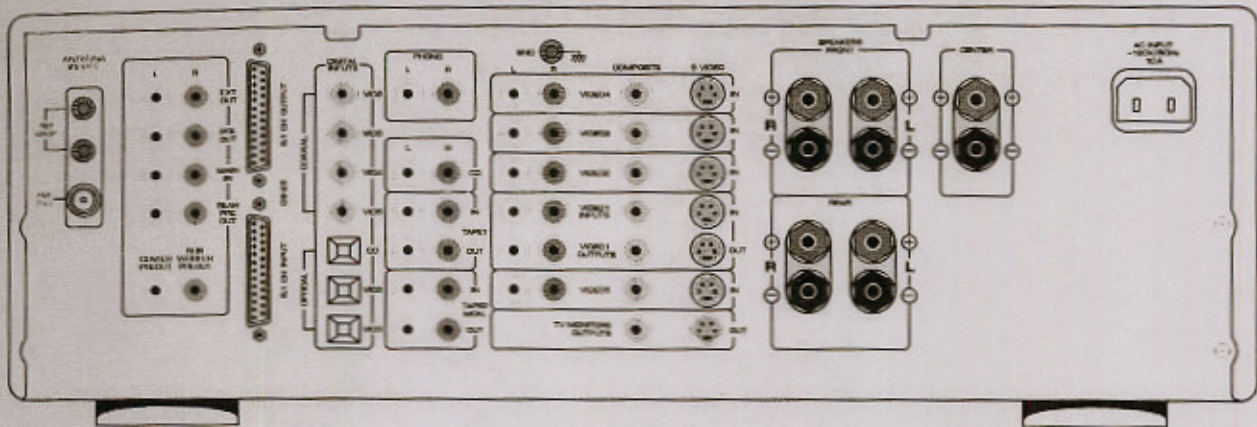


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Part # 913-015-00 Rev A

CARVER



# SFS-40 PRIVATE STEREO TUBE AMPLIFIER

## OPERATING MANUAL

We at Sonic Frontiers are sure that you will derive many years of listening pleasure with your new SFS-40 Stereo Tube Amplifier. This brief operating manual contains important information regarding the operation and care of the amplifier, so be sure to read this manual carefully and follow these simple instructions in order to keep it looking, operating and sounding its best!

## VACUUM TUBES

### Handling

We suggest that you do not handle the large power tubes with your bare hands or fingers as skin oils deposited on the glass surface can "leach" through the glass envelope and cause the tube to become "gassy." In other words, your tube life may be shortened unnecessarily. Use a paper towel or one of the cotton gloves (supplied) instead. This is also the recommended procedure for handling the small input tubes. Also, check to be sure that none of the 6DJ8 tube pins are bent when you install them.

### Installation

Whenever you remove or insert the input or power tubes into their sockets, handle them gently and do not force them into the sockets. Instead, "rock" them slightly as you slowly push them into place, making sure that they are properly seated. Over-enthusiastic "rocking" may snap-off the moulded keying lug (orientation pin) at the base of the tube (not covered under warranty)!

### Recommended Tube Types

Your SFS-40 amplifier is supplied from the factory with 6DJ8 tubes for the input and driver stages (installed into the small sockets). You may also use tubes of the following designations: ECC88, 6922, or 7308/E188CC.

The power tubes are factory supplied matched pair EL34 (mil-spec, sometimes called E34L's) type but you may also use E34L's, 6CA7's or 6550/6550A/KT88/KT90/KT99a types. Although not essential, we recommend the use of matched pairs of power output tubes for lowest distortion.

### Tube Biasing

This is a simple yet important function of the front panel meter, the selector switch and the four slotted adjustment controls protruding above the top surface of the chassis.

It is essential that the following procedures be followed before you turn on your SFS-40 amplifier.



## OPERATION

1. Connect your speaker leads and input cable on the amplifier, making sure the power switch is in the "OFF" position (down).
2. Using a long-handled slotted screwdriver, rotate all of the adjustment controls fully counter-clockwise.
3. Turn "ON" the amplifier. After approximately 5 seconds you should see an orange glow appearing inside each tube. Wait one minute, then turn the selector switch knob on the top surface of the chassis to the far left position (fully counter-clockwise). Now insert a flat bladed screwdriver into the front left bias control slot and slowly rotate the control clockwise while observing the front panel bias meter. Adjust the control until the meter pointer reads "40" on the meter scale. Now rotate the selector knob clockwise to the next position and adjust the left rear bias control for a "40" reading on the meter. Continue the same procedure for the remaining two output tubes, rotating the control clockwise. When you have adjusted all four tubes to the "40" position, return the selector knob to the middle "12 o'clock" position (the indicator mark on the knob should be pointing straight towards the back of the amp.) The first time you use the amplifier, you should recheck the bias settings on each output tube after about 30 minutes of use (when checking, please ensure that there is no signal going through the amp). Adjust if necessary. Periodic checking is needed for all future use.

Your SFS-40 amplifier is now ready for use.

**NOTE:** The "40" position on the meter scale biases each output tube for maximum sonic performance and longest tube life. The red mark on the meter scale at the "50" position indicates the absolute maximum that the EL34 type tube should be run at (running this tube type at "50" will drastically shorten the life of the tube without any redeeming sonic advantages). The "50" position can be used, however, if 6550(a), KT88 or KT90/KT99(a) type tubes are installed.

## CLEANING

The beautiful stainless steel (non-magnetic) finish of the chassis and transformer top covers will last for years. A regular dusting with a soft, non-abrasive cloth will generally keep the finish looking like new. Fingerprints may be removed with a small amount of silicon spray, such as WD-40 TM. Be sure to apply any liquid into a soft cleaning cloth, not directly onto the chassis. At no time should you allow any liquids to drop onto the amplifiers; it may run into the electronic circuitry underneath and cause damage which will not be covered under your warranty!



## TROUBLE-SHOOTING GUIDE

If at any time your SFS-40 amplifier fails to work, follow this simple checklist:

1. Make certain that the A.C. power cord is plugged in firmly at the A.C. wall socket.
2. Make sure that you have biased the output tubes.
3. Open the fuseholder. Check that:
  - A. A "slo-blo" fuse, with a rating of 2 1/2 Amp 250V (0.25" x 1.25"), is installed (or 1 1/4 Amp 250V (5mm x 20mm) for European and Asian versions).
  - B. That the A.C. power fuse is intact and has not blown.
4. If the power line fuse has blown, replace it with a same size and type fuse of the same rating (2 1/2 Amp 250V. slo-blo - 100 to 120 Volt Countries / 1 1/4 Amp 250V. - 200 to 240 Volt Countries).
5. Turn on the amplifier. If the amplifier fails to operate, turn off the amplifier, remove the four EL34/E34L power tubes (using a glove, cloth or paper towel) and turn the amp on again. If the four small 6DJ8 type tubes glow and the A.C. line fuse remains intact, it is likely that one of the four power tubes has shorted and should be replaced.
6. If the fuse blows again without the power tubes installed, then you should return the amplifier to your dealer or to a service depot for repair.

**NOTE:** Under no circumstances should you replace the A.C. power fuse with one of a higher current rating! Doing so may cause further damage to the amplifier in the event of a fault condition and will also void your warranty! In addition, your continued protection from the risk of fire or shock would be seriously compromised.

**NOTE:** The surge capabilities of slo-blo fuses from different manufacturers vary. If in doubt, replace your fuse with one supplied by SONIC FRONTIERS or your distributor.
7. If at anytime you are unable to adjust the meter pointer to read at least "35" on the meter, for any one of the four power tubes, you should replace the tube as it is nearing the end of its useful life.
8. If you experience a slight "HUM" in your system, you may have a "Ground Loop." This is caused by having more than one grounded component in your system when all these components run off the same AC circuit. To eliminate this problem, "lift the ground" (either remove the ground prong off your AC cord or use a 3-to-2 adapter plug) on one of the components, preferably a source component such as a Preamplifier. If you are still unsure, please contact your dealer for further assistance.



## **VENTILATION**

Your SFS-40 amplifier must be placed on a flat hard surface to allow proper air flow through the ventilation slots in the bottom panel. Failure to do so may result in overheating of electronic components inside the unit and possible damage to your amplifier.

## **PACKING MATERIAL**

We recommend that you retain all of the packing material and shipping boxes for your SFS-40 amplifier. They are custom designed to prevent shipping damage from occurring. SONIC FRONTIERS INC. will accept no responsibility for any damage occurring to amplifiers that are shipped in packing material other than the original SONIC FRONTIERS INC. packing material.

## **SAFETY INSTRUCTIONS**

1. **WATER AND MOISTURE** - This product should not be used near water. Do not expose this product to rain or moisture to prevent fire or shock hazard.
2. **HEAT** - This product should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances which produce heat.
3. **POWER SOURCES** - This product should be connected to an AC power source of the same rated voltage. The original shipping containers will stipulate the AC voltage this unit can operate on.
4. **CLEANING** - see previous section in this manual.
5. **SERVICING** - Do not open this product. **NO USER SERVICEABLE PARTS INSIDE.** Refer servicing to qualified service technician.
6. **NON-USE PERIODS** - The power cord of this product should be unplugged from the outlet when left unused for an extended period of time.

## **DISCLAIMER OF LIABILITY**

Under no circumstances does SONIC FRONTIERS INC. assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connect to it.

SONIC FRONTIERS INC. reserves the right to make design changes or improvements without the obligation to revise prior versions. All specifications are subject to change without notice.



## LIMITED FIVE YEAR WARRANTY

SONIC FRONTIERS INC. warrants to the purchaser that each SFS-40 Stereo Tube Amplifier is free of manufacturing defects for a period of five (5) years from the date of purchase. This five (5) year limited non-transferable warranty excludes all vacuum tubes, which we warrant for a period of 1 year. To receive this warranty, the original purchaser must mail to SONIC FRONTIERS INC. within thirty (30) days from date of purchase, the enclosed WARRANTY REGISTRATION FORM completed, along with a copy of the bill of sale from an authorized SONIC FRONTIERS dealer. SONIC FRONTIERS INC. will then validate the warranty to the original purchaser. This warranty is subject to the following conditions and limitations:

1. This warranty applies only to the original purchaser.
2. This warranty is void and inapplicable if the product has been handled other than in accordance with the instructions in the OPERATING MANUAL, abused or misused, damaged by accident or neglect or in being transported, or the defect is due the product being tampered with, modified or repaired by anyone other than SONIC FRONTIERS INC. or an authorized SONIC FRONTIERS repair depot.
3. This warranty does not cover normal maintenance.
4. SONIC FRONTIERS INC. shall not be responsible in any way for consequential or indirect damages or liabilities resulting from the use and operation of the product covered herein or resulting from any breach of this warranty or any implied warranty relating to said product.

During this period, SONIC FRONTIERS INC. will repair or replace any defective components free of charge. A Return Authorization Number is required before any amplifier is returned to our factory for any reason. This number must be visible on the exterior of the shipping container(s) for SONIC FRONTIERS INC. to accept the return.

Units shipped to us without a Return Authorization Number or without a visible RA number on the exterior of the shipping container(s) will be returned to the sender, freight collect.

Units to be repaired by SONIC FRONTIERS INC. must be sent shipping and insurance prepaid by the original purchaser in the original packing material. A returned product should be accompanied by a written description of the defect. Repaired units will be returned by SONIC FRONTIERS INC. shipping and insurance prepaid.

All other warranties or conditions either written or implied are void.



## TECHNICAL SPECIFICATIONS

Power	45 watts RMS from 20 Hz to 20 kHz 50 watts RMS at 1 kHz (40 ma. bias, 1 channel driven)
Frequency Response (1 watt into 3.5 ohms)	5 Hz to 40 kHz + 0.5 dB 4 Hz to 90 kHz - 3.0 dB
Input Impedance	100 Kohms
Input Sensitivity	.80V RMS at 1 kHz for 40 watts
Power Requirements	250 VA 50/60 Hz (Maximum)
Fuse Requirements	2 1/2 Amp 250V slo-blo - 100V to 120V Countries 1 1/4 Amp 250V slo-blo - 200V to 240V Countries
Tube Complement	2 - Matched pair EL 34/E34L      4 - 6DJ8
Dimensions	16 in. Wide x 12.5 in. Deep x 7 in. High
Weight	36 lbs. (16.5 kg) - unpacked

**NOTE:** All specifications based on the use of factory supplied tubes.