

INSTRUCTION LEAFLET & SERVICE INFORMATION

—FOR THE—

Electrohome Custom Built "PA-300" **Hi-Fi**

6-TUBE POWER AMPLIFIER

— FEATURING —

- Six position Input Selector Switch
- Six Separate Input Jacks
- Six Position Record Compensation Switch
- Separate Bass and Treble Tone Controls
- Separate Level and Contour Control
- Rumble Filter with Switch
- Two Switched AC Receptacles
- Hum Balance Control
- DC Balance Control
- Preamplifier for Magnetic Type Phono Cartridge
- Preamplifier for Crystal Microphone
- Push-pull Output Amplifier Circuit
- 4, 8, 16 ohm. Output Impedance Taps
- 25/60 Cycle, 110-120V. A.C., Operation
- Jewel Type Indicator

Specifications as follows:

With tone controls in flat position, level and contour controls full clockwise, all measurements (nominal) taken at crystal input and 16 ohm output tap.

Frequency Response — 1W level ± 1 db., 30 cps to 15,000 cps.

Harmonic Distortion — Less than 1% at normal operating levels.

Intermodulation Distortion — Less than 1% at normal operating levels (60 and 3000 cps. 4:1)

Hum and Noise — 80 db. below rated output.

Voltage Input Required for 10W Output Level — .4 Volts

Maximum Power Output at 400 C.P.S. — 15 Watts

Undistorted Power Output at 400 C.P.S. — 10 Watts

Power Consumption — 62 Watts

Dominion Electrohome Industries Ltd.

KITCHENER - ONTARIO - CANADA

Other Products

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

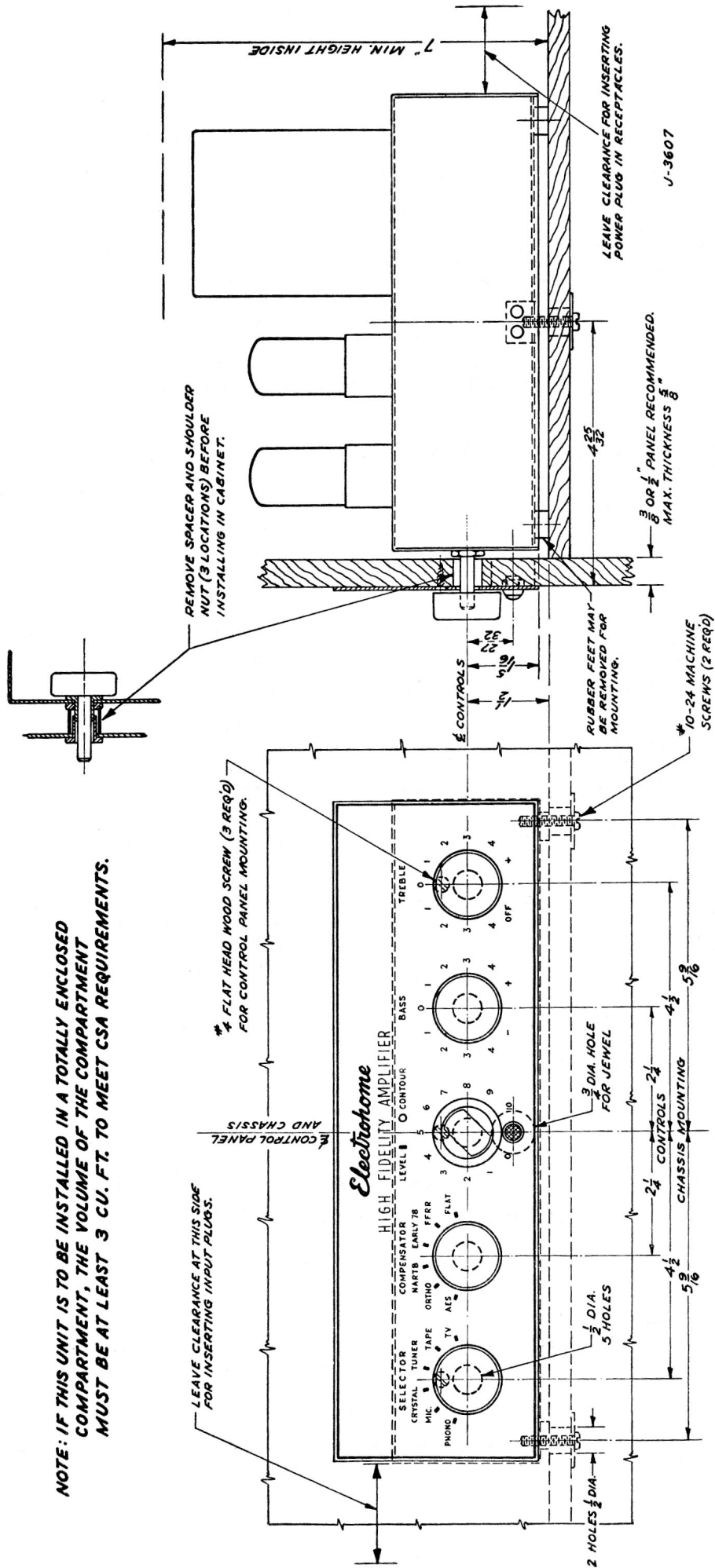
Custom-Built Radio Receivers, Tuners, Hi-Fi Amplifiers, Cabinets.

Fans, Heat Circulators, Small Electric Motors, Humilifiers, Dehumidifiers.

Home Freezers and Clothes Dryers.

Deilcraft Fine Furniture.

NOTE: IF THIS UNIT IS TO BE INSTALLED IN A TOTALLY ENCLOSED COMPARTMENT, THE VOLUME OF THE COMPARTMENT MUST BE AT LEAST 3 CU. FT. TO MEET CSA REQUIREMENTS.



CHASSIS INSTALLATION

This amplifier has been designed with a removable front panel, to permit its installation in custom cabinets, bookcases, wall panels, etc., and still retain the usefulness of the control panel. The drawing showing the mounting of the amplifier will assist in the proper location of the chassis in relationship to the panel being used to provide adequate shaft protrusion for the knobs.

As noted on the drawing, the three spacers and shoulder nuts holding the front panel to the chassis may be removed and No. 4 flat head woodscrews, of suitable length, used to hold the front panel to the wood panel.

It is important that the amplifier be located to insure proper ventilation as the tubes and transformers 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 METAL BASE PLATE SUPPLIED TO MEET CSA REQUIREMENTS.

NOTE: If the chassis is to be installed in a totally enclosed compartment, the 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 unit correspond to those of your local power company.

OFF-ON AC SWITCH

This switch is located on the rear of the treble tone control. The jewel on the panel lights up when the amplifier is turned on.

INPUT JACKS

- PHONO — For G.E. or low level type magnetic type pickup cartridge or other equipment using a magnetic unit as a voltage producing source. The input load resistor is for G.E. and should be changed for Pickering type cartridge, etc.
- MIC. — For high impedance crystal microphone utilizing the built-in preamplifier as incorporated in the 12AX7 tube.
- CRYSTAL — To permit the connection of a changer using a crystal cartridge, or other equipment using a crystal unit as a voltage producing source.
- TUNER — For the connection of an AM, FM or AM-FM tuner to reproduce the AM or FM sound through this high-fidelity system.
- TAPE — To permit the connection of a tape reproducing system to take full advantage of the tapes wide frequency range recording characteristics as reproduced through this units high-fidelity system.
- TV — For the connection of a TV set to reproduce the FM TV sound through this high-fidelity system.

INPUT SELECTOR SWITCH

The six positions on the selector switch are provided to permit an easy means of selecting and connecting the inputs as outlined above to the amplifier to take full advantage of its high-fidelity features.

This selector switch has been designed to short out all inputs except the one being used, to eliminate input signals from other than the one selected, feeding through and causing crosstalk.

RECORD COMPENSATION

In the manufacture of records, the treble range is pre-emphasized (boosted) to mask surface noise and the bass range de-emphasized in volume to conserve groove space and reduce distortion. When the records are played, therefore, the reproduction equipment must be able to reduce the treble and increase the bass to restore the original balance. All manufacturers do not record with the same amount of treble pre-emphasis and bass de-emphasis and, therefore, a series of settings for varying degrees of compensation is required.

Suggested settings of the record compensation switch on the record changer drawer for various types of recordings are shown, but in all cases the proper settings of the controls are those that sound best. All the settings shown are for use with the treble and bass tone controls set in their mid (flat) position.

SUGGESTED RECORD COMPENSATOR SWITCH SETTINGS

FOR VARIOUS MAKES OF RECORDS

Audio Engineering Society (A.E.S.)	Orthophonic (ORTHO)	National Association of Radio and Television Broadcasters (N.A.R.T.B.)	Early 78	Full Frequency Range Records (F.F.R.R.)	Flat
Blue Note Jazz	American Recording Soc.	Angel	Older	London ffrr	Cetra-Soria 78
Canyon	Capitol F.D.S.	Artist	Records	Decca ffrr	English Columbia
Capitol (early releases)	Capital	Atlantic	having high		H.M.V. 78
Capitol-Cetra	Columbia	Bach Guild	surface		Most European
Colosseum	Decca	Bartok	noise		78
Concert Hall	H.M.V. 33-1/3	Boston			This setting
Contemporary	London	Caedmon			provides flat
E.M.S.	M G M	Cetra-Soria			treble response
Good Time Jazz	Mercury	Columbia			
Mercury	R.C.A. Victor	Cook Laboratories			
Philharmonia	Tempo	Decca			
R.C.A. (early releases)		Elektra			
Urania		Epic			
		Esoteric			
		Folkways			
		Haydn Society			
		Lyrichord			
		M G M			
		Oceanic			
		Polymusic			
		Remington			
		Urania			
		Vanguard			
		Vox			
		Westminster			

TONE CONTROLS

It may be that the suggested settings of compensation do not give you a pleasing tone balance of the relative loudness of the bass and treble notes. Since the receiver is played in various types of rooms with individual acoustical characteristics, and each person has his or her own idea of tone balance, the bass and treble tone controls may be adjusted to provide the greatest listening pleasure.

To bring out the full richness of the bass instruments turn the bass control towards the 4+ position. For the full brilliance of the cymbals and for overtones of all instruments, turn the treble control towards the 4+ position.

If the bass or treble frequencies are too accentuated with the controls set at the centre "O" position or towards the 4+ positions, they can be reduced by turning the controls towards the 4- positions.

LEVEL AND CONTOUR CONTROL

Music played over a sound system at normal room level will sound deficient in bass and upper treble if compensation is not used to boost these frequencies. This can be fully appreciated when it is understood that the sensitivity of the human ear varies with frequency and intensity of sound. At a very high volume level the full range of frequencies is heard most nearly balanced. At lower volume levels the ear is less sensitive to the extremely low and high frequencies. Some provision should be made, therefore, to permit separate adjustments of level and boost in the sound reproducing equipment, to compensate for the deficiencies of the ear, and to provide the greatest listening pleasure.

This amplifier provides a dual level and contour control to make these separate adjustments of level and boost. The level control is necessary to set the level of the signal which is fed to the contour control so that the user may set the contour control to give the most satisfactory response. The contour control possesses the qualities of a loudness control, i.e., it automatically compensates for lost frequencies at lower volume settings by providing proper amounts of boost at those frequencies.

With these controls an infinite variety of balance is available to suit your personal preferences for various types of recordings or broadcast programs.

Typical operations are as follows:

With the tone controls set in the flat position

Set Level Control (rear knob) fully clockwise — use the contour control as a loudness control to control volume.

Set Contour Control (front knob) fully clockwise — use the Level control as a conventional volume control.

Turning the contour control counterclockwise increases the boosting action of the high and low frequencies in relation to the middle frequencies.

A method using the controls in conjunction with each other is as follows:

Turn the Contour Control (front knob) to its extreme right hand position, set the level control (rear knob) for maximum anticipated loudness on crescendo passages, adjust bass and treble tone controls as outlined previously and reset the contour control for desired listening level. When the setting is found which suits your individual preference, **tonal balance** can be maintained without varying tone controls as the listening level is varied.

NOTE When the AM tuner is used, it will be found that the lows are much more pronounced than the highs. Under this condition of operation, the contour control should be set almost fully clockwise and the level set control used as a volume control.

CAUTION — Do not adjust the contour control or tone controls to give excessive bass or treble boost at high volume levels. Excessive bass boost will overdrive the amplifier resulting in severely distorted reproduction; excessive treble boost gives thin reproduction.

Proper settings of the controls for best balance will be found as you become familiar with their operation.

RUMBLE FILTER SWITCH

All record changers or record players are not designed or built to eliminate inherent rumble and, as a result, when these units are used in conjunction with an amplifier and speaker system with extended low frequency response, this rumble becomes apparent. Its presence is recognized by a low frequency hum or distorted output emanating from the speakers and caused by inaudible cone flutter. The rumble filter built into this amplifier attenuates the very low frequencies, including the rumble frequencies which occur around 30 cycles per second.

If your amplifier is used with a changer or player having high rumble content, set the switch on "IN" position. Full range frequency response can only be achieved when the Filter is in the out position.

OTHER FEATURES

Included in this amplifier are:

- (a) Two AC receptacles (rear of chassis) switched on or off by the AC switch on the treble tone control have been added to provide a switched source of 117V AC voltage for use with tuners, changers, etc., the power requirements of which **DO NOT EXCEED 200 WATTS MAXIMUM**.
- (b) Hum Balancer Control. It may be found necessary to adjust the hum-balancer for minimum hum reproduction when the 12AX7 tube is replaced. Set the bass tone control in its extreme right hand position (position of maximum boost), the selector switch to phono position, the level and contour controls to extreme right hand positions, and adjust the hum-balancer for minimum hum level.
- (c) Speaker terminals (on rear of chassis) for 4, 8 or 16 ohm output impedance to permit the amplifier to be used with speakers varying from conventional standard single type to coaxial or multiple speakers, with crossover networks to provide proper balance of treble and bass frequencies.
- (d) DC Balance Control. A DC balance control has been incorporated in this amplifier to permit proper balance of output circuitry resulting in minimum distortion.

THIS CONTROL SHOULD ONLY BE ADJUSTED BY A QUALIFIED SERVICEMAN.

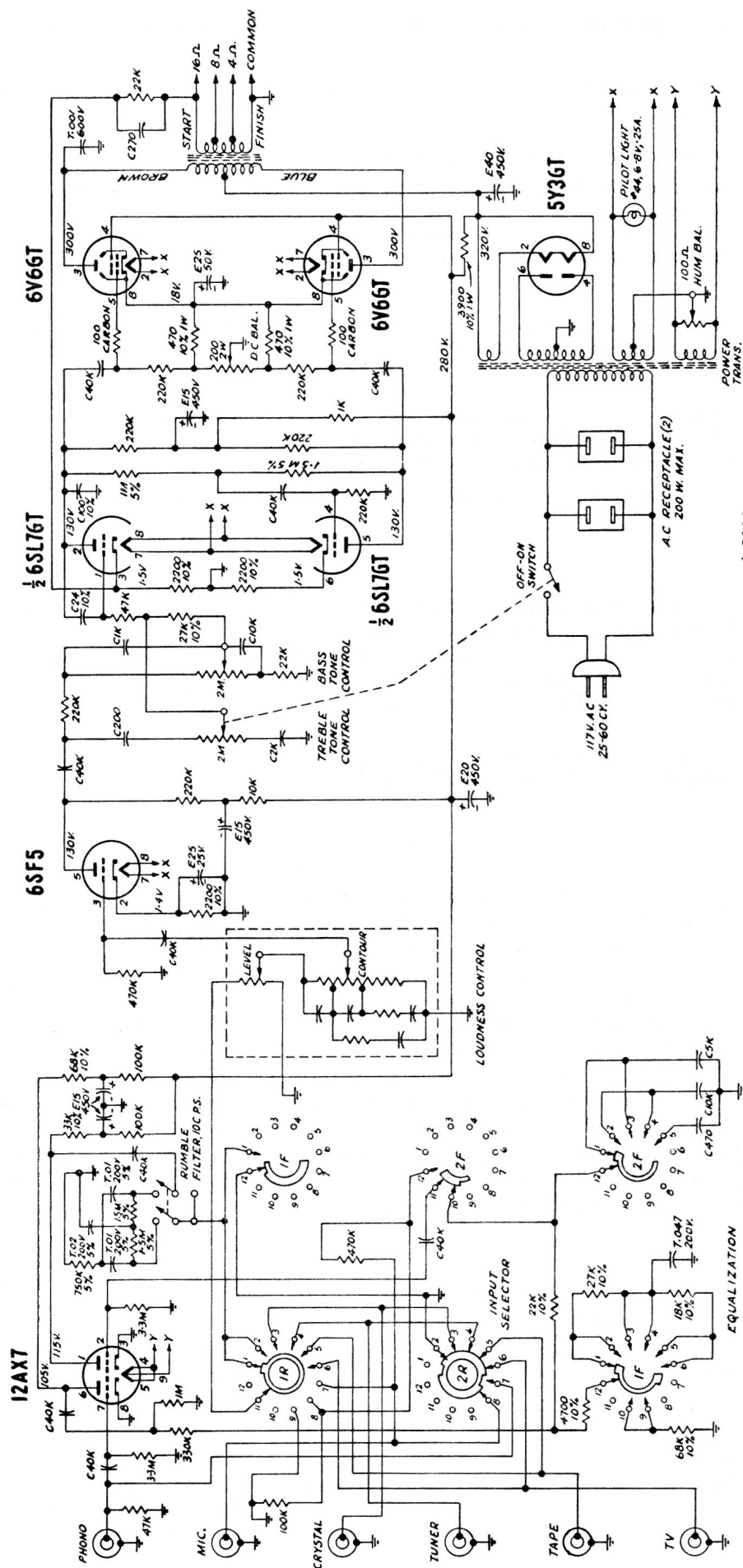
A Word of Caution

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 components in this amplifier have been carefully chosen, as regards values, tolerances and types to give the maximum in the way of ultimate wide frequency response. When servicing is required due consideration must be given to the values originally specified and exact replacements made, if at all possible.

NOTE: 220K. Resistor added, junction of Rumble Filter Switch and C40K Condensor to Ground.



INPUT SELECTOR

- POSITION.
1. PHONO.
2. MIC.
3. CRYSTAL
4. TUNER
5. TAPE
6. TV.

EQUALIZATION

- POSITIONS
1. AES
 2. ORTHO.
 3. NARTB.
 4. EARLY 78.
 5. FFR.
 6. FLAT.

COMPONENT VALUES

RESISTORS: HALF WATT, UNLESS OTHERWISE SPECIFIED.
20% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
K = 1000 OHMS.
M = 1000,000 OHMS.

CONDENSERS: T = TUBULAR, FOLLOWED BY CAP. IN MFD. AND D.C.W.V.
E = ELECTROLYTIC, FOLLOWED BY CAP. IN MFD. & D.C.W.V.
C = CERAMIC, FOLLOWED BY CAP. IN MMFD. & VOL. IF CRIT.

ALL VOLTAGES MEASURED TO CHASSIS WITH 20,000 OHM/VOLT METER AND AT ZERO SIGNAL OUTPUT.
(RECORD COMPENSATOR SWITCH SHOWN IN A.E.S. (EXTREME COUNTER CLOCKWISE) POSITION.
INPUT SELECTOR SWITCH SHOWN IN EXTREME COUNTER CLOCKWISE. (PHO. 1 POSITION)

