



VTL

ST-85 Stereo Power Amplifier

Owner's Manual

MAKING TUBES USER FRIENDLY

VTL ST-85 Stereo Power Amplifier

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Introduction

Congratulations on your purchase of the VTL ST-85 Stereo Power Amplifier.

The ST-85 Stereo Amplifier, a 85 watts per channel amplifier, is designed to deliver an involving and true-to-live listening experience to you. Proper care and maintenance of the ST-85 will assure its lasting value and maximum performance. Please take a moment to read through this owner's manual and please take time to get familiar with the features of this product, so that you can become familiar with the operating and maintenance procedures needed for the ST-85. After you have finished reading this manual please keep it in a safe place for future reference.

The VTL team is proud that you have selected the ST-85 power amplifiers as a new member of your home audio and home theater system. We sincerely hope that the VTL ST-85 will contribute towards your enjoyment of music and give you many hours of listening pleasure.

Symbol Conventions used in this guide

Certain symbols are used in this owner's manual to draw your attention to important points being discussed. For your own safety and that of your equipment you should note and heed the warnings that follow these symbols.

The "Warning - Pay particular Attention" symbol used is



and the "Warning - Observe These Precautions For Your Safety" is



Electrical Safety Notice

Electrical voltage from power cables is hazardous. We recommend that the power cord connected to this unit be used with a properly grounded outlet. To prevent electrical shock do not remove any of the covers of this amplifier, especially while the unit is powered on.



Water and Moisture

The amplifier should not be used close to any water or moisture sources. If liquid enters the amplifier it must be immediately unplugged and returned to your dealer for servicing. If this occurs you should under no circumstances try to power the unit on before the unit has been properly serviced by a trained repair technician - there are hazardous voltages present in this unit that can cause serious injury if they come in contact with you.



Location and Ventilation



Install this amplifier in a location which is stable and well ventilated. If the amplifier is placed in a built-in installation, ensure that there is adequate room for a supply of air to flow through the ventilation openings. Allow at least 9 inches clearance on the top and around the sides of the amplifier. Be sure the amplifier is at least 10 inches away from your preamplifier to prevent possible noise introduction into your system. Tiptoes or other isolation accessories may prove useful in reducing mechanical vibrations. **Do not place amplifiers directly on high pile carpets as this will block the ventilation vents.** Do not place the amplifier next to heat sources such as radiators, stoves or other appliances. Do not place amplifier on the floor where small children can tamper with the equipment. If it is not possible to place amplifier out of the reach of small children it is recommended that you remove power cables when the equipment is not in use.

Servicing

Do not attempt to service the amplifier beyond the procedures described in this manual. For all other service and questions, please contact your authorized VTL dealer or the factory.



Operational Warnings

- ▶ **Do not touch the tubes after the amplifier is turned on.** Tubes can get very hot while the amplifiers are operating. Turn off the amplifier and allow the tubes to cool down before attempting to work with the tubes.
- ▶ **Do not attempt to disassemble the amplifier chassis or remove any covers from the amplifier.** Always consult with your VTL authorized dealer or the VTL factory support department before attempting any service work on any VTL unit.
- ▶ Always connect your loudspeaker to the amplifier before powering the unit on. Operating any VTL power amplifiers without a speaker load connected can damage the output transformer, and will not be covered under the warranty. Also, ensure that no speaker cables can become loose during use and that there are no intermittent faults with the cables.
- ▶ Tube amplifiers can be heavy and awkward to lift, with the weight unevenly distributed, and you should not attempt to move the unit without help. Each unit of the ST-85 Stereo weighs approximately **45 lbs (20.5 Kg)**.
- ▶ Do not attempt to make or break any connections to the amplifier while the unit is powered on as this can damage the amplifier and/or the rest of the system, and this damage is not covered by warranty.
- ▶ If this unit has tetrode/triode switch, do not flip the triode tetrode switches while the unit is powered on, as this can damage the switch and is not covered under warranty.
- ▶ Do not exceed fuse ratings or attempt to bypass any fuses, as this can cause an extremely hazardous condition and will void any warranties. Use only the same type and rating of fuses as specified in the owners manual and marked on the unit.



Getting Started

Unpacking the ST-85 from its box



The ST-85 Stereos are shipped in cartons and wrapped in thick plastic. The plastic is not strong enough to support the unit, and may tear if you try to lift the unit out of the box with it. Also there are protruding switches which could break if the unit is not properly handled, and in addition to the awkward, unbalanced heavy load the unit has a cleaning polish on it which makes it slippery and hard to grasp. We have found that the best way to remove the amplifier from the box is as follows:

1. With the box on a thick carpeted floor, fold back all the flaps of the top of the carton, leaving all the packing foam in place. Roll the carton onto one long side on top of the flap.
2. Roll the box once more onto the open top and, making sure that none of the flaps is trapped under the carton, lift the carton off the unit.
3. Lift the top foam away from the upside down unit and carefully cut away the plastic from around the amplifier.
4. Lift the amplifier up and away from the packaging either by holding onto the metal handles on the front of the unit or by rolling the unit onto a short side and then again so that it lands on its four rubber feet. Then lift away the packaging and set all the packaging in the carton.
5. When lifting the unit be sure to only lift it from the bottom under the transformers. Be careful not to break any switches. Be sure to only set the amplifier down on its bottom side on the four rubber feet on a stable surface. Setting it on any other side may damage protruding components.

If the unit is too heavy or too awkward to lift then do not attempt to do this by yourself, but rather find someone to help you. Save the carton and all packaging for any future shipment of the amplifiers.

The ST-85 Front Panel



The ST-85 Front Panel showing the Power on switch and the power on LED indicator.

Check for tube placement

Use the following procedures to check whether the tubes standing on the deck of your amplifier are placed firmly in their sockets, as the tubes can become dislodged and loosen during shipping of the amplifier.

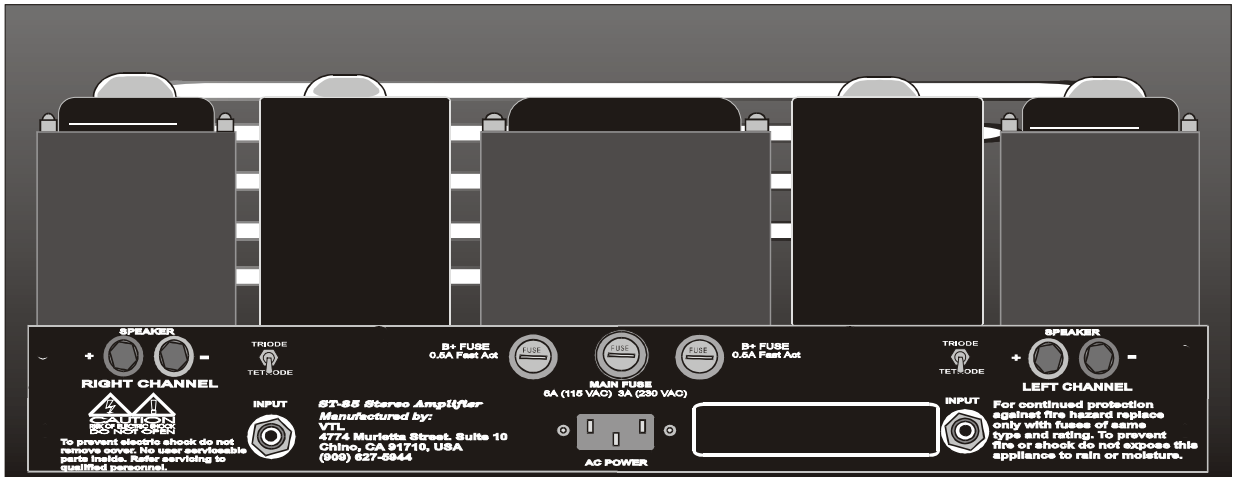
Visually inspect through the vent holes to ensure that all tubes are fully seated before powering the unit on for the first time. If there are any tubes not fully seated then you should refer to your VTL dealer, and take this procedure with the amplifier.

Notes for the servicing technician:

1. Remove the protective wire cage on the top deck of the amplifier. The cage is mounted with three screws on each side of the amplifier. Loosen the screws and lift the wire cage slowly and carefully. Do not let the cage touch or hit any of the tubes inside the amplifier. Keep the cage and the screws in a separate place while you're working on the amplifier.
2. Make sure that the amplifier is not connected to the power outlet and not turned on. Use your fingers to hold onto the upper portion of the tube towards its tip. Gently rock the side of the tube to see if there is any movement in the tube. If there is any movement, that means the tube has come loose. Press the tube firmly into its socket, using a gentle force and a slight "rocking" motion.
3. Repeat the above test for the rest of the tubes. There are a total of four output tubes and two input tubes in each amplifier.

- After you've examined all the tubes to make sure that they are firmly placed in their sockets, you can put the protective cage back onto the amplifier unit. Tighten the screws to make sure that the cage is securely fastened to the unit.

ST-85 Back Panel



The ST-85 Back View

Connecting Your Amplifier to your system

The ST-85 amplifier is a self-contained unit with the amplifier and power supply sections on one compact chassis. Follow the instructions below to connect the amplifier to your audio or home theater system:

- Connect all source components (e.g. CD, Tuner, Tape, DAT, Turntable etc.) to the preamplifier. Follow the instructions on your preamplifier and source component manuals to connect these components together.
- Connect the power amplifier to the output channel of the preamplifier. The interconnect cable between the amplifier and the preamplifier links the input channel of the power amplifier to the output channel of the preamplifier. The Stereo amplifier that is going to drive the left channel of your speaker system should be connected to the left output channel of the preamplifier. The same applies to the right channel amplifier.
- Select the input connector type. The amplifier supports only one type of input connector – the RCA input. Place the interconnect cable firmly into the input jack which matches the type you have, and firmly insert the interconnect cable into the input jack marked “INPUT”.
- Connect the loudspeaker cable to your amplifier. There is a pair of speaker binding posts in the back of your amplifier for connecting your loudspeaker cables to the amplifier. These binding posts are marked “+” and “-“ above the posts and “SPEAKER” in between the posts. For example, if you are connecting the Stereo amplifier to the left channel speaker, you should take the speaker cable connected to the left speaker and connect it to the amplifier’s “LEFT CHANNEL SPEAKER” binding posts. First, loosen

the binding posts on the amplifier. Take the red connector from the speaker cable and connect it to the “SPEAKER” binding post marked “+”. Take the black connector from the speaker cable and connect it to the “SPEAKER” binding post marked “-“. Tighten the binding posts by hand, using a nut-driver (3/8”). Be careful not to over-tighten the posts, as you may break the connection inside the amplifier if you exert too much force on the posts.

Voltage Setting

Your power amplifier has been set by the factory to the correct voltage for the country where you made your purchase. The voltage setting should be marked on the Serial Number Badge located on the back panel of your amplifier. Check to make sure that this complies with your local voltage rating before plugging in and turning on your amplifier.



Your amplifier is shipped with a power cord that matches the requirements of your country. If you need a replacement and you are not sure what the appropriate cord should be, consult your authorized VTL dealer or the VTL factory customer support department.

Power Source for your Amplifier

Your *ST-85 Stereo* power amplifier is a high-performance, high power amplifier capable of outputting up to 85 watts per channel. To assure that you can operate your power amplifier under the best conditions for the optimal results, you should plug the unit directly into a wall AC outlet, preferably one separate outlet for each unit. Do not plug your amplifier into a light extension cord or into the back of another component. This will starve the amplifier of current and significantly impact the performance of your system.



See the chapter on Specifications for the power consumption requirements of your amplifier.

Operating the Amplifier

Powering your system on

After you have properly connected your loudspeakers to your power amplifiers and all your source components and the power amplifiers to the preamplifier you are ready to power your system on.

1. If you haven't already done so, visually (by looking through the cage vent holes) ensure that all the tubes inside the VTL amplifier are properly seated all the way into their sockets. Make sure that the power amplifier is not powered on at this stage by either disconnecting it from the AC source or turn the power on switch on the front panel of the amplifier to the "off" or "0" position.
2. Power on the source component(s) you intend to use for your listening session
3. Power on your preamplifier. Make sure that your preamplifier is either in the mute state or turn its volume knob to the zero position.
4. Using the power cord which comes with your amplifier, connect the one end of the power cord to the "AC POWER" connector on the bottom angle of the back of the amplifier. Connect the other end of the power cord to an electrical outlet directly into a wall socket.
5. Turn on the power amplifier in your system. The power-on switch is located on the right hand corner of the amplifier's front panel. When the unit is powered off, the switch points in the "0" position. Clicking the switch once turns on the unit and the switch is in the "1". There is a green power-on LED to the left of the front panel. The LED light should be on when the system is properly powered on.



ZCaution: When you turn on your amplifier for the first time, watch the tubes while they warm up and observe if any of them goes into an exceptionally bright red glow on the plate of any of the tubes. Turn the system off immediately and refer to your authorized VTL dealer or the VTL factory service dept. if this happens. This glow may indicate a defective tube that needs to be replaced.

ZCaution: If powering on the system using the above steps results in tripping a circuit breaker in your house, or blowing a fuse on the amplifier, then turn off the power amplifier and the rest of the system immediately. Find the fuse box and turn the circuit on again to restore power to your house. Contact your VTL authorized dealer or the VTL factory customer support department immediately so that they can help you resolve this problem.

Ground Loop Hum

If you get a ground loop hum from your stereo system after installation and turn on you should immediately turn off the amplifiers and consult your VTL dealer or the VTL factory. Under no circumstances should you attempt to lift or defeat any grounds on electrical equipment plugged into the AC, as these grounds are installed for your and the equipment's safety, and an ungrounded component can present an extremely hazardous

condition and is illegal under most electrical safety codes. For your own safety please refer all questions of this nature to a properly trained service technician.

Powering the system off

1. When you're done listening to your system always turn the amplifier off first. Locate the "Power On" switch on the lower right hand side of the front panel of the amplifier. Turn the switch to the "0" position. The amplifier should now be in powered-off state, and the "Power-on LED" on the left of the front panel should be extinguished.
2. Wait at least 20 seconds after the amplifier is powered down before you proceed to turn off the other components in your system
3. Turn the preamplifier and source components off, if you prefer to keep these off when not in use.

Tetrode-Triode Switching

Your VTL power amplifier gives you a choice of listening to your system in tetrode mode or in triode mode. In tetrode mode, your amplifier is capable of delivering up to 85 watts per channel. This mode of operation is most suited to music that requires a wide dynamic response and lots of bass punch. Triode mode for the ST-85, operating at approximately 40 watts per channel, is most suited for vocal and small instrumental ensembles. In this mode, you will experience the delicacy, detail, and intimacy of the music in its very best form.

→Caution: you must power off the amplifier first before changing the tetrode-triode setting.

After the amplifier is powered off, look for the switch marked "Tetrode Triode" in the back of the amplifier. Flip the switch in the direction as indicated by the markings.



Wait for at least five minutes to allow the capacitors to drain its charge and power your amplifier back on again. Your amplifier should now be operating in the mode you specified.

Bias Checking and Setting

The idle (or quiescent) draw for the output tubes has been factory preset for approximately 27 mA for each tube, and should be re-set upon initial installation into your system. This setting should only be performed by someone trained in this procedure, as it requires removal of one of the covers that will expose potentially hazardous voltages which are present in the unit. Do not attempt to undertake this procedure yourself as you could be injured. The idle current of the tubes will fluctuate slightly over time at a rate that is dependent on the usage of the unit. We recommend that the bias setting should be checked on all the tubes after every 1000 hours of listening (or once per year.) Using your amplifier with incorrect bias settings will result in poor performance and a shortened life-time for the tubes.



There is a fuse on the back panel of the amplifier that will protect the rest of the circuitry in the event that a tube draws excessive current. If the fuse blows then you should immediately turn the amplifier off and contact your authorized VTL dealer or the VTL factory customer support department before attempting to turn the amplifier back on again. The symptom for this fuse blowing is either a condition where all the tubes appear to be lit but with no sound coming out of the amplifier, or a tearing sound coming from your speaker if the fuse blows while the amplifier is playing music. This sound will not damage your loudspeakers as the amplifier is



losing power while the fuse is blowing, and its level is not changed by the volume control position of the preamplifier.

Caution: Bias checking and setting on all tubes must be performed every time a tube is replaced in an amplifier.

For checking the bias you should take the unit and this procedure to your authorized VTL dealer and ask them to check the bias for you.

Notes for the service technician:

Bias measurements are preferably taken with a digital multimeter equipped with the auto-ranging feature. If you don't have such a meter you can purchase one at a local electronics supply store such as Radio Shack. The Radio Shack catalog numbers for usable multimeters are: 22-166, 22-167, 22-163, 22-174 or even 22-179.

Use the following procedures to measure and adjust the bias setting:

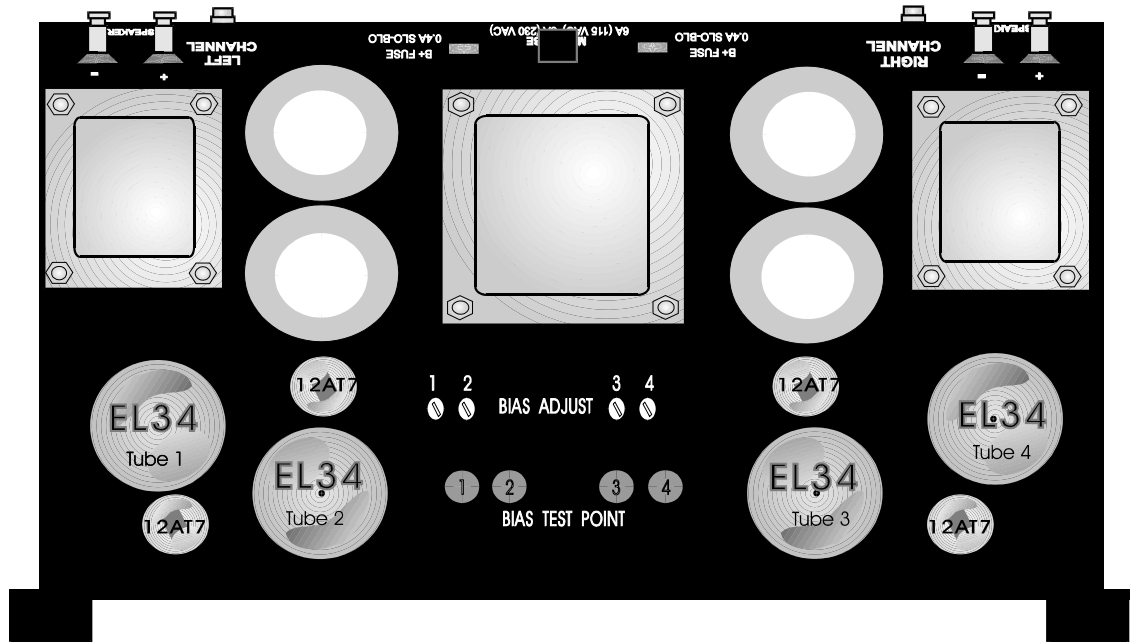
1. Make sure that the amplifier is powered off. Remove the protective metal cage of the amplifier, and make sure that there is sufficient room around the amplifier for you to access the bias measurement points going across the front of the amplifier. Set the multimeter for resistance measurement (ohms). (Consult the owner's manual of the multimeter to make sure that you have used the correct settings.)
2. Connect the negative (black, “-“) probe from the multimeter to the negative (“-“) speaker binding post of the amplifier.
3. Consult the following figure for the locations of the bias measurement points on the amplifier's top deck. Insert the positive (red, “+“) probe of the multimeter into each bias measurement point. The resistance reading on each point should be 10 ohms, within a 10% range. If the resistance reading is outside the acceptable range, please consult the VTL factory customer service department immediately. Repeat the measurement procedure for all 4 bias measurement points.
4. Remove the multimeter probes from the amplifier. Check to make sure that the amplifier is connected to a loudspeaker or a load resistor. Put the preamplifier in the mute state (or turn the volume down) to make sure that no signal is coming from the preamplifier. Power on the amplifier and let it warm up for about 10-15 minutes so that the tubes become stabilized.
5. Change the meter setting to measure DC voltage. Insert the negative probe (black) from the multimeter into the negative speaker binding post of the amplifier fitting it into the post where the speaker cable is connected. Insert the positive probe into the bias measurement point of each tube going from the #1 point to #4. The reading on the multimeter should stabilize after a second or two and indicate a reading between 275 to 300 millivolts DC (0.275 to 0.300 Volts.) This reading may fluctuate a little due to variations in the AC lines. It is not unusual for a 120V rated AC line to vary between 115V and 122 V.
6. Caution: If the voltage reading is 50 millivolts or more below or above the acceptable range then adjust the trimpot in the direction required and ensure that the reading is

changing. If the reading does not respond or continues to climb rapidly, or fluctuates with large swings back and forth then you should turn off the amplifier immediately and contact the VTL factory service department for assistance.

7. In general a 10 - 15% variation around the 275-300 millivolts range is an acceptable bias measurement. When the measurement is outside this range, you will need to adjust the bias setting by using the following procedures:
 1. Keep the positive probe from the millimeter in the same measurement point where you found the out of range bias reading. Locate the bias adjustment point whose number corresponds to the bias measurement point. See Figure 2 for the locations of the measurement points.
 2. Insert a 1/8" flat tipped screwdriver (with a plastic shaft or a properly insulated handle) into the bias adjustment trimpot which corresponds to the out of range measurement point. Rotate the screwdriver slowly to see the changes on the multimeter reading. Try rotating the screw in both directions to see the effect of the change. Adjust the setting of the bias to the proper range, i.e. 275 to 300 millivolts DC.
 3. After you've completed the bias adjustment changes, it is a good idea to go back and check the bias measurements for all the other tubes since changes made to one tube will slightly affect the setting of the others.
 4. Place the amplifier's protective cage firmly back onto the amplifier after you are satisfied that the measurements are stable.

Caution: If your observations do not conform to the above instructions, or if you do not feel confident about performing the bias procedures yourself, please consult with the VTL factory service department. Improper setting of the bias will affect the current draw of the output tubes and affect the performance and lifetime of the tubes.

Top view and Bias Measurement points of the ST-85 Amplifier



ST85 TOP VIEW
(PROTECTIVE COVER REMOVED)

Care and Maintenance of your VTL Amplifier

Break In Period

Your VTL amplifier is a pure tube product designed to give you the continued optimum performance over a long time period. Even though the amplifier has undergone a burn-in cycle in the VTL factory, the tubes and circuits will require further usage and burn-in to reach maximum performance. During the first 100 hours of usage the amplifier will undergo noticeable improvements in sound.

Power-on Period

We recommend that your amplifier should be powered-off when you are done with your listening session. Leaving your amplifiers running idle when you are not listening to music will be a waste of electricity as well as unnecessary usage of the tube life.

Tube Types

The VTL ST-85 Stereo amplifier uses a total four EL34 tubes for the output stage and four 12AT7 tubes for the input and driver stages.

Tube Life

Your VTL amplifier has been designed to ensure long tube life. Tube replacement need not be considered until after approximately 3000 hours of use (roughly 3 to 4 years depending on your listening requirements.) As the tubes age beyond their peak performance they begin to lose their ability to provide full power. This usually results in some loss of control in the bass and a general softening of the sound in the upper frequencies.

We recommend a complete replacement of all tubes in your amplifier at that time, which will restore it to a “like new” sound quality. Your VTL dealer or VTL factory service department will be happy to assist you with the re-tubing process.

Note: use only tube types and tube brands that are recommended by VTL. VTL specified replacement tubes are available from your authorized VTL dealer or the



VTL factory service department. Any damage incurred to units which use non-VTL approved tubes will not be covered under the warranty.

Changing Tubes

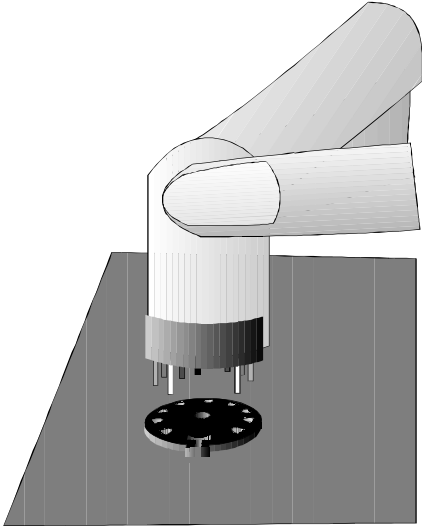
Do not attempt to change tubes yourself. Contact your authorized VTL dealer or the VTL factory service department so that this service can be performed by a trained technician. You will need to take the unit and this procedure to your dealer for them to perform this procedure and the corresponding bias procedure properly.

Notes to the Service technician:

Be sure to only touch the tubes themselves, and do not allow any part of your body or hanging jewelry to come into contact with any part of the circuit inside the unit.

1. Diagnose the tubes: If you are not undergoing a complete retube for the entire amplifier, then you must first decide how many tubes and which tubes should be changed. Use the bias checking procedure as documented in the *Getting Started* section of this manual to find out how to measure the bias setting of the tubes and to determine whether they are within the acceptable range. For example if you find out from the bias measurements that tube #1 and #3 are fluctuating frequently and they are above or below the acceptable range this may indicate that a replacement of these two tubes is necessary. A full power test of the amplifier may need to be undertaken to ensure that all power tubes are conducting equally.
2. Power off the amplifier: To change tubes in this amplifier you should first power the unit down, **unplug** the unit from the wall outlet and disconnect the amplifier from the rest of your system. Let the amplifier stay power-off for at least 15 minutes before you start working with it. Make sure the tubes are cool before you touch them. Using a Philips #2 point screw driver remove the protective cage from the unit by loosening the two screws from the side of the amplifier. Carefully remove the cover and the screws and store them in a safe place.
3. Removing Tubes: Locate the tube you need to remove and hold onto the upper portion of the tube towards its tip. Gently rotate and rock the tube with your fingers to loosen it from its socket until its pins are completely disengaged from the socket. Take the tube out of the unit.

1. Plugging in a new tube: Hold onto the upper portion of the tube towards its tip. Lower the



tube onto the socket, making sure that the pins from the tube matches the holes in the socket. There are either two pins on the tube that are spaced at a wider distance from each other than the rest of the pins (9 pin miniature tubes), or there is a locating keyway in the middle of the tube (8 pin octal tubes). Make sure that these locators go into the side of the socket that matches. Press the tube firmly into its socket, using a gentle force and a slight “rocking” motion. When the tube is properly and completely inserted into the socket it should be firmly implanted and does not give in to any movement at all when you try to rock it.

into the opened amplifier box, making sure that the cover is put on in the correct front and back position. Locate the screws that were removed from the cover and put them back in the correct holes. Tighten all screws to make sure that the cover is securely fastened to the unit.

2. Replacing the protective cage: Lower the amplifier’s cover chassis slowly back

Changing the AC and B+ Fuses

The B+ fuse for your amplifier is rated at 0.5A fast acting ceramic. There is also one primary mains fuse rated at 6A Slo Blo (100/120Volt AC) or 3A Slo Blo (220/240 Volt AC) ceramic. The B+ fuses are housed in two holders located on the back panel of the amplifier, and the mains fuse is housed in a separate holder also located on the back panel of the unit. To change either fuse make sure the unit is powered off, and disconnect the AC power cord from the unit. Move the amplifier so that you can work with the panel in the back. The type of fitting used for the fuses is called a bayonet fit, which describes the action needed to remove the fuse cap. Locate the appropriate fuse holder and to loosen it turn the screw head approximately one quarter of a turn in a counter-clockwise direction while pressing inwards. The fuse cap should spring out from its housing with the fuse held inside the cap. Take the fuse out, and replace it with a new one, and insert the fuse cap back into the holder, pushing it downward while turning it in the clockwise direction to lock it in place.

WARNING: For continued protection against fire hazard only replace the fuse with the same type and rating as was originally specified for the amplifier. If you have problems locating the correct fuse contact your VTL dealer or the VTL factory service department.



Cleaning

Your VTL amplifier should be dusted occasionally with a damp non-abrasive cloth. You should not use any solvents for cleaning the front panel, as this can damage the lettering and the finish. It is recommended that you use a contact cleaner such as Pro-Gold on the input and output connectors regularly to ensure optimum sound and proper signal conducting capability.

Transporting ST-85

If you should ever need to ship your amplifier, pack the unit with the original carton and foam. Contact your VTL dealer or the VTL factory if you need replacement packing material.

Specifications

ST-85 Stereo power amplifier

Vacuum Tube Complement	4 x EL34, 4 x 12AT7
Output Power	60 watts per channel
20 Hz – 20kHz, into 5 ohm load	
T.H.D. 20 Hz – 20 kHz @ 125W	less than 3%
T.H.D. 20 Hz – 20 kHz @ 60W	
Input Sensitivity @ 85 W	0.680 V
Input Impedance	100K Ohms
Optimum Load Range	2 - 8 ohms
S/N Ratio @ 85W	-95dB, 120 Hz
Power Consumption	Idle = 140 W Full Power = 500 W
Primary Mains Fuse Rating	100/120V = 6A Ceramic Slo Blo 220/ 240V = 3A Ceramic Slo Blo
B+ Fuse Rating	0.5A fast acting ceramic
Dimensions	W = 16 inches (40cm), D = 12 inches (30cm), H =7 inches (18 cm)
Weight	45 lbs (20.5Kg) {total 55 lbs (25 Kg) packed}

Warranty

Your VTL amplifier/preamplifier is covered by a limited warranty against defects in materials and workmanship for a period of 90 days from date of purchase by the original purchaser only when purchased from an authorized VTL dealer only. A further optional limited non-transferable five-year warranty is available to the original purchaser only upon proper registration of ownership within 30 days of date of first purchase. The warranty period begins on date of first sale to the end user, or one year after shipment from the VTL factory, whichever is the earlier.

Proper registration is made by filling out and returning to the factory the warranty card attached to this general warranty statement, along with a copy of the original sales receipt as proof of the original date of purchase, within 30 days of purchase. Only one registration card is issued with each unit. If the warranty registration card has already been removed then this is not a new unit, and is therefore not warranted by the factory. If you believe this to be a new unit then please contact the factory with the details of purchase.

This warranty is provided by the dealer where the unit was purchased, and by VTL Amplifiers Inc. Under the terms of the warranty defective parts will be repaired or replaced without charge, excepting the cost of tubes. A six-month warranty on tubes is available with the correct recording of the serial number of the preamplifier on your warranty registration card and mailing it with your purchase receipt to VTL.

If a VTL product fails to perform properly under the above warranty then the purchaser's sole remedy shall be to return the product to the authorized VTL dealer or to VTL Amplifiers Inc, where the defect will be repaired without charge for parts and labor. The product will then be returned via prepaid, insured freight, method and carrier to be determined solely by VTL Amplifiers Inc. All returns to the factory must be in the original packing and accompanied by a Return Authorization, (new packing will be supplied for a nominal charge if needed), accompanied by a written description of the defect. This must be shipped to VTL Amplifiers Inc via insured freight at the customer's own expense. Charges for unauthorized service and transportation costs are not reimbursable under this warranty, and all warranties, express or implied, become null and void where the product has been damaged by misuse, accident, neglect, modification, tampering or unauthorized alteration by anyone other than VTL Amplifiers Inc.

This warranty applies only to units used in residential non-commercial use. The warrantor assumes no liability for property damage or any other incidental or consequential damage, whatsoever which may result from failure of this product. Any and all warranties of merchantability and fitness implied by law are limited to the duration of the expressed warranty. All warranties apply only to VTL products purchased and used in the USA.

Warranty Registration

Warranty registration for VTL products is valid in the USA only. International VTL customers should consult the local VTL importer regarding product registration and warranty procedures.

To obtain valid US warranty service, please fill out the enclosed VTL Warranty Registration card and mail it together with a **COPY OF THE ORIGINAL BILL OF SALE** to the following address within the first thirty days of purchase:

**VTL Warranty Registration
4774 Murrieta Street, Suite 10
Chino, CA 91710
USA**

To help you keep a record of the serial number and purchase information, please enter the following information into this manual.

Product Model Number: _____

Serial Number: _____

Purchase Date: _____

Authorized Dealer: _____

Service Notes

Date	Service	Initials
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____