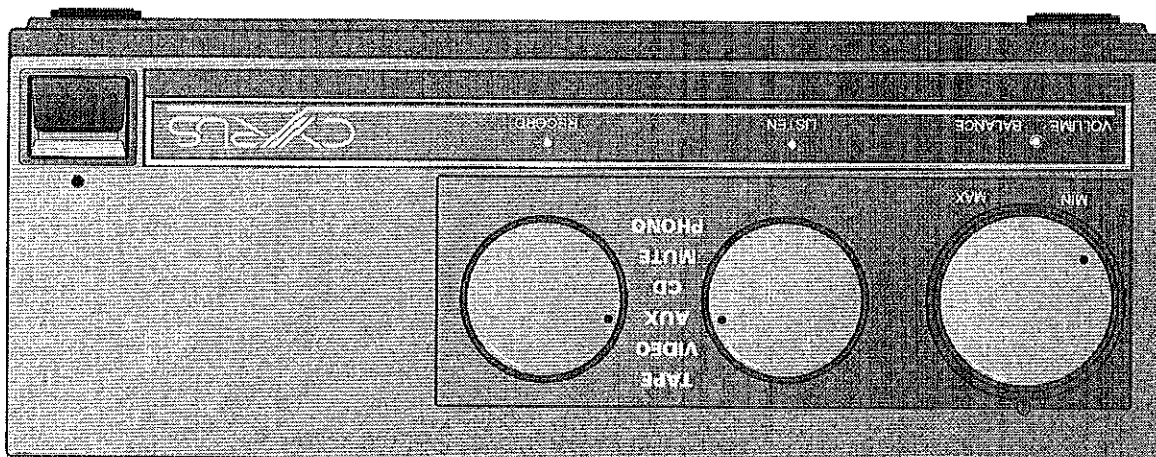


CYRUS

SPECIFICATIONS

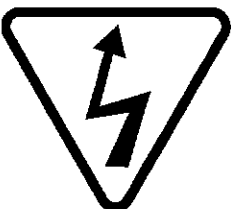
Continuous power	Continuous power (with PSX connected)	Distortion (1kHz)	Frequency response (line input)	Frequency response (phono RIAA)	Damping factor	Slew rate	Sensitivity (reference 1 W output)	Input impedance	Maximum output voltage	S/N Ratio (reference 1 W output)	Dimensions (H x W x D)	Weight	Finish
50W/CH (both driven into 8 Ohms)	80W/CH (both driven into 4 Ohms)	0.003%, 1kHz (into 8 Ohms)	0.004%, 1kHz (into 4 Ohms)	-3 dB, 1Hz and 50kHz	100	10	MM: 0.3mV, MC: 0.02mV, Line: 50mV	14k (RCA), 47k (MM), 100k (MC)	11V (Tape out)	MM: 84dB A MC: 75dB A Line: 86dB A	85mm x 215mm x 345mm	4 - 5kg (depending on version)	Black or grey



SERVICE MANUAL

CYRUS TWO
INTEGRATED AMPLIFIER
(ALL VERSIONS)

CYRUS TWO SERVICE CAUTIONS



These two symbols shown are displayed prominently on the Cyrus Two rear panel. They indicate that the following cautions must be observed by all personnel-

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER OR BACK. THERE ARE NO USER SERVICEABLE PARTS INSIDE THE PRODUCT. ALWAYS REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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NOTE: It is important to identify the Cyrus Two version before using this manual.

CYRUS TWO TYPE IDENTIFICATION

Issue 06

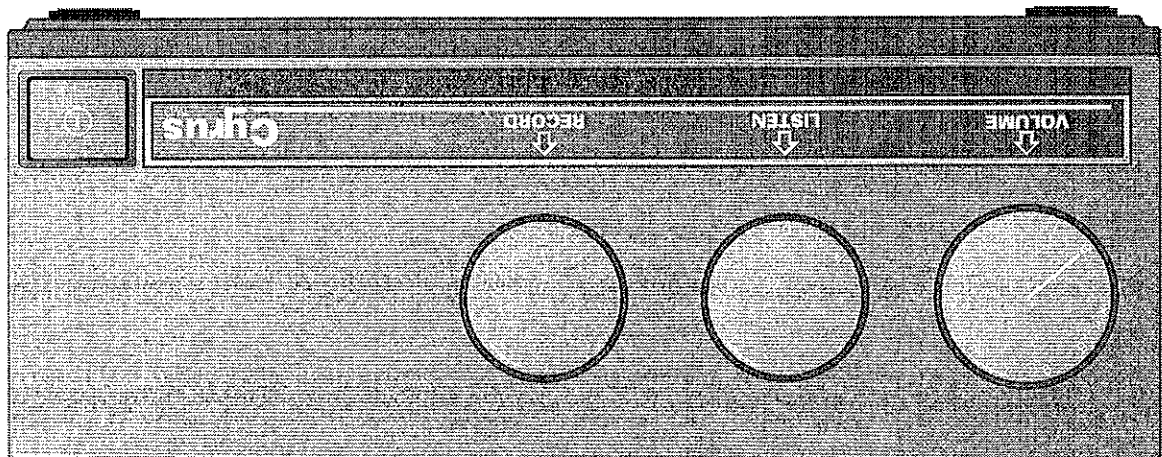
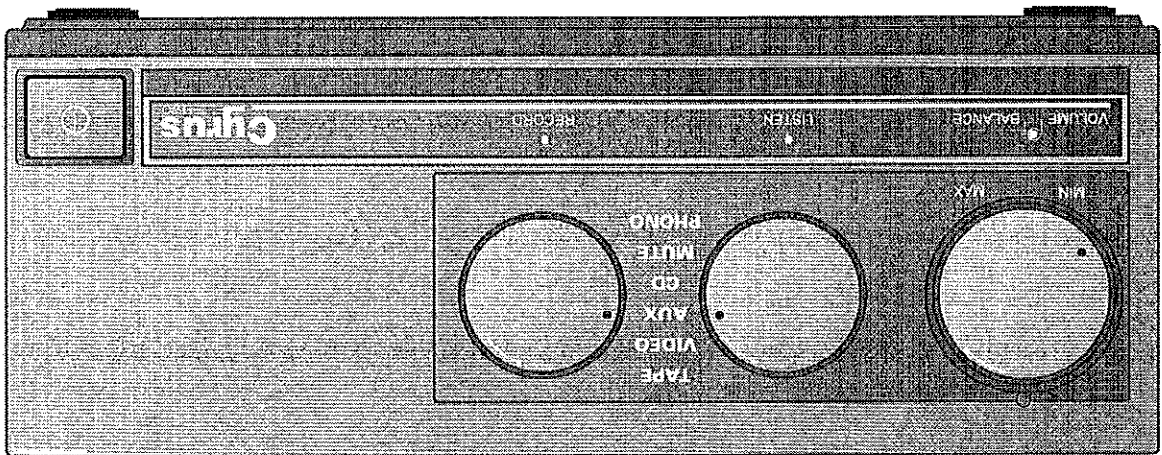
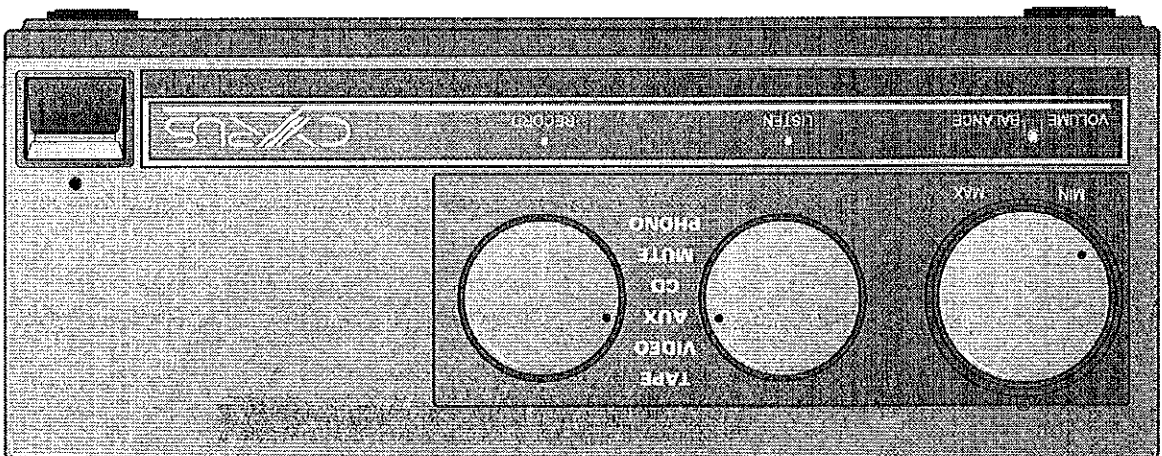
The was the first version of the Cyrus Two amplifier. It can be identified by the graphite plastic case and front panel. The chassis was constructed of pressed steel. The front featured three control knobs (volume, select, and record) and a push button on/off switch. A headphone socket was mounted on the rear panel. This was not fitted to all units. Production commenced on 20/5/84 with serial number 200100 and ceased on 1/12/87 with serial number 212780.

Issue 07

This version of the Cyrus Two featured a die-cast metal chassis with die-cast front and covers. The front featured four control knobs (volume, select, record, and balance) and a push button on/off switch. The finish was either in black or grey. On this version the headphone socket (when fitted) was mounted on the front panel or on the left side panel. The rear panel had an additional input for video. The bias adjustment on the circuit board was no longer fitted. When the unit was switched on the Cyrus legend on the front panel was illuminated. Production commenced on 23/12/87 with serial number 222000 and ceased on 3/8/89 with serial number 222791.

TOC

The main difference between this version and Issue 07 was the front panel on/off switch which was replaced by toggle switch. The front panel Cyrus legend was in raised silver lettering. The headphone socket was no longer fitted, and the LED circuit changed so that the series resistor did not overheat. Production commenced on 17/5/89 with serial number 223001 and ceased in September 1992.



CYRUS TWO TYPE IDENTIFICATION

Rating label

The Cyrus Two is manufactured to meet the power requirements of different world markets. Each Cyrus Two carries a rating label on the rear panel which includes details of the following:

Nominal power voltage

This will be either 240V For use on nominal 230V - 250V AC mains supply (UK)

220V For use on nominal 210V - 230V AC mains supply (Europe)

120V For use on nominal 110V - 130V AC mains supply (North America)

100V For use on nominal 90V - 110V AC mains supply (Japan)

If it becomes necessary to adjust the nominal voltage for use in another zone, the power transformer and the power fuse must *both* be replaced with original parts from Cyrus to be the correct type for the new zone

AC fuse rating

The AC fuse rating is also shown on the label. If replacing the AC fuse it is essential that the replacement fuse is exactly the same specification as the original fuse, supplied by Cyrus.

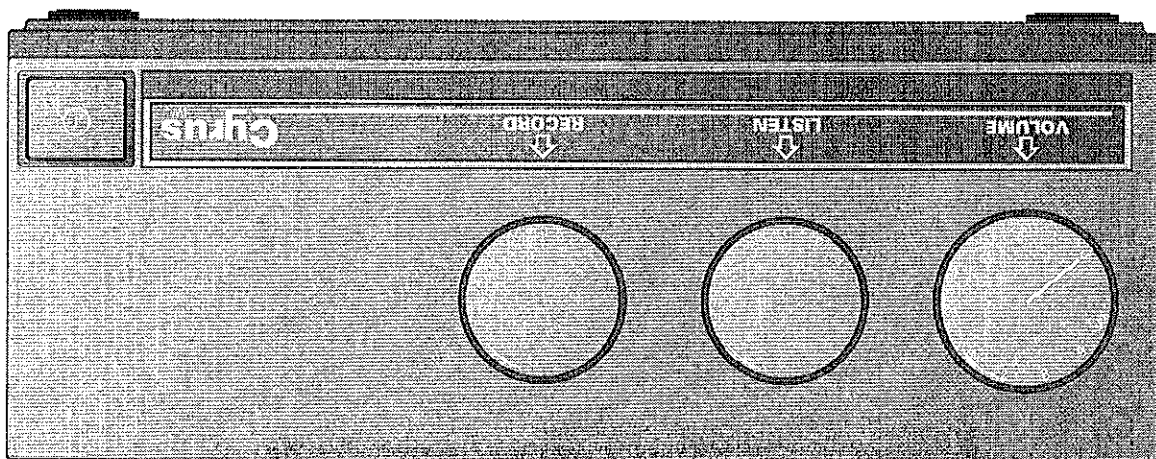
Power consumption

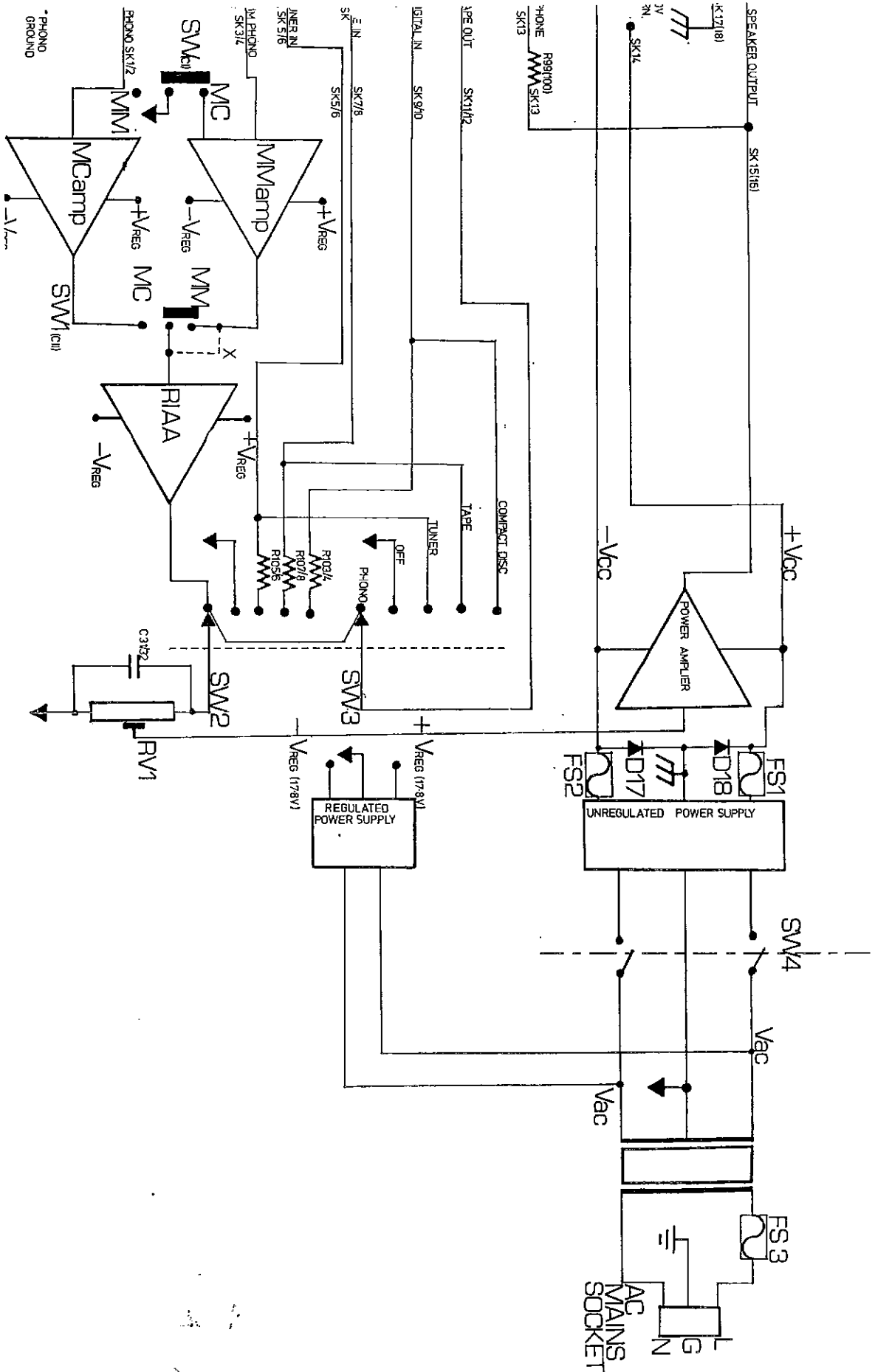
The power consumption figure is indicated under conditions of full power drive into the rated speaker load.

Serial number

Each Cyrus Two carries a serial number code which is displayed on the rear panel. It is therefore important to ensure that a rear panel removed from a product is re-fitted to the same product. In any communications with Cyrus Service or Quality departments it is essential that the full serial number is quoted so that original specification parts and service information may be supplied.

ISSUE 06





Power supply

The 31V ac from the secondary of the mains transformer feeds the bridge rectifier diodes (D5, D6, D7 and D8). The rectified voltage is smoothed by C61 and C62, giving an output of ± 41 V dc. This unregulated voltage supplies the power amplifier stage. The transformer secondary also feeds another bridge rectifier (D9, D10, D11, and D12). This voltage is smoothed by C67 and C68 and fed to the voltage regulators VR1 (-ve) and VR2 (+ve). These regulate the voltage to ± 18 V dc, which supplies the pre-amplifier section. Note that the regulated supply is independent of the amplifier mains switch, so that the pre-amplifier is always powered whenever the Cyrus Two is connected to the mains supply.

Pre-amplifier

The input to the moving magnet (MM) stage is coupled to operational amplifier OA3. R19 provides the standard moving magnet input impedance of 47k. The output from OA3 is then coupled via C19 to R27 and R29 to the selector switch SW1. RIAA equalisation is then provided by dual amplifier OA5. The input to the moving coil (MC) stage is coupled to matched transistors Q1 (LM394) which then connects to OA1. The output from OA1 is coupled via C9 and R15 to the selector switch SW1. RIAA equalisation is provided by the first half of dual amplifier OA5. The second half of OA5 buffers the output from the RIAA equalisation stage (OA5) which is then coupled to the input selector switch via C25 and R41. SW1 (mounted on the rear panel) selects either moving magnet (MM) or moving coil (MC) input.

Input selection and tape monitor

The input selection is via rotary switch SW2. The tape record output may be selected, independently of the listen output, by SW3. The selected input is connected to the volume and thence to the power amplifier.

Power amplifier

The left and right power amplifiers are a fully discrete bi-polar quasi-complementary design. The amplifier uses negative voltage feedback to provide linear frequency and amplitude responses. R43/44 C35/36 set the high frequency response and C33/34 R45/46 set the low frequency response of the input filter to the amplifier. The front end of the amplifier (Q7/8 Q11/12 Q13/14 Q9/10) forms a long tail pair differential amplifier. The long tail pair is biased on by Q5/6 and Q3/4 which are arranged as a constant current source (CCS). R47/48 sets the current of the CCS.

Q17/20 Q18/19 form the second gain stage. The load for the gain stage is a current mirror Q21/22 and Q23/24. Q15/16 form a cascode stage. Q25/26 are thermally connected to the output devices to provide an output bias that tracks the temperature of the output transistors. Q27/28, Q33/34 and Q43/44, Q45/46 are configured as an emitter follower output stage and Q29/30, Q37/38 and Q39/40, Q41/42 are configured as a complement to the emitter follower. D1/2 improve the matching of the output halves. D18/17 prevents the power supply rails from reversing polarity if one of the power supply fuses should blow.

The recommended procedure for finding signal faults which occur in the Cyrus Two amplifier is as follows-

- Check internal power supplies.
- Trace input signal.

POWER SUPPLY VOLTAGE TESTS

Each of the power supplies should be checked in sequence. Connect the mains power to the unit. Switch on the power at the front panel, then make tests for the voltages listed between the chassis ground and the following test-points with a DVM.

TEST POINT	VOLTAGE	NOTES
D8 -ve	31VAC (approx)	Voltage will vary slightly with AC mains input.
D5 +ve	31VAC (approx)	Voltage will vary slightly with AC mains input.
Fuse F1	+41V (approx)	Voltage will vary slightly with AC mains input.
Fuse F2	-41V (approx)	Voltage will vary slightly with AC mains input.
VR2 output	+18V	
VR1 output	-18V	

Refer to the power supply schematic diagram when making these tests. If any of the above voltages are incorrect, the problem should be found before proceeding with further tests.

SIGNAL FAULTS

If the power supply tests prove OK but a signal fault is still apparent, connect the standard test signal of 1kHz, 65mV to the CD input. Select the CD input, set the volume to maximum and trace the signal through the input switches, the volume control stages and the output buffer amplifiers.

The defective amplifier stage can then be identified and investigated.

OUTPUT STAGE FAULTS

If the amplifier continuously blows fuses then the output stages of the Cyrus Two may be faulty. Without applying power, check the output transistors with a DVM set to 'diode test'. First check the output transistors Q39, Q41, Q43 and Q45, the driver transistors Q33 and Q37, the pre-driver transistors Q27 and Q29, and the quiescent transistor Q25. Check the values of 0.47R resistors adjacent to the output transistors. If any of these resistors is open circuit, the output transistors will be damaged.

Following these tests and if necessary the replacement of any components which are damaged

Refit the PCB, apply power to the Cyrus Two without a load connected. Switch on and check that the DC offset voltage at the loudspeaker output terminals is within $\pm 50\text{mV}$ of 0VDC. Check also that the quiescent current is set correctly (refer to the alignment instructions). Failure of these tests indicates that there may be a problem in the earlier stages of the power amplifier and careful checks of the other transistors is advised.

Alignment

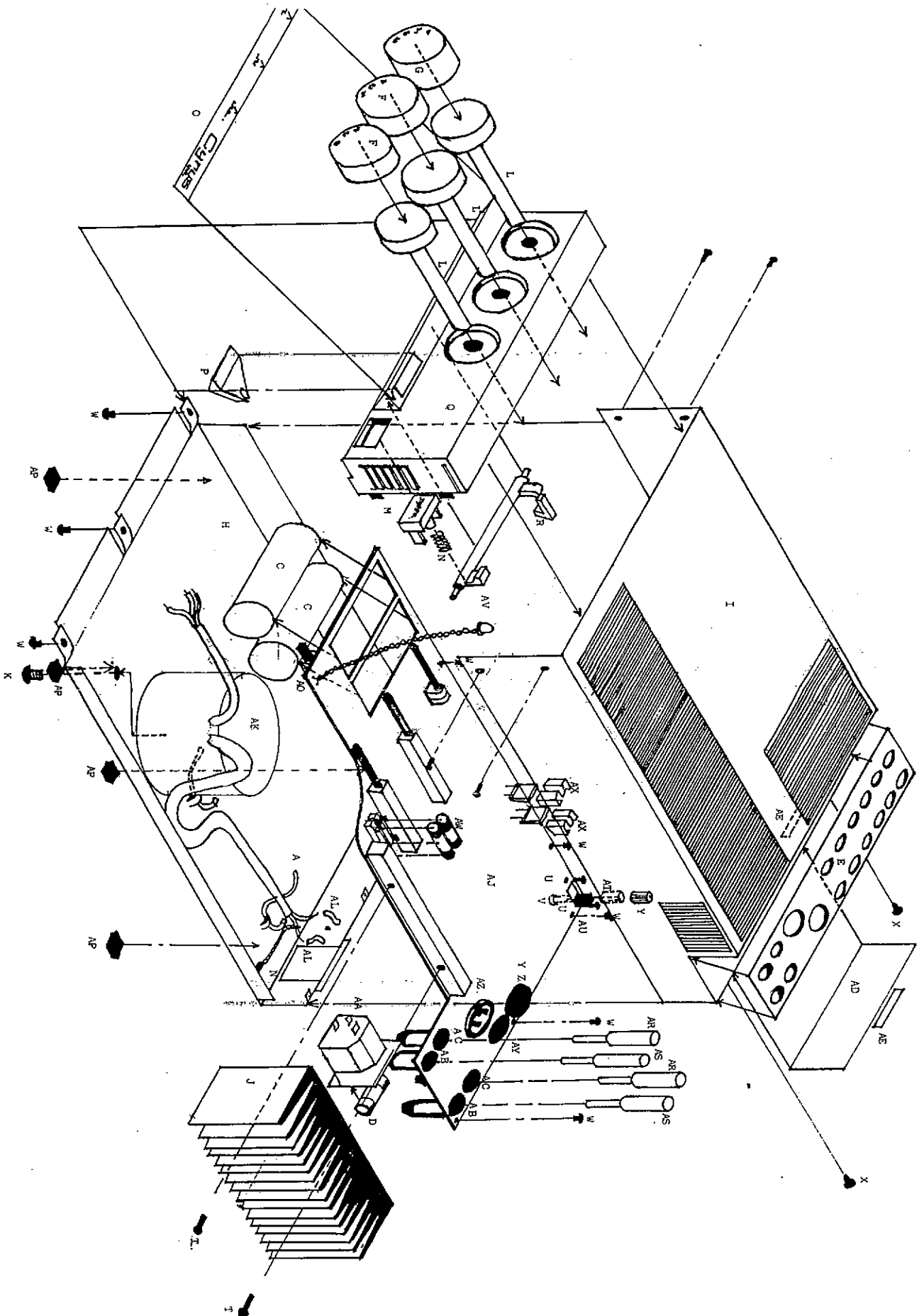
If repairs have been made to the power amplifier section of the Cyrus Two, it will be necessary to set the bias current to the correct value. The points for checking the bias current are across one of the output transistor emitter resistors, (R93 for the left channel and R94 for the right channel).

- Switch off the power to the amplifier.
- Connect a digital test meter reading millivolts to the bias test points for the left channel.
- Switch on the amplifier. Set the volume to minimum (Do not connect a signal source or loudspeakers to the amplifier whilst adjusting quiescent current).
- Adjust the quiescent setting preset RV2 so that the meter reads the 8 - 20mV.
- Now connect the test meter to the bias test points for the right channel. Adjust the quiescent setting preset RV3 so that the meter reads 8 - 20mV.
- Leave the amplifier to stabilise for ten minutes and repeat the adjustments for both channels.

Adjustments for use with the Cyrus PSX

The Cyrus Two can be used with an optional PSX power supply. The PSX supplies DC power directly to the main reservoir capacitors of the Cyrus Two and therefore powers the main amplifier stages. The power transformer of the Cyrus Two remains active at this time to provide power for the pre-amplifier circuits. This improves both the technical and sonic performance of the Cyrus Two.

To use the Cyrus Two with a PSX it is necessary to remove the DC fuses from the Cyrus Two main pcb (FS1 and FS2).



CYRUS TWO CHASSIS DRAWING - ISSUE 06

CYRUS TWO CHASSIS PARTS LIST - ISSUE 06

Ref	Part number	Description	Quantity	Notes
A	Order by description	Cable tie short	2	
B	Order by description	Instruction book	1	
C	52-B10000UF50V/XJ1	10000uF 50V capacitor	2	
D	52-HFUSE1AXXXX/BEQ	20mm fuse	2	220/240V
D	52-HFUSE2AXXXX/BEQ	20mm fuse	2	100/120V
E	52-CARDCAL2X06/BE1	Rear panel legend	1	
F	52-CKNOSX06XXX/BB1	Selector cap	2	
G	52-CKNOVX06XXX/BB1	Volume cap	1	
H	52-CACHAX06XXX/BE1	Chassis	1	
I	52-CACOVSGLX06/GE1	Chassis cover	1	Single fixing
I	52-CACOVJWNX06/GE1	Chassis cover	1	Twin fixing
J	52-H2SNKHFA706/XE1	Heatsink	1	
K	Order by description	M6 transformer bolt	1	
L	52-MSHAF706XXX/BE1	Knob shaft	3	
M	52-CBUTPW06XX/BE1	Power button	1	
N	52-HBUTPWRSFGX/XE1	Spring	1	
O	52-CAFR706LAB2/BE1	Legend strip	1	
P	52-MDIFMOLUD06/XE1	Diffuser	1	
Q	Order by description	Front	1	Single fixing
Q	52-CAFR7TWNX06/GE1	Front - grey	1	Twin fixing
R	52-HSWEXT06XXX/XE1	Switch extender	1	
S	Order by description	6BA spire clip	2	
T	Order by description	M3 x 12mm tapite	2	
U	Order by description	M2 x 5mm pan post	2	
V	Order by description	M3 x 16mm	1	
W	Order by description	M3 x 6mm post	9	
X	Order by description	No 4 3/8 post	4	
Y	Order by description	Thumb nut	1	
Z	52-HSKTHP06XXX/XE1	Headphone socket 1/4"	1	
AA	Order by description	IBC connector	1	
AB	52-HSKT4MMBANX/RE1	4mm socket red	2	
AC	52-HSKT4MMBANX/BE1	4mm socket black	4	
AD	Order by description	Rear labels	1 set	Set of labels for rear panel
AE	Order by description	Serial number label	1	
AJ	Order by description	Main PCB assy	1	
AK	52-TX240VCYIX/XE1	Mains transformer	1	240V
AK	52-TX220VCY2XX/XE1	Mains transformer	1	220V
AK	52-TX120VCY2XX/XE1	Mains transformer	1	120V
AK	52-TX100VCYIX/XE1	Mains transformer	1	100V
AL	Order by description	Sleeve	2	
AM	52-MCYMLEADUKX/XT1	Mains lead	1	240V
AM	52-MCYMLEADEUR/XT1	Mains lead	1	220V
AM	52-MCYMLEADUSA/XT1	Mains lead	1	120V
AN	Order by description	16/0.2 wire	6	
AO	52-CBUTPW06XX/BE1	Mains switch	1	
AP	52-MFOOT06XXX/BE1	Square foot	4	
AR	52-HPLG4MMBANX/RT2	4mm plug red	2	
AS	52-HPLG4MMBANX/RT2	4mm plug black	2	
AT	Order by description	Hex spacer	1	
AU	Order by description	MM/MC wire assy	1	
AV	52-LLED07XXXXXX/RE1	LED assy	1	
AW	52-HFUSE4AULXX/BEQ	4A fuse	2	
AX	52-MPF745XXXXXX/BE1	Heatsink	2	

Ordering parts from the parts list

When ordering PCB parts from the parts list, always quote the following information to ensure that the correct parts are supplied-

- Model number and issue
- Serial number
- Component PCB reference
- Value
- Full description

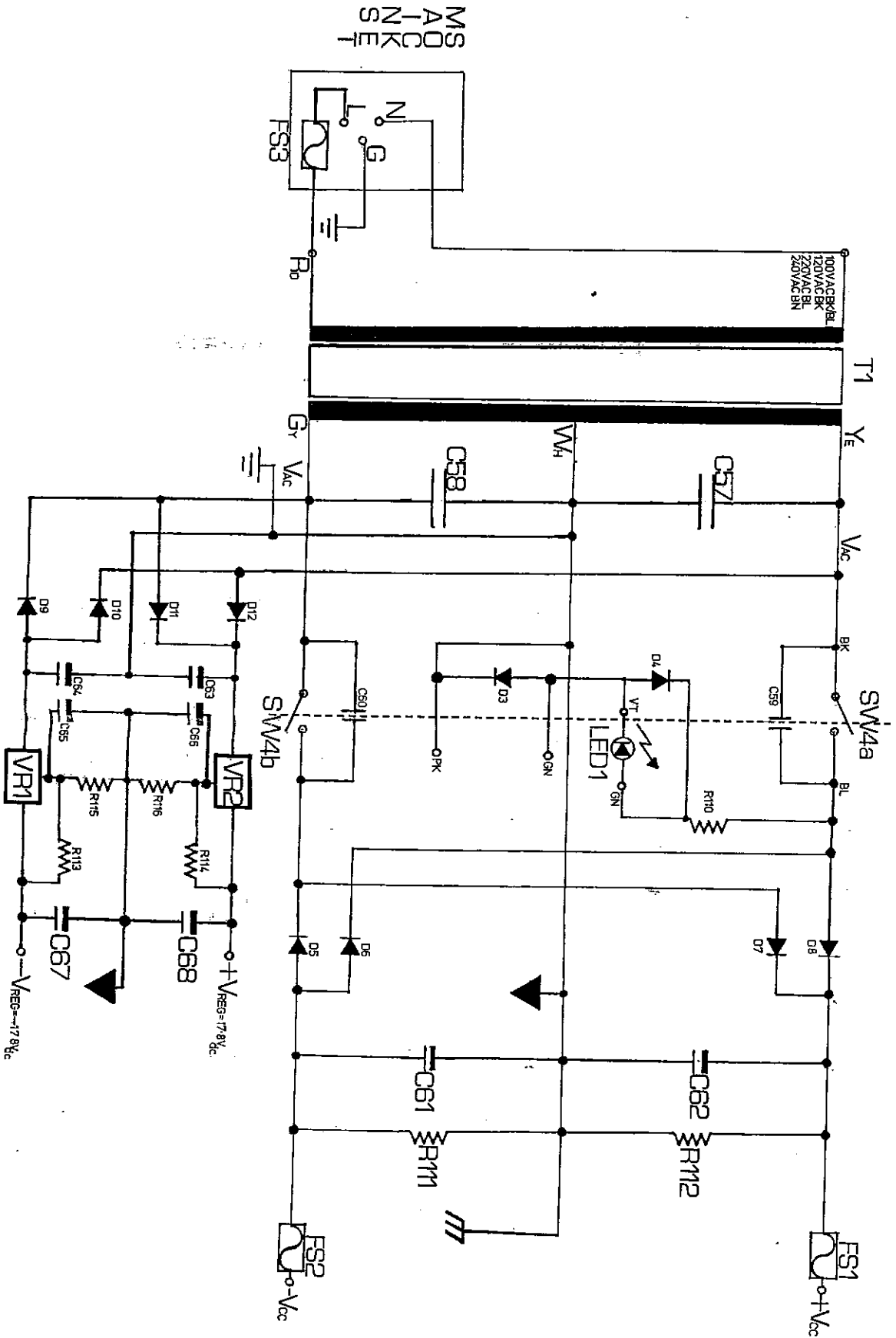
For example-

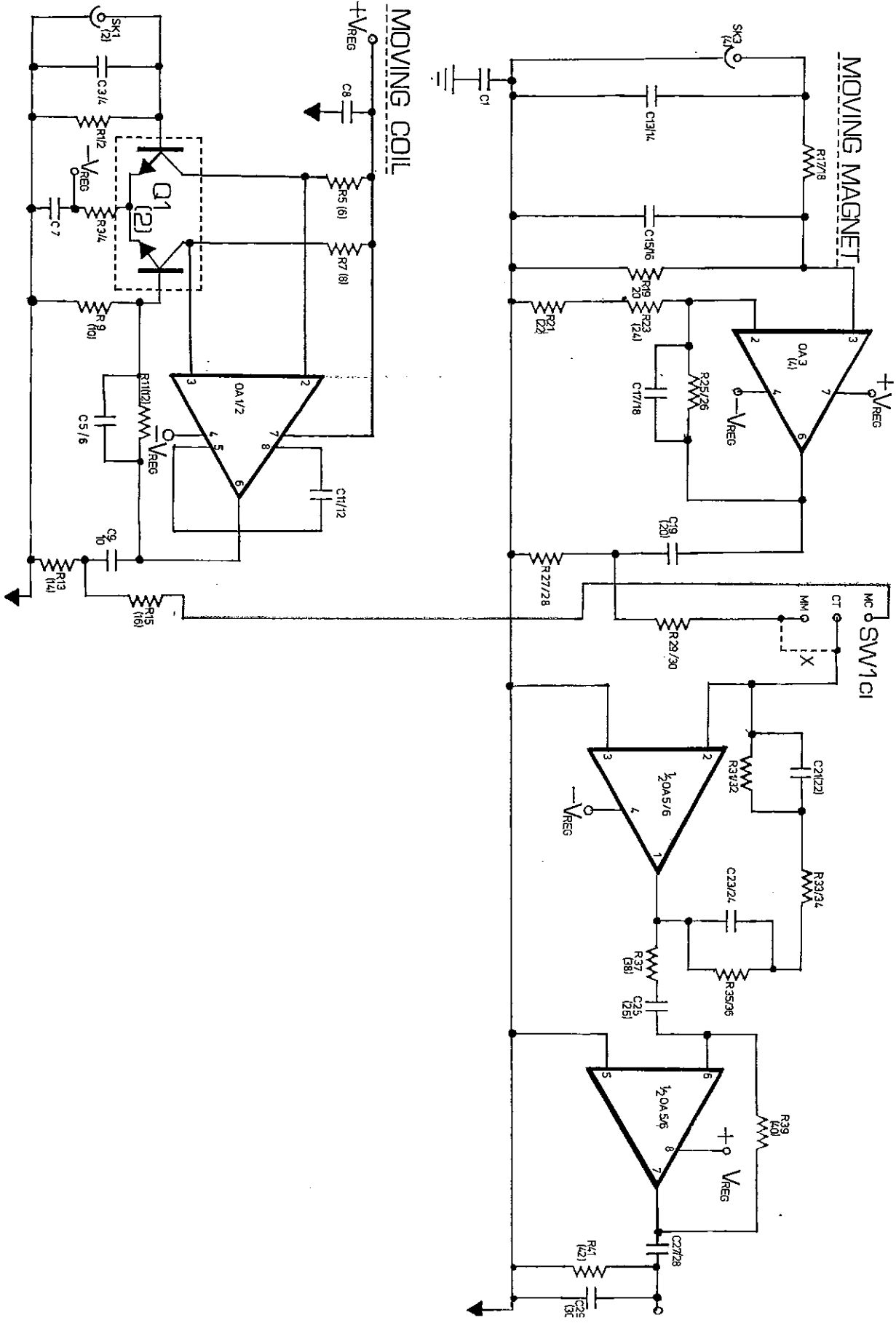
- Cyrus Two issue 06
- C223392
- R24
- 15R
- Resistor, 2%

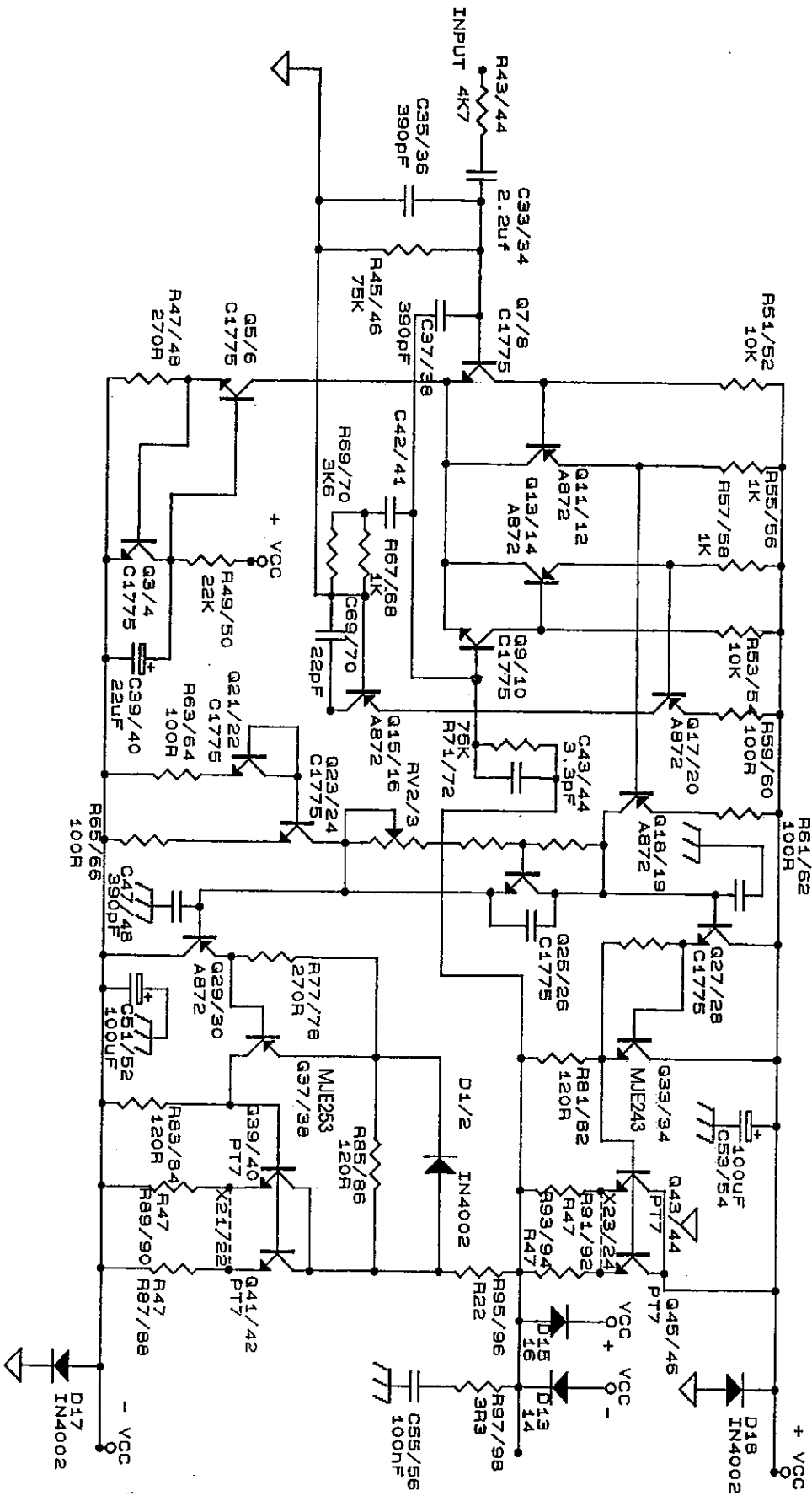
Understanding the parts list

The parts list which follows covers the Issue 06 Cyrus Two PCB assembly.

- Column 1 of the parts list shows the reference number that will be found on the PCB and the schematic diagram.
- Column 2 of the parts list shows brief details of the component package.
- Column 3 of the parts list shows the component value or type number.
- Column 4 of the parts list shows the tolerance and type of the component.
- Column 5 of the parts list is for notes concerning changes made to parts specifications.



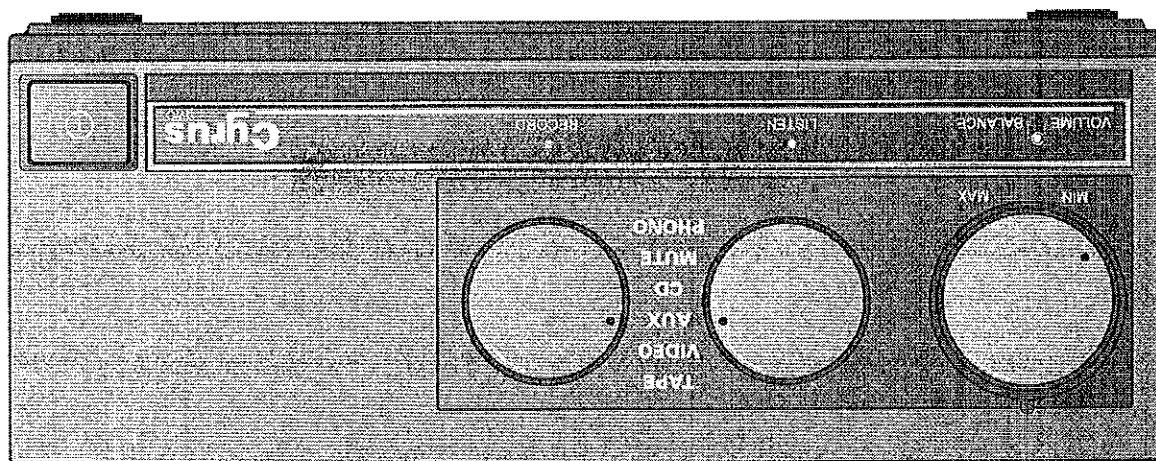




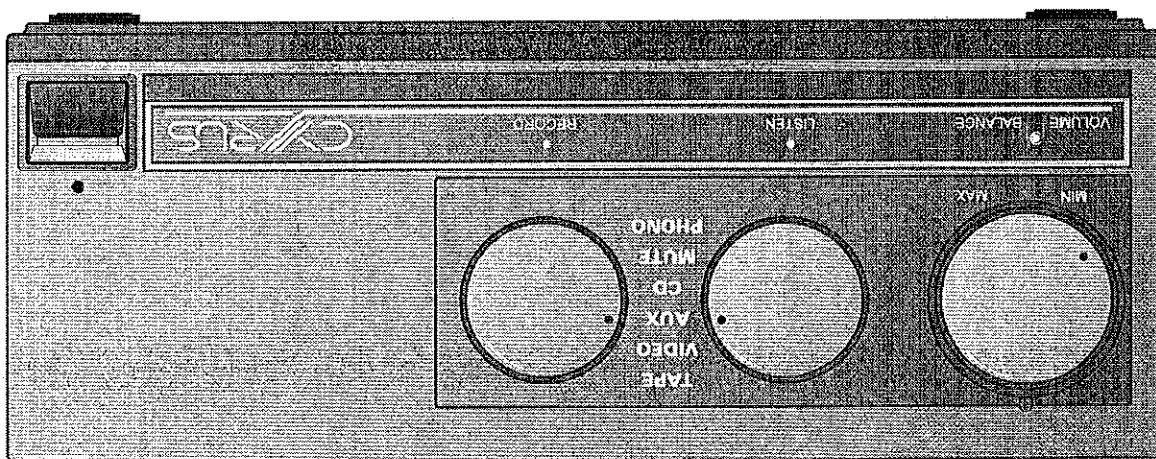
CYRUS TWO POWER AMPLIFIER - ISSUE 06

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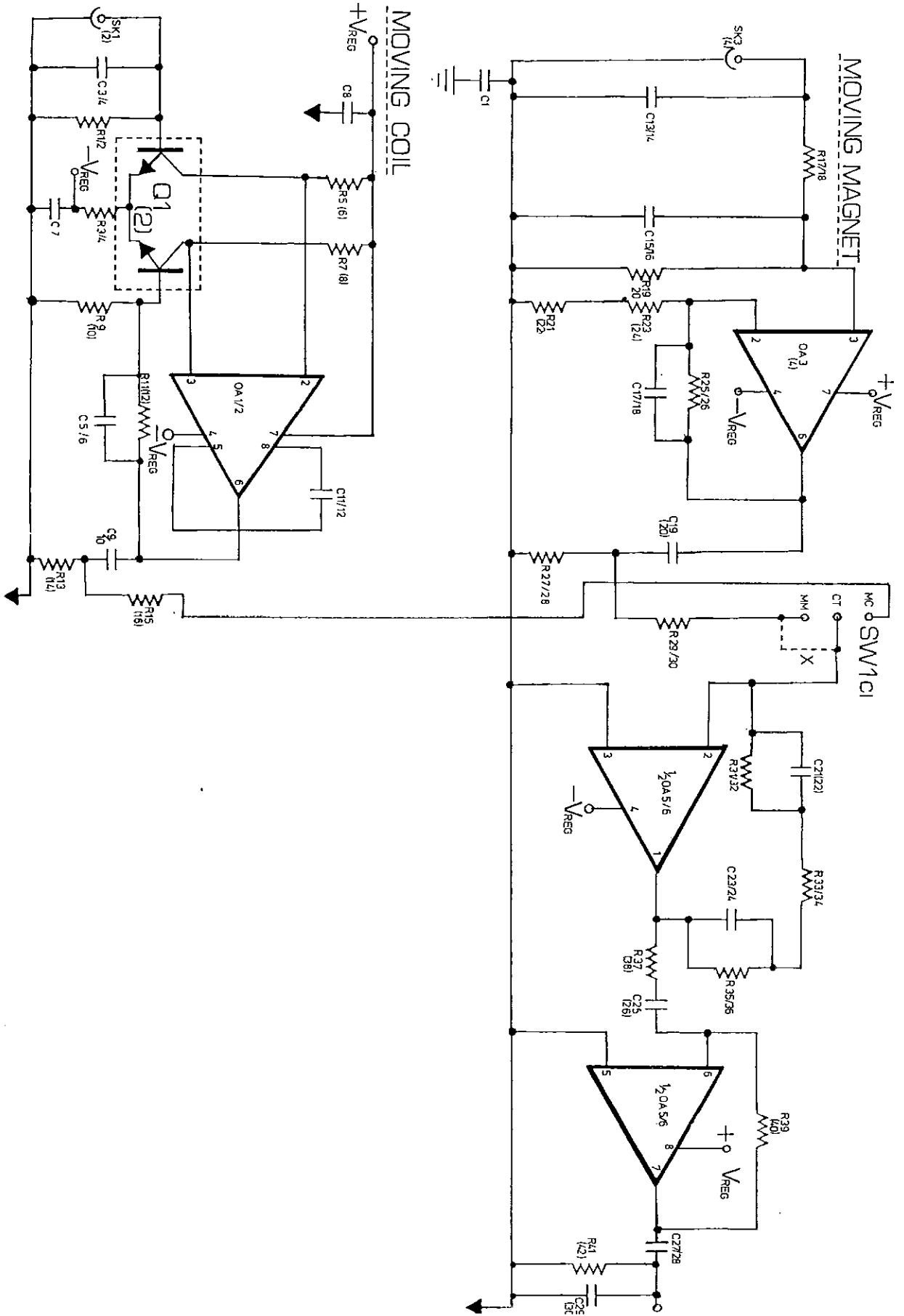
ISSUE 07

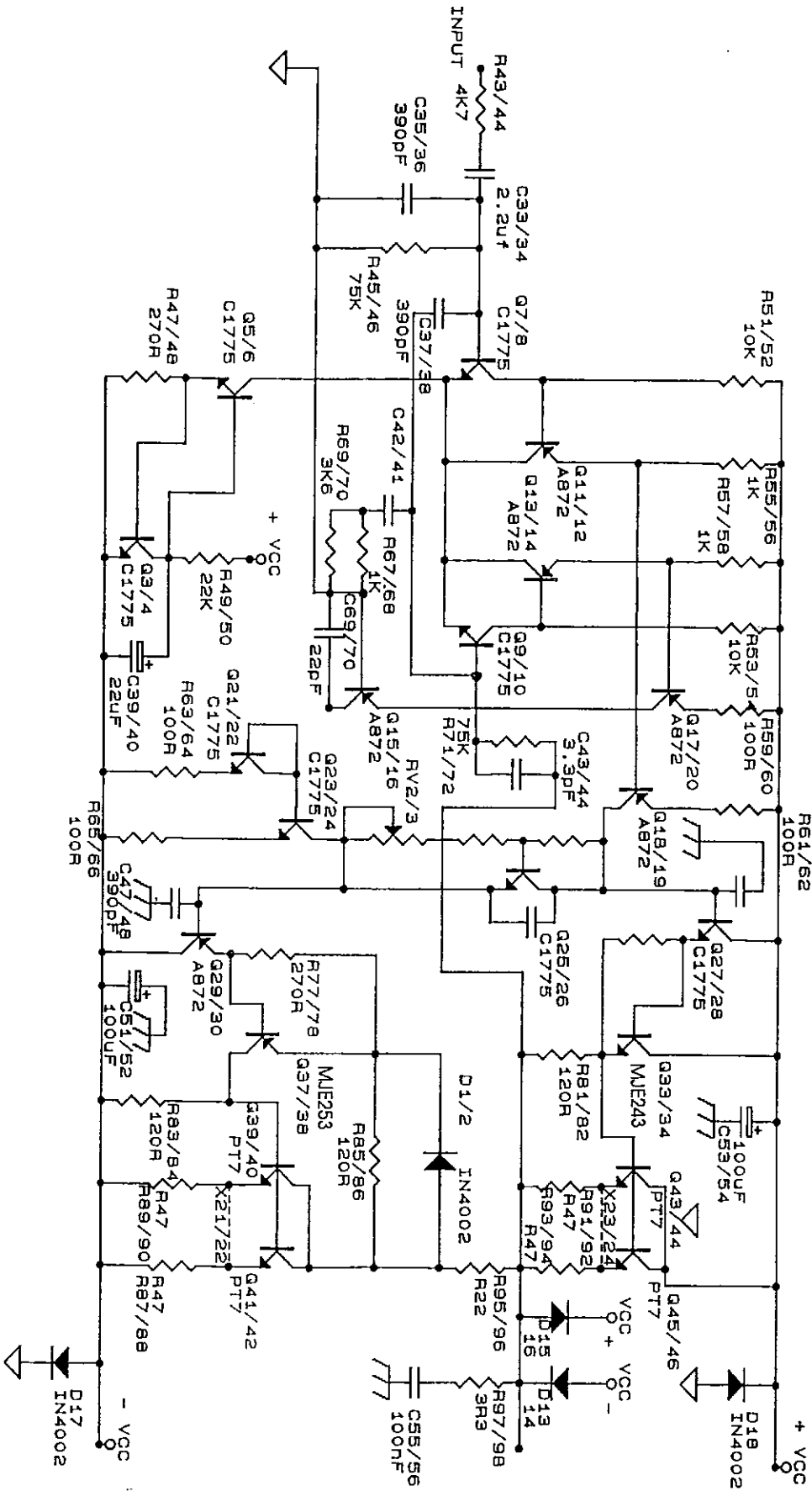


TOG

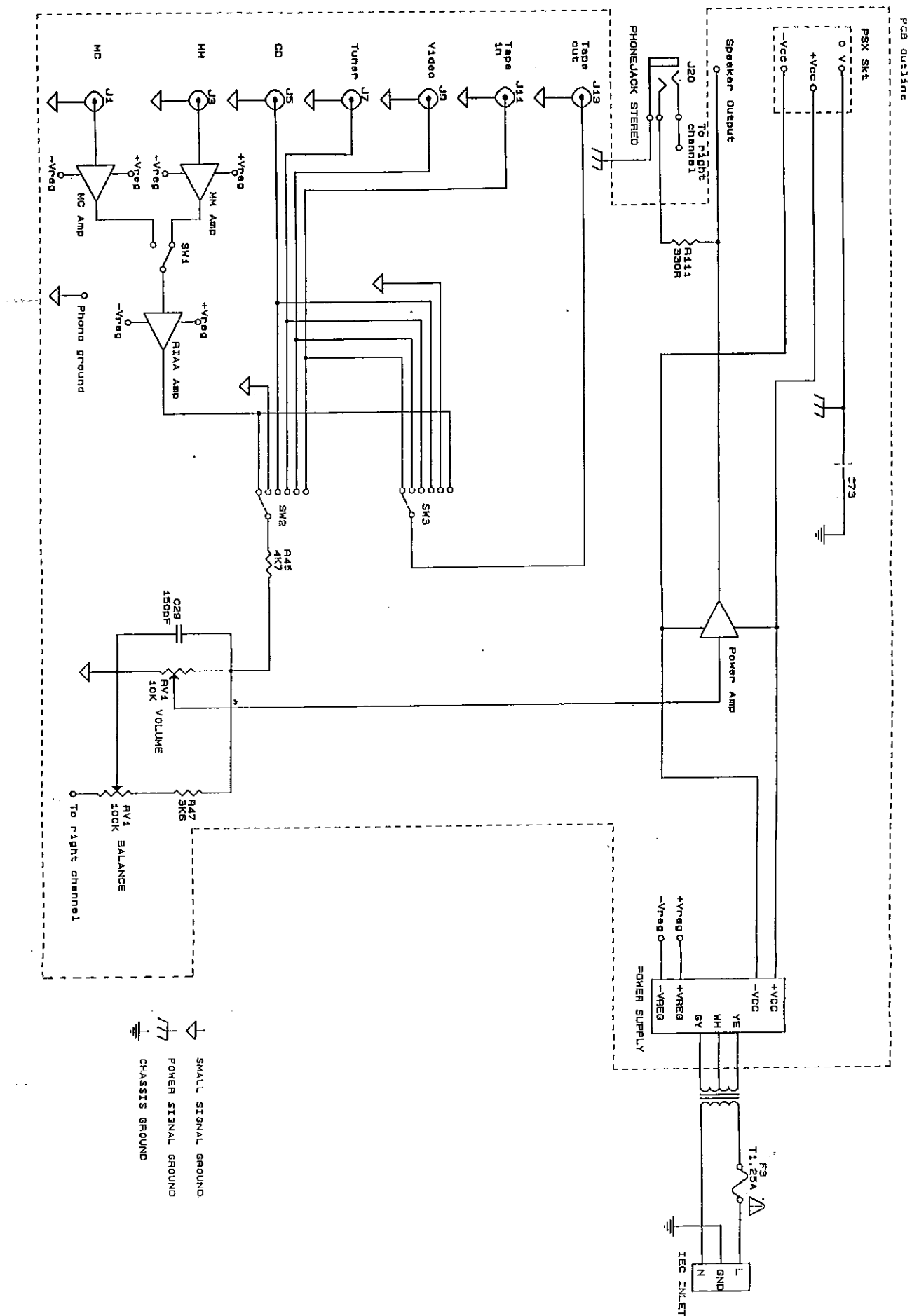








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CYRUS TWO BLOCK DIAGRAM - ISSUE 07 AND TOG

Power supply

The 30V ac from the secondary of the mains transformer feeds the bridge rectifier diodes (D13, D14, D15 and D16). The rectified voltage is smoothed by C65 and C66, giving an output of $\pm 40V$ dc. This unregulated voltage supplies the power amplifier stage. The transformer secondary also feeds another bridge rectifier (D17, D18, D19, and D20). This voltage is smoothed by C67 and C68 and fed to the voltage regulators VR1 (-ve) and VR2 (+ve). These regulate the voltage to $\pm 18V$ dc which is fed to the pre-amplifier section. Note that the regulated supply is independent of the amplifier mains switch, so that the pre-amplifier is always powered whenever the Cyrus Two is connected to the mains supply.

The technical description below is for the left channel only

Pre-amplifier

The input to the moving magnet (MM) stage is coupled to operational amplifier OA3. R19 provides the standard moving magnet input impedance of 47k. The output from OA3 is then coupled via C17 R27 and R29 to the selector switch SW1. RIAA equalisation is provided by dual amplifier OA5. The input to the moving coil (MC) stage is coupled to matched transistors Q1 (LM394) which then connect to OA1. The output from OA1 is coupled via C5 and R15 to the selector switch SW1. RIAA equalisation is provided by the first half of dual amplifier OA5. The second half of OA5 buffers the output from the RIAA equalisation stage (OA5) which is then coupled to the input selector switch via C25 and R43. SW1 (mounted on the rear panel) selects either moving magnet (MM) or moving coil (MC) input.

Input selection and tape monitor

The input selection is via rotary switch SW2. The tape record output may be selected, independently of the listen output, by SW3. The selected input is connected to the balance and volume controls and thence to the power amplifier.

Power amplifier

The power amplifier is a direct coupled design with quasi-complementary output configuration. A protection circuit is used to sense the presence of excess current passing through the 0.22R resistors in line with the output transistors. The protection circuit comprises of Q35 and Q37. If excess current flows through R107A this is detected by Q37 which switches on. This then switches Q35 on which then latches both Q35 and Q37 on. Q35 then disables the constant current source (Q11) via Q15, and this disables the power amplifier.

The front end of the amplifier Q3, Q5, Q7, and Q9 form a long tail pair differential amplifier. The long tail pair are biased by Q11 and Q13 which are arranged as a constant current source (CCS). C43 sets the low frequency response of the amplifier feedback. Q17 and Q19 form the second gain stage. The load for the gain stage is a current mirror Q23 and Q25. Q27 and Q31 are configured as an emitter follower output stage, and Q29, Q33 are configured as a complement to the emitter follower. D3 improves the matching of the output halves.

The recommended procedure for finding signal faults which occur in the Cyrus Two amplifier is as follows-

- Check internal power supplies.
- Trace input signal.

POWER SUPPLY VOLTAGE TESTS

Each of the power supplies should be checked in sequence. Connect the mains power to the unit. Switch on the power at the front panel, then make tests for the voltages listed between the chassis ground and the following test-points with a DVM.

TEST POINT	VOLTAGE	NOTES
D13 -ve	30VAC (approx)	Voltage will vary slightly with AC mains input
D16 +ve	30VAC (approx)	Voltage will vary slightly with AC mains input
Fuse F1	+41V (approx)	Voltage will vary slightly with AC mains input
Fuse F2	-41V (approx)	Voltage will vary slightly with AC mains input
VR2 output	+18V	
VR1 output	-18V	

Refer to the power supply schematic diagram when making these tests. If any of the above voltages are incorrect, the problem should be found before proceeding with further tests.

SIGNAL FAULTS

If the power supply tests prove OK but a signal fault is still apparent, connect the standard test signal of 1kHz, 50mV to the CD input. Select the CD input, set the volume to maximum and trace the signal through the input switches, the volume control stages and the output buffer amplifiers. The defective amplifier stage can then be identified and investigated.

OUTPUT STAGE FAULTS

If the amplifier continuously blows fuses then the output stages of the Cyrus Two may be faulty. Without applying power, check the output transistors with a DVM set to 'diode test'. First check the output transistors Q41 and Q43, the driver transistors Q31 and Q33, the pre-driver transistors Q27 and Q29, and the quiescent transistor Q39. Check also the condition of the output stage fusible resistors R89-R95. Check the values of the 0.22R resistors adjacent to the output transistors. If any of these resistors is open circuit, the output transistors will be damaged.

Following these tests and if necessary the replacement of any components which are damaged

Refit the PCB, apply power to the Cyrus Two without a load connected. Switch on and check that the DC offset voltage at the loudspeaker output terminals is within $\pm 50\text{mV}$ of 0VDC. Check also that the quiescent current is set correctly (refer to the alignment instructions). Failure of these tests indicates that there may be a problem in the earlier stages of the power amplifier and careful checks of the other transistors is advised.

Alignment

If repairs have been made to the power amplifier section of the Cyrus Two, it will be necessary to set the bias current to the correct value. The points for checking the bias current are across one of the output transistor emitter resistors, (R107A for the left channel and R108A for the right channel).

- Switch off the power to the amplifier.
- Connect a digital test meter reading millivolts to the bias test points for the left channel.
- Switch on the amplifier. Set the volume to minimum (Do not connect a signal source or loudspeakers to the amplifier whilst adjusting quiescent current).
- The meter reading should be in the range 8 - 20mV. If the voltage is too high, it can be reduced by increasing the value of R81 to the next preferred value of 180R. If the voltage is too low, connect a resistor of value 220R across R81 using the solder pillars fitted to the pcb.
- Now connect the test meter to the bias test points for the right channel and repeat the above procedure.
- Leave the amplifier to stabilise for ten minutes and check that the voltages are still within the recommended values.

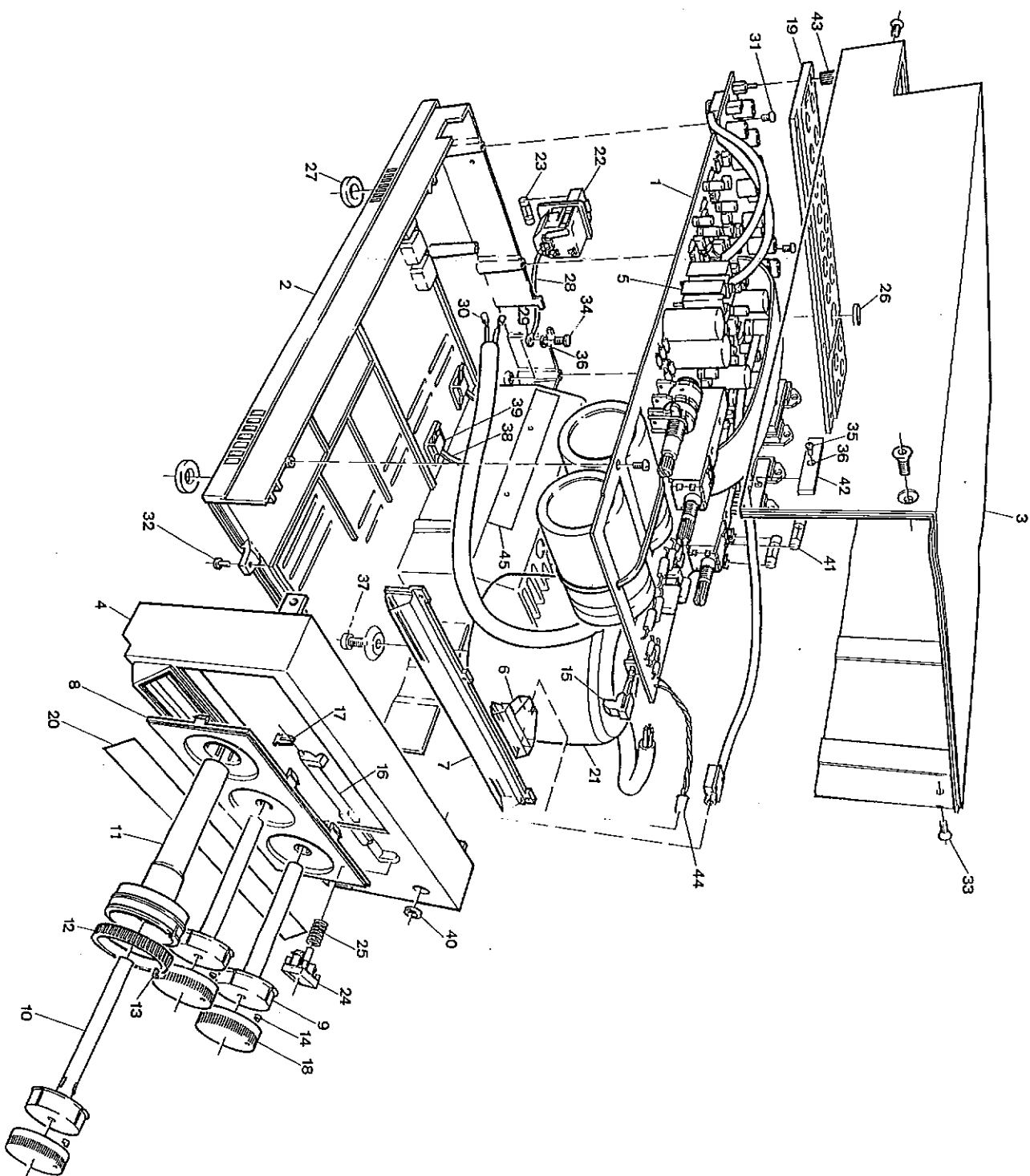
Adjustments for use with a Cyrus PSX

The Cyrus Two can be used with an optional PSX power supply. The PSX supplies DC power directly to the main reservoir capacitors of the Cyrus Two and therefore powers the main amplifier stages. The power transformer of the Cyrus Two remains active at this time to provide power for the pre-amplifier circuits. This improves both the technical and sonic performance of the Cyrus Two.

To use the Cyrus Two with a PSX it is necessary to remove the DC fuses from the Cyrus Two main pcb (F1 and F2).

Setting for mono operation

For certain applications (e.g. bi-amping), it is possible to operate the Cyrus Two as a mono amplifier. This is achieved by linking the two pins marked "M" (adjacent to R49 and R50) and removing the link X12 (adjacent to the above pins). Input to the right channel is then (via any of the line inputs or the phono input) routed to both output channels.



CYRUS TWO CHASSIS DRAWING - ISSUE 07 AND TOG

CYRUS TWO CHASSIS PARTS LIST - ISSUE 07 AND TOG

No.	Part number	Description	Quantity	Notes
1	52-BASSVCY2TGX/XE1	Circuit board	1	
2	52-CACHATGXXXXXX/BX1	Chassis	1	
3	52-CXCVOVSGLX07/BE1	Cover black - issue 07	1	
3	52-CXCVOVSGLXTG/BE1	Cover black - issue TOG	1	
3	52-CXCVOVSGLX07/NE1	Cover NEXTEL - issue 07 and TOG	1	
4	52-CAFRITSGLX07/NE1	Front NEXTEL issue 07	1	
5	52-MPF745XXXXXX/BE1	Heatsink	2	
6	52-MDIFMOULD07/XE1	Diffuser (issue 07 only)	1	
7		Order by description	1	
8	52-CAFRIT07LAB2/BE1	Front decal - issue 07	1	
8	52-CAFRITGLABX/BE1	Front decal - issue TOG	1	
9	52-MSHAFT07SEL/BE1	Selector shaft - issue 07	2	
9	52-MSHAFTTGSEL/RT1	Selector shaft - issue TOG	2	
10	52-MSHAFT07VOL/BE1	Volume shaft - issue 07	1	
10	52-MSHAFTTGVOL/RE1	Volume shaft - issue TOG	1	
11	52-MSHAFT07BAL/BE1	Balance shaft - issue 07	1	
11	52-MSHAFTTGBAL/BE1	Balance shaft - issue TOG	1	
12	52-CBALRJNGXXX/BE1	Balance ring	1	
13	52-CBALIND07XX/RE1	Balance indicator - issue 07	1	
14	52-CVOLIND07XX/RE1	Vol/sci indicator - issue 07	3	
15	52-HSWEXT07XXX/RE1	Switch extender - issue 07	1	
16	52-MTARM07XXXXXX/RE1	Transfer arm - issue 07	1	
17	52-MTARB07XXXXXX/RE1	Arm bearing - issue 07	2	
18	52-CKNOBXTGXXX/BB1	Control knob	3	
19	52-CARDCALIX07/BE1	Back decal - issue 07	1	
19	52-CARDCALIXTG/BD1	Back decal - issue TOG	1	
20	52-CAFRIT07LAB1/BE1	Front label - issue 07	1	
20	52-CAFRITGLABX/BE1	Front label - issue TOG	1	
21	52-TX240VCYIIX/XE1	Mains transformer	1	240V
21	52-TX220VCY2XX/XE1	Mains transformer	1	220V
21	52-TX120VCY2XX/XE1	Mains transformer	1	120V
21	52-TX100VCYIIX/XE1	Mains transformer	1	100V
22		Order by description	1	
22	52-HFUSE1AXXXX/XES	1A A.S. fuse	1	
24	52-CBUTPWR07XX/BE1	Power button - issue 07	1	
24	52-HSWTPWRTOGX/BT1	Toggle switch - issue TOG	1	
25	52-HBUTPWRSPGX/XE1	Button spring - issue 07	1	
26		Order by description	1	
27	52-MFGOOTIIXXX/BH1	Cyrus foot	4	
28		Order by description	1	
29		Order by description	1	
30		Order by description	2	
31		Order by description	7	
32		Order by description	2	
33		Order by description	4	
34		Order by description	1	
35		Order by description	2	
36		Order by description	3	
37		Order by description	1	
38		Order by description	4	
39		Order by description	2	
40		Order by description	1	
41	52-HFUSE3A15XX/XEQ	4A Q/B fuse	2	

CYRUS TWO CHASSIS PARTS LIST – ISSUE 07 AND TOG

No.	Part number	Description	Quantity	Notes
42	52-HHEAT5INBAR/XE1	Output transistor clamp	2	
43	Order by description	Thumb nut	1	
44	52-LLED07XXXXXX/RE1	LED assy – Issue 07	1	
44	52-LLEDXXTGXXX/RE1	LED assy – Issue TOG	1	
45	52-MSILPADXXXXX/XE1	SIL pad	1	

CYRUS TWO PCB PARTS LIST – ISSUE 07 AND TOG

Ordering parts from the parts list

When ordering PCB parts from the parts list, always quote the following information to ensure that the correct parts are supplied-

- Model number and issue
- Serial number
- Component PCB reference
- Value
- Full description

For example-

- Cyrus Two issue 07
- C223392
- R89
- 270R
- Resistor, 2% fusible

Understanding the parts list

The parts list which follows covers the Issue 07 and TOG Cyrus Two PCB assembly.

- Column 1 of the parts list shows the reference number that will be found on the PCB and the schematic diagram.

- Column 2 of the parts list shows brief details of the component package.

- Column 3 of the parts list shows the component value or type number.

- Column 4 of the parts list shows the tolerance and type of the component.

- Column 5 of the parts list is for notes concerning changes made to parts specifications.

CYRUS TWO PCB PARTS LIST – ISSUE 06

RESISTORS

R1	AXIAL	470R	MF 1/4W 2%	
R2	AXIAL	470R	MF 1/4W 2%	
R3	AXIAL	1K5	MF 1/4W 2%	
R4	AXIAL	1K5	MF 1/4W 2%	
R5	AXIAL	470R	MF 1/4W 2%	
R6	AXIAL	470R	MF 1/4W 2%	
R7	AXIAL	470R	MF 1/4W 2%	
R8	AXIAL	470R	MF 1/4W 2%	
R9	AXIAL	15R	MF 1/4W 2%	
R10	AXIAL	15R	MF 1/4W 2%	
R11	AXIAL	1K	MF 1/4W 2%	
R12	AXIAL	1K	MF 1/4W 2%	
R13	AXIAL	270K	MF 1/4W 2%	
R14	AXIAL	270K	MF 1/4W 2%	
R15	AXIAL	4K7	MF 1/4W 2%	
R16	AXIAL	4K7	MF 1/4W 2%	
R17	AXIAL	470R	MF 1/4W 2%	
R18	AXIAL	470R	MF 1/4W 2%	
R19	AXIAL	4K7	MF 1/4W 2%	
R20	AXIAL	4K7	MF 1/4W 2%	
R21	AXIAL	150R	MF 1/4W 2%	
R22	AXIAL	150R	MF 1/4W 2%	
R23	AXIAL	15R	MF 1/4W 2%	
R24	AXIAL	15R	MF 1/4W 2%	
R25	AXIAL	1K5	MF 1/4W 2%	
R26	AXIAL	1K5	MF 1/4W 2%	
R27	AXIAL	270K	MF 1/4W 2%	
R28	AXIAL	270K	MF 1/4W 2%	
R29	AXIAL	10K	MF 1/4W 2%	
R30	AXIAL	10K	MF 1/4W 2%	
R31	AXIAL	75K	MF 1/4W 2%	
R32	AXIAL	75K	MF 1/4W 2%	
R33	AXIAL	1K	MF 1/4W 2%	
R34	AXIAL	1K	MF 1/4W 2%	
R35	AXIAL	1M	MF 1/4W 2%	
R36	AXIAL	1M	MF 1/4W 2%	
R37	AXIAL	10K	MF 1/4W 2%	
R38	AXIAL	10K	MF 1/4W 2%	
R39	AXIAL	10K	MF 1/4W 2%	
R40	AXIAL	10K	MF 1/4W 2%	
R41	AXIAL	270K	MF 1/4W 2%	
R42	AXIAL	270K	MF 1/4W 2%	
R43	AXIAL	4K7	MF 1/4W 2%	
R44	AXIAL	4K7	MF 1/4W 2%	
R45	AXIAL	75K	MF 1/4W 2%	
R46	AXIAL	75K	MF 1/4W 2%	
R47	AXIAL	270R	MF 1/4W 2%	
R48	AXIAL	270R	MF 1/4W 2%	
R49	AXIAL	22K	MF 1/4W 2%	
R50	AXIAL	22K	MF 1/4W 2%	
R51	AXIAL	10K	MF 1/4W 2%	

CYRUS TWO PCB PARTS LIST – ISSUE 06

R52	AXIAL	10K	MF 1/4W 2%	
R53	AXIAL	10K	MF 1/4W 2%	
R54	AXIAL	10K	MF 1/4W 2%	
R55	AXIAL	1K	MF 1/4W 2%	
R56	AXIAL	1K	MF 1/4W 2%	
R57	AXIAL	1K	MF 1/4W 2%	
R58	AXIAL	1K	MF 1/4W 2%	
R59	AXIAL	100R	MF 1/4W 2%	
R60	AXIAL	100R	MF 1/4W 2%	
R61	AXIAL	100R	MF 1/4W 2%	
R62	AXIAL	100R	MF 1/4W 2%	
R63	AXIAL	100R	MF 1/4W 2%	
R64	AXIAL	100R	MF 1/4W 2%	
R65	AXIAL	100R	MF 1/4W 2%	
R66	AXIAL	100R	MF 1/4W 2%	
R67	AXIAL	1K	MF 1/4W 2%	
R68	AXIAL	1K	MF 1/4W 2%	
R69	AXIAL	3K6	MF 1/4W 2%	
R70	AXIAL	3K6	MF 1/4W 2%	
R71	AXIAL	75K	MF 1/4W 2%	
R72	AXIAL	75K	MF 1/4W 2%	
R73	AXIAL	3K6	MF 1/4W 2%	
R74	AXIAL	3K6	MF 1/4W 2%	
R75	AXIAL	680R	MF 1/4W 2%	
R76	AXIAL	680R	MF 1/4W 2%	
R77	AXIAL	270R	MF 1/4W 2%	
R78	AXIAL	270R	MF 1/4W 2%	
R79	AXIAL	270R	MF 1/4W 2%	
R80	AXIAL	270R	MF 1/4W 2%	
R81	AXIAL	120R	MF 1/4W 2%	
R82	AXIAL	120R	MF 1/4W 2%	
R83	AXIAL	120R	MF 1/4W 2%	
R84	AXIAL	120R	MF 1/4W 2%	
R85	AXIAL	120R	MF 1/4W 2%	
R86	AXIAL	120R	MF 1/4W 2%	
R87	AXIAL	R47	WW 1W 5%	
R88	AXIAL	R47	WW 1W 5%	
R89	AXIAL	R47	WW 1W 5%	
R90	AXIAL	R47	WW 1W 5%	
R91	AXIAL	R47	WW 1W 5%	
R92	AXIAL	R47	WW 1W 5%	
R93	AXIAL	R47	WW 1W 5%	
R94	AXIAL	R47	WW 1W 5%	
R95	AXIAL	R22	WW 1W 5%	
R96	AXIAL	R22	WW 1W 5%	
R97	AXIAL	3R3	WW 1W 5%	
R98	AXIAL	3R3	WW 1W 5%	
R99	AXIAL	330R	WW 1W 5%	
R100	AXIAL	330R	WW 1W 5%	
R101		DELETED		
R102		DELETED		
R103	AXIAL	4K7	MF 1/4W 2%	
R104	AXIAL	4K7	MF 1/4W 2%	

CYRUS TWO PCB PARTS LIST - ISSUE 06

R105	AXIAL	4K7	MF 1/4W 2%	
R106	AXIAL	4K7	MF 1/4W 2%	
R107	AXIAL	4K7	MF 1/4W 2%	
R108	AXIAL	4K7	MF 1/4W 2%	
R109		DELETED		
R110	AXIAL	180R	MF 1W 5%	
R111	AXIAL	3K9	MF 1W 5%	
R112	AXIAL	3K9	MF 1W 5%	
R113	AXIAL	270R	MF 1/4W 2%	
R114	AXIAL	270R	MF 1/4W 2%	
R115	AXIAL	3K6	MF 1/4W 2%	
R116	AXIAL	3K6	MF 1/4W 2%	
R117		0R	link	

Key:
MF = metal film, NFR = non flammable resistor.

CAPACITORS

C1		68000pF	PP 63V 10%	
C2		Not fitted		
C3		68000pF	PP 63V 10%	
C4		68000pF	PP 63V 10%	
C5		100pF	PP 160V 10%	
C6		100pF	PP 160V 10%	
C7		68000pF	PP 63V 10%	
C8		68000pF	PP 63V 10%	
C9		2.2uF	EL 50V -10%	
C10		2.2uF	EL 50V -10%	
C11		47pF	PP 160V 10%	
C12		47pF	PP 160V 10%	
C13		100pF	PP 160V 10%	
C14		100pF	PP 160V 10%	
C15		150pF	PP 160V 10%	
C16		150pF	PP 160V 10%	
C17		100pF	PP 100V 10%	
C18		100pF	PP 100V 10%	
C19		1uF	EL 50V -20%	
C20		1uF	EL 50V -20%	
C21		1000pF	PP 160V 2.5%	
C22		1000pF	PP 160V 2.5%	
C23		3600pF	PP 160V 2.5%	
C24		3600pF	PP 160V 2.5%	
C25		2.2uF	EL 50V -20%	
C26		2.2uF	EL 50V -20%	
C27		2.2uF	EL 50V -20%	
C28		2.2uF	EL 50V -20%	
C29		100pF	PP 160V 10%	
C30		100pF	PP 160V 10%	
C31		150pF	PP 160V 10%	
C32		150pF	PP 160V 10%	
C33		2.2uF	EL 50V -20%	
C34		2.2uF	EL 50V -20%	
C35		390pF	PP 160V 10%	

CYRUS TWO PCB PARTS LIST – ISSUE 06

C36		390pF	PP 160V 10%	
C37		390pF	PP 160V 10%	
C38		390pF	PP 160V 10%	
C39		22uF	EL 25V -20%	
C40		22uF	EL 25V -20%	
C41		470uF	EL 6V -20%	
C42		470uF	EL 6V -20%	
C43		3.3pF	CR -20%	
C44		3.3pF	CR -20%	
C45		150pF	PP 160V 10%	Was 100pF. Changed from S/N 207559
C46		150pF	PP 160V 10%	Was 100pF. Changed from S/N 207559
C47		150pF	PP 160V 10%	Was 100pF. Changed from S/N 207559
C48		150pF	PP 160V 10%	Was 100pF. Changed from S/N 207559
C49		22uF	EL 25V -20%	
C50		22uF	EL 25V -20%	
C51		100uF	EL 50V -20%	
C52		100uF	EL 50V -20%	
C53		100uF	EL 50V -20%	
C54		100uF	EL 50V -20%	
C55		0.1uF	PE 63V 10%	
C56		0.1uF	PE 63V 10%	
C57		6800pF	PE 63V 10%	
C58		6800pF	PE 63V 10%	
C59		0.01uF	PE 400V 10%	
C60		0.01uF	PE 400V 10%	
C61		10000uF	EL 50V -20%	
C62		10000uF	EL 50V -20%	
C63		470uF	EL 50V -20%	
C64		470uF	EL 50V -20%	
C65		22uF	EL 25V -20%	
C66		22uF	EL 25V -20%	
C67		22uF	EL 25V -20%	
C68		22uF	EL 25V -20%	
C69		100pF	PP 160V 10%	Was 680pF. Changed from S/N 206558
C70		100pF	EL 25V -20%	Was 680pF. Changed from S/N 206558

DIODES

D01	AXIAL	IN4002	1 amp rectifier diode	
D02	AXIAL	IN4002	1 amp rectifier diode	
D03	AXIAL	IN4002	1 amp rectifier diode	
D04	AXIAL	IN4002	1 amp rectifier diode	Added from S/N 206558
D05	AXIAL	MR852	1 amp rectifier diode	
D06	AXIAL	MR852	1 amp rectifier diode	
D07	AXIAL	MR852	1 amp rectifier diode	
D08	AXIAL	MR852	1 amp rectifier diode	
D09	AXIAL	IN4002	1 amp rectifier diode	
D10	AXIAL	IN4002	1 amp rectifier diode	

CYRUS TWO PCB PARTS LIST – ISSUE 06

D11	AXIAL	IN4002	1 amp rectifier diode
D13	AXIAL	IN4002	1 amp rectifier diode
D14	AXIAL	IN4002	1 amp rectifier diode
D15	AXIAL	IN4002	1 amp rectifier diode
D16	AXIAL	IN4002	1 amp rectifier diode
D17	AXIAL	IN4002	1 amp rectifier diode
D18	AXIAL	IN4002	1 amp rectifier diode

TRANSISTORS

Q1	LM394	NPN signal transistor (matched pair)
Q2	LM394	NPN signal transistor (matched pair)
Q3	2SC1775A	NPN signal transistor
Q4	2SC1775A	NPN signal transistor
Q5	2SC1775A	NPN signal transistor
Q6	2SC1775A	NPN signal transistor
Q7	2SC1775A	NPN signal transistor
Q8	2SC1775A	NPN signal transistor
Q9	2SC1775A	NPN signal transistor
Q10	2SC1775A	NPN signal transistor
Q11	2SA872A	PNP signal transistor
Q12	2SA872A	PNP signal transistor
Q13	2SA872A	PNP signal transistor
Q14	2SA872A	PNP signal transistor
Q15	2SA872A	PNP signal transistor
Q16	2SA872A	PNP signal transistor
Q17	2SA872A	PNP signal transistor
Q18	2SA872A	PNP signal transistor
Q19	2SA872A	PNP signal transistor
Q20	2SA872A	PNP signal transistor
Q21	2SC1775A	NPN signal transistor
Q22	2SC1775A	NPN signal transistor
Q23	2SC1775A	NPN signal transistor
Q24	2SC1775A	NPN signal transistor
Q25	2SC1775A	NPN signal transistor
Q26	2SC1775A	NPN signal transistor
Q27	2SC1775A	NPN signal transistor
Q28	2SC1775A	NPN signal transistor
Q29	2SA872A	PNP signal transistor
Q30	2SA872A	PNP signal transistor
Q31	DELETED	
Q32	DELETED	
Q33	MJE243	NPN power transistor
Q34	MJE243	NPN power transistor
Q35	DELETED	
Q36	DELETED	
Q37	MJE253	PNP power transistor
Q38	MJE253	PNP power transistor
Q39	PT7	NPN power transistor

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

Was ZTX653.
Changed from S/N 204310

CYRUS TWO PCB PARTS LIST – ISSUE 06

Q40	T0220	PT7	NPN power transistor	
Q41	T0220	PT7	NPN power transistor	
Q42	T0220	PT7	NPN power transistor	
Q43	T0220	PT7	NPN power transistor	
Q44	T0220	PT7	NPN power transistor	
Q45	T0220	PT7	NPN power transistor	
Q46	T0220	PT7	NPN power transistor	

VOLTAGE REGULATORS

VR1	T0220	LM337	1.5A -ve regulator	
VR2	T0220	LM317	1.5A +ve regulator	

INTEGRATED CIRCUITS

OA1	DIL	NE5534AN	Operational amplifier	
OA2	DIL	NE5534AN	Operational amplifier	
OA3	DIL	NE5534AN	Operational amplifier	
OA4	DIL	NE5534AN	Operational amplifier	
OA5	DIL	LF353DP	Operational amplifier	
OA6	DIL	LF353DP	Operational amplifier	

CONNECTORS

SK3-14	PHONO	Input sockets		
SK15-18	4mm	Loudspeaker socket		
SK19	XLR	PSX socket		
SK20	3.5mm	Headphone socket		
SK21	12 pin socket	Complete with ribbon cable		

SWITCHES

SW1	Slide switch	MM/MC		Phono switch
SW2	Rotary switch	INPUT		
SW3	Rotary switch	TAPE		
SW4	Push switch	PUSH		Mains switch

OTHERS

RV01	ROTARY	10k	Volume control	
RV02	ROTARY	200R	Bias adjust	
RV03	ROTARY	200R	Bias adjust	
FS1		20mm	4A	
FS2		20mm	4A	

CYRUS TWO PCB PARTS LIST – ISSUE 07 AND TOG

RESISTORS

R1	AXIAL	100R	MF 1/4W 2%
R2	AXIAL	100R	MF 1/4W 2%
R3	AXIAL	1k5	MF 1/4W 2%
R4	AXIAL	1k5	MF 1/4W 2%
R5	AXIAL	470R	MF 1/4W 2%
R6	AXIAL	470R	MF 1/4W 2%
R7	AXIAL	470R	MF 1/4W 2%
R8	AXIAL	470R	MF 1/4W 2%
R9	AXIAL	15R	MF 1/4W 2%
R10	AXIAL	15R	MF 1/4W 2%
R11	AXIAL	1k	MF 1/4W 2%
R12	AXIAL	1k	MF 1/4W 2%
R13	AXIAL	270k	MF 1/4W 2%
R14	AXIAL	270k	MF 1/4W 2%
R15	AXIAL	4k7	MF 1/4W 2%
R16	AXIAL	4k7	MF 1/4W 2%
R17	AXIAL	470R	MF 1/4W 2%
R18	AXIAL	470R	MF 1/4W 2%
R19	AXIAL	4k7	MF 1/4W 2%
R20	AXIAL	4k7	MF 1/4W 2%
R21	AXIAL	150R	MF 1/4W 2%
R22	AXIAL	150R	MF 1/4W 2%
R23	AXIAL	15R	MF 1/4W 2%
R24	AXIAL	15R	MF 1/4W 2%
R25	AXIAL	1k5	MF 1/4W 2%
R26	AXIAL	1k5	MF 1/4W 2%
R27	AXIAL	270k	MF 1/4W 2%
R28	AXIAL	270k	MF 1/4W 2%
R29	AXIAL	10k	MF 1/4W 2%
R30	AXIAL	10k	MF 1/4W 2%
R31	AXIAL	75k	MF 1/4W 2%
R32	AXIAL	75k	MF 1/4W 2%
R33	AXIAL	1k	MF 1/4W 2%
R34	AXIAL	1k	MF 1/4W 2%
R35	AXIAL	1M	MF 1/4W 2%
R36	AXIAL	1M	MF 1/4W 2%
R37	AXIAL	6k8	MF 1/4W 2%
R38	AXIAL	6k8	MF 1/4W 2%
R39	AXIAL	10k	MF 1/4W 2%
R40	AXIAL	10k	MF 1/4W 2%
R41	AXIAL	270k	MF 1/4W 2%
R42	AXIAL	270k	MF 1/4W 2%
R43	AXIAL	150R	MF 1/4W 2%
R44	AXIAL	150R	MF 1/4W 2%
R45	AXIAL	4k7	MF 1/4W 2%
R46	AXIAL	4k7	MF 1/4W 2%
R47	AXIAL	3k6	MF 1/4W 2%
R48	AXIAL	3k6	MF 1/4W 2%
R49	AXIAL	4k7	MF 1/4W 2%
R50	AXIAL	4k7	MF 1/4W 2%
R51	AXIAL	75k	MF 1/4W 2%

CYRUS TWO PCB PARTS LIST – ISSUE 07 AND TOG

R52	AXIAL	75k	MF 1/4W 2%
R53	AXIAL	270R	MF 1/4W 2%
R54	AXIAL	270R	MF 1/4W 2%
R55	AXIAL	22k	MF 1/4W 2%
R56	AXIAL	22k	MF 1/4W 2%
R57	AXIAL	10k	MF 1/4W 2%
R58	AXIAL	10k	MF 1/4W 2%
R59	AXIAL	10k	MF 1/4W 2%
R60	AXIAL	10k	MF 1/4W 2%
R61	AXIAL	1k	MF 1/4W 2%
R62	AXIAL	1k	MF 1/4W 2%
R63	AXIAL	1k	MF 1/4W 2%
R64	AXIAL	1k	MF 1/4W 2%
R65	AXIAL	750R	MF 1/4W 2%
R66	AXIAL	750R	MF 1/4W 2%
R67	AXIAL	75k	MF 1/4W 2%
R68	AXIAL	75k	MF 1/4W 2%
R69	AXIAL	6k8	MF 1/4W 2%
R70	AXIAL	6k8	MF 1/4W 2%
R71	AXIAL	75k	MF 1/4W 2%
R72	AXIAL	75k	MF 1/4W 2%
R73	AXIAL	100R	MF 1/4W 2%
R74	AXIAL	100R	NFR 1/4W 2% fusible
R75	AXIAL	100R	NFR 1/4W 2% fusible
R76	AXIAL	100R	NFR 1/4W 2% fusible
R77	AXIAL	100R	NFR 1/4W 2% fusible
R78	AXIAL	100R	NFR 1/4W 2% fusible
R79	AXIAL	100R	NFR 1/4W 2% fusible
R80	AXIAL	100R	NFR 1/4W 2% fusible
R81	AXIAL	160R	MF 1/4W 2%
R82	AXIAL	160R	MF 1/4W 2%
R83	AXIAL	680R	MF 1/4W 2%
R84	AXIAL	680R	MF 1/4W 2%
R85	AXIAL	3k6	MF 1/4W 2%
R86	AXIAL	3k6	MF 1/4W 2%
R87	AXIAL	150R	MF 1/4W 2%
R88	AXIAL	150R	MF 1/4W 2%
R89	AXIAL	270R	NFR 1/4W 2% fusible
R90	AXIAL	270R	NFR 1/4W 2% fusible
R91	AXIAL	270R	NFR 1/4W 2% fusible
R92	AXIAL	270R	NFR 1/4W 2% fusible
R93	AXIAL	120R	NFR 1/4W 2% fusible
R94	AXIAL	120R	NFR 1/4W 2% fusible
R95	AXIAL	120R	NFR 1/4W 2% fusible
R96	AXIAL	120R	NFR 1/4W 2% fusible
R97	AXIAL	120R	NFR 1/4W 2% fusible
R98	AXIAL	120R	NFR 1/4W 2% fusible
R99	AXIAL	100R	MF 1/4W 2%
R100	AXIAL	100R	MF 1/4W 2%
R101	AXIAL	100R	MF 1/4W 2%
R102	AXIAL	100R	MF 1/4W 2%
R103	AXIAL	470R	MF 1/4W 2%
R104	AXIAL	470R	MF 1/4W 2%

CYRUS TWO PCB PARTS LIST – ISSUE 07 AND TOG

R105	AXIAL	100R	MF 1/4W 2%	
R106	AXIAL	100R	MF 1/4W 2%	
R107	AXIAL	R22	3W 5%	
R108	AXIAL	R22	3W 5%	
R109	AXIAL	3R3	MF 1.6W 5%	
R110	AXIAL	3R3	MF 1.6W 5%	
R111	AXIAL	330R	MF 1.6W 5%	
R112	AXIAL	330R	MF 1.6W 5%	
R113	AXIAL	3K9	MF 1W 5%	
R114	AXIAL	3K9	MF 1W 5%	
R115	AXIAL	3K6	MF 1/4W 2%	
R116	AXIAL	3K6	MF 1/4W 2%	
R117	AXIAL	270R	MF 1/4W 2%	
R118	AXIAL	270R	MF 1/4W 2%	
R119	AXIAL	100R	MF 1.6W 5%	
R120	AXIAL	100R	MF 1.6W 5%	
R121	AXIAL	15R	MF 1/4W 2%	

Key:
MF = metal film, NFR = non flammable resistor.

CAPACITORS

C1		6800pF	PP 63V 10%	
C2		6800pF	PP 63V 10%	
C3		100pF	PP 100V 10%	
C4		100pF	PP 100V 10%	
C5		2.2uF	EL 50V -20%	
C6		2.2uF	EL 50V -20%	
C7		DELETED		
C8		DELETED		
C9		6800pF	PP 63V 10%	
C10		6800pF	PP 63V 10%	
C11		100pF	PP 100V 10%	
C12		100pF	PP 100V 10%	
C13		150pF	PP 100V 10%	
C14		150pF	PP 100V 10%	
C15		DELETED		
C16		DELETED		
C17		1uF	EL 50V	
C18		1uF	EL 50V	
C19		1000pF	PP 100V 2.5%	
C20		1000pF	PP 100V 2.5%	
C21		3600pF	PP 100V 2.5%	
C22		3600pF	PP 100V 2.5%	
C23		2.2uF	EL 50V -20%	
C24		2.2uF	EL 50V -20%	
C25		2.2uF	EL 50V -20%	
C26		2.2uF	EL 50V -20%	
C27		100pF	PP 100V 10%	
C28		100pF	PP 100V 10%	
C29		150pF	PP 100V 10%	
C30		150pF	PP 100V 10%	

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C31	2.2uF	EL 50V -20%
C32	2.2uF	EL 50V -20%
C33	390pF	PP 100V 10%
C34	390pF	PP 100V 10%
C35	390pF	PP 100V 10%
C36	390pF	PP 100V 10%
C37	22uF	EL 25V -20%
C38	22uF	EL 25V -20%
C39	22uF	EL 25V -20%
C40	22uF	EL 25V -20%
C41	100pF	PP 100V 10%
C42	100pF	PP 100V 10%
C43	470uF	EL 6V -20%
C44	470uF	EL 6V -20%
C45	3.3pF	PF/CR 20%
C46	3.3pF	PF/CR 20%
C47	120pF	PP 100V 10%
C48	120pF	PP 100V 10%
C49	120pF	PP 100V 10%
C50	120pF	PP 100V 10%
C51	22uF	EL 25V -20%
C52	22uF	EL 25V -20%
C53	100uF	EL 50V -20%
C54	100uF	EL 50V -20%
C55	100uF	EL 50V -20%
C56	100uF	EL 50V -20%
C57	1uF	EL 50V -20%
C58	1uF	EL 50V -20%
C59	0.1uF	PE 63V 10%
C60	0.1uF	PE 63V 10%
C61	6800pF	PP 63V 10%
C62	6800pF	PP 63V 10%
C63	4700pF	MP3Y 250V ac
C64	4700pF	MP3Y 250V ac
C65	10000uF	EL 50V -20%
C66	10000uF	EL 50V -20%
C67	470uF	EL 63V -20%
C68	470uF	EL 63V -20%
C69	22uF	EL 25V -20%
C70	22uF	EL 25V -20%
C71	22uF	EL 25V -20%
C72	22uF	EL 25V -20%
C73	DELETED	

Key:
 EL = electrolytic. PE = polyester. PP = polypropylene.

DIODES

D1	1N4002	1 amp rectifier diode
D2	1N4002	1 amp rectifier diode
D3	1N4002	1 amp rectifier diode
D4	1N4002	1 amp rectifier diode
D5	1N4002	1 amp rectifier diode

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D6	IN4002	1 amp rectifier diode	
D7	IN4002	1 amp rectifier diode	
D8	IN4002	1 amp rectifier diode	
D9	IN4002	1 amp rectifier diode	
D10	IN4002	1 amp rectifier diode	
D11	IN4002	1 amp rectifier diode	
D13	PFR852	3 amp rectifier diode	
D14	PFR852	3 amp rectifier diode	
D15	PFR852	3 amp rectifier diode	
D16	PFR852	3 amp rectifier diode	
D17	IN4002	1 amp rectifier diode	
D18	IN4002	1 amp rectifier diode	
D19	IN4002	1 amp rectifier diode	
D20	IN4002	1 amp rectifier diode	

TRANSISTORS

Q1	LM394	Dual NPN signal transistor	
Q2	LM394	Dual NPN signal transistor	
Q3	2SC1775A	NPN signal transistor	TO92
Q4	2SC1775A	NPN signal transistor	TO92
Q5	2SC1775A	NPN signal transistor	TO92
Q6	2SC1775A	NPN signal transistor	TO92
Q7	2SA872A	PNP signal transistor	TO92
Q8	2SA872A	PNP signal transistor	TO92
Q9	2SA872A	PNP signal transistor	TO92
Q10	2SA872A	PNP signal transistor	TO92
Q11	2SC1775A	NPN signal transistor	TO92
Q12	2SC1775A	NPN signal transistor	TO92
Q13	2SC1775A	NPN signal transistor	TO92
Q14	2SC1775A	NPN signal transistor	TO92
Q15	2SC1775A	NPN signal transistor	TO92
Q16	2SC1775A	NPN signal transistor	TO92
Q17	2SA872A	PNP signal transistor	TO92
Q18	2SA872A	PNP signal transistor	TO92
Q19	2SA872A	PNP signal transistor	TO92
Q20	2SA872A	PNP signal transistor	TO92
Q21	2SA872A	PNP signal transistor	TO92
Q22	2SA872A	PNP signal transistor	TO92
Q23	2SC1775A	NPN signal transistor	TO92
Q24	2SC1775A	NPN signal transistor	TO92
Q25	2SC1775A	NPN signal transistor	TO92
Q26	2SC1775A	NPN signal transistor	TO92
Q27	2SC1775A	NPN signal transistor	TO92
Q28	2SC1775A	NPN signal transistor	TO92
Q29	2SA872A	PNP signal transistor	TO92
Q30	2SA872A	PNP signal transistor	TO92
Q31	MJE243	NPN power transistor	TO202
Q32	MJE243	NPN power transistor	TO202
Q33	MJE253	PNP power transistor	TO202
Q34	MJE253	PNP power transistor	TO202
Q35	2SC1775A	NPN signal transistor	TO92

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Q36	TO92	2SC1775A	NPN signal transistor	
Q37	TO92	2SA872A	PNP signal transistor	
Q38	TO92	2SA872A	PNP signal transistor	
Q39	TO92	2SC1775A	NPN signal transistor	
Q40	TO92	2SC1775A	NPN signal transistor	
Q41	TOP3	PT77	NPN power transistor	
Q42	TOP3	PT77	NPN power transistor	
Q43	TOP3	PT77	NPN power transistor	
Q44	TOP3	PT77	NPN power transistor	

VOLTAGE REGULATORS

VR1	TO220	LM337	1.5A -ve regulator	
VR2	TO220	LM317	1.5A +ve regulator	

INTEGRATED CIRCUITS

OA1	NE5534AN	Operational amplifier	
OA2	NE5534AN	Operational amplifier	
OA3	NE5534AN	Operational amplifier	
OA4	NE5534AN	Operational amplifier	
OA5	NE5532N	Operational amplifier	
OA6	NE5532N	Operational amplifier	

CONNECTORS

SK1 - 14	PHONO	Input socket	
SK15 - 18	4mm	Loudspeaker socket	
SK19	3 pin XLR	PSX socket	
SK20	3.5mm	Headphone socket	
SK21	12 pin socket	Complete with ribbon cable	

SWITCHES

SW1	MM/MC	Slide switch	
SW2	INPUT	Rotary switch	
SW3	TAPE	Rotary switch	
SW4	PUSH TYPE	Mains switch (alternative)	
SW4	TOGGLE TYPE	Mains switch (alternative)	

OTHERS

FS1	20mm	4A	
FS2	20mm	4A	

