



# OWNER'S MANUAL

**MANLEY REFERENCE  
500 / 200 WATT  
MONOBLOCK**

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## INTRODUCTION

### **THANK YOU!...**

for choosing the Manley 500/200 Monoblock Amplifiers. Designed by David Manley, the Manley 500/200 Monoblock Amplifiers use only the best available components, with the shortest and cleanest signal path possible, and with the use of our own in-house CNC machine shop we can provide you with a amplifier that looks as good as it sounds.

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 to switch between triode or tetrode operation which allows the user to choose between the sonic benefits and seductive qualities of triode and the more powerful tetrode operation mode. 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. Careful use of the 'EVER-WARM' power switching should also greatly increase the life of the output tubes as well as allow your amplifiers to always be ready for pleasurable listening. Each output tube has its own bias adjust, and the procedure for adjusting each tube's current draw is described in this manual. The FEEDBACK & SLOPE controls featured on the 500/200 allow the user to optimise the amplifier-speaker interface.

The output transformer is a revolutionary new design by David Manley which is wound on the Manley Labs factory premises. Its stellar performance will be obvious upon first listening. The secret is in keeping both phases of the push-pull halves always equal, and in this new output transformer design, David has achieved just that. The output transformer has been factory set for an optimum 5 ohm load which will drive most speakers.

Thank you again, and please enjoy!

# MAINS CONNECTIONS

## GENERAL NOTES

### LOCATION & VENTILATION

The Manley 440/200 Monoblock Amplifiers 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 a constant flow of air can flow. Do not place amplifiers directly on high pile carpet or any other surface that will block the ventilation vents underneath the amplifiers. If you have small children or pets, you should consider placing the amplifiers out of reach 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, these amplifiers 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, do not touch the tubes after the amplifier has been switched on, as the tubes become very hot during operation and should only be handled after the power has been turned off and the tubes have cooled.

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.**



**WARNING!**



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

## CONNECTING YOUR AMPLIFIER

Setting up your amplifiers is rather easy.

1. Connect all source components (turntable, CD, Tuner, Tape DAT, etc.) to your preamplifier.
2. If using an UNBALANCED output from your preamplifier, connect the RCA interconnects from the output of the preamplifier or switching center to the RCA input on the back of the amplifiers. Select the rear switch to the UNBALANCED position.
3. If using a BALANCED output from your preamplifier, connect the 3 pin XLR interconnects from the output of the preamplifier or switching center to the XLR input on the back of the amplifiers. Select the rear switch to the BALANCED position.

The pin out for the BALANCED input is as follows:

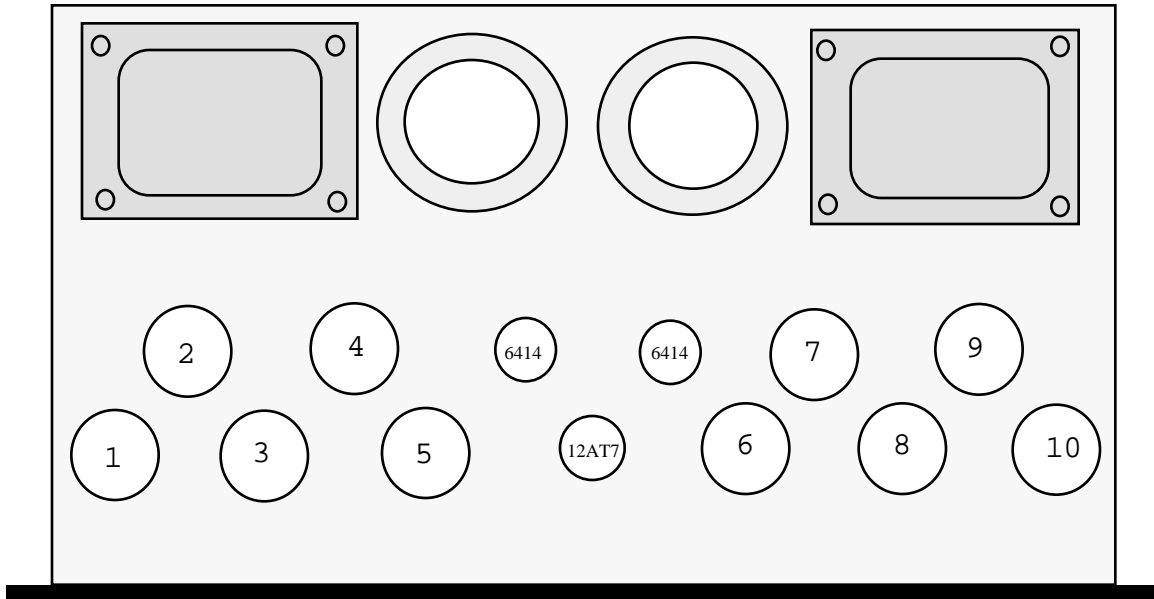
PIN 1: GROUND

PIN 2: POSITIVE GOING PHASE (+)

PIN 3: NEGATIVE GOING PHASE (-)

4. Please note: The correct input selection MUST be made.
3. Connect the hot or "+" speaker cable to the red binding post and the common or "-" speaker cable to the black binding post. 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 connections inside the amplifier.
4. Ensure that the "mains" switch on the front panel is in the "off" or "0" position and the OPERATE / STANDBY switch is in the STANDBY mode.
5. Turn on Preamplifier and any source components you plan to use.
6. Plug amplifier into wall outlet.
7. Switch the square mains power switch to the ON position and allow the amplifier a minute or so to 'warm up'. The blinking LED will indicate that the amplifier is in STANDBY mode.
8. Engage the soft-start switch to the OPERATE position. The blinking standby LED will extinguish.
9. Turn up the volume and enjoy.
10. After your listening session, if you wish to leave the amplifier in the energy-saving and 'EVER-WARM' STANDBY mode, engage the OPERATE/STANDBY switch to the STANDBY position. The standby blinking LED will remind you that the amplifier is in STANDBY mode.

## TOP VIEW



## Amplifier Overhead View Tube Location

### OUTPUT TUBES: 10 x RUSSIAN 6550

The 6550's used are the Russian Svetlana 6550's. This has been proven to be the rugged and reliable of this type and we strongly emphasize that only the RUSSIAN 6550's should be used in this amplifier. The MANLEY 440/200 WATT MONOBLOCK has been thoroughly optimised around this tube. Use of unapproved tube types can and will void your warranty.

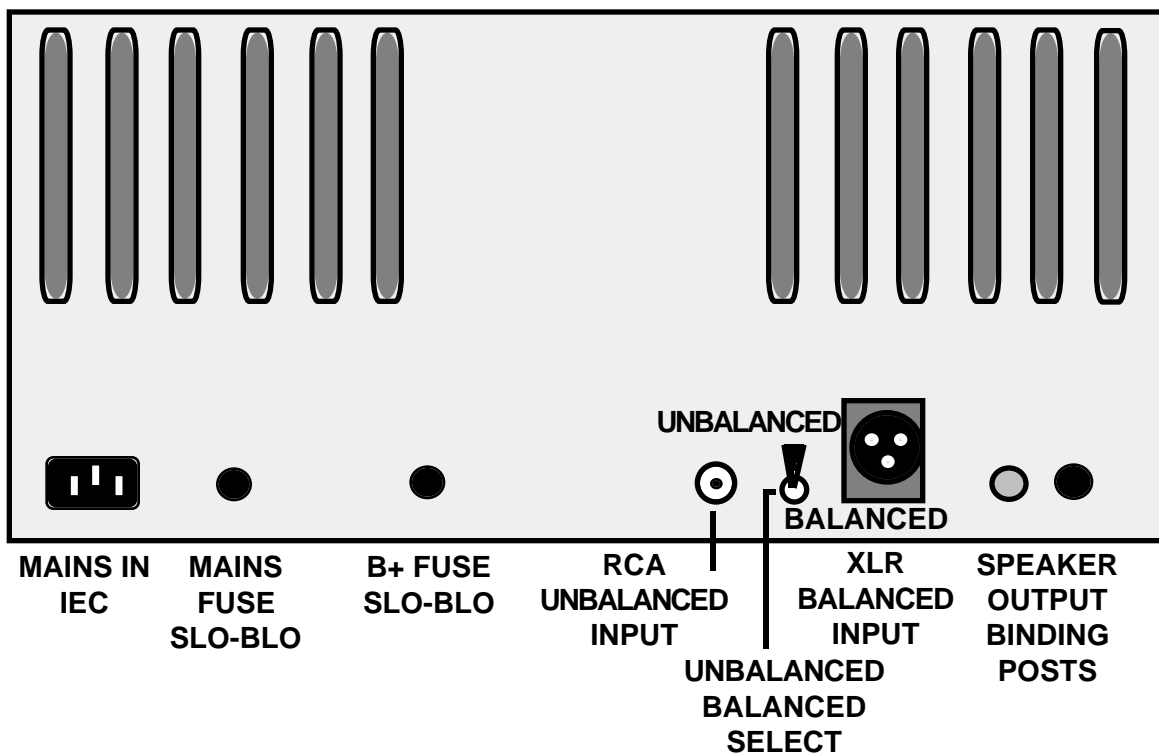
### DRIVER TUBES: 2 x 6414

The 6414 is an American military uprated version of the 12BH7A with increased current drive.

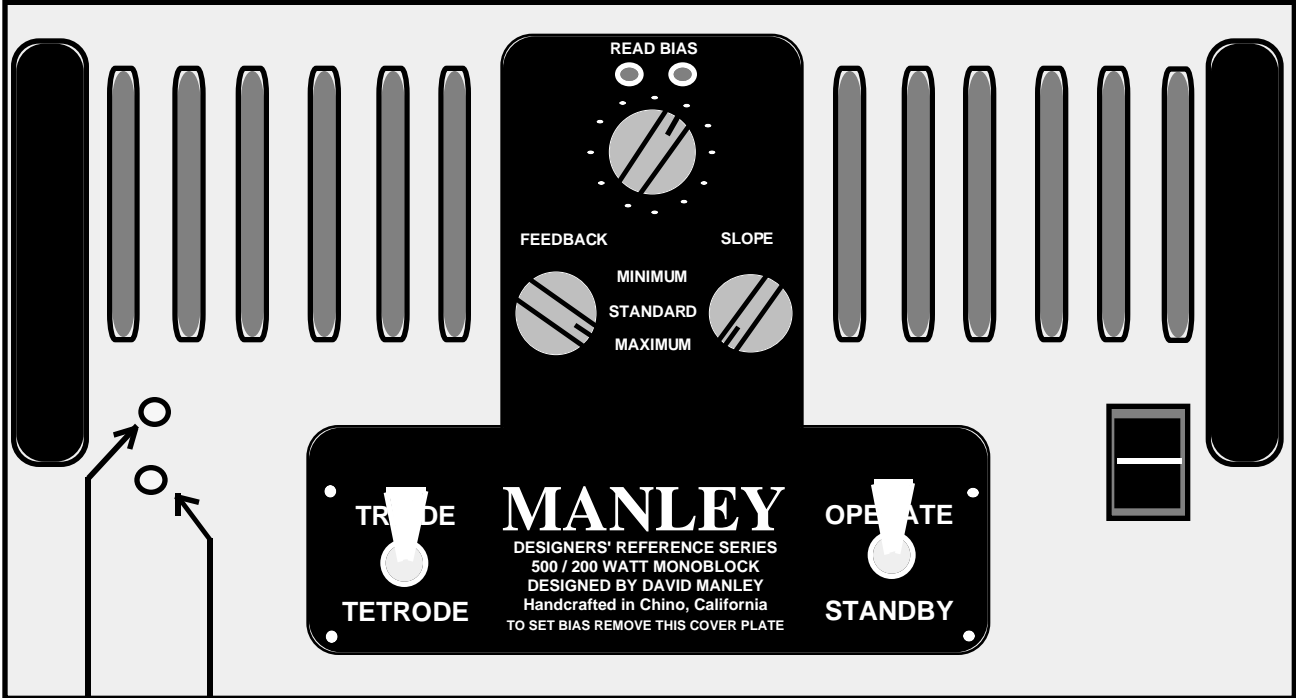
### INPUT TUBE: 12AT7WA

The 12AT7WA has several equivalent numbers, (12AT7, 12AT7A, 6201, ECC81, etc.) Any of these types may be used. We have selected this 12AT7WA very carefully for noise, microphonics, and constancy. Replacement tubes of premium quality are always available from MANLEY LABORATORIES.

# REAR VIEW



# FRONT VIEW



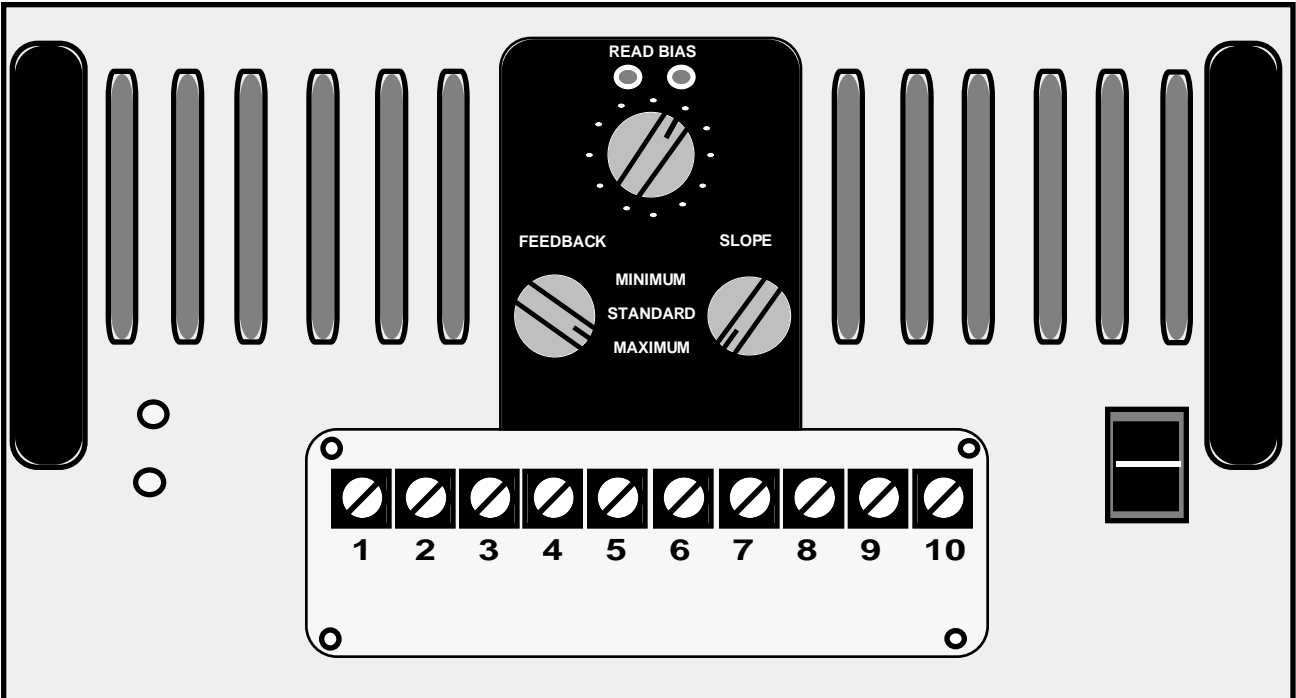
POWER LED

STANDBY LED (BLINKING)

TRIODE  
TETRODE  
SWITCH

OPERATE  
STANDBY  
EVER-WARM  
SOFT START  
SWITCH

MANS  
POWER  
ON / OFF  
SWITCH



**FRONT VIEW OF AMPLIFIER  
WITH BIAS COVER PLATE REMOVED  
SHOWING BIAS ADJUST POTS**



## BIAS PROCEDURES

The Manley 500/200 Monoblock Amplifiers uses a fixed bias system that requires very little attention. We recommend checking the bias every 2-3 months or any time you replace an output tube. To adjust or check the bias, follow the following steps.

For this procedure you will need a voltmeter (a hand held autoranging DMM digital multimeter is the easiest) and a small flat screwdriver.

1. On page 8, which shows the FRONT panel of the amplifier, you can see 2 black tip jacks labeled READ BIAS. To measure the current draw of each output tube place the meter probes into the black tip jacks. (If you read a negative reading reverse the meter probes.) Set the meter to read 'millivolts' DC (direct current).
2. Each of the ten (10) output tubes can have its own bias adjusted by adjusting its own bias adjust pot. On the top view picture on page 6, you can see the numbering sequence for the 10 output tubes. The corresponding reading for the tip jacks (measurement points) is selected by the 10 position switch under the tip jacks. Start with the switch in the one o'clock position. This switch reads like a clock where one o'clock is tube #1 and corresponds to the left-most adjustment pot. Two o'clock is tube #2 and corresponds to the second from the left adjustment pot, and so on.
3. The first step to setting the bias is to turn on the amplifier and ensure that there is zero signal input, either leave the preamplifier or source signal turned off or unplug the amplifier input. Also, leave your loudspeakers connected as these provide an ideal load on the output. (DO NOT EVER OPERATE YOUR AMPLIFIER WITHOUT SPEAKERS CONNECTED!) It is recommended that you leave the amplifier on long enough to ensure that the tubes have reached their stable current draw, at least 1/2 hour is recommended.
5. Place the meter probes in the black tip jacks where they will remain for whole biasing procedure and switch the select switch to position #1 (one o'clock). Adjust the first bias trim pot slowly until you measure 275mV to 300 mVDC (0.275V to 0.300VDC). Since you are measuring across a 10 ohm cathode resistor, this would correspond to a 27 to 30 mA current draw for each tube by Ohm's law.
6. If you are unable to bring the bias voltage down 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, switching to the next tube and adjusting the next trim pot each time. After you have adjusted all the output tubes, recheck and repeat the procedure as they will drift a little bit during adjustment. Once they are all set, your amplifier should be in perfect operation.

# OPERATIONAL NOTES

## SWITCHING ON -- SOFT START

The MANLEY 500/200 is equipped with a SOFT-START circuit which lessens the initial stress the amplifier takes upon turn-on. We recommend that you use this soft start facility whenever you turn the amplifier on and especially when cold.

1. Ensure that the "mains" switch on the front panel is in the "off" or "0" position and the OPERATE / STANDBY switch is in the STANDBY mode.
2. Turn on preamplifiers and all source components you plan to use and let them warm up for a minute.
3. Switch the square mains power switch to the ON position and allow the amplifier a minute or so to 'warm up'. The blinking LED will indicate that the amplifier is in STANDBY mode.
4. Engage the soft-start switch to the OPERATE position. The blinking standby LED will extinguish.
5. Turn up the volume and enjoy.

## THE EVER-WARM MODE

After your listening session, if you wish to leave the amplifier in the energy-saving and 'EVER-WARM' STANDBY mode, engage the OPERATE/STANDBY switch to the STANDBY position. The standby blinking LED will remind you that the amplifier is in STANDBY mode. The amplifier will draw only 400mA (30 watts @ 120VAC) from the mains outlet-- certainly an energy saving way to keep your amplifiers always ready for a listening session!

## TRIODE / TETRODE OPERATION:

With the TRIODE / TETRODE switch, the amplifier may be set for TRIODE or TETRODE operation. When the switch is in the lower position, the amplifier is in TETRODE mode which will produce well over 440 watts. When the switch is in the upper position, the amplifier is in TRIODE mode which will produce half the power of TETRODE operation but as fans of triodes know, nothing can match that sweet seductive sound of triodes! For some more demanding energetic music, large rooms, or for power hungry inefficient loadspeakers, you might find you will need the extra power of tetrode operation. Other times and other situations will find you very well satisfied with the triode mode. One major rule applies for switching between triode and tetrode:

**THE AMPLIFIER MUST BE TURNED OFF OR IN STANDBY MODE BEFORE SWITCHING BETWEEN TRIODE AND TETRODE!!!!**

Follow turn on SOFT START procedure above when re-powering up the unit.

## FEEDBACK & SLOPE CONTROLS

The FEEDBACK control varies the global feedback resistor of the amplifier in 2dB steps. This will change the gain and slew rate of the amplifier. The SLOPE control varies the feedback 'slope' capacitor value which changes the amplifier's intended roll-off points at supersonic frequencies. The best way to take advantage of these controls is to let your ears decide which combination works best for your system, speakers, and taste. Feel free to experiment with different settings to custom-tailor the sound to suit.

## TUBE LIFE

You should expect extended life from the tubes in your MANLEY 500/200 if you adhere to the procedures described above and check your bias at least once every 2-3 months. We stock all the tubes in these amplifiers should you ever need replacements (and at very reasonable prices too!)

## FUSES

The fuses used in your amplifier are standard 1/4" x 1 1/4" SLO-BLO types. The correctly rated fuse has been installed at the factory for your country's voltage. If replacing a fuse, always unplug the amplifier's power cord from the wall outlet and always use the exact same type and ampere rating fuse as the one you are replacing. Failure to do so will void your warranty and can be a dangerous fire hazard. NEVER replace a fuse with thick wire, tin foil, gum wrappers, or anything else other than the correct fuse!

## SPECIFICATIONS

Vacuum Tubes:	10 x 6550 (Output), 2 x 6414 (Drivers), 1 x 12AT7 (Input)
Output Power	TETRODE: 500Watts (@1.5% THD 5 ohm load) TRIODE: 250 Watts (@1.5% THD 5 ohm load)
Frequency Response, +/- .5 dB	10 Hz - 80 KHz
Input Sensitivity	1V
Input Impedance	100 KOhm
Load Impedance	5 Ohm (fixed)
S/N Ratio @440W	-80 dB
Power Consumption	30 Watts Quiescent (STANDBY MODE) 1320 Watts Full Power (@1.5% THD 5 load)
Mains Fuse	100, 110, 120V 10 A (Slo-Blo) 220, 240 V 8 A (Slo-Blo)
B+ Fuse	1 1/2A (250V)SLO-BLO
Dimensions	W=19, D=13, H=11 inches
Shipping Weight	82 lbs EACH

# 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 \_\_\_\_\_ SERIAL No. \_\_\_\_\_

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

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

MODEL: MANLEY REFERENCE 500/200 MONOBLOCK

SERIAL No. \_\_\_\_\_

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

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

ADDRESS \_\_\_\_\_

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

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

Comments???? \_\_\_\_\_

\_\_\_\_\_