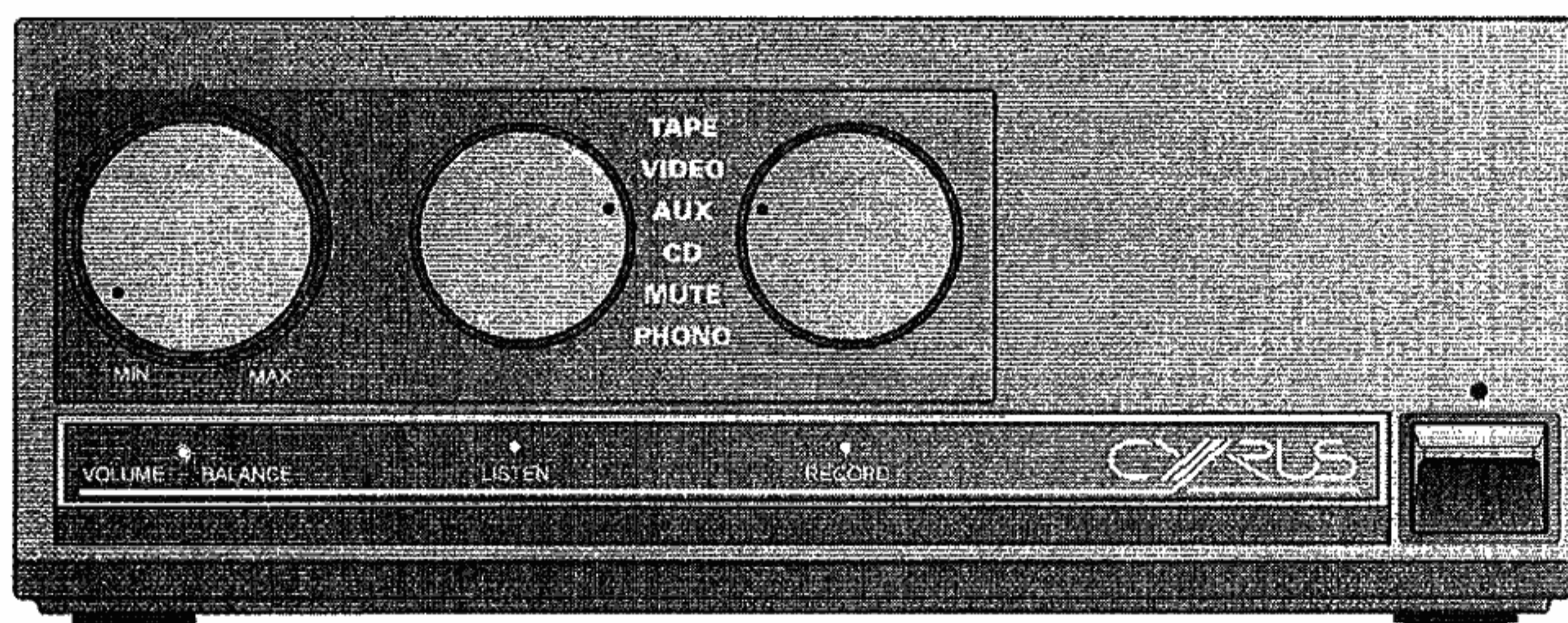


CYRUS ONE INTEGRATED AMPLIFIER

(ALL VERSIONS)

SERVICE MANUAL



SPECIFICATIONS

Continuous power	25W/CH (both driven into 8 Ohms) 40W/CH (both driven into 4 Ohms)
Distortion	0.005%, 1kHz (into 8 Ohms) 0.007%, 1kHz (into 4 Ohms)
Frequency response (line input)	-3 dB, 1Hz and 50kHz
Frequency response (phono RIAA)	20Hz – 20kHz \pm 0.2dB
Damping factor	100
Slew rate	10
Sensitivity (reference 1W output)	MM: 400uV, MC: 40uV, Line: 65mV
Input impedance	14kOhm (RCA), 47kOhm (PH)
Maximum output voltage	11V (Tape out)
S/N Ratio (reference 1W output)	MM: 84dBA MC: 67dBA Line: 86dBA
Dimensions (H x W x D)	85mm x 215mm x 345mm
Weight	4 -5kg (depending on version)
Finish	Black or grey

CYRUS

CYRUS ONE SERVICE CAUTIONS



These two symbols shown are displayed prominently on the Cyrus One 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 One version before using this manual.

CYRUS ONE TYPE IDENTIFICATION

Issue 06

The was the first version of the Cyrus One 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 17/5/84 with serial number 100100 and ceased on 23/10/87 with serial number 121775.

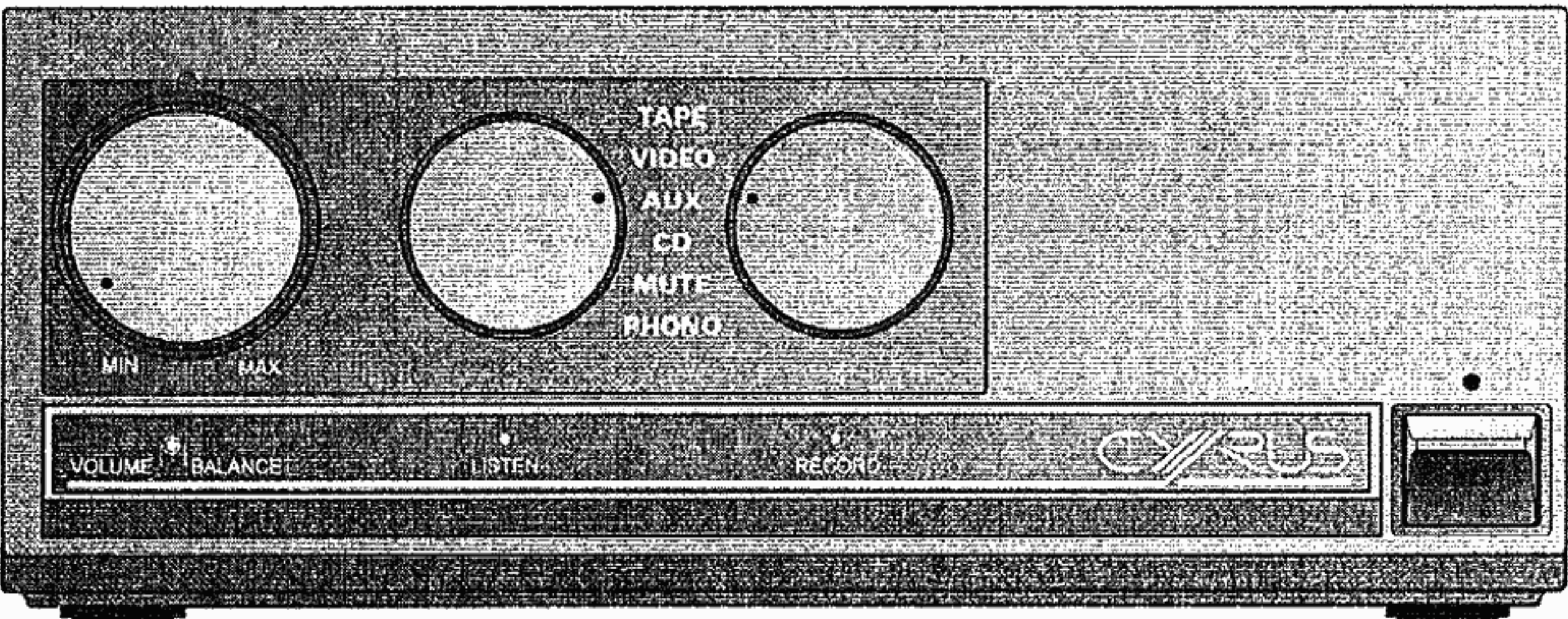
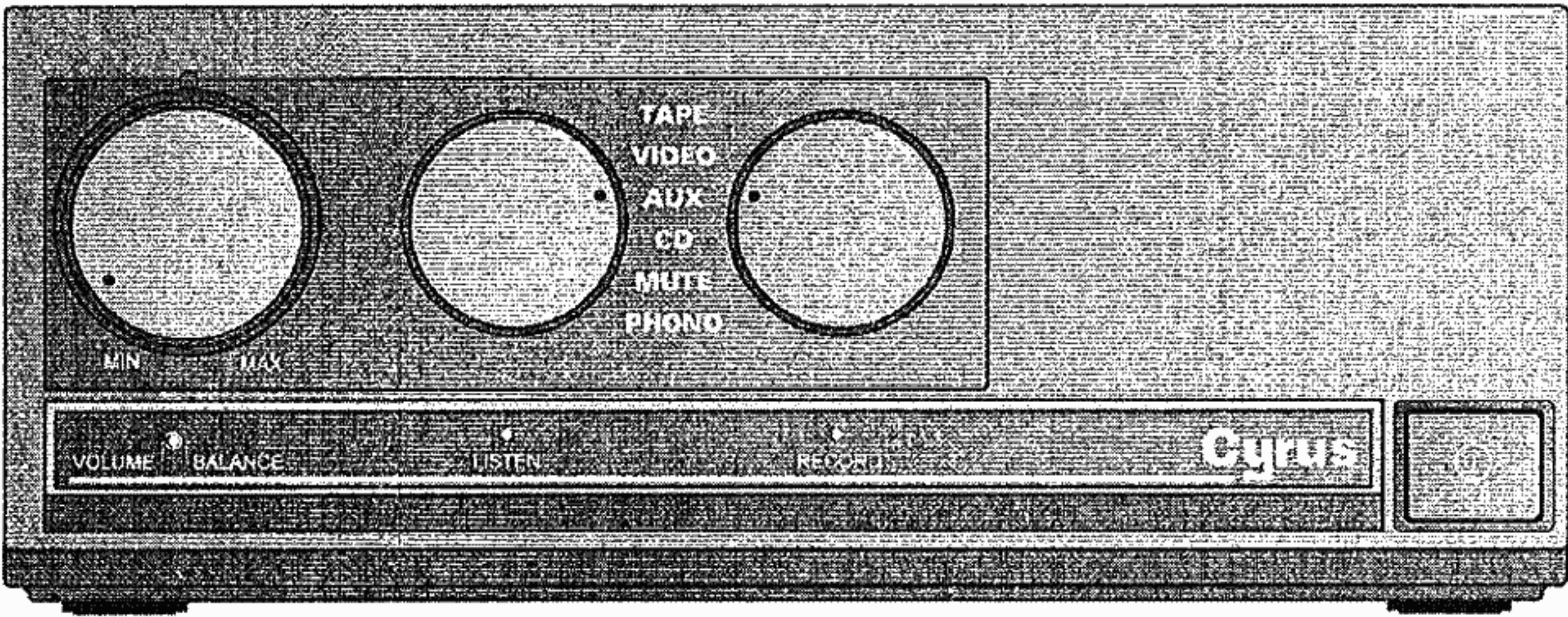
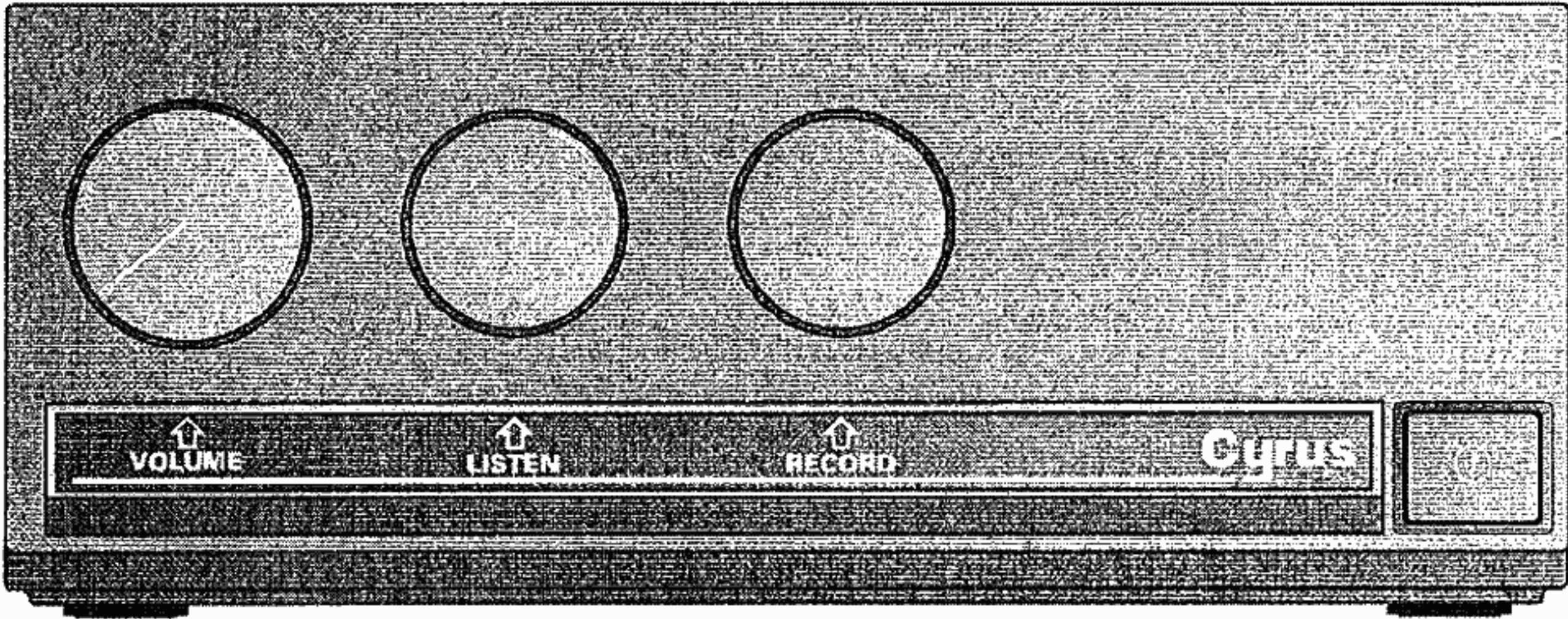
Issue 07

This version of the Cyrus One 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 122000 and ceased on 13/6/89 with serial number 134674.

TOG

The main difference between this version and Issue 07 was that the front panel push button on/off switch 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 135000 and ceased in September 1992.

CYRUS ONE TYPE IDENTIFICATION



CYRUS ONE TYPE IDENTIFICATION

Rating label

The Cyrus One is manufactured to meet the power requirements of different world markets. Each Cyrus One 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)

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.

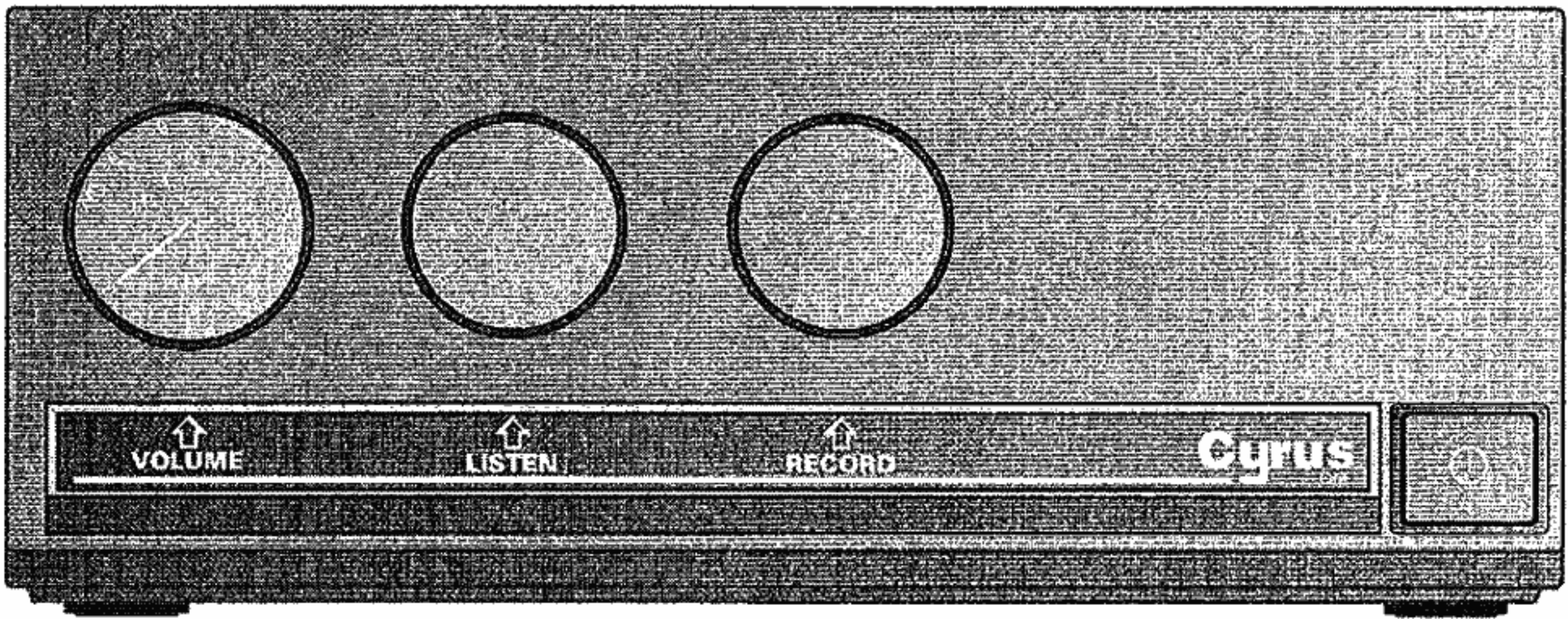
Power consumption

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

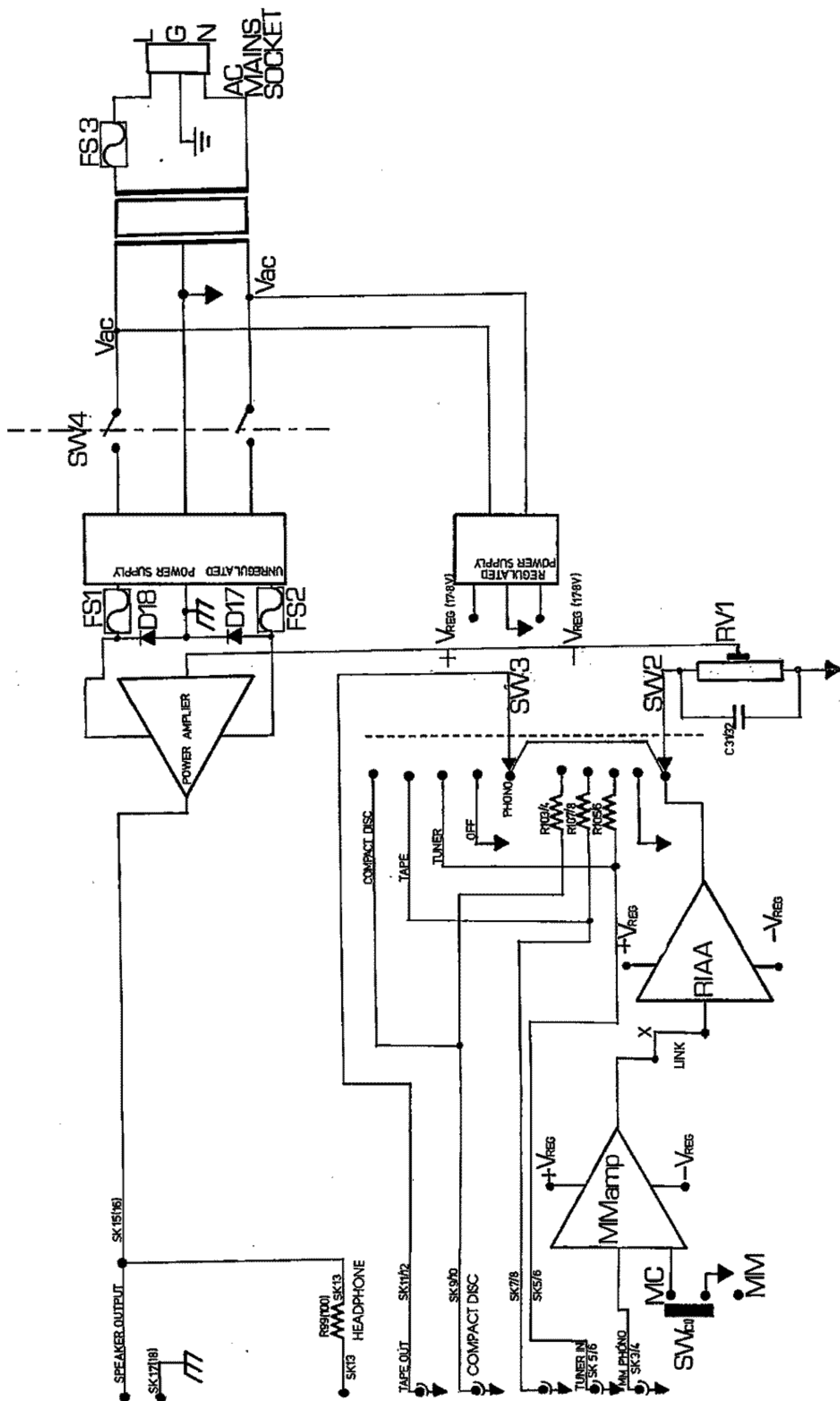
Serial number

Each Cyrus One 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



CYRUS ONE BLOCK DIAGRAM - ISSUE 06



Power supply

The 23V 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 $\pm 30\text{v}$ 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 C63 and C64 and fed to the voltage regulators VR1 (-ve) and VR2 (+ve). These regulate the voltage to $\pm 18\text{V}$ 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 One 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, R27 and R29 to the RIAA equalisation stage (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 C27. When the switch is set to moving coil (MC), R21 is shorted out and the gain is increased by a factor of 10.

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 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 to 2.2mA.

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 are configured as an emitter follower output stage and Q29/30, Q37/38 and Q39/40 are configured as a complement to the emitter follower. D1/2 improve the matching of the output halves. D15/16 and D13/14 provide protection for the output stage when driving inductive loads by shorting the over-swings to the power supply rails. D18/17 prevents the power supply rails from reversing polarity if one or the power supply fuses should blow.

CYRUS ONE FAULT FINDING – ISSUE 06

The recommended procedure for finding signal faults which occur in the Cyrus One 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	22VAC (approx)	Voltage will vary slightly with AC mains input.
D5 +ve	22VAC (approx)	Voltage will vary slightly with AC mains input.
Fuse F1	+30V (approx)	Voltage will vary slightly with AC mains input.
Fuse F2	-30V (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 One may be faulty. Without applying power, check the output transistors with a DVM set to 'diode test'. First check the output transistors Q39 and Q43, the driver transistors Q33 and Q37, the pre-driver transistors Q27 and Q29, and the quiescent transistor Q25. Check the values of the 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

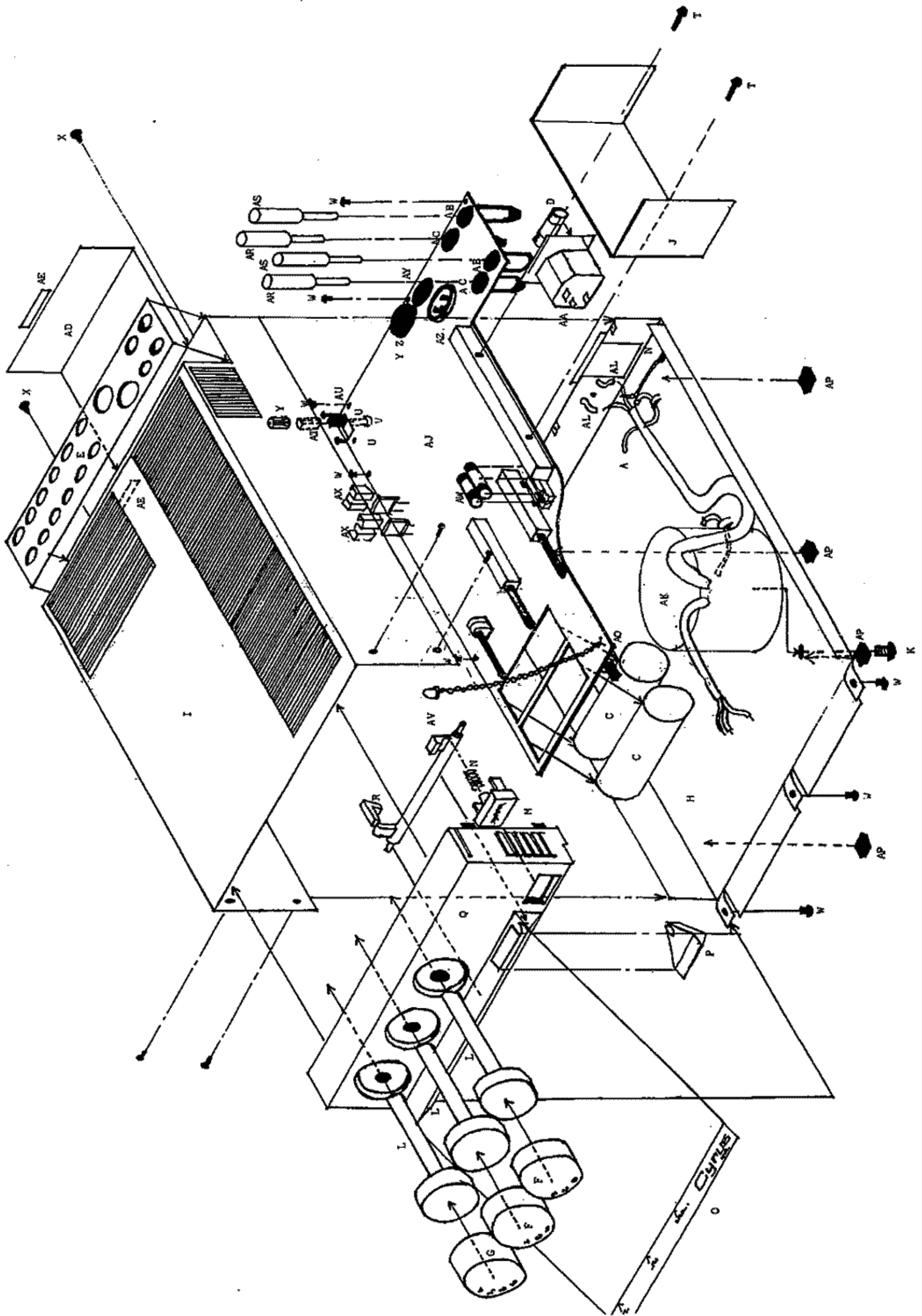
Refit the PCB, apply power to the Cyrus One without a load connected. Switch on and check that the DC offset voltage at the loudspeaker output terminals is within $\pm 50\text{mV}$ of 0VDC. Check also that the quiescent current is set correctly (refer to the alignment instructions). Failure of these 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.

CYRUS ONE ALIGNMENT – ISSUE 06

If repairs have been made to the power amplifier section of the Cyrus One, 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 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.

CYRUS ONE CHASSIS DRAWING – ISSUE 06



CYRUS ONE 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-E6800UF50VX/XE1	6800uF 50V capacitor	2	
D	52-HFUSE1AXXXX/XEQ	20mm fuse	2	220/240V
D	52-HFUSE2AXXXX/XEQ	20mm fuse	2	100/120V
E	52-CARDCALIX06/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-CACOVSG LX06/GE1	Chassis cover	1	Single fixing
I	52-CACOV TWNX06/GE1	Chassis cover	1	Twin fixing
J	52-IIISNKHEAT06/XE1	Heatsink	1	
K	Order by description	M6 transformer bolt	1	
L	52-MSHAFT06XXX/BE1	Knob shaft	3	
M	52-CBUTPWR06XX/BE1	Power button	1	
N	52-HBUTPWRSPGX/XE1	Spring	1	
O	52-CAFRT06LAB1/BE1	Legend strip	1	
P	52-MDIFMOULDO6/XE1	Diffuser	1	
Q	Order by description	Front	1	Single fixing
Q	52-CAFRT TWNX06/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 taptite	2	
U	Order by description	M2 x 5mm pan posi	2	
V	Order by description	M3 x 16mm	1	
W	Order by description	M3 x 6mm posi	9	
X	Order by description	No 4 3/8 posi	4	
Y	Order by description	Thumb nut	1	
Z	52-HSKTHP06XXX/XE1	Headphone socket 1/4"	1	
AA	Order by description	IEC 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-TX240VCY1XX/XE1	Mains transformer	1	240V
AK	52-TX220VCY1XX/XE1	Mains transformer	1	220V
AK	52-TX120VCY1XX/XE1	Mains transformer	1	120V
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-CBUTPWR06XX/BE1	Mains switch	1	
AP	52-MFOOT06XXXX/BE1	Square foot	4	
AR	52-HPLG4MMBANX/BT2	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-LLED07XXXXX/RE1	LED assy	1	
AW	52-HFUSE4AULXX/XEQ	4A fuse	2	
AX	52-MPF745XXXXX/BE1	Heatsink	2	

CYRUS ONE PCB PARTS LIST – ISSUE 06

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 One issue 06
- C123392
- R24
- 15R
- Resistor, 2%

Understanding the parts list

The parts list which follows covers the Issue 06 Cyrus One 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 ONE PCB PARTS LIST – ISSUE 06

RESISTORS

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%
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%

CYRUS ONE PCB PARTS LIST – ISSUE 06

R68	AXIAL	1k	MF 1/4W 2%
R69		Not fitted	
R70		Not fitted	
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%
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.

CYRUS ONE PCB PARTS LIST – ISSUE 06

CAPACITORS

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%	
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 114303
C46		150pF	PP 160V 10%	Was 100pF. Changed from S/N 114303
C47		150pF	PP 160V 10%	Was 100pF. Changed from S/N 114303
C48		150pF	PP 160V 10%	Was 100pF. Changed from S/N 114303
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%	

CYRUS ONE PCB PARTS LIST – ISSUE 06

C61		6800uF	EL 50V -20%	
C62		6800uF	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 112921
C70		100pF	EL 25V -20%	Was 680pF. Changed from S/N 112921

DIODES

D01	AXIAL	1N4002	1 amp rectifier diode	
D02	AXIAL	1N4002	1 amp rectifier diode	
D03	AXIAL	1N4002	1 amp rectifier diode	
D04	AXIAL	1N4002	1 amp rectifier diode	Added from S/N 112950
D05	AXIAL	MR852	3 amp rectifier diode	
D06	AXIAL	MR852	3 amp rectifier diode	
D07	AXIAL	MR852	3 amp rectifier diode	
D08	AXIAL	MR852	3 amp rectifier diode	
D09	AXIAL	1N4002	1 amp rectifier diode	
D10	AXIAL	1N4002	1 amp rectifier diode	
D11	AXIAL	1N4002	1 amp rectifier diode	
D13	AXIAL	1N4002	1 amp rectifier diode	
D14	AXIAL	1N4002	1 amp rectifier diode	
D15	AXIAL	1N4002	1 amp rectifier diode	
D16	AXIAL	1N4002	1 amp rectifier diode	
D17	AXIAL	1N4002	1 amp rectifier diode	
D18	AXIAL	1N4002	1 amp rectifier diode	

TRANSISTORS

Q3	TO92	2SC1775A	NPN signal transistor	
Q4	TO92	2SC1775A	NPN signal transistor	
Q5	TO92	2SC1775A	NPN signal transistor	
Q6	TO92	2SC1775A	NPN signal transistor	
Q7	TO92	2SC1775A	NPN signal transistor	
Q8	TO92	2SC1775A	NPN signal transistor	
Q9	TO92	2SC1775A	NPN signal transistor	
Q10	TO92	2SC1775A	NPN signal transistor	
Q11	TO92	2SA872A	PNP signal transistor	
Q12	TO92	2SA872A	PNP signal transistor	
Q13	TO92	2SA872A	PNP signal transistor	
Q14	TO92	2SA872A	PNP signal transistor	
Q15	TO92	2SA872A	PNP signal transistor	
Q16	TO92	2SA872A	PNP signal transistor	
Q17	TO92	2SA872A	PNP signal transistor	
Q18	TO92	2SA872A	PNP signal transistor	
Q19	TO92	2SA872A	PNP signal transistor	

CYRUS ONE PCB PARTS LIST – ISSUE 06

Q20	TO92	2SA872A	PNP signal transistor	
Q21	TO92	2SC1775A	NPN signal transistor	
Q22	TO92	2SC1775A	NPN signal transistor	
Q23	TO92	2SC1775A	NPN signal transistor	
Q24	TO92	2SC1775A	NPN signal transistor	
Q25	TO92	2SC1775A	NPN signal transistor	
Q26	TO92	2SC1775A	NPN signal transistor	
Q27	TO92	2SC1775A	NPN signal transistor	
Q28	TO92	2SC1775A	NPN signal transistor	
Q29	TO92	2SA872A	PNP signal transistor	
Q30	TO92	2SA872A	PNP signal transistor	
Q31		DELETED		
Q32		DELETED		
Q33	TO202	MJE243	NPN power transistor	Was ZTX653. Changed from S/N 110182
Q34	TO202	MJE243	NPN power transistor	Was ZTX653. Changed from S/N 110182
Q35		DELETED		
Q36		DELETED		
Q37	TO202	MJE253	PNP power transistor	Was ZTX753. Changed from S/N 110182
Q38	TO202	MJE253	PNP power transistor	Was ZTX753. Changed from S/N 110182
Q39	TO220	PT7	NPN power transistor	
Q40	TO220	PT7	NPN power transistor	
Q41		NOT FITTED		
Q42		NOT FITTED		
Q43	TO220	PT7	NPN power transistor	
Q44	TO220	PT7	NPN power transistor	
Q45		NOT FITTED		
Q46		NOT FITTED		

VOLTAGE REGULATORS

VR1	TO-220	LM337	1.5A +ve regulator	
VR2	TO-220	LM317	1.5A -ve regulator	

INTEGRATED CIRCUITS

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

CONNECTORS

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

CYRUS ONE PCB PARTS LIST – ISSUE 06

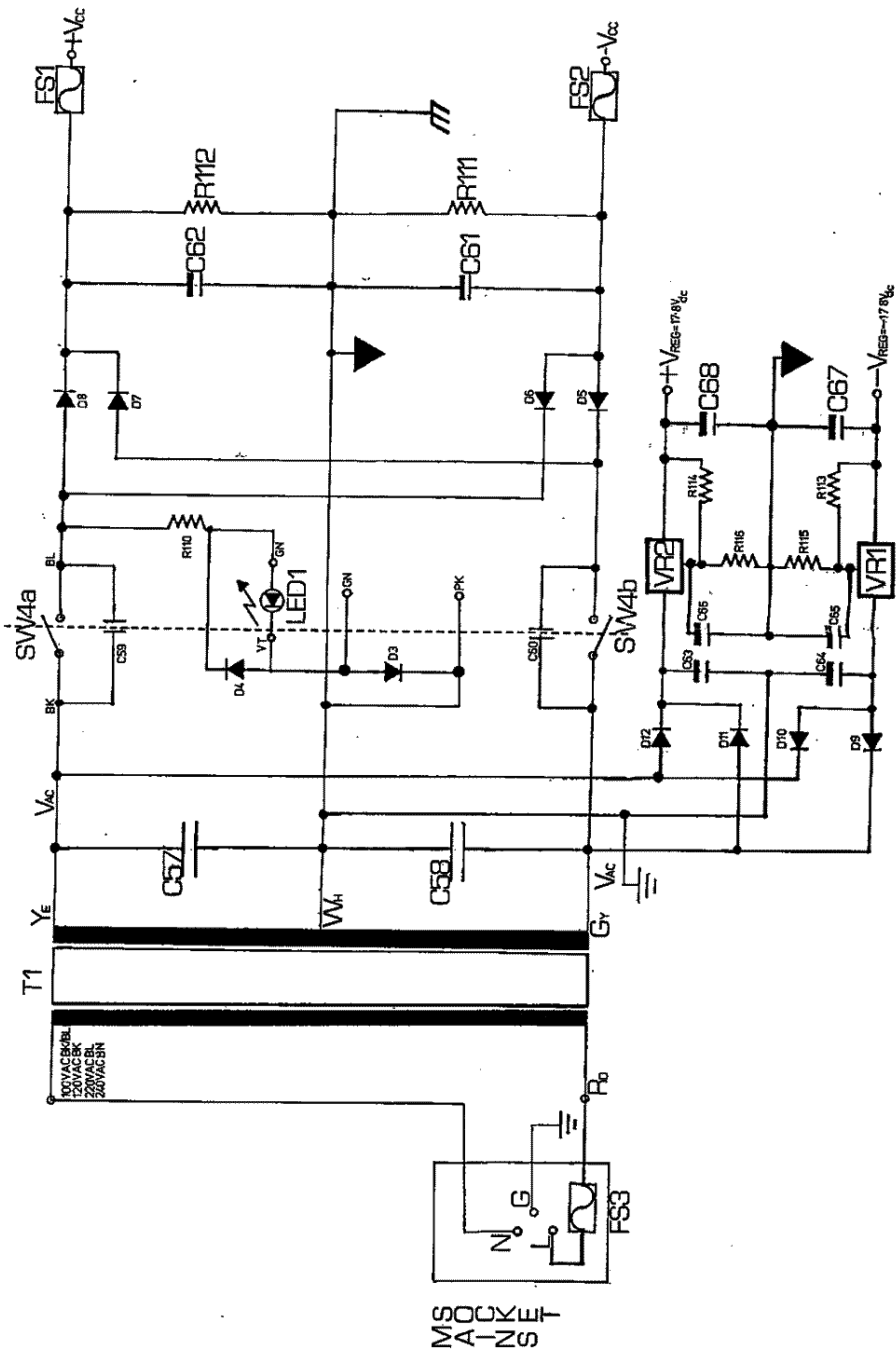
SWITCHES

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

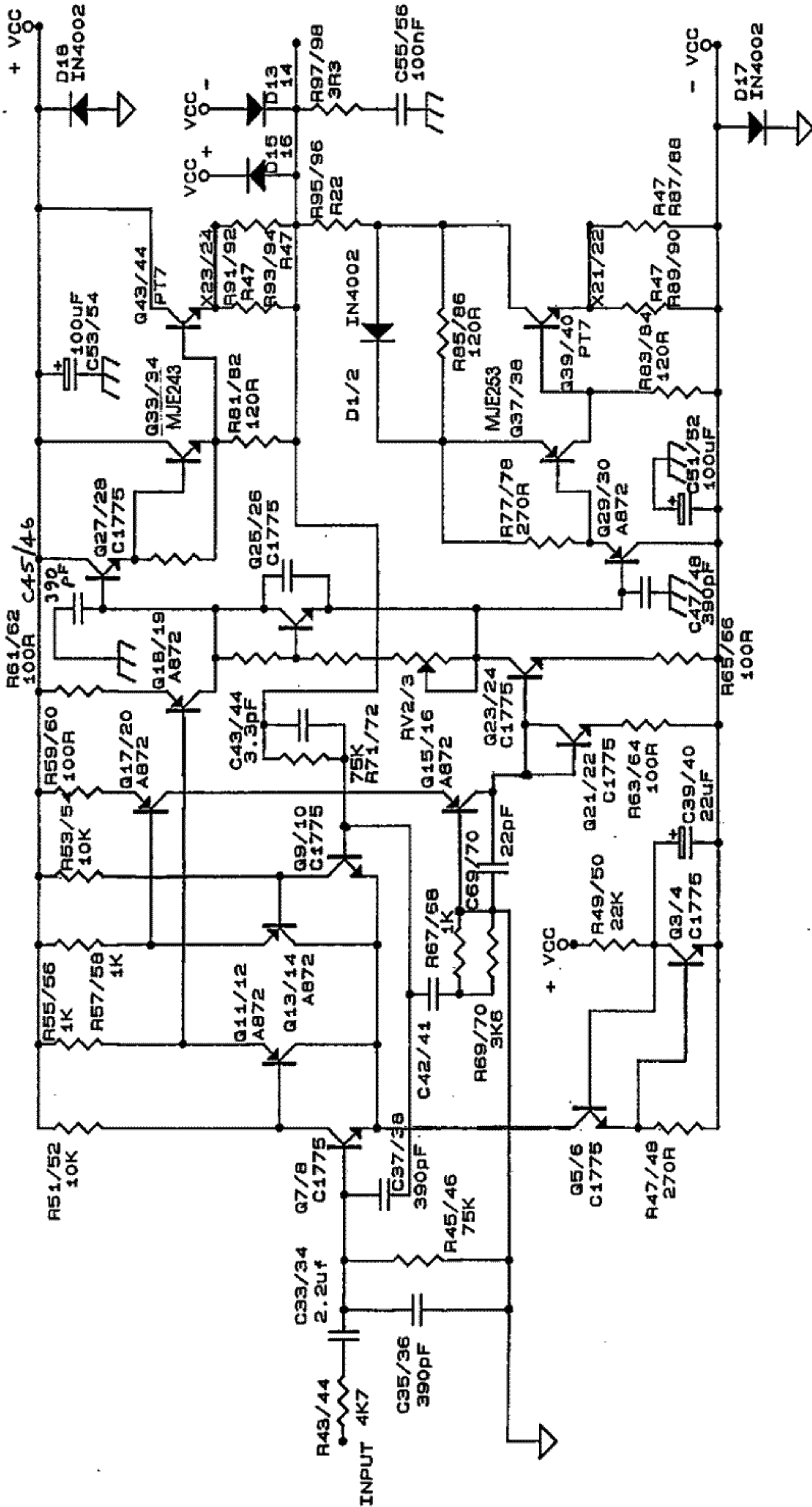
OTHERS

RV01		ROTARY	10k	Volume control
RV02		PCB ROTARY	200R	Bias adjust
RV03		PCB ROTARY	200R	Bias adjust
FS1		20mm	3.15A Quick blow	
FS2		20mm	3.15A Quick blow	

CYRUS ONE POWER SUPPLY SCHEMATIC – ISSUE 06

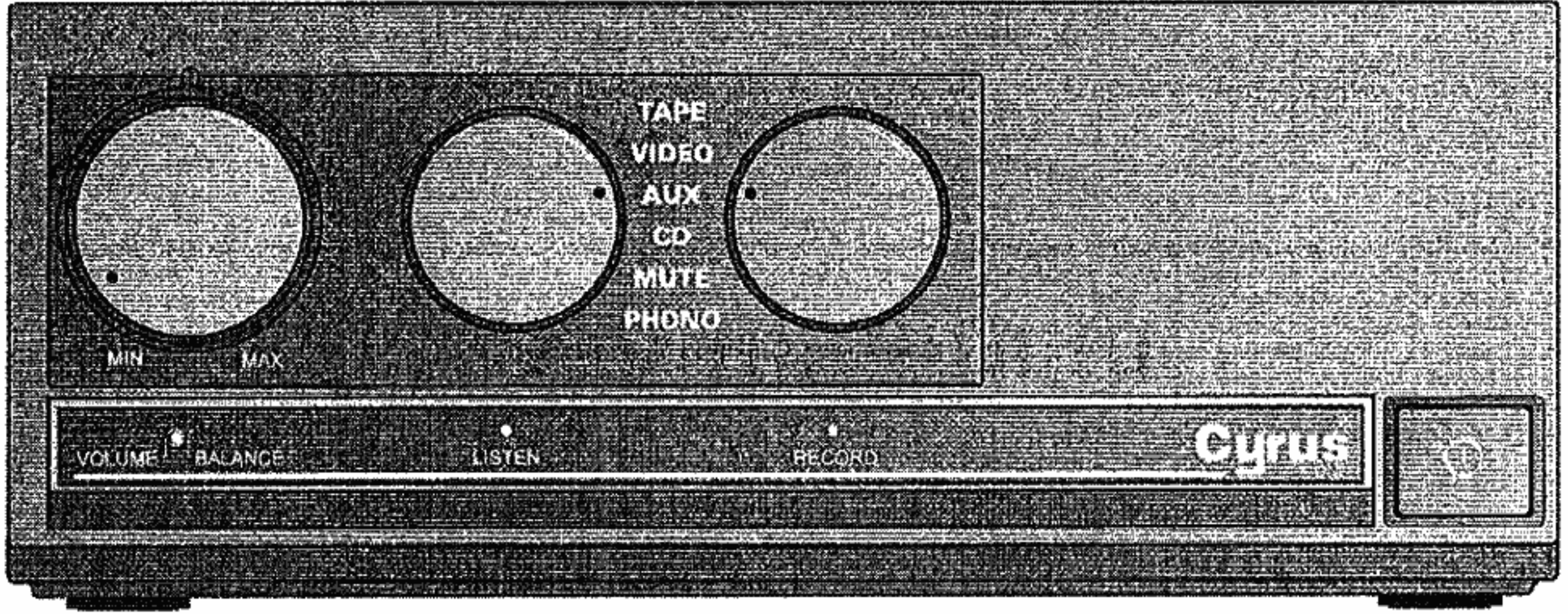


CYRUS ONE POWER AMPLIFIER SCHEMATIC – ISSUE 06

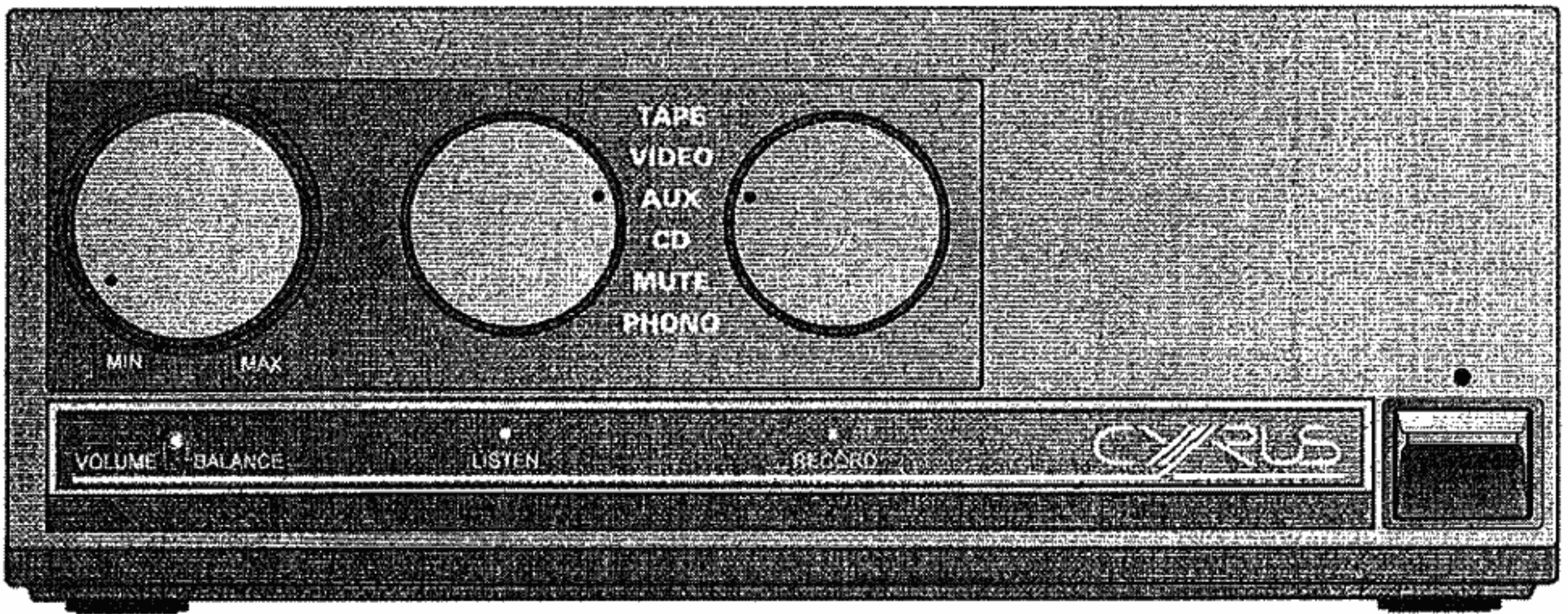


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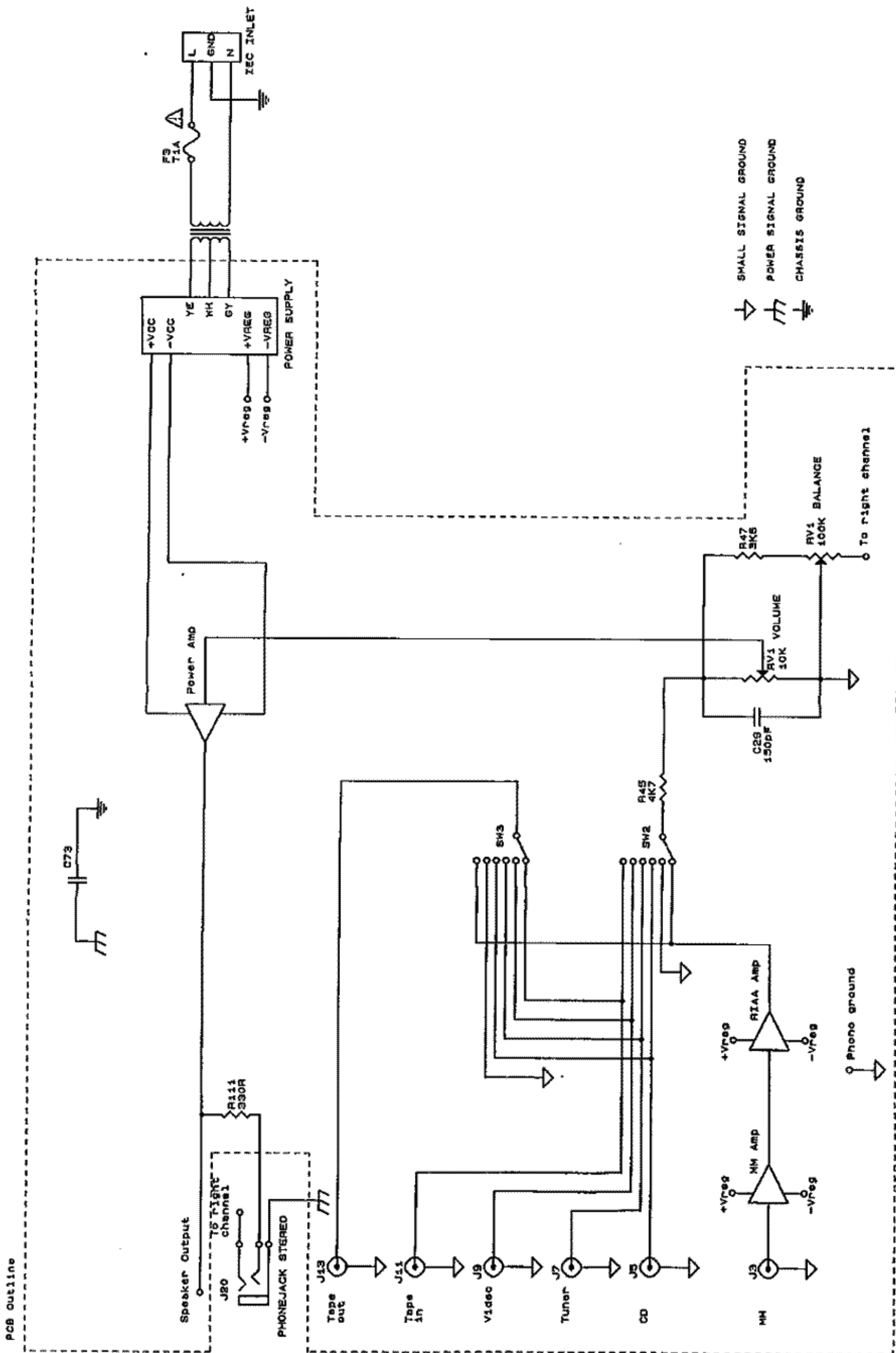
ISSUE 07



TOG



CYRUS ONE BLOCK DIAGRAM – ISSUE 07 AND TOG



Power supply

The 22V 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 ± 30 V 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 ± 18 V 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 One 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 and R29 to the RIAA equalisation stage (OA5A). When the switch is set to moving coil (MC), R21 is shorted out and the gain is increased by 10. OA5B buffers the output from the RIAA equalisation stage (OA5A) which is then coupled to the input selector switch via C25.

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 balance 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. If necessary the quiescent current is adjusted by selecting a slightly higher or lower value for R81. The protection circuit comprises Q37 and Q35. 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 (Q3/4 Q5/6 Q7/8 Q9/10) forms a long tail pair differential amplifier. The long tail pair is biased on by Q11/12 and Q13/14 which are arranged as a constant current source (CCS). R53/54 set the current of the CCS to 2.2mA

Q17 and Q19 form the second gain stage. The load for the gain stage is a current mirror Q23 and Q25. Q21 forms a cascode stage. Q39 is thermally connected to the output devices to provide an output bias that tracks the temperature of the output transistors. 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.

CYRUS ONE FAULT FINDING – ISSUE 07 AND TOG

The recommended procedure for finding signal faults which occur in the Cyrus One 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	22VAC (approx)	Voltage will vary slightly with AC mains input.
D16 +ve	22VAC (approx)	Voltage will vary slightly with AC mains input.
Fuse F1	+30V (approx)	Voltage will vary slightly with AC mains input.
Fuse F2	-30V (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 One 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 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 One 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.

CYRUS ONE ALIGNMENT AND MONO – ISSUE 07 AND TOG

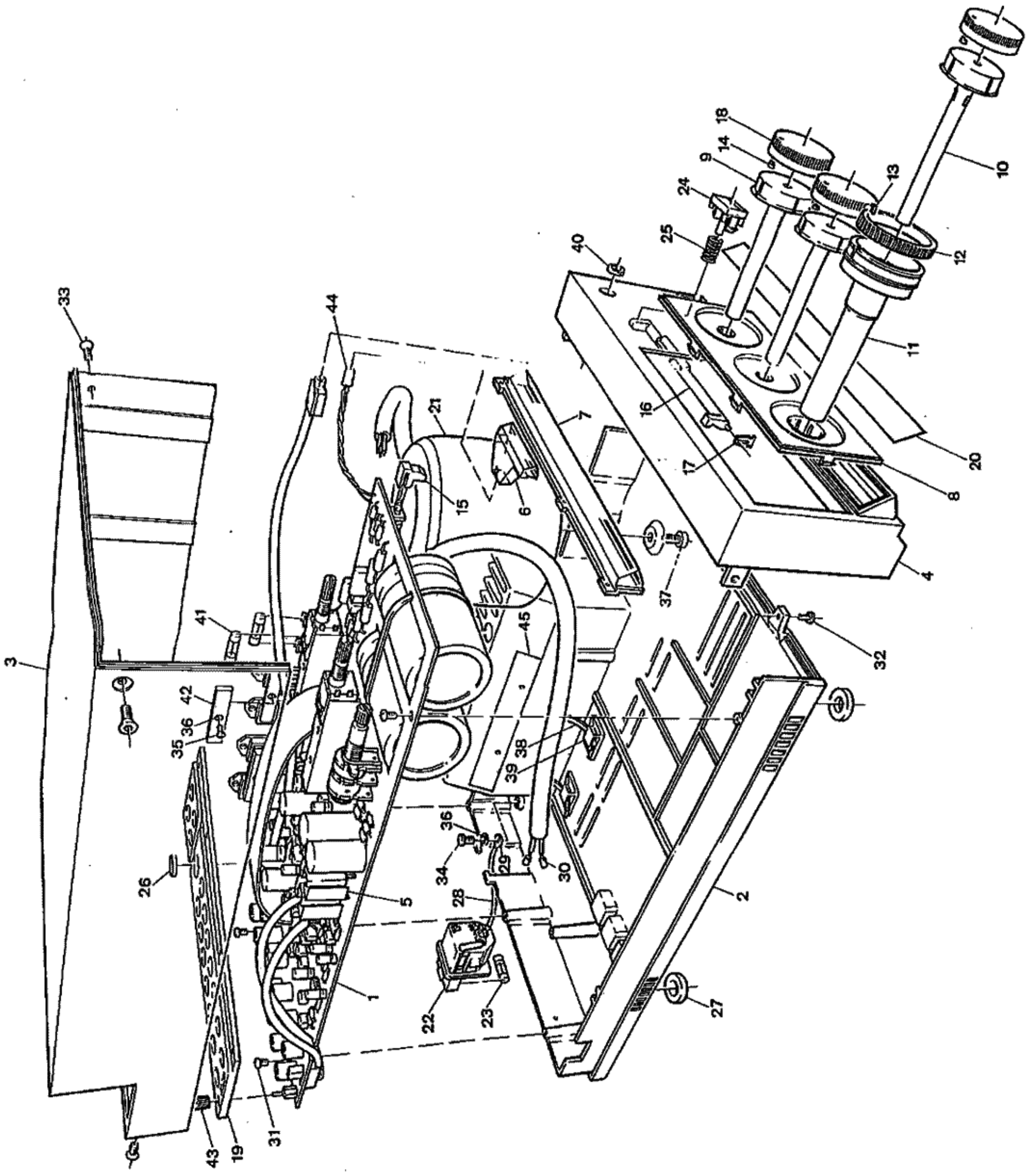
If repairs have been made to the power amplifier section of the Cyrus One, it will be necessary to set the bias current to the correct value. The points for checking the bias current are across one of the output transistor emitter resistors, (R107A for the left channel and R108A for the right channel).

- 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.

Setting for mono operation

For certain applications (e.g. bi-amping), it is possible to operate the Cyrus one 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 ONE CHASSIS DRAWING – ISSUE 07 AND TOG



CYRUS ONE CHASSIS PARTS LIST – ISSUE 07 AND TOG

No.	Part number	Description	Quantity	Notes
1	52-BASSYCY1TOG/XE1	Circuit board	1	
2	52-CACHATGXXXX/BX1	Chassis	1	
3	52-CXCOVSLX07/BE1	Cover black – issue 07	1	
3	52-CXCOVSLXTG/BE1	Cover black – issue TOG	1	
3	52-CXCOVSLX07/NE1	Cover NEXTEL – issue 07 and TOG	1	
4	52-CAFRTSGLX07/NE1	Front NEXTEL issue 07	1	
5	52-MPF745XXXX/BE1	Heatsink	2	
6	52-MDIFMOULDO7/XE1	Diffuser (issue 07 only)	1	
7	Order by description	Front panel lens assy	1	
8	52-CAFRT07LAB1/BE1	Front decal – issue 07	1	
8	52-CAFRTTGLABX/BE1	Front decal – issue TOG	1	
9	52-MSHAFT07SEL/BE1	Selector shaft – issue 07	2	
9	52-MSHAFTTGSSEL/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-CBALRINGXXX/BE1	Balance ring	1	
13	52-CBALIND07XX/RE1	Balance indicator – issue 07	1	
14	52-CVOLIND07XX/RE1	Vol/sel indicator – issue 07	3	
15	52-HSWEXT07XXX/RE1	Switch extender	1	
16	52-MTARM07XXXX/RE1	Transfer arm	1	
17	52-MTARB07XXXX/RE1	Arm bearing	2	
18	52-CKNOBXTGXXX/BB1	Control knob	3	
19	52-CARDCAL1X07/BE1	Back decal – issue 07	1	
19	52-CARDCAL1XTG/BD1	Back decal – issue TOG	1	
20	52-CAFRT07LAB1/BE1	Front label – issue 07	1	
20	52-CAFRTTGLABX/BE1	Front label – issue TOG	1	
21	52-TX240VCY1XX/XE1	Mains transformer	1	240V
21	52-TX220VCY1XX/XE1	Mains transformer	1	220V
21	52-TX120VCY1XX/XE1	Mains transformer	1	120V
22	Order by description	IEC socket	1	
23	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	Socket cap	1	
27	52-MFOOTIIXXXX/BH1	Cyrus foot	4	
28	Order by description	6cm earth wire	1	
29	Order by description	Ring tag M4	1	
30	Order by description	Sleeve	2	
31	Order by description	M3x6mm	7	
32	Order by description	M3x6mm black	2	
33	Order by description	M3x8mm C/S	4	
34	Order by description	M4x6mm pan head	1	
35	Order by description	M4x12mm pan head	2	
36	Order by description	M4 lock washer	3	
37	Order by description	M6x16mm	1	
38	Order by description	Short cable tie	4	
39	Order by description	Cable tie base	2	
40	Order by description	Headphone nut	1	
41	52-HFUSE3A15XX/XEQ	3.15A Q/B fuse	2	
42	52-HHEATSINBAR/XE1	Output transistor clamp	2	

CYRUS ONE CHASSIS PARTS LIST – ISSUE 07 AND TOG

No.	Part number	Description	Quantity	Notes
43	Order by description	Thumb nut	1	
44	52-LLED07XXXXX/RE1	LED assy – issue 07	1	
44	52-LLEDXXTGXXX/RE1	LED assy – issue TOG	1	
45	52-MSILPADXXXX/XE1	SIL pad	1	

CYRUS ONE PCB PARTS LIST – ISSUE 07 AND TOG

Location of parts in the amplifier

The parts list that follows includes details of the components of the circuit boards used in the Cyrus One.

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 One issue 07
- C123392
- R89
- 270R
- Resistor, 2% fusible

Understanding the parts list

The parts list which follows covers the Issue 07 and TOG Cyrus One 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 ONE PCB PARTS LIST – ISSUE 07 AND TOG

RESISTORS

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%	
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	1k	MF 1/4W 2%	
R66	AXIAL	1k	MF 1/4W 2%	
R67	AXIAL	75k	MF 1/4W 2%	

CYRUS ONE PCB PARTS LIST – ISSUE 07 AND TOG

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	130R	MF 1/4W 2%
R82	AXIAL	130R	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%
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%

CYRUS ONE PCB PARTS LIST – ISSUE 07 AND TOG

R121	AXIAL	15R	MF 1/4W 2%	
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Key:

MF = metal film. NFR = non flammable resistor.

CAPACITORS

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%	
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		150pF	PP 100V 10%	
C48		150pF	PP 100V 10%	
C49		150pF	PP 100V 10%	
C50		150pF	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%	

CYRUS ONE PCB PARTS LIST – ISSUE 07 AND TOG

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		7000uF	EL 40V -20%	
C66		7000uF	EL 40V -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	
D6		1N4002	1 amp rectifier diode	
D7		1N4002	1 amp rectifier diode	
D8		1N4002	1 amp rectifier diode	
D9		1N4002	1 amp rectifier diode	
D10		1N4002	1 amp rectifier diode	
D11		1N4002	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		1N4002	1 amp rectifier diode	
D18		1N4002	1 amp rectifier diode	
D19		1N4002	1 amp rectifier diode	
D20		1N4002	1 amp rectifier diode	

TRANSISTORS

Q3	T092	2SC1775A	NPN signal transistor	
Q4	T092	2SC1775A	NPN signal transistor	
Q5	T092	2SC1775A	NPN signal transistor	
Q6	T092	2SC1775A	NPN signal transistor	
Q7	T092	2SA872A	PNP signal transistor	
Q8	T092	2SA872A	PNP signal transistor	
Q9	T092	2SA872A	PNP signal transistor	
Q10	T092	2SA872A	PNP signal transistor	
Q11	T092	2SC1775A	NPN signal transistor	
Q12	T092	2SC1775A	NPN signal transistor	

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Q13	TO92	2SC1775A	NPN signal transistor
Q14	TO92	2SC1775A	NPN signal transistor
Q15	TO92	2SC1775A	NPN signal transistor
Q16	TO92	2SC1775A	NPN signal transistor
Q17	TO92	2SA872A	PNP signal transistor
Q18	TO92	2SA872A	PNP signal transistor
Q19	TO92	2SA872A	PNP signal transistor
Q20	TO92	2SA872A	PNP signal transistor
Q21	TO92	2SA872A	PNP signal transistor
Q22	TO92	2SA872A	PNP signal transistor
Q23	TO92	2SC1775A	NPN signal transistor
Q24	TO92	2SC1775A	NPN signal transistor
Q25	TO92	2SC1775A	NPN signal transistor
Q26	TO92	2SC1775A	NPN signal transistor
Q27	TO92	2SC1775A	NPN signal transistor
Q28	TO92	2SC1775A	NPN signal transistor
Q29	TO92	2SA872A	PNP signal transistor
Q30	TO92	2SA872A	PNP signal transistor
Q31	TO202	MJE243	NPN power transistor
Q32	TO202	MJE243	NPN power transistor
Q33	TO202	MJE253	PNP power transistor
Q34	TO202	MJE253	PNP power transistor
Q35	TO92	2SC1775A	NPN signal transistor
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	TO220	PT7	NPN power transistor
Q42	TO220	PT7	NPN power transistor
Q43	TO220	PT7	NPN power transistor
Q44	TO220	PT7	NPN power transistor

VOLTAGE REGULATORS

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

INTEGRATED CIRCUITS

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

CONNECTORS

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

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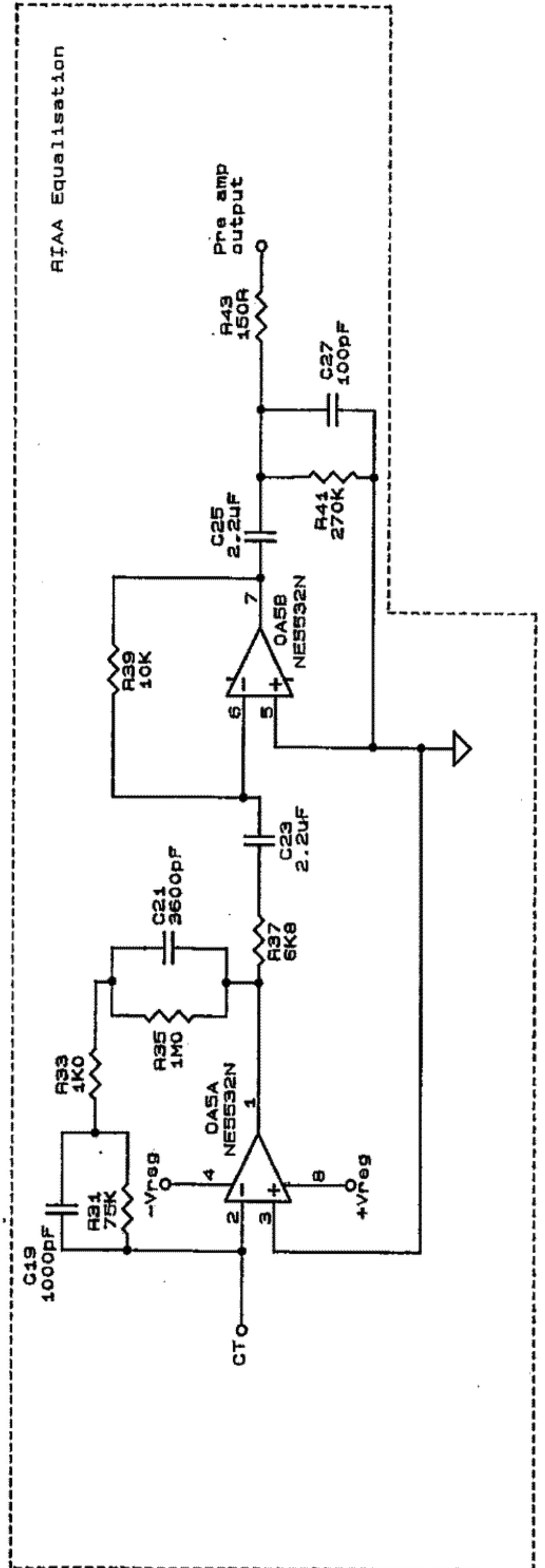
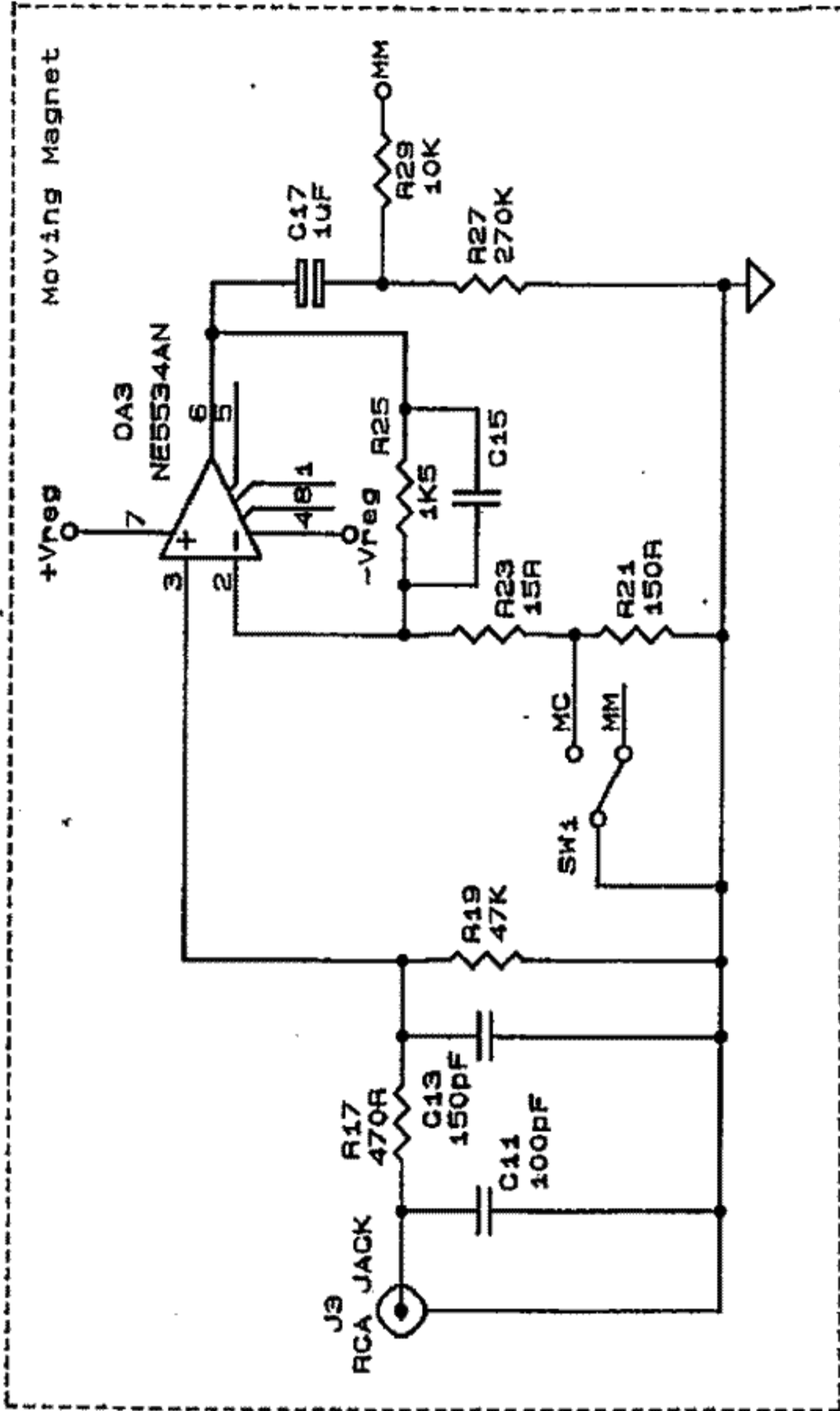
SWITCHES

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

OTHERS

F1		20mm	3.15A	
F2		20mm	3.15A	

CYRUS ONE PREAMPLIFIER SCHEMATIC – ISSUE 07 AND TOG



CYRUS ONE POWER AMPLIFIER SCHEMATIC – ISSUE 07 AND TOG

