

**MANLEY**

**LABORATORIES, INC.**

# **OWNER'S MANUAL**

## **MANLEY 100/100 Stereo Integrated Amplifier**

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# INTRODUCTION

## THANK YOU!...

for choosing the Manley 100/100 Stereo Integrated Amplifier. Designed by David Manley, the 100/100 Stereo Integrated Amplifier uses only the best available components, with the shortest and cleanest signal path possible, and with the use of our own milling equipment we can provide you with an amplifier that looks as good as it sounds. For this amplifier design, we have chosen an interesting Russian KT88S output tube. The circuit and the components used have been chosen carefully after years of development and refinement for reliability, constancy and most importantly, musical, accurate, and emotional delivery of the sound. The circuit topology is similar to other designs in the MANLEY range. This amplifier is configured for ULTRALINEAR or "partial-triode" operation which achieves the seductive quality of triode operation without the inefficiency and sacrifice in power of triode operation. We emphasize big, beefy reservoir capacitors in the high voltage supplies giving plenty of instant energy for dynamic performance of transient peaks and bass performance which often exceeds that of rival solid-state amplifiers. We run high voltages on the plates of the output tubes and are thus able to run them at lower current which will result in longer life for the output tubes. Each output tube has its own bias adjust, and the procedure for adjusting each tube's current draw is described in this manual. The output transformer has been factory set in series-parallel for an optimum 5 ohm load which will drive most speakers. Other output impedances can be achieved by changing the configuration of the transformer secondary. Please contact us at the factory should you need to do this.

Thank you again, and please enjoy!

## GENERAL NOTES

### LOCATION & VENTILATION

The Manley 100/100 Stereo Integrated Amplifier must be installed in a stable location with ample ventilation. Allow a minimum of 2 inches of clearance on the top and sides of the amplifiers, such that constant movement of air can flow. Do not place amplifiers directly on high pile carpet or any other surface that will block the ventilation holes underneath the amplifiers. If you have small children or pets, you should consider placing the amplifiers out of reach or using the optional cages (covers) available as an option to prevent damage to the amplifier or damage to your small children or pets by the amplifier as the tubes do get hot during operation.

### WATER & MOISTURE

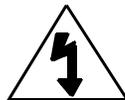
As with any electrical equipment, this amplifier should not be used near water or moisture. If liquid enters the amplifier, it must be immediately returned to your dealer for servicing.

### SERVICING

The user should not attempt to service the amplifier beyond that described in the owner's manual. Refer all servicing other than biasing and tube replacement to Manley Laboratories

### SPECIAL NOTES

Tubes may become loose during transit. Straighten and press down each tube before plugging the amplifier into the mains socket. Furthermore, NEVER touch the tubes after the amplifier has been switched on, the tubes become very hot during operation and should only be handled after the power has been turned off and the tubes have cooled.



**WARNING!**



**TO PREVENT THE RISK OF ELECTRIC SHOCK  
DO NOT OPEN THE CABINET  
REFER SERVICING TO  
QUALIFIED PERSONEL**

## MAINS CONNECTIONS

Your amplifier has been factory set to the correct mains voltage for your country. The voltage setting is marked on the serial badge, located on the rear panel. Check that this complies with your local supply.

Export units for certain markets have a moulded mains plug fitted to comply with local requirements. If your unit does not have a plug fitted the coloured wires should be connected to the appropriate plug terminals in accordance with the following code.

GREEN/YELLOW	EARTH	terminal
BLUE	NEUTRAL	terminal
BROWN	LIVE	terminal

As the colours of the wires in the mains lead may not correspond with the coloured marking identifying the terminals in your plug proceed as follows;

The wire which is coloured GREEN/YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN or GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked by the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked by the letter L or coloured RED.

**DO NOT CONNECT/SWITCH ON THE MAINS SUPPLY UNTIL ALL OTHER CONNECTIONS HAVE BEEN MADE.**

## CONNECTING YOUR AMPLIFIER

Setting up your amplifier is rather easy.

1. Carefully unpack the box. The power tubes have been removed for protection in shipping and will have to be inserted now. The tubes should be numbered from 1 to 4 and "1" should go in the furthest left socket and 4 goes into the most right socket. Align the protusion on the plastic on the tube base to the matching notch on the tube socket. Usually some slight wiggling of the tube as it is inserted helps to make slipping the tubes in easier. The tubes are numbered because the amplifier was calibrated with the tubes in those positions. If the tubes are put in the amp in random order then adjusting the bias will be necessary. Regarding handwritten numbers on the tube like 200 or 370 see the note below.
2. Connect all source components (turntable, CD, Tuner, Tape DAT, etc.) to your 100/100 Stereo Integrated Amplifier
3. Connect the hot or "+" speaker cable to the red binding post and the common or "-" speaker cable to the black binding post (See diagram 2). Ensure that the other end of the cable is connected correctly to the speaker. Tighten the binding posts by hand. If you use a nut-driver (3/8") **do not over-tighten** the posts or you may break the connection inside the amplifier.
4. Ensure that the "mains" switch on the front panel is in the "off" or "0" position.
5. Turn on Preamplifier and any source components you plan to use.
6. Plug amplifier into wall outlet.
7. Turn on the amplifier and allow it a minute or so to 'warm up' before playing any audio signal.
8. Turn up the volume and enjoy.

Those handwritten numbers on the tube (typically ranging from 150 to 500) are generated by a pre-test and batching process we do. We have a computer based tube tester that gives us the tube's bias currents after being "burnt in". The advantage is that it allows us to "batch" tubes so that the 4 we put in your amp are fairly well matched. Absolute matching is not needed because the "bias trims" take care of that plus the inevitable drift as a tube ages. Perhaps in a year or maybe 5 years you may want or need to replace 1 tube or 4. If you tell us the "number" written on the tube, we can supply you with as many tubes similarly batched. This is particularly good if you only need to replace 1 or 2 tubes.

## BIAS PROCEDURES

The Manley 100/100 Stereo Integrated Amplifier is a fixed bias system that requires very little attention. If you wish to adjust or check the bias, follow the following steps.

1. On diagram 2, which depicts the top panel of the amplifier, you can see 4 black tip jacks and 1 green tip jack. To measure the current draw of each output tube place the positive probe (red) into the black tip jack for the tube you wish to measure and the negative probe (black) in the green (GROUND) tip jack and set the meter to read 'millivolts'.
2. Each of the four (4) output tubes can have its own bias adjusted by altering its own bias adjust pot. On diagram 2, you can see the numbering sequence for the 4 output tubes, the corresponding tip jack (measurement point) and bias adjust pot.
3. The first step to setting the bias is to turn on the amplifier and ensure that there is zero signal input. Also, leave your loudspeakers connected as these provide an ideal load on the output. It is recommended that you leave the amplifier on long enough to ensure that the tubes have reached their stable current draw.
5. Place the probes in the first black tip jack (negative probes remains in the green tip jack for whole biasing procedure) and adjust the first bias trip pot (see diagram 2) until you measure 280 to 300 mV. Since you are measuring across a 10 ohm cathode resistor, this would correspond to a 28 to 30 mA bias current.
6. If you are unable to bring the bias voltage down to 280 to 300 mV on any tube then we recommend that the tube be carefully watched or replaced.
7. Follow step five with the remaining tubes. Once they are all set, your amplifier should be in perfect operation. Whenever replacing an output tube, or when retubing the unit, use tubes of the same type and quality as was fit by the factory. Watch and adjust the bias for the specific output tube or tubes you are replacing as soon as you turn on the amplifier, then check again after a half hour, and again in a few hours. Should you have any questions, or wish to purchase approved tubes from us here at Manley Labs, please do not hesitate to call.

## OPERATIONAL NOTES

### SWITCHING ON

The power switch is located on the lower left hand corner of the front panel. Push the top of the rocker switch (1) to turn on the amplifier and the bottom of the rocker to turn off the amplifier. The LED on the right side of the front panel will illuminate indicating that the amplifier is operating.

### RUNNING

It is not recommended that you leave your amplifier permanently switched on. This only wastes electricity and tube life. Your amplifier has solid state rectification and reaches peak operating condition in approximately 30 minutes.

### TUBE LIFE

As with all tubes, their quality degrades with age. This is due to cathode emission, a natural process found in all tubes. We recommend that you have your amplifier checked every 3-4 years, depending on usage, usually the amplifier will require re-tubing after this time has elapsed.

### PANEL LAMP

The lamp which illuminates the front panel insert is easily replaceable should it ever burn out. To replace it use only the same type with the same or greater voltage rating. In these amplifiers, the lamp is a FUSE LAMP STYLE 8V 0.15mA. Dimensions are 1/4" x 1 1/4". **To replace the lamp, first turn off the amplifier and unplug the power cord!**

Remove the bottom cover and locate the lamp holder which sets behind the front panel insert. Do not touch any other components inside the amplifier as high voltages may be present even after the amplifier is unplugged, sometimes for weeks! Carefully pry out the old lamp from the clips and firmly replace with the new lamp of the same type and rating. Replace the bottom cover after you are through.

## SPECIFICATIONS

Vacuum Tubes:	4 x -88S (Output), 2 x 6414 (Driver), 2 x 5751 (Input)	
Output Power	95 Watts per side @1Khz 1.5%THD, into 5 ohms	
Frequency Response, +/- .5 dB	10 Hz - 40 KHz	
Input Sensitivity	800 mV	
Input Impedance	100 KOhm	
Load Impedance	5 Ohm	
S/N Ratio @90W	-80 dB	
Power Consumption	170 Watts	Quiescent
	220 Watts	Full Power
Mains Fuse	100, 110, 120V	6 A (Slo-Blo)
	220, 240 V	3 A (Slo-Blo)
B+ Fuse	4/10 Amp. (Slo-Blo)	
Dimensions	W=19, D=14.5, H=7.5 inches	
Shipping Weight	43 lbs	

# WARRANTY

All Manley Laboratories equipment is covered by a limited warranty against defects in materials and workmanship for a period of 90 days from date of purchase to the original purchaser only. A further optional limited 5 year warranty is available to the original purchaser upon proper registration of ownership within 30 days of date of first purchase.

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. Only 1 card is issued with each unit, and the serial number is already recorded on it.

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 Manley Laboratories, Inc. Under the terms of the warranty defective parts will be repaired or replaced without charge, excepting the cost of tubes. No warranty is offered on tubes, unless:

1. a Manley Laboratories preamplifier is used with a Manley Laboratories amplifier, and
2. the warranty registration card is filled out.

In such a case a 6 month warranty on tubes is available with the correct recording of the serial number of the preamplifier on your warranty registration card.

If a Manley Laboratories product fails to meet the above warranty, then the purchaser's sole remedy shall be to return the product to Manley Laboratories, where the defect will be repaired without charge for parts and labour. The product will then be returned via prepaid, insured freight, method and carrier to be determined solely by Manley Laboratories. All returns to the factory must be in the original packing, (new packing will be supplied for no charge if needed), accompanied by a written description of the defect, and must be shipped to Manley Laboratories 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 Manley Laboratories.

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 Manley Laboratories products purchased and used in the USA.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

# WARRANTY REGISTRATION

We ask that you please fill out this registration form and send the bottom half to:

MANLEY LABORATORIES  
REGISTRATION DEPARTMENT  
13880 MAGNOLIA AVE.  
CHINO CA, 91710

Registration entitles you to product support, full warranty benefits, and notice of product enhancements and upgrades. You **MUST** complete and return the following to validate your warranty and registration. Thank you again for choosing to use Manley Laboratories.

MODEL 100/100 Stereo Integrated Amplifier. SERIAL No. \_\_\_\_\_

PURCHASE DATE \_\_\_\_\_ SUPPLIER \_\_\_\_\_

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*PLEASE DETACH THIS PORTION AND SEND IT TO MANLEY LABORATORIES*

MODEL 100/100 Stereo Integrated Amplifier. SERIAL No. \_\_\_\_\_

PURCHASE DATE \_\_\_\_\_ SUPPLIER \_\_\_\_\_

NAME OF OWNER \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY, STATE, ZIP \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

Serial #'s of Associated Manley Laboratories Equipment \_\_\_\_\_

\_\_\_\_\_