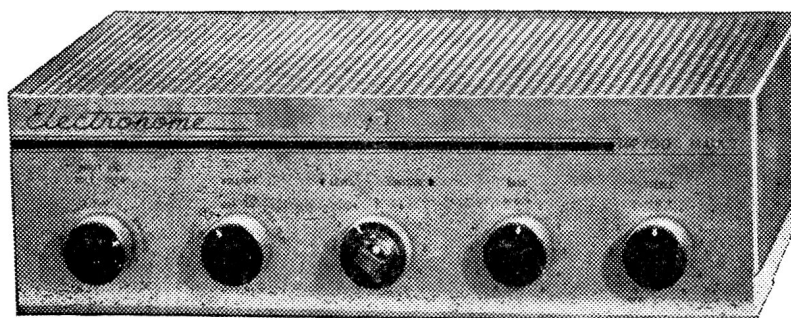
LK-546-1—Filter Choke 8 hy. 60 ma.

LK-547-1—Filter Choke 10 hy. 150 ma.

Q-292—Toggle Switch

R-372—W. W. Potentiometer—Balance Controls.

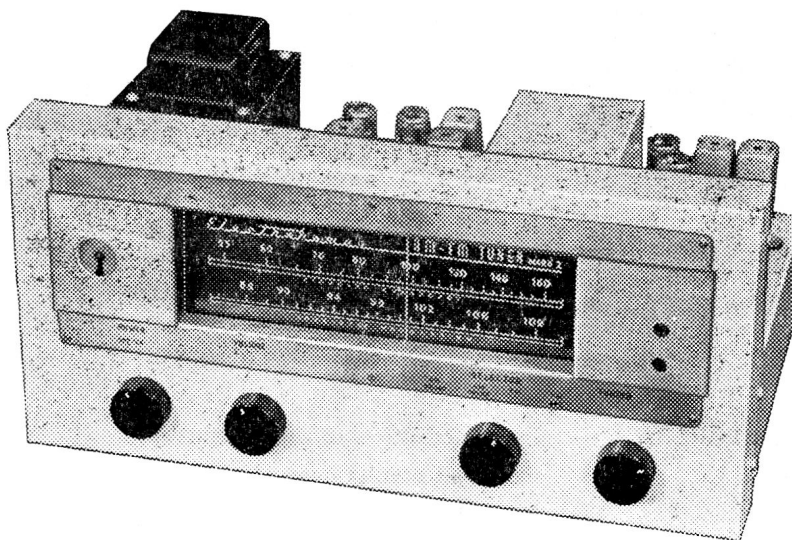
"VA-100 MK.1" PREAMPLIFIER-EQUALIZER



FREQUENCY RESPONSE	— 20 to 20,000 cps.
HUM & NOISE LEVEL	— 85 db. below 2 volts rated output
INTERMODULATION DISTORTION	— Less than .5% at 5 volts output
HARMONIC DISTORTION	— 0.05% at 5 volts output
VOLTAGE GAIN	— 5
CONTOUR CONTROL	— Designed to provide 20 db. lift at 20 cps.
BASS TONE CONTROL	— Designed to provide 15 db. cut or lift at 50 cps.
TREBLE TONE CONTROL	— Designed to provide 15 db. cut or lift at 10,000 cps.
HIGH PASS FILTER SWITCH	— 2 Position (Rumble Frequencies): FLAT position—Flat response. BASS CUT position —20 db. at 30 cps.
LOW PASS FILTER SWITCH	— 2 Position (Tweet & Scratch Frequencies): FLAT position—Flat response. TREBLE CUT Position—14 db. at 5 Kc. and —25 db. at 10 Kc.
EQUALIZATION	— 24 different equalization curves are available using the roll-off and roll-over selector switches. Included are equalization curves for Early 78, Columbia LP, RIAA, London LP, FFRR, Flat, etc.
TUBE COMPLEMENT	— (3) 12AX7 — (a) Preamp. & Equalizer. (b) Cathode follower input to filter circuit (Lo-Pass High-Pass), Voltage Amplifier. (c) Tone control circuitry to Voltage Amplifier to Loudness Control and Low Imped, Coupling stage — (1) 6X4 — Rectifier
DC FILAMENT SUPPLY ON PREAMPLIFIER TUBES	
POWER CONSUMPTION	— 20 Watts at 117 Volts 25/60 Cycle
SIZE & WEIGHT	— 4½" High x 13¼" Wide x 7½" Deep. 9 lbs.
FOUR INPUT JACKS	— Magnetic Phono — for low level magnetic cartridge — *Radio — for connection of AM or AM-FM Tuner. — *TV — for connection of TV sound to utilize tone controls and other features of the VA-100 in combination with a hi-fi amplifier and speaker system. — *Tape — for connection of tape reproducing system. *These jacks can also be used for connection of phono with a crystal cartridge.
FRONT CONTROLS	— 1. Input & Roll-over Selector 2. Roll-off Selector 3. Level & Contour Control 4. Bass Tone Control 5. Off-on AC Switch and Treble Tone Control
OUTPUT JACKS (2)	— (a) Low impedance to work into minimum load of 250,000 ohms for best results. (b) Output to tape recorder.
REAR CONTROLS	— (a) Hum Balance Control (b), Magnetic, load adjusting control (Phono Input)

All values shown are nominal.

CHF142-515 AM-FM TUNER



DUAL ANTENNA INPUTS

- AM — Low impedance loop supplied.
Provision for connecting external antenna.
- FM — Folded dipole for built-in installation supplied.
Provision for connecting external antenna.
Antenna impedance 300 or 72 ohm.

TUNED R.F. STAGE SENSITIVITY

- On BC Band 535-1650 Kc. On FM Band 88-108 Mc.

SELECTIVITY

- AM — 1 Microvolt or better for 1 volt output
FM — 3 Microvolts (average) for 30 db. quieting.
- AM — Sharp — 6 Kc. wide at 5 db. down
Broad — 16 Kc. wide at 10 db. down
- FM — 100 Kc. wide at 10 db. down

FREQUENCY RESPONSE

- 20 to 20,000 cps \pm 1 db.

DISTORTION

- Less than 0.04% for 1 volt

HUM LEVEL

- 100 db. below 2 volts rated output

OUTPUT

- 500 ohms Impedance out of cathode follower

10 KC. FILTER

- Built-in. 45 db. down at 10,000 cps. 2 db. down at 5,000 cps.

I.F. FREQUENCY

- AM — 455 Kc. FM — 10.7 Mc.

POWER CONSUMPTION

- 70 watts at 117 volts AC. 25/60 Cycle

SIZE & WEIGHT

- 7" High x 14 7/8" Wide x 9 1/8" Deep. 17 lbs.

CONTROLS

- 1. AC Off-On Switch
- 2. Volume Control
- 3. Selector Switch — Broad AM, Sharp AM, FM and FM AFC
- 4. Tuning

TUBE COMPLEMENT

- (2) 6BQ7A — FM RF Amplifier. FM Oscillator and A.F.C. Control.
- (1) 6CB6 — FM Converter.
- (3) 6BA6 — FM 1st and 2nd I.F. AM R.F. Amplifier.
- (1) 6BE6 — AM Converter
- (2) 6AU6 — FM 1st & 2nd Limiter
- (2) 6AL5 — FM Discriminator. AM 2nd Detector and AVC.
- (1) 6E5 — Tuning Eye
- (1) 12AU7 — Voltage Amplifier & Cathode Follower Output
- (1) 5Y3GT — Rectifier

SPECIAL FEATURES

Extremely sensitive cascoded FM RF stage.
Continuously variable A.F.C. threshold control.
Channel indicator pilot lights.
Flywheel tuning.
Tuning eye.

All values shown are nominal.