

▪ DETAIL CONCERNING TO FRONT PANEL ② TUBE INDICATOR

The tube indicator lamp is linked with the below two selector switches (located inside of the cabinet):

- CATHODE RESISTORS :
To select a cathode resistor for the output tube.
EL34/Green indicator, 6L6WGC/Red indicator.
- PLATE VOLTAGE
To select a plate voltage for the output tube.
EL34/Green indicator, 6L6WGC/Red indicator.



▪ CS-600X SPECIFICATION

Used tubes	4 x 6CA7/EL34 (6L6WGC/5881 Option)
	2 x 12AU7A, 2 x 12BH7A
	1 x 6CM3/6DN3
Output Power	6CA7/EL34 : 28W x 2(MAX) at 1KHz.
	6L6WGC/5881 : 32W x 2(MAX) at 1KHz.
Input Sensitivity	900mV (at 20W)
Frequency Response	10Hz ~ 100KHz (-0.1dB)
Power Consumption	195W Max
Dimensions	450(W) x 360(D) x 142(H)mm (Including knobs and other appendixes.)
Weight	23kg
Attachment	Detachable AC power cord

▪ CAUTIONS

CS600X is a 28W/32W high power tube amplifier which become very hot with heat of tubes, and therefore, in order to reduce a risk of danger and to extend a life of the equipment, please keep the following cautions:

- Before removing a top cover for replacing tubes, please confirm the power cable is disconnected and the tubes are cooled down.
- Do not put something on the unit.
- Do not install the unit in a rack or a narrow space.
- Do not close ventilation holes on the rear panel.
- Do not close bottom ventilation by inserting something into a bottom space.
- Do not put combustible, heaters or stoves.

Phono equalizer facility is not incorporated in CS-600X, therefore, please use a Phono equalizer amplifier when using analogue record player with RIAA response. In this case, please connect the Earth line of a Phono equalizer amp (or a record player) to the "GND" terminal of CS-600X.

Leben
A Motion Sound

STEREO INTEGRATED AMPLIFIER
CS600X
OWNER'S MANUAL



Thank you very much for purchasing our CS-600X integrated amplifier.

CS-600X is basically equipped with 6CA7(EL34) output tube, however according to music sources, you also can enjoy variegated sounds by using an optional output tube 6L6. CS-600X is an Integrated Amplifier, however, you also can use this unit as "Power amplifier" by changing a selector switch on the front panel.

We hope CS-600X will be a favorite amplifier all through your audio life.

6CA7(EL34) ■ OUTPUT TUBE

6CA7/EL34 is a reputed pentode which was developed by Philips(Holland) featuring high-sensitivity and high-output, and has been used for all historical tube power amplifiers of Marantz.

CS-600X is designed to make a max. Output power of 28W/ch. By putting a 410V plate voltage and 460Ω cathode resistors.

6L6WGC/5881 ■ OPTIONAL OUTPUT TUBE

6L6 tube is a high power beam tube with 30 W plate-loss, which was developed as a Metal Tube, and has been improved to 6L6GA, 6L6GB and 6L6GC. 6L6 was basically designed and used for professional sound equipments, however, this tube was brought into spotlight when McIntosh released model 50W.I(1949) and MC-240(1955) equipped with 6L6, and after that, the sound of 6L6 has been highly recognized and taken root as a regular tube for audio amplifier.

CS-600X is designed to make a maximum output power of 32W/channel by adjusting the plate voltage at 450V and Cathode Resistors at 680Ω.

12AU7A + 12BH7A ■ FIRST STAGE AMPLIFICATION TUBES

A huge quantity of these tubes were produced by many manufacturers in the past and many high quality NOS tubes are available on market, therefore, you have a chance to try several different NOS tubes by replacement. Apart from it, these tubes are still being produced for musical instruments and also for audio amplifiers, and there is no fear of replacement tubes in future as well.

6CM3/6DN3 ■ DAMPER TUBE

The 6CM3 is a strong anti-pressure tube which also has been developed for TV use and has a higher flow capacity of 400mA than 6CJ3(350mA).

ABOUT CIRCUIT

After the first stage amplification by SRPP through the first triode unit of 12AU7A and 12BH7A, make a phase-reverse by Mullard type cathode connection through the second triode units, then transmit to the last stage. Self-biasing circuit(Auto-biasing circuit) will protect the output tubes EL34(or 6L6) from damages from age. A characteristic of the damper tube(6CM3/6DN3) is to rise a high voltage gradually, which will affect very much to extend a life of the output tubes.(6DW4B also can take place of 6CJ3). The Bass Booster of CS600X is controlled by capacitors arranged on the "NFB roof", that is a very rare method. Bass(or Treble) control is normally controlled by a tone control circuit, however, the above method makes the circuit much more simple. Further more, in order to cut a negative influence of the Bass booster to the middle frequency, 15Kohm resistor(filter) is arranged in the circuit.

SIDE WOOD-PANEL

We selected Canadian White-Ash for CS-600X. This wood material is very hard and heavy, and is oftenly used as a material of Baseball bats and oars for low boat. As a natural wood is used, please accept if there are any irregular grains between each side panels and also small clacks occasionally. For Cleaning the wood-panels, you may just rub by a soft cloth or may use a furniture wax for more polish.

OUTPUT TUBE COMPATIBILITY SETTING TABLE

Other than 6CA7/EL34 and 6L6GC, you can enjoy a sound of several other tubes as per the below compatibility table:

TUBES	CATHODERESISTORS		PLATE VOLTAGE	
	6L6GC	EL34	6L6GC	EL34
EL34/6CA7	X	O	X	O
6L6GC/5881	O	X	O	X
KT77	X	O	X	O
6L6GA/GB/WGB	O	X	X	O
350B	O	X	O	△
KT66	O	X	O	△
KT88	O	X	O	△
6550A	O	X	O	△

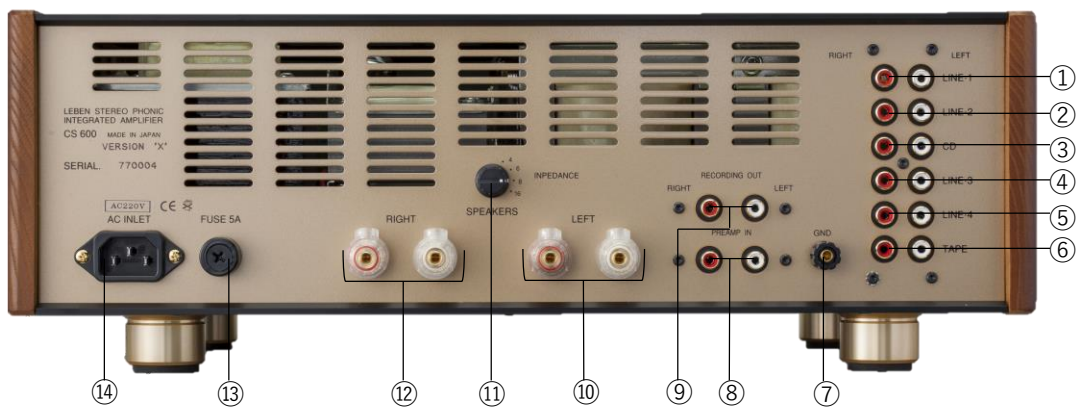
*WARNING: DO NOT USE THE FOLLOWING TUBES
 • 6L6(METAL TUBE) – A risk of electric shock – 7027 (A) – Not Applicable

FRONT PANEL



- ① **POWER ON/OFF switch**
When the power switch is turned ON, an orange LED indicator lights.
- ② **TUBE INDICATOR**
(The details are on the rear page)
- ③ **Two steps BASS BOOST**
+3bB & +5bB in the range below 100Hz.
- ④ **SPEAKER/HEADPHONE Selector Switch**
When turned the selector switch to PHONES position, you also can enjoy a real HI-FI sound coming directly from the output transformer to the headphone output.
- ⑤ **BARANCE CONTROL**
The knob is used to adjust a balance between the right and left channels.
- ⑥ **VOLUME CONTROL**
Smooth Detent-Volume with 40-steps.
Turn the knob to the right to raise the volume.
- ⑦ **PHONES (Headphone output)**
To prevent hearing loss, do not raise the volume level excessively when using a headphone.
- ⑧ **OPERATION Indicator Lamp**
When the output tubes are warmed-up for operation, a blue LED indicator lights (it takes about 20 seconds).
- ⑨ **MODE**
Stereo & Reverse selector.
- ⑩ **MUTING (Normal position OFF)**
Turn ON when you want to cut off sound in a moment.
- ⑪ **TAPE MONITOR**
Turn ON when you listen to the sound source connected to the TAPE terminal ⑥ on the rear panel.
- ⑫ **NORMAL/PRE IN**
When a preamplifier is connected to the PREAMP IN terminal ⑧ on the rear panel and turn this switch to PRE IN, This unit works as a "Power Amplifier". In this case function ⑬⑪⑨ are bypassed and only other functions ⑦⑥⑤④③ are in operation.
- ⑬ **INPUT SELECTOR**
Use to select equipments connected to terminal ①~⑥.

REAR PANEL



- ① **LINE INPUTS:** Connect AM/FM Tuner, DVD, VTR/LD and other playback components by RCA pin-jack.
- ② **Same as ①**
- ③ **CD INPUT:** Connect CD/HDCD player by RCA pin-jack.
- ④ **Same as ①**
- ⑤ **Same as ①**
- ⑥ **TAPE INPUT:** Connect PLAY-OUT terminal of Cassette Tape Deck or MD Deck by RCA pin-jack.
- ⑦ **GND (Ground)**
This is an "EARTH" terminal.
- ⑧ **PREAMP IN**
Connect Preamplifier output by RCA jack.
- ⑨ **RECORDING OUT**
Connect REC-IN terminal of Cassette Tape Deck or other recording components.
- ⑩ **LEFT Speaker terminal**
Red(+) and Black(+)
- ⑪ **IMPEDANCE**
Adjust the impedance according to the connected speakers (4/6/8/16Ω).
- ⑫ **RIGHT Speaker terminal**
Red(+) and Black(+)
- ⑬ **FUSE 5A**
5A slow blow fuse is herein. Please do not use a fuse of more than 5A
- ⑭ **AC INLET**
Connect an attached AC power cord tightly.