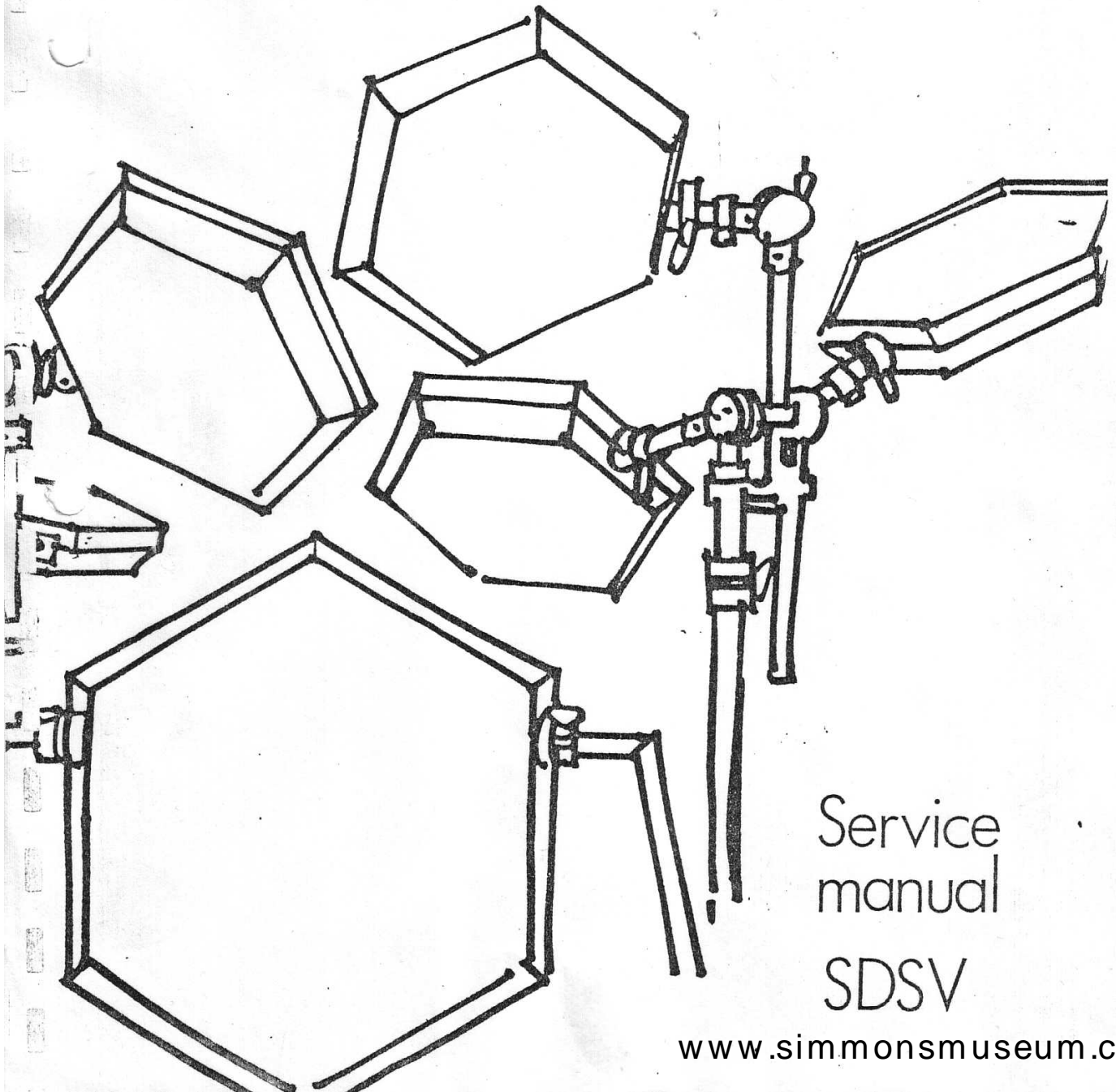
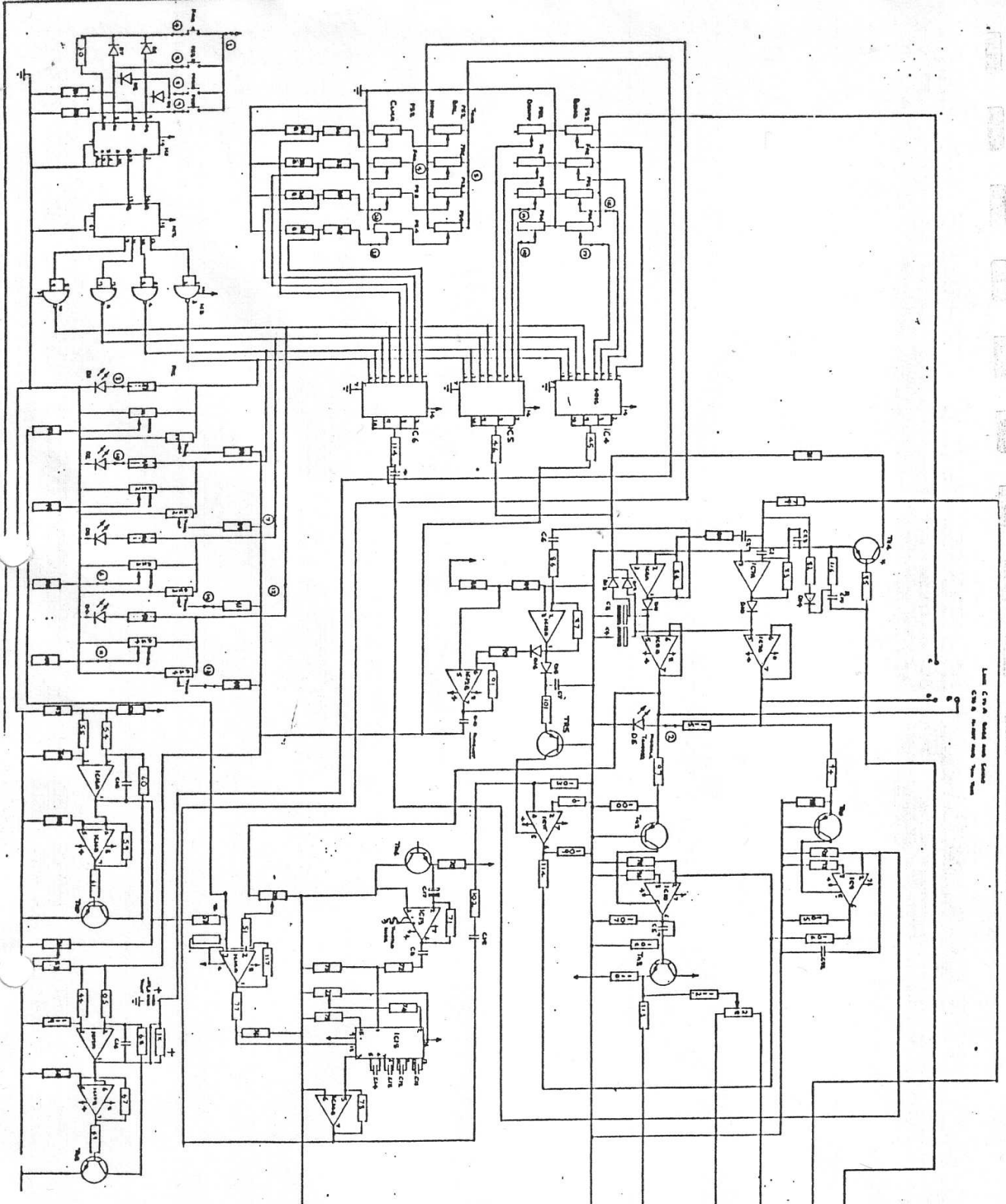


SIMMONS

electronic drums



Service
manual
SDSV



Lead C-6, 10 and 11
C-6 and 10 are not used

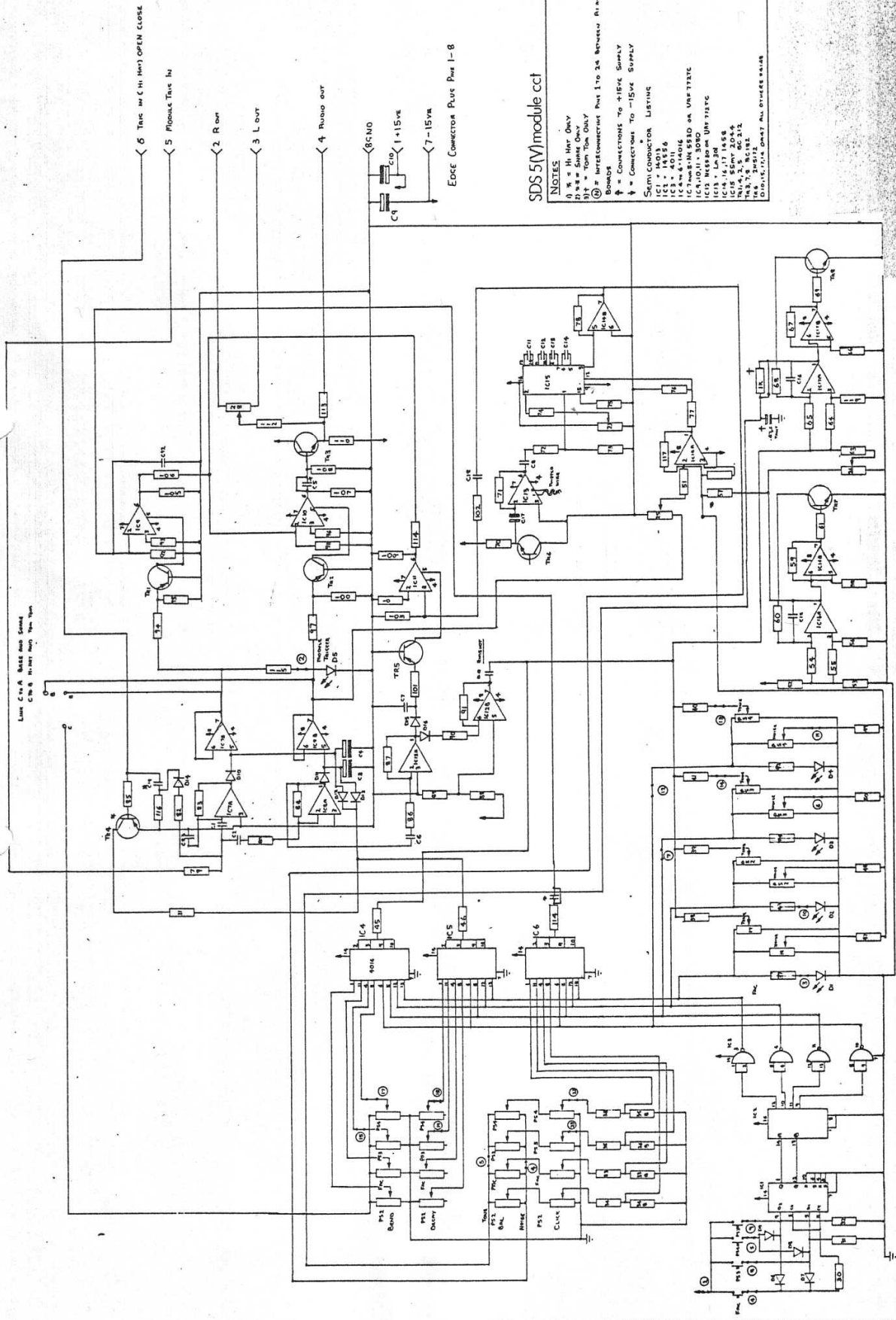
- 6 Turn on (M) OPEN CLAMP
- 5 Positive Test In
- 2 Row
- 3 L over
- 4 Phase over

30V
C10 1-15V
7-15V
Exact Common Point 1-8

SDS 5M module cct

- NOTES
- 1. 9 to 14 Meter Output
 - 2. Base Emitter Output
 - 3. Turn On Only
 - 4. Interconnection from Pin 1 to 30 terminals on IC2
 - 5. Connections to "RIBB" Supply
 - 6. Connections to "5V" Supply
- Some Connections Listened
- IC1 - 40018
 - IC2 - 14818
 - IC3 - 14818
 - IC4 - 14818
 - IC5 - 14818
 - IC6 - 14818
 - IC7 - 14818
 - IC8 - 14818
 - IC9 - 14818
 - IC10 - 14818
 - IC11 - 14818
 - IC12 - 14818
 - IC13 - 14818
 - IC14 - 14818
 - IC15 - 14818
 - IC16 - 14818
 - IC17 - 14818
 - IC18 - 14818
 - IC19 - 14818
 - IC20 - 14818
 - IC21 - 14818
 - IC22 - 14818
 - IC23 - 14818
 - IC24 - 14818
 - IC25 - 14818
 - IC26 - 14818
 - IC27 - 14818
 - IC28 - 14818
 - IC29 - 14818
 - IC30 - 14818

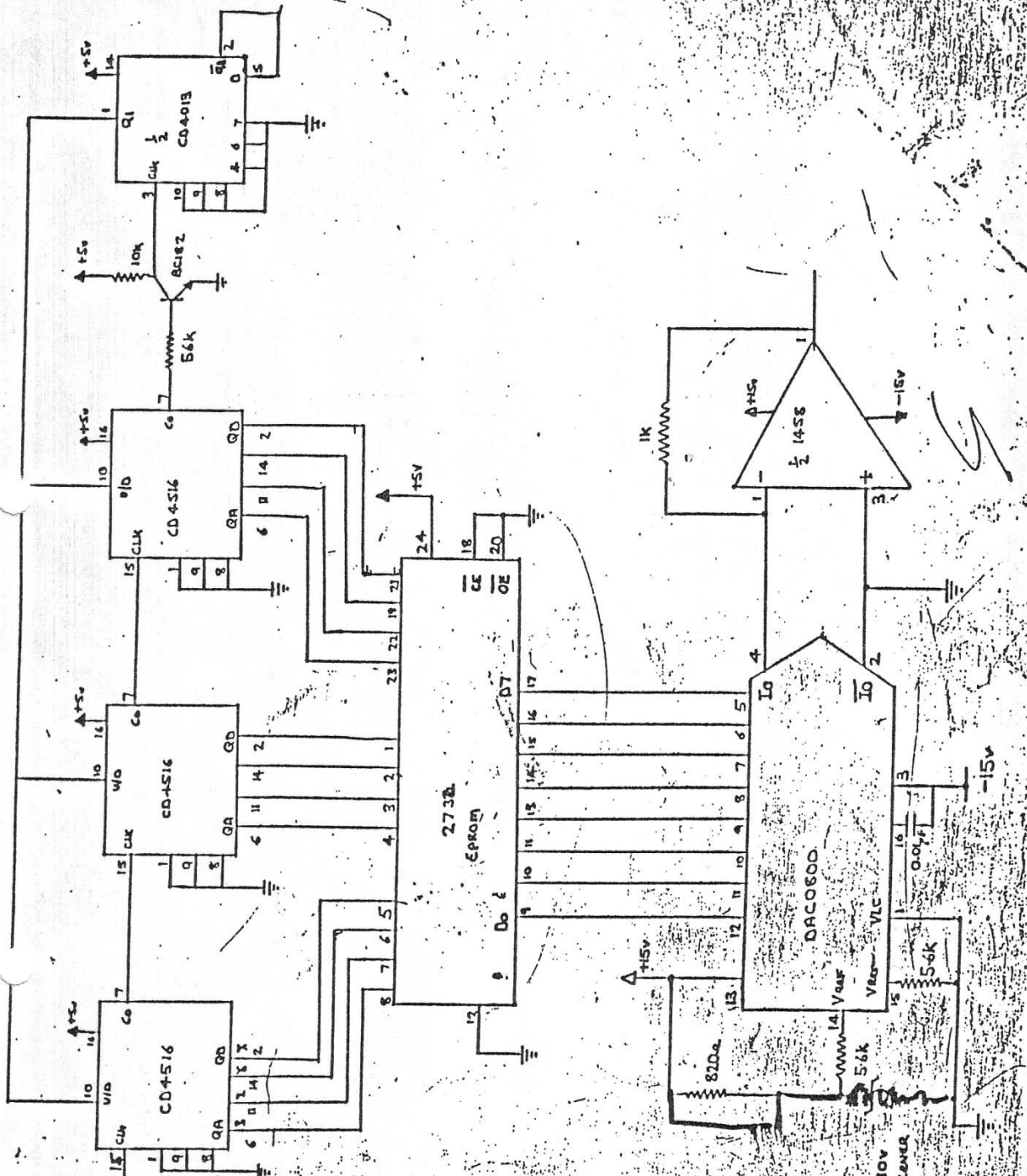
LINE CTR A BASE AND SOURCE
C TRS IS NOT USED IN THIS TYPE



SDS 5(M) module cct

- NOTES
 A = 14 Pin Only
 B = 16 Pin Only
 C = 18 Pin Only
 D = 20 Pin Only
 E = 24 Pin Only
 F = INTERCONNECT PINS 1 TO 24 APPROXIMATE RADIUS R1
 BONDING
 † = CONNECTIONS TO +15V SUPPLY
 ‡ = CONNECTIONS TO -15V SUPPLY
 SCHEMATIC CONDUCTOR LISTING
 IC1 - 741
 IC2 - 741
 IC3 - 741
 IC4 - 741
 IC5 - 741
 IC6 - 741
 IC7 - 741
 IC8 - 741
 IC9 - 741
 IC10 - 741
 IC11 - 741
 IC12 - 741
 IC13 - 741
 IC14 - 741
 IC15 - 741
 IC16 - 741
 IC17 - 741
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 IC98 - 741
 IC99 - 741
 IC100 - 741

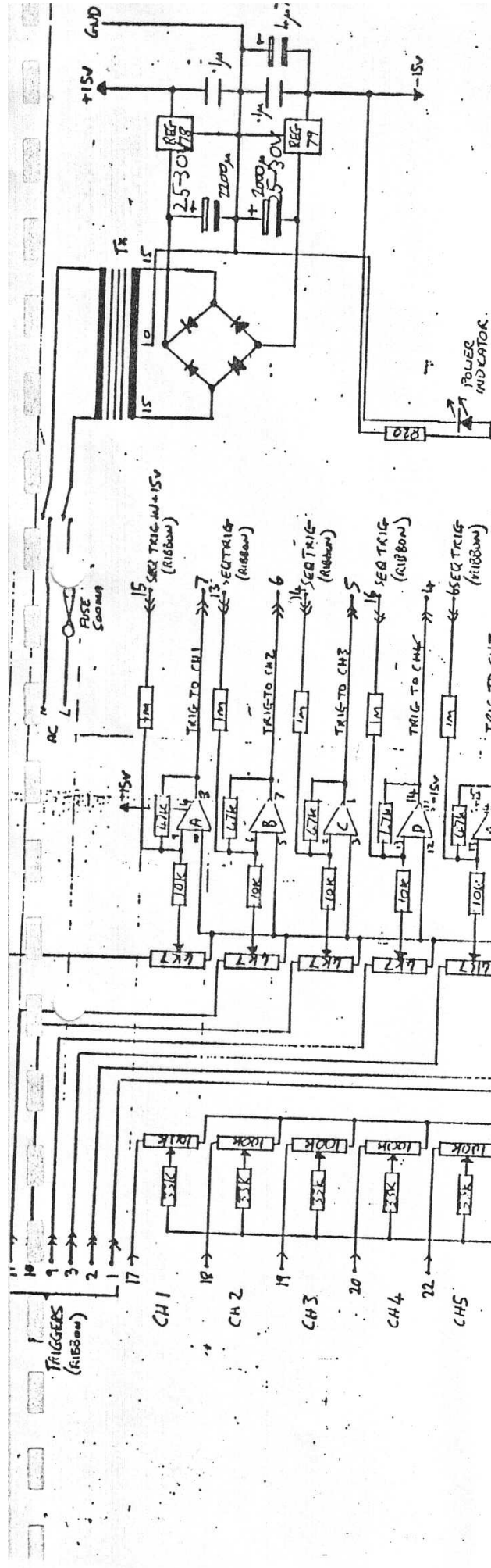
EDGE CONNECTOR PLUG PINS 1-8



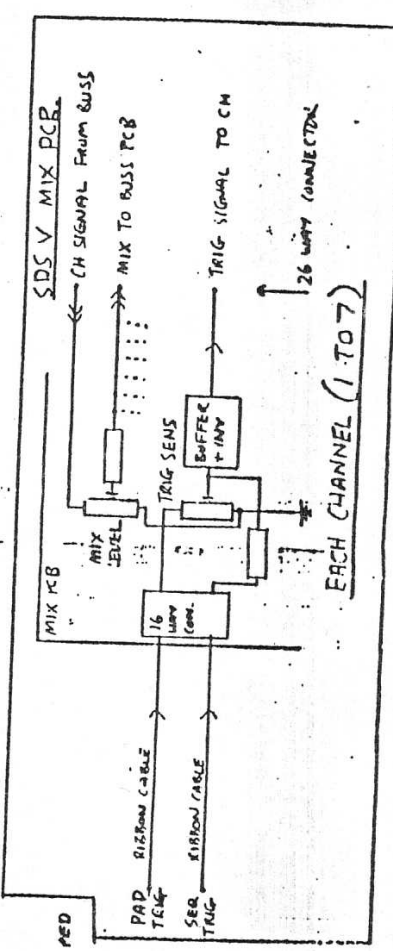
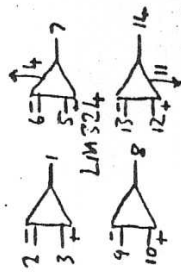
COMOS
 I = approx 100mA

5

5



→ = AUDIO
 ⇨ = TRIGGERS.



SENSITIVITY

MIX LEVEL

+15V TO HI HAT PAD
 HI HAT OPEN/CLOSE/TRIGGER PAD
 RIBBON CABLE

MIX OUT TO
 BUSS BUFFER

EACH CHANNEL (1 TO 7)

TRIG SIGNAL TO CH

MIX TO BUSS PCB

CH SIGNAL FROM BUSS

MIX LEVEL

TRIG SENS

TRIG SIGNAL TO CH

MIX TO BUSS PCB

CH SIGNAL FROM BUSS

26 WAY CONNECTOR

NOT USED

POWER INDICATOR

SEQ TRIG (RIBBON)

EU TRIG (RIBBON)

TRIG TO CH1

TRIG TO CH2

TRIG TO CH3

TRIG TO CH4

TRIG TO CH5

TRIG TO CH6

TRIG TO CH7

TRIGGERS (RIBBON)

AC

TR

15V GND

-15V

REG 78

REG 79

2530V78

2000u

500u

1/4

1/4

15

10

15

15

15

15

15

15

15

15

15

15

15

15

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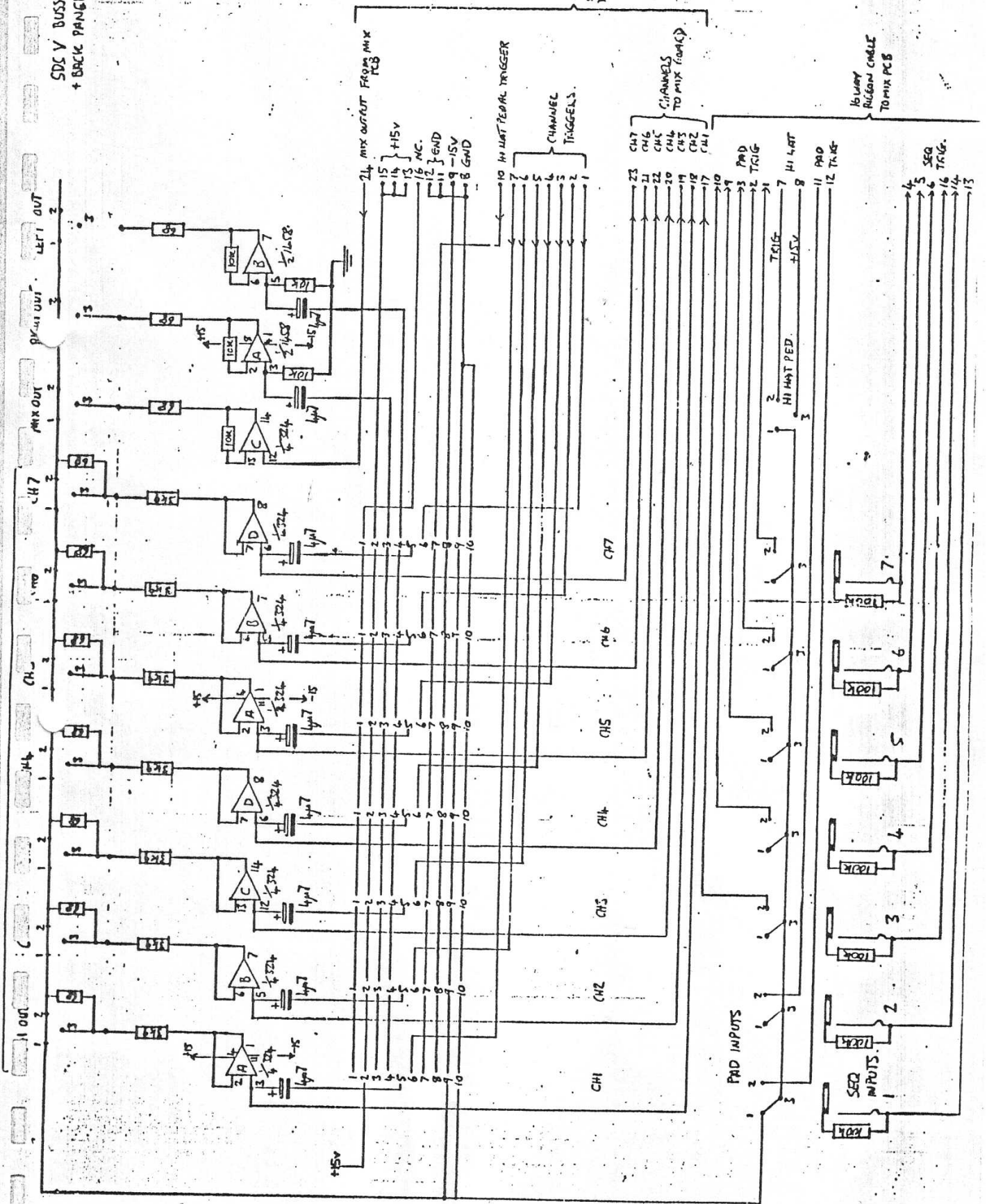
15

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SDE V BUSS PCB
+ BACK PANEL WIRING

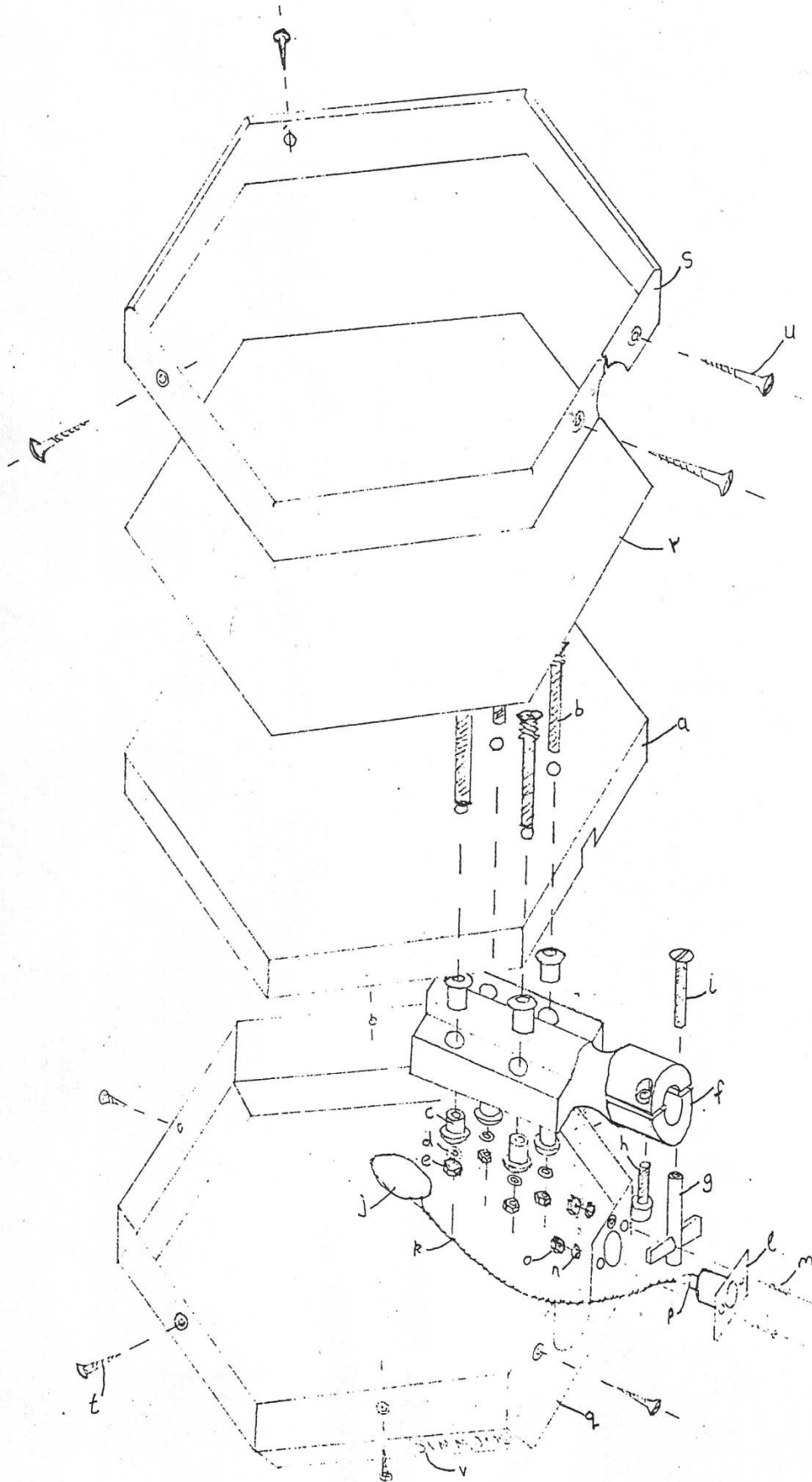


24 MIX OUT FROM MIX PCB

26 WAT SWDEC TERMINAL

16 WAY BUSSING CABLE TO MIX PCB

SMALL DRUM COMPONENTS



SDSV Pad Repair

INDEX OF PROCEDURES

	PAGE
SMALL DRUM COMPONENTS	1
1. To Remove Rim	2
2. To Remove Shell	3
3. To Separate Shell and Wood	3
4. To Remove Cannon	4
5. To Replace PVC Playing Surface	5
6. To Replace Shell	6
7. To Replace Pick-Up	7
8. To Replace Rim	8
9. Fault Finding	9
1. Electronic Failure	9
2. Mechanical Failure	9

N.B. A suitable work surface for maintenance is a table covered by a cloth or polythene bag to prevent scratching the drum.

Take care at all times as playing surface and shell are easily scratched.

SMALL DRUM COMPONENT LIST

- a) Supporting wood
 - b) 40mm M5 pozidrive speaker bolts. 4 off
 - c) Rubber grommets. 8 off
 - * d) M5 washers. 4 off
 - e) M5 self locking nuts. 4 off
 - f) Joint or clamp
 - g) Turn key
 - h) 25mm M6 allen bolt
 - i) 40mm M6 flat head slotted bolt
 - j) Piezzo electric crystal or pick-up
 - k) Wire
 - * l) Cannon (male plug)
 - * m) 12½mm 6 BA round head slotted bolts. 2 off
 - * n) 6 BA slip proof washers. 2 off
 - * o) 6 BA nuts. 2 off
 - * p) 1 kilo ohm resistor
 - * q) Shell
 - r) Front or playing surface
 - s) Rim
 - * t) "Shell Screws" 3/4" No 6 pozidrive twinfast (or double grip) countersunk woodscrews. 7 off
 - * u) "Rim Screws" 1" No 6 raised slotted crome brass countersunk woodscrews. 4 off
 - v) Small drum stickers
- GLUES
- * playing surface glue : Dunlop Flooring Adhesive
 - * pick-up to wood glue : Bostik Hyperbond
 - * pick-up glue to cover solder joint : Araldite
 - * Sealant to cover pick-up and cannon : Silicon Sealant or Bathtub Caulk
- * All these available from hardware or electronic stores.
Rest available from Simmons.

1. TO REMOVE RIM

Tools No 6 flat bit screwdriver

- a. Place the drum, playing surface upwards, on a suitable work surface
- b. Unscrew the four rim retaining screws
- c. Rim may now be lifted off (Diagram B)

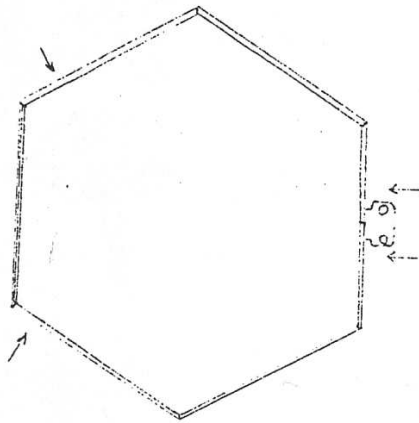


diagram "B"

2. TO REMOVE SHELL

Tools No 6 pozidrive screwdriver

- a. Remove rim as in 1.
- b. Place drum playing surface down
- c. Unscrew the seven shell retaining screws
- d. Lift the shell from the wood by pointing the clamp away from you, place both thumbs on the clamp, and using the fingertips, lever the side of the shell with the cannon in it upwards, applying even pressure both sides of the arch shaped cut out (Diagram C). Failure to do this may result in the unsupported shell cracking across the arch. DO NOT FORCE THE SHELL. When the shell is free, do not lift away as the cannon is still connected to the wood via the double strand wire. If it can be avoided, do not disconnect as reconnection is fiddly. Turn the shell over, keeping the side with the cannon in close to the wood. The drum is now prepared for internal maintenance.

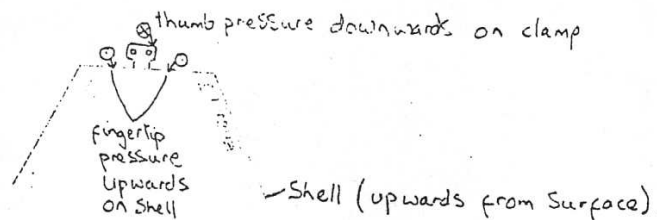


diagram "C"

3. TO SEPARATE SHELL FROM WOOD

Tools Soldering iron, sharp knife (e.g. Stanley)

- a. Remove silicon rubber from cannon socket by cutting away carefully with knife. Do not cut wires
- b. Unsolder wires from cannon

4. TO REMOVE CANNON

Tools No 6 flat bit screwdriver, 6 BA box spanner or any 6 BA spanner

- a. Separate shell from wood (See 3.)
- b. Unscrew 6 BA bolts and nuts using screwdriver and spanner. The nut will be stiff, as paint is used to lock the thread.
- c. When replacing the cannon, lock thread of 6 BA bolts with paint or similar (e.g. nail varnish, thread lock etc.) and ensure that the cannon is arranged in the same fashion as before, i.e. pin 3 towards the arch shaped cut out.

5. TO REPLACE PVC PLAYING SURFACE

Tools No 6 flat bit screwdriver, playing surface glue (not usually necessary)

- a. Remove rim as in 1.
- b. Peel off playing surface and any debris, but do not remove glue
- c. Peel protective film from new playing surface and align on supporting wood in same fashion as old one was removed. Ensure that the corners of the new surface do not overlap the shell (Diagram D) to prevent the rim compressing the surface. A few 60° turns of the playing surface may produce a better alignment, as the drum is not exactly symmetrical.

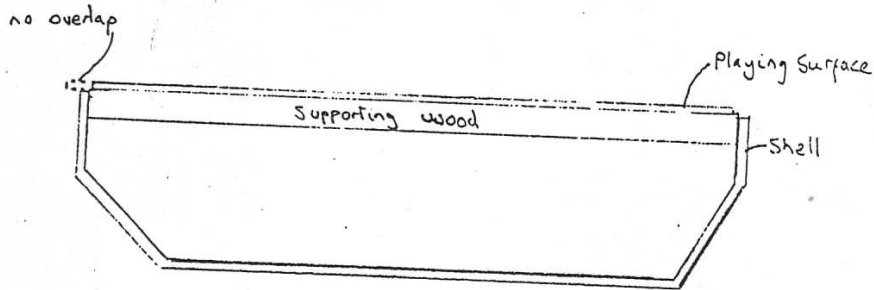


DIAGRAM "D"

The glue remaining on the wood should be sufficient to stick the new surface. If more is required, apply evenly and sparingly to the wood using a serrated applicator. However, this should not be necessary. This glue has been selected for its non-setting properties, and for its water base. **DO NOT USE OTHER GLUES.** The solvents used in other glues will attack the plastic of the playing surface, making it brittle. Also, most other glues set hard and the action of use will fatigue the glue bond and break it in time.

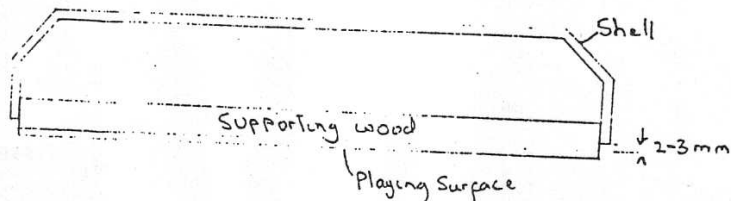
- d. Replace the rim and rim screws

6. TO REPLACE OLD SHELL

Tools No 6 flat bit screwdriver, No 6 pozidrive screwdriver, electric hand drill, 2.5 and 3.5mm twist drill bits, silicon sealant, soldering iron, sharp knife (e.g. Stanley), 6 BA box spanner

- a. Remove rim as in 1.
- b. Remove shell as in 2.
- c. Separate shell and wood as in 3.
- d. Remove cannon as in 4.
- e. Replace cannon on new shell as in 4.
- f. Re solder wires to pins 1 and 2 of cannon (polarity not important) i.e. same ones as resistor. DO NOT SHORT WITH PIN 3
- g. Re-cover wires and cannon pins with silicon rubber
- h. Allow to dry, or continue with care.
- i. Replace shell on wood and replace screws. If screw holes on new shell do not align with pilot holes in wood, then pilots may be plugged (matchsticks will do) and new pilot holes drilled (2.5mm) as the shell dictates. Leave a slight gap between shell edge and playing surface (Diagram E)
- j) Turn drum over and put rim in place. DO NOT REPLACE RIM SCREWS YET
- k) Clear holes in plastic (3.5mm clearance) for rim screws to pass through shell. This is done by putting the rim in position, preferably held by a second party, and drilling gently through the rim screw holes into the plastic only to the depth of the plastic. DO NOT DRILL OUT THE WOOD
- l) The rim screws may now be replaced

diagram "E"



7. TO REPLACE PICK-UP

Tools No 6 flat bit screw driver, No 6 poxidrive screwdriver, silicon sealant, sharp knife (e.g. Stanley), Soldering iron, new pick-up (available pre-wired from Simmons) Bostik Hyperbond

- a. Remove rim as in 1.
- b. Remove shell as in 2.
- c. Separate shell and wood as in 3.
- d. Remove old pick-up and wire (lever pick-up off, pull away wire)
- e. Place small blob of glue (1 drop) on wood in same position as old pick-up
- f. Paint brass side (flat side) of pick-up with activator
- g. Press pick-up onto blob of glue and apply pressure for 60 seconds. After two minutes tug wire gently to test bond. Only a medium strength bond is required.
- h. Re-solder new wire to pins 1 and 2 of cannon as before.
- i. Coat pick-up and cannon liberally with silicon sealant. Replace new wire in position occupied by old one (adjacent to clamp), silicon into place
- j. Replace shell and shell screws
- k. Replace rim and rim screws

8. TO REPLACE RIM

N.B. It is advised that the drum be returned for this maintenance. If circumstances dictate, however, the job may be accomplished as follows:

Tools No 6 flat bit screwdriver, electric hand drill, 2.5mm and 3.5mm twist drill bits

- a. Remove old rim as in 1.
- b. Plug holes in shell and wood with matchsticks or plastic wood
- c. Place new rim in position and turn the drum playing surface down
- d. A second party should hold the rim in place and apply downward pressure on the drum. When the rim is firmly in position the screw holes in the rim may be used to position and mark pilot holes
- e. Remove rim and drill pilot holes 2.5mm in diameter 1" deep. ENSURE THE DRILL REMAINS SQUARE TO THE DRUM
- f. Drill out clearance through the shell 3.5mm diameter to the depth of the shell only in the same positions as the pilot holes
- g. Replace the rim and rim screws

9. FAULT FINDING

Failure of the drum pad may be for either of two reasons:

1. Electronic Failure

The drum pad is very simple electronically, being just a pulse generator to switch the module on or off, the magnitude of the response depending on how hard the drum is hit.

Therefore, if the module responds in the above way to the pad being hit, no matter what the response sounds like, the pad is functioning correctly. Any sound quality failure is therefore a fault in the module

2. Mechanical Failure

Mechanical failure of most types has already been dealt with, we therefore turn to mechanical failure of the electronic components

a) No response at all from drum

Try pad with a different lead on different module. If there is still no response:

- i. check the solder connection of the wire to the cannon
- ii. check that the pins 2 and 3 (or 1 and 3) are not shorting out (blobs of solder, etc)
- iii. replace pick-up as a final resort

The drum may be tested while disassembled as long as the pick-up is glued and connected

b) Intermittent response from drum

- i. check that playing surface is firmly stuck down
- ii. follow procedure for a)

c) Low sensitivity

- i. check pad with different lead and module
- ii. replace pick-up

d) Over-sensitivity

- i. check solder connection of resistor on cannon
- ii. replace pick-up

specification

Connect to a properly earthed mains supply using the following code:

Blue - Neutral

Brown - Live

Green/Yellow - Earth

DO NOT USE WITHOUT A PROPER EARTH

Trigger Range	Pads	5mv Min	1.5v Max
	Sequencer	1v Min	15v Max

Maximum output occurs at 75mv and 7v respectively.

Input Impedance	Pads	4.7k ohms
	Sequencer	1m ohms

Output Level	„Mix out (level controls at Max)	2vpp into 50 ohms
	„L and R out	2vpp into 50 ohms
	„Individual outputs	100 mvpp into 50 ohms.

„Factory pre-set sounds, triggered at maximum.

Pad Inputs Wired	Pin 1 =	Ground
	Pin 2 =	Hot
	Pin 3 =	Ground

Outputs Wired	Pin 1 =	Ground
	Pin 2 =	Ground
	Pin 3 =	Hot

Power Requirements

UK and Europe	220v - 240	50Hz 11va
USA	110v - 120	60Hz 11va

Dimensions

Small Pads	14 1/4" x 2 1/4"	(Corner - Corner)
Bass Drum	22" x 2 1/4"	(Corner - Corner)
Electronics	17 1/2" x 11 3/4"	x 5 1/2"

Simmons Electronics Ltd reserve the right to alter any specification shown in this manual without prior notice.

Thanks for visiting
<http://www.simmonsmuseum.com>

