

1. HISTORY SHEET. Each unit must be accompanied by an INSTRUMENT HISTORY SHEET. Ensure the History Sheet has been completed satisfactorily.
2. MAINS VOLTAGE. Check the Mains Switch setting on the rear panel. It must be 230V.
3. EARTH CONTINUITY. Check the earth connection from the IEC connector to the rear panel. Check the tightness of the Rear Panel Earth connection. It must be tight. Check that an Earth Symbol has been placed adjacent to the Earth Terminal.
4. VISUAL INSPECTION. Inspect the unit, paying particular attention to the following:
  - 4.1 PSU Capacitors and Diodes. Value and orientation.
  - 4.2 Intergrated circuits. Type and orientation.
  - 4.3 Transformer Wiring. Wired as per PCB silk screen. Check insulation of wires.
  - 4.4 Soldered Joints. Check for solder shorts, dry or unsoldered joints.
  - 4.5 Internal Fuses. Check fuses are seated correctly. Check values as stated on the PCB Silk Screen.
  - 4.6 External Finish. Check front and rear panel silk screening for legibility. Check all external surfaces for marks and blemishes. Check that all screw heads are undamaged, check screws are tight.
  - 4.7 Knobs and Switches. Check that Knobs and Switches move freely. Check they are correctly aligned with their legends. Check they are uniformly spaced from the front panel.
  - 4.8 LED Alignment. Check that all LED's are equally spaced from the front panel.
5. FIT VALVES Check the valve bases for splayed pins. Perform corrective action as necessary. All valves are ECC83/12AX7A unless otherwise stated. Plug valve in each socket, ensure valve is a tight fit. Do not wiggle valve in socket.
6. SWITCH ON. Check Mains Switch moves freely. Leave in OFF position. Set DVM to DC Voltage and connect between Ground & +15 volt point on PCB. Connect the IEC Mains Cord to the Mains Inlet. Switch unit On. Check each supply in turn as quickly as possible. Switch OFF if a supply is not present.
  - 6.1 +15 volt rail. +15.00 volts +/- 0.25v.
  - 6.2 -15 volt rail. -15.00 volts +/- 0.25v.
  - 6.3 HT voltage 150 volts +/- 8.0v.
  - 6.4 Heater voltages +6.3 volts & -6.3 volts +/- 1.0v.
  - 6.5 Phantom Power. +48 volts +1.0v/-4.0v.
7. LED CHECK. Using the appropriate controls check all LED's illuminate together. The DRIVE and PEAK LED's may be excluded from this test.

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- 8. INITIAL SETTINGS. Set all Front panel switches to the OUT position.  
 Set all Pots to mid-position  
 Set all Rotary Switches fully anti-clockwise.
- 9. TEST EQUIPMENT. To perform the tests to this procedure use:  
 A calibrated Signal Generator.(Sinewave) 0.0 dBu @ 1 kHz unless stated.  
 A calibrated Signal Analyser.(dBu/THD+N%/Phase) With 22-22k Filter to On.  
 An Oscilloscope.  
 A Digital Voltmeter.  
 A metal film 150R resistor in shielded XLR connector.(Pins 2 & 3)
- 9.1 REFERENCES All unit settings are on the Front Panel unless stated otherwise.  
 All Settings(RVnn) are on the Main PCB unless stated otherwise.
- 9.2 HISTORY SHEET. All faults/rework must be logged on the History Sheet.  
 Where practical show the operator/assembler the nature of the problem.  
 Serious/Repetitive faults must be reported to the Production Manager.  
 After the unit has been succesfully tested Sign & Date the History Sheet.  
 The History Sheet must remain with the unit at all times.  
 After the unit is dispatched the History Sheet must be filed for analysis.

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10. INITIAL TESTS.

Conduct the Tests on Channel 1 and then repeat all the Tests on Channel 2,3 & 4.  
 Where applicable Channel 2,3 & 4 test references are shown in brackets.

- 10.1 PHANTOM POWER. Connect DVM to XLR pin 2 and Ground.  
 Select +48V switch to ON.  
 Check for +48 volt reading.(+1v/-4v)  
 Repeat test for XLR pin 3 and Ground.  
 After test is complete set +48V switch to OFF.
- 10.2 SIGNAL BALANCE. Connect input to Input XLR. -40 dBu.  
 Alternately scope pins 2 & 3 of OUTPUT XLR while adjusting RV5(6,7,8).  
 Adjustment is complete when the signals at pins 2 & 3 are equal.
- 11.0 CALIBRATION.
- 11.1 INPUT GAIN. Signal In = -60 dBu to InputXLR. Signal Out from Output XLR.  
 Set Analyser Filter to ON.  
 Set INPUT GAIN pot fully clockwise.  
 Set OUTPUT GAIN pot to centre position.  
 The reading should be 0.0 dBu +/- 0.5 dBu.  
 If not select the value of R169(R170,R171,R172) to suit.  
 Note: These resistors are on the Left and Right hand front panel PCB's.
- 11.2 MIC NOISE. Connect 150R resistor across MIC XLR pins 2 & 3.  
 Check for a change in value of -67 dBu or better.
- 11.3 UNBAL OUT. Signal In = -60 dBu to Input XLR.  
 Signal Out from Rear Panel Unbal Output.(Double Pole)  
 Check for -14.0 dBu +/- 1.0 dBu.
- 11.4 90Hz Filter. Signal In = -60 dBu @ 90Hz to Input XLR.  
 Signal Out from Output XLR.  
 Note value with 90Hz switch OUT.  
 Press 90Hz switch IN. Value should drop by -3 dBu.  
 Leave 90Hz switch OUT.
- 11.5 DISTORTION. Set Signal In to -20 dBu @ 1kHz.  
 Set INPUT GAIN pot fully anti-clockwise.  
 Set Analyser to read THD+N(%).  
 Set RV13(14,15,16) for a value below 0.08%.  
 Note: Allow 3-4 seconds between each adjustment for reading to settle.  
 Return Analyser to read dBu.
- 11.6 DRIVE / PEAK LED's. With INPUT GAIN pot fully anti-clockwise and OUTPUT GAIN pot clockwise.  
 Set Signal In to -12.0 dBu. Check that DRIVE LED is Off.  
 Set Signal In to -8.0 dBu. Check that DRIVE LED is just ON.  
 Set Signal In to +2.0 dBu. Check that DRIVE LED is fully ON.  
 Check that PEAK LED is ON. Set OUTPUT GAIN to mid-position.  
 Note: PEAK LED may have illuminated at the previous step.  
 Set Signal In to +5.0 dBu. Check that PEAK LED is OFF.  
 Set Signal In to +7.0 dBu. Check that PEAK LED is ON.  
 Set Signal In to -39.0 dBu. Set INPUT GAIN pot fully clockwise.  
 Check that PEAK LED is OFF.  
 Set Signal In to -36.0 dBu. Check that PEAK LED is ON.

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