

### WARRANTY

This Yorkville Sound Product is FULLY warranted for a period of TWO YEARS from the date of purchase.

This warranty will REMAIN in effect until the original expiration date, REGARDLESS of whether or not the product is re-sold in the interim.

Furthermore, it is not required that you (the owner) fill in a form for warranty registration. We would, however, recommend that the dated proof of original purchase be retained throughout the warranty period.

One condition voids this warranty:

1) modifications made without our prior written consent.

We are not responsible for incidental or consequential damage when a unit fails. In the U.S.A., some states do not permit such an exemption, in which case the warranty coverage for incidental or consequential damage will be 30 days from original date of purchase.

To service our warranty, we agree to supply all PARTS and be responsible for all LABOUR on authorized repairs. You (the owner) are responsible for all transportation, should it be needed.

If this product fails while under warranty, contact the authorized Yorkville Sound Dealer from whom it was originally purchased. Repairs may be made by that store or by its authorized warranty station or, if you are on the road, by the NEAREST authorized Yorkville Sound warranty station. If you cannot locate any of the above, contact the appropriate service department listed below. We will not assume responsibility for the cost of repairs performed by a non-authorized person unless we have previously agreed to do so in writing.

If you are ever dissatisfied with the service you receive, contact the appropriate service department listed below. We will first try to correct the problem through the dealer. If this proves unsuccessful, we will authorize you to return the product to us for factory service.

In the U.S.A. this warranty gives you specific legal rights. You may have other rights which vary from state to state. While we have never needed to establish an arbitration service, we are willing to participate in such a service.

Your factory service departments are:

#### FACTORY SERVICE DEPARTMENT

In Canada  
Yorkville Sound Limited  
80 Midwest Road  
Scarborough, Ontario  
Canada, M1P 4R2

In the United States  
Yorkville Sound Inc.  
P.O. Box 71  
56 Harvester Avenue  
Batavia, N.Y., 14020

In United Kingdom  
Hilton Electronics  
55 High Street  
Hurstpierpoint, Sussex  
England

*Traynor* **BETA 800**  
POWER AMPLIFIER



YORKVILLE SOUND LTD. • 80 MIDWEST ROAD • SCARBOROUGH • ONTARIO • CANADA • M1P 4R2 • TEL. (416) 751-8481 • TELEX. 06 963731  
YORKVILLE SOUND INC. • P.O. BOX 71 • 56 HARVESTER AVENUE • BATAVIA • N.Y. 14020 • TEL. (716) 344 1978 • TELEX. 06 963731

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# OWNER'S MANUAL

*Traynor* **BETA800**  
POWER AMPLIFIER

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**NOTES:**

BETA 800 USER'S MANUAL

INTRODUCTION:

Congratulations on your purchase of the BETA 800 stereo power amplifier. The BETA 800 is a third generation amplifier incorporating the most sophisticated bipolar amplification technology in a simple to use, reliable and rugged package designed to provide years of maintenance-free performance under the most demanding conditions.

The BETA 800 design focus was to provide excellent and affordable performance in an easily portable package.

The corner pieces of the transport cabinet interlock to provide secure stacking of multiple BETA 800s while the cabinet eliminates the problems of torn automobile upholstery and amplifier damage which can result when naked rack mount amplifiers are misused as truly portable units. However, the BETA 800 is a true rack mount amplifier and may be removed from its rugged transport cabinet and installed in an equipment rack with no modification.

SPECIFICATIONS:

POWER PER CHANNEL-----250 WATTS @ 8 OHMS  
-----400 WATTS @ 4 OHMS  
T.H.D.-----LESS THAN 0.05%  
DYNAMIC HEADROOM-----3 dB AT 4 OHMS  
FREQUENCY RESPONSE-----7Hz TO 30KHz +/-1dB  
SLEW RATE-----40V/U SEC  
DAMPING-----GREATER THAN 250  
HUM AND NOISE----- -100dB UNWEIGHTED

BETA 800 BENCH TEST PROCEDURE

SETTING BIAS CURRENT ON THE BETA 800:

- the bias current should be set when the amp is cold, (that is, before a load has been driven; heatsink cold to the touch).
- leave the amp on for about 2-3 minutes before proceeding.
- the test point pins (TP1 and TP2) at the far right of the M474 PCB are used to monitor the bias current. Connect a DVM to these pins and adjust the bias to 4 millivolts DC.

TESTS REQUIRED:

(1)-Before turning on the unit, make sure that the bias current trimmer is fully counter-clockwise.

(2)-Power up the unit through a VARIAC. (Monitor the voltage between TP1 and TP2, the bias voltage, with a DVM. STOP if this voltage exceeds 10 millivolts). Now, raise the variac voltage slowly until the LEDs light up. (about 50 VAC) IF THE LEDS ARE NOT LIT BY 85 VAC, DON'T INCREASE THE VOLTAGE ANY FURTHER. Instead find and fix the reason why there is no current through the VBe multiplier.

IMPORTANT: Do not spend more than 2 minutes with the variac below 85 VAC. Below this voltage the "Power Down" circuit is conducting, (Q1 and Q2 on M475) and will overheat if left too long. All tests should be done with the variac set above 85 VAC.

(3)-Once the LEDs are on, continue up to 120VAC with the variac. Check the DC supplies, the voltage between TP4 and TP5 (1.3 to 1.5 Volts) and the voltage between TP6 and TP7 (0.9 to 1.1 Volts). This last one should be the same as the voltage between TP8 and TP9.

(4)-The next thing to do is adjust the bias current. (see top of page) If the bias current will not adjust, find and fix the problem. **NOTE:** The bias voltage is adjusted to 4 millivolts when the amp is cold. This may rise as high as 10 millivolts when the amp is fully warmed up. Remember to always make bias adjustments with no signal and no load connected.

(5)- Check the outputs for offset voltage. Should be less than 25 mV.

(6)-TP3 should be within 250 mV of ground. If it is not, there is some kind of offset problem, even if the amp appears to work.

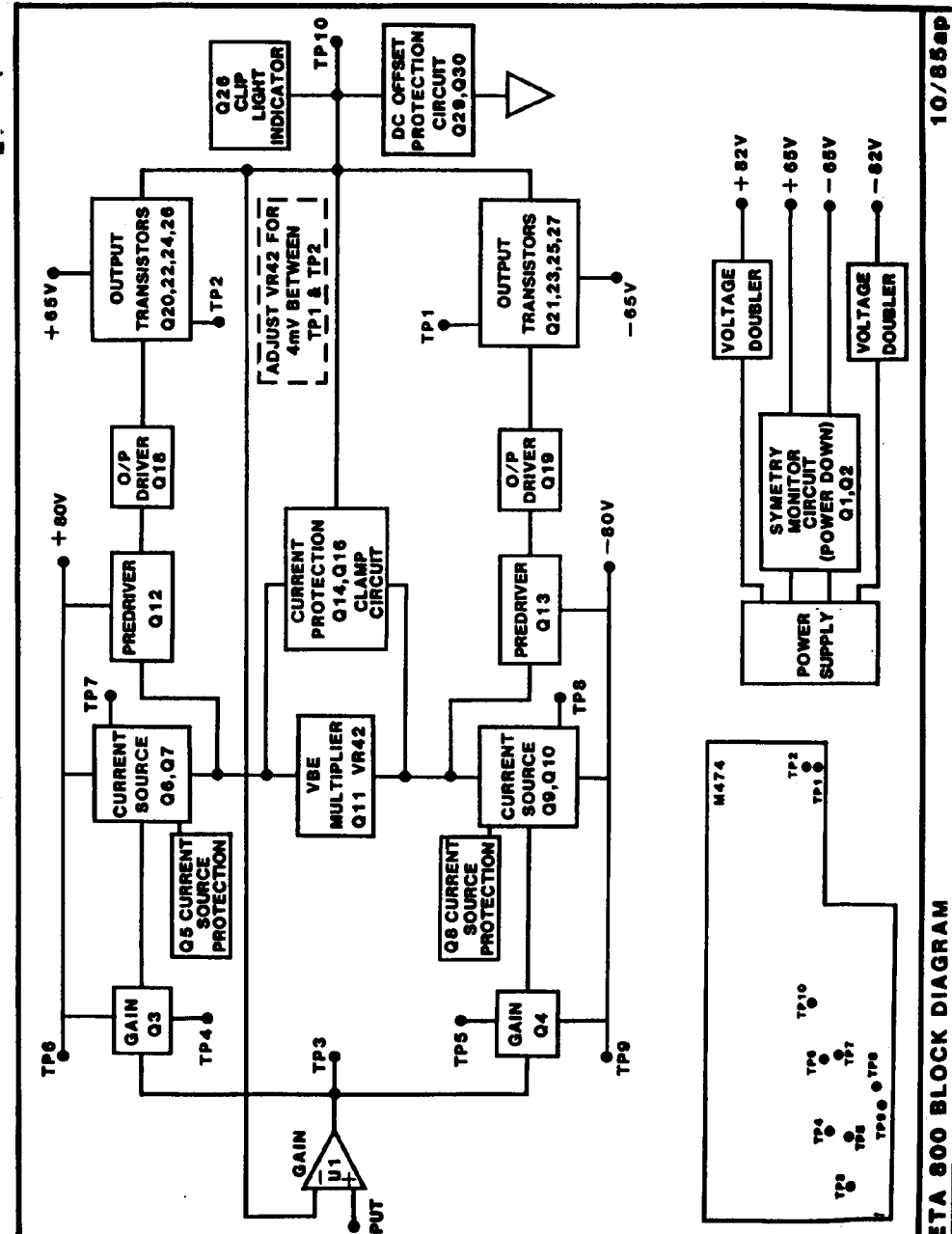
(7)-Check that there is no voltage across the 100R 1W resistors on M475. If there is, check the parts in that circuit.

(8)-It is very important that the output devices are properly tightened down. (8 inch/pounds)

(9)-OK, apply a signal and see what happens as you would with any amp.

QUICK CHECKS:

- Clipping should be symmetrical.
- 2 volts peak should just clip the amp. (1.4 volts RMS)
- Flat from 10Hz to 30 KHz.
- 400 watts or better into 4 ohms, both sides driven.
- Way over 200 watts per side into 8 ohms.
- Check clip LEDs
- Check bias voltage when amp is hot. Should be around 10 millivolts.
- Check MONO operation with signal into "A" input only.
- Check for turn on and turn off noise. Should be best yet.
- Check for 0.5 millivolts AC RMS noise on output



CIRCUIT FEATURES AND PERFORMANCE:

The circuit design of the BETA 800 uses dual feedback loops with only 20 dB of feedback in a topology having inherent low distortion. This approach reduces phase shift and transient intermodulation while optimizing slew rate and bandwidth.

The output stage and heatsink assembly have been designed to handle worst case conditions and the BETA 800 is fully protected against all external faults such as shorted loads. Speaker loads of 2 Ohms or less, (four 8 Ohm cabinets connected in parallel on each channel) will activate this protection circuitry, causing the amplifier output to switch on and off intermittently as the BETA 800 tests to see if the improper load is still present. Loads of 2.7 Ohms or more will never activate the protection circuit, but loads below 4 Ohms may overheat the BETA 800 causing the thermal light to come on and the amplifier to shut down. The air pathways on either side of the amp should never be obstructed as this could also cause overheating.

Full DC fault protection circuitry guards against speaker damage in the unlikely event of amplifier failure.

The BETA 800 will operate in either stereo or mono modes. Stereo mode is activated by plugging into both input jacks. If only the A-channel input jack is used, the amplifier is automatically placed in MONO mode. In this condition the same signal is applied to both amplifier inputs. The GAIN controls may be used to vary the level of this signal in each channel independently. The BETA 800 cannot be bridged. The full power output of 800 Watts is achieved by connecting either four 8-Ohm cabinets or two 4-Ohm cabinets to the output jacks on the rear panel.

**NOTES:**