

# ADJUSTMENTS

Having read the foregoing instructions on the functions and connections of your newly acquired QS-500 and proper speaker positions, you are now almost ready to step into the immensely richer world of 4-channel stereo. Before you step out, however, make the following adjustments and you'll save yourself a lot of trouble in the future.

## Setting for Optimum Input Signal Levels

1. Turn down slightly the volume controls of your QS-500 and front-channel amplifier, and turn the Level Set Control of your QS-500 fully counter-clockwise. Then turn on their power switches.
2. Turn on the tape monitor switch of your front-channel amplifier.
3. Set the unit's three balance controls to their respective center positions.
4. Operate your front-channel amplifier and play a record just as you would do in 2-channel sound reproduction.
5. Turn the Level Set Control clockwise gradually, and you'll notice the four VU meter pointers begin to swing. Leave the control where the front-channel VU meters swing as far as the red 1 or 2 mark at the loudest passages of the music. The Level Set Control, consisting of two friction-coupled knobs, permits separate adjustment of the left and right channel input signal strengths, should they be out of proportion with each other.

**NOTE:** If your radio tuner and tape decks also have provisions for adjusting their output signal levels, match them to the output level of the phonograph (or turntable or record changer). This will save you the trouble of readjusting the Level Set Control (or Volume Control) every time you change the program source.

## Adjusting Volume Balance between the Front/Rear Channels

1. Set your QS-500's three balance controls at their respective center positions.
2. Turn the unit's Volume Control all the way up to the maximum, turning down the front-channel amplifier's volume control simultaneously so as to obtain the loudest volume you can tolerate in daily listening.
3. Now turn down your QS-500's Volume Control to the usual listening level, and then adjust the Rear Volume Control to achieve optimum balance between the front and rear channels.
4. Once the above adjustments are finished, use the QS-500's Volume Control to make any temporary volume adjustments in the course of daily listening.

## Adjusting Volume Balance between the Front Left/Right Channels

Adjust the volume balance between front left and right channels by fixing the balance control of the front-channel amplifier in its center and then manipulating the QS-500's Front Balance Control.

# OPERATIONS

## Reception of FM Stereo Broadcasts/ Playing Records

Operating your QS-500 to receive FM stereo broadcasts or play records is very simple. Just turn on the tape monitor switch of your front-channel amplifier (or set it to "PLAYBACK"), and the rest is the same as 2-channel reproduction. Make any volume and/or balance adjustments with the appropriate controls on the QS-500. Use other controls on the unit for the best 4-channel stereo effect, following instructions on pages 3~5.

## Recording/Playing a 2-Channel Stereo Tape

Two-channel stereo tape recordings can be made and reproduced by the use of a 2-channel stereo tape deck connected to the QS-500. If the tape deck is a 3-head type (with separate record and playback heads), it is possible to record a tape and reproduce it simultaneously for the purpose of monitoring.

### Recording

1. Set the function selector control of the front-channel amplifier to the program source to be recorded—such as phono, FM, microphone, auxiliary input, etc.
2. Start the tape deck in the recording mode.

**NOTE:** Push down the 2-Channel Tape Monitor Switch of the QS-500 to "PLAYBACK" if you want to monitor the recording as you make it.

### Playback

1. Push down the 2-Channel Tape Monitor Switch of the QS-500 to "PLAYBACK."
2. Start the tape deck in the playback mode.
3. Adjust the playback volume control of the tape deck so that the front-channel VU meter pointers of the QS-500 will swing to the red 1 or 2 mark at the loudest passages of the music being reproduced.
4. Use the various controls on both the QS-500 and front-channel amplifier to obtain the best 4-channel stereo effect for the type of music being reproduced.

## Recording/Playing a 4-Channel Stereo Tape

You can record the 4-channel stereo sound from the QS-500 into a 4-channel stereo tape deck connected to the QS-500. And of course, a 4-channel stereo tape recording can be reproduced through the QS-500. If the tape deck is of a 3-head type (with separate record and playback heads), it is possible to record a tape and reproduce it simultaneously to check on the quality of the recording.

### Recording

1. Set the function selector control of the front-channel amplifier to the program source to be recorded.

2. Turn the Function Selector of the QS-500 to a position best suited to the type of the program source.

3. Start the tape deck in the recording mode.

**NOTE:** Push down the 4-Channel Tape Monitor Switch of the QS-500 to "PLAYBACK" if you want to monitor the recording as you make it.

### Playback

1. Push down the 4-Channel Tape Monitor Switch of the QS-500 to "PLAYBACK."

2. Start the 4-channel tape deck in the playback mode.

3. Adjust the playback volume control of the tape deck so that the front-channel VU meter pointers on the QS-500 will swing to the red 1 or 2 mark at the loudest passages of the music being reproduced.

4. Use the various controls on both the QS-500 and front-channel amplifier to obtain the best 4-channel stereo effect for the type of music being reproduced.

# SIMPLE MAINTENANCE HINTS

## If the Rear-Channel Sound Is Shaky

You may sometimes notice the sound from the rear speaker systems is shaky when that from the front speaker systems is not. Probable causes of this condition include the following:

1. The record is damaged or worn out.
2. The cartridge stylus is damaged or has dust on it.
3. The stylus pressure of the cartridge is either too light or heavy.
4. The cartridge itself is faulty.
5. The level of the input signals fed to the QS-500 is too high.
6. The sound in the record or tape is distorted to begin with.
7. The stereo separation of the FM tuner is poor, or the FM antenna input is insufficient and the broadcast signal contains considerable noise.

## If the Separation of the Front/Rear, Left/Right Channels Is Poor

While your QS-500 is designed so that the sounds from the four speaker systems blend with one another to form an integrated sound field, the separation of the front and rear channels, and the left and right channels, may sometimes, be disturbingly poor for one of the following reasons:

1. The program source itself is poor in stereo separation.
2. The left and right channels of the program source are not in phase.
3. The left and right channels of the program source differ in output voltage.

## To Connect the Front-Channel Amplifier, etc.

Use the pin plug-equipped shielded cords supplied with your QS-500 to connect the front-channel amplifier. If you should choose to use other cords for some reason, they should be relatively thick and have a minimum of distributed capacity. And try to keep them as short as possible. Observe the same cautions when connecting tape decks.

## About the Place of Installation

The bonnet of the QS-500 is designed so that any heat radiated inside will escape through it. Due care

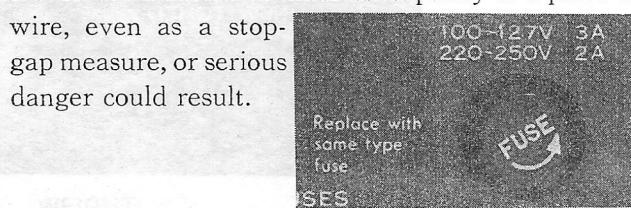
should be taken of the dissipation of such heat if you wish to place something on top of the QS-500 or put the unit inside a closed cabinet, etc. Above all, avoid placing it where it may be exposed to the direct sunlight.

## Should the Power Fuse Blow

If the VU meters fail to glow and the QS-500 remains dead when you turn on the Power/Rear Speakers Switch, it is possible that its power fuse has blown.

If this happens, disconnect the power cord from the AC outlet and examine the power fuse on the unit's rear panel. If you find it blown, find out the cause of the blowout and eliminate it, then replace the blown fuse with a new glass-tubed fuse of the rated capacity (3-ampere for 100 to 127 volts, 2-ampere for 220 to 250 volts).

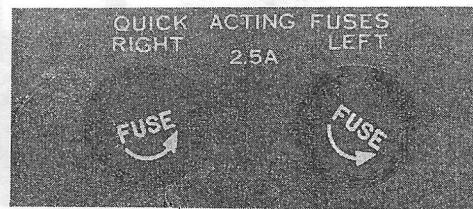
Never use a fuse of a different capacity or a piece of wire, even as a stop-gap measure, or serious danger could result.



## About the Quick-Acting Fuses

If the VU meters of the QS-500 illuminate but no sound is heard from both or either of the rear speaker systems, examine their connections and operation once. If nothing is wrong with them, it is possible that both or either of the quick-acting fuses protecting the power transistors has blown.

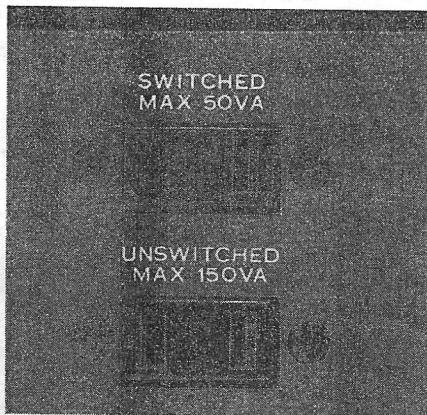
If this happens, disconnect the power cord from the AC outlet and check the two quick-acting fuses on the unit's rear panel. If you find both or either of them blown, discover and eliminate the cause of the blowout, and replace it with a new 2.5-ampere quick-acting fuse supplied. Probable causes of the blowout include excessively large input signals and a short-circuit at the speaker terminals.



# SIMPLE MAINTENANCE HINTS

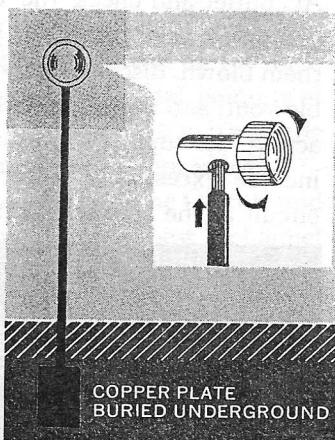
## AC Outlets

Of the two AC outlets provided on the rear panel, the one marked SWITCHED is controlled by the front-panel Power/Rear Speakers Switch. The other, marked UNSWITCHED, is always 'live' and independent of the Power/Rear Speakers Switch. Their power capacity is limited, and it is prohibited to connect equipment with a bigger power requirement. Before connecting any equipment, make certain its power requirement does not exceed the power capacity limit.



## Grounding

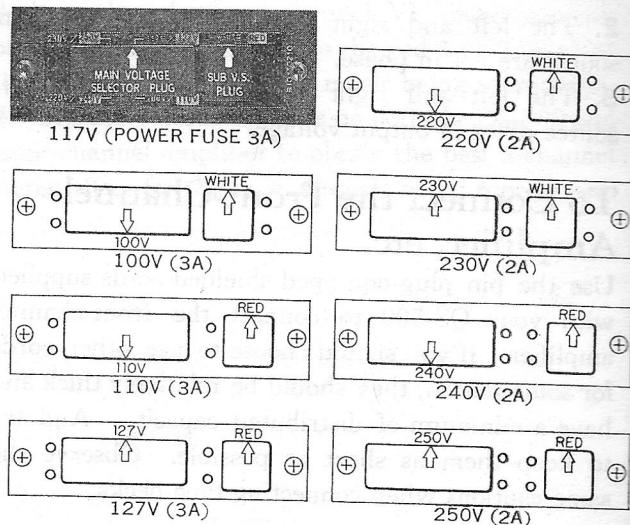
Any noise picked up by the connecting cords may be effectively grounded by connecting a piece of PVC (polyvinyl chloride) or enameled wire to the rear-panel grounding terminal on the QS-500's rear panel, attaching a small copper plate or carbon rod to the other end and burying it deep underground. The grounding leads of other equipment in the system may be connected to the same terminal to ground the entire system at once.



## Voltage Adjustment

So that you may operate your QS-500 in any part of the world, it is equipped with Voltage Selector Plugs. As it is set to the correct power supply voltage of your area in our factory prior to shipment, there is no need to touch it. However, should you move after purchasing the unit and find the power supply voltage is different, simply reset the plugs as follows:

1. Remove the two screws securing the name plate on the unit's rear panel, then remove the name plate.
2. Set the arrow mark on the Main Voltage Selector Plug to the required voltage: 100, 110, 117, 127, 220, 230, 240 or 250 volts.
3. If the required voltage is indicated in red, set the arrow mark on the adjacent Sub Voltage Selector Plug to "RED." If it is indicated in white, however, set that arrow to "WHITE."
4. Change the power fuse also whenever the power supply voltage has changed. For 100-127 volt operation, use a 3-ampere glass-tubed fuse. For 220-250 volt operation, use a 2-ampere version of such fuse.
5. Where the power supply voltage considerably fluctuates, the Voltage Selector may be reset to avoid unpleasant side effects of such fluctuation. Reset it to the voltage immediately higher than the peak of the fluctuation.



# SPECIFICATIONS/ACCESSORIES

## SYNTHESIZER SECTION

### INPUT LEVEL

RATED INPUT 2-CHANNEL: 0.15V (50kΩ)  
MINIMUM INPUT 2-CHANNEL: 0.05V (50kΩ)  
TAPE MONITOR 2-CHANNEL: 0.15V (50kΩ)  
4-CHANNEL: 0.775V (50kΩ)

### OUTPUT LEVEL

RATED OUTPUT (0 VU) 4-CHANNEL:  
0.775V (to Front Amplifier)

MAXIMUM OUTPUT 4-CHANNEL:  
5.0V (to Front Amplifier)

RECORDING OUTPUT 2-CHANNEL: 0.15V  
4-CHANNEL: 0.775V

### FREQUENCY RESPONSE

REAR CHANNEL: 20 to 20,000Hz +1, -2dB

### SYNTHESIZATION OF REAR CHANNEL SIGNAL:

1 NEW SANSUI'S MATRIX SYSTEM

2 SANSUI'S PHASE MODULATION SYSTEM

### REAR CHANNEL PHASE MODULATION:

Max. 180 degrees at 10,000Hz

HUM AND NOISE(IHF): less than -70dB

## POWER AMPLIFIER SECTION

### POWER OUTPUT

MUSIC POWER (IHF): 120W at 4 ohms load  
90 W at 8 ohms load

CONTINUOUS POWER: 40/40W at 4 ohms load  
33/33W at 8 ohms load

### TOTAL HARMONIC DISTORTION:

less than 0.5% at rated output

### INTERMODULATION DISTORTION:

(60Hz:7,000Hz=4:1 SMPTE method)  
less than 0.5% at rated output

POWER BANDWIDTH (IHF): 20 to 40,000Hz

CHANNEL SEPARATION: better than 60dB

HUM AND NOISE (IHF): less than -80dB

LOAD IMPEDANCE: 4 to 16 ohms

DAMPING FACTOR: 24

### SEMICONDUCTORS:

Transistors: 37 Diodes: 20 IC:1 Modules: 7 Zener Diodes: 2

### POWER REQUIREMENTS

POWER VOLTAGE: 100, 110, 117, 127, 220, 230,  
240, 250V 50/60Hz

POWER CONSUMPTION: 205W (max. signal)

DIMENSION: 382mm (15 1/16")W, 167mm (6 7/16")H  
337mm (13 5/16")D

WEIGHT: 10kg (22 lbs)

\* Manufacturer reserves right to change design and/or specifications  
without notice for purpose of improvement.

## About Servicing

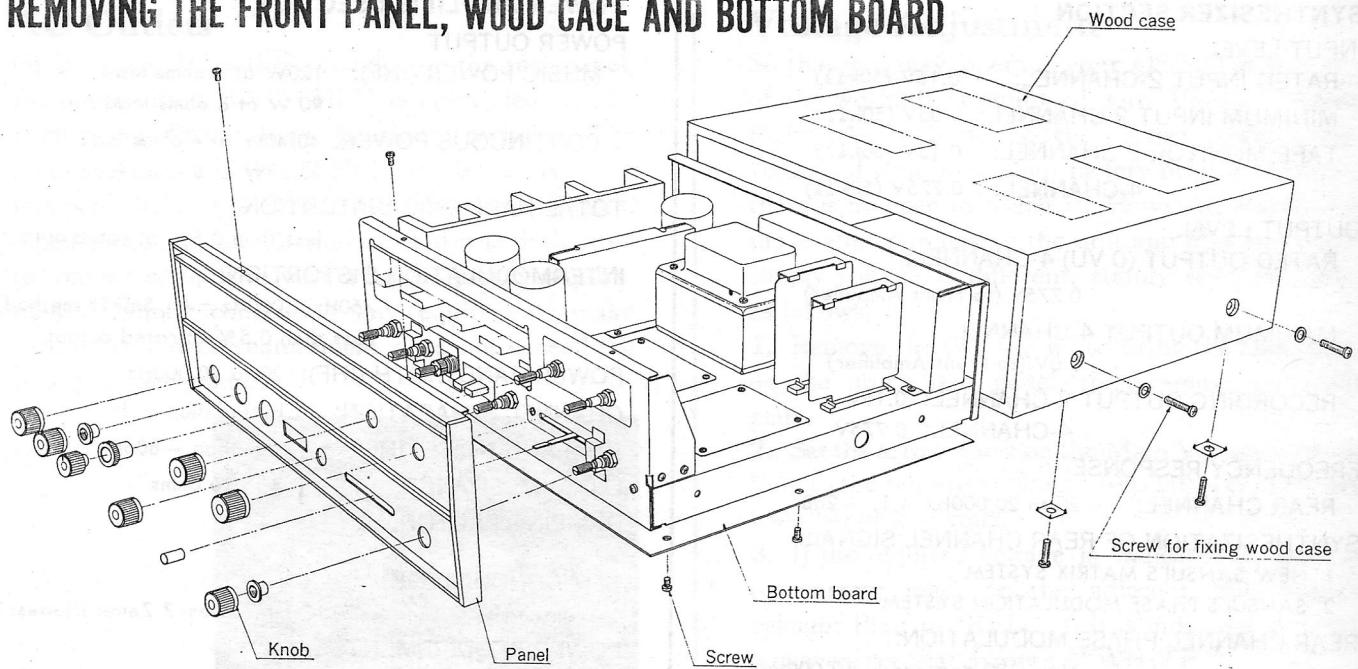
If anything should ever go wrong with your QS-500 or if you have any question about it, please contact the Sansui dealer from whom you purchased it or your nearest Authorized Sansui Service Station.

## ACCESSORIES

1. OPERATING INSTRUCTIONS  
AND SERVICE MANUAL ..... 1
2. OPERATING SHEET ..... 1
3. CONNECTING CORDS WITH PIN-PLUGS ..... 4
4. POLISHING CLOTH ..... 1
5. QUICK ACTING FUSES ..... 2
6. BUTTERFLY BOLTS ..... 2
7. WASHERS ..... 2

# DISASSEMBLY PROCEDURE/TEST POINTS

## REMOVING THE FRONT PANEL, WOOD CACE AND BOTTOM BOARD



## TEST POINTS

