

ARCAM

DELTA 60 AMPLIFIER SERVICE MANUAL

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Issue 2 Serial number 0001 -
(Paul Newton February 90)

Arcam Drawing No. H04/0004

CONTENTS

CIRCUIT DESCRIPTION	1
Disc Stage	1
Power Amplifier	1
Power Supply	2
Mute Circuit	2
TEST POINTS	3
REMOVAL OF PCB FOR SERVICING	4
CHANGE OF MAINS VOLTAGE	5
CIRCUIT DIAGRAMS	6

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Power Supply

The power supply uses a large toroidal transformer which delivers about 27.5 volts AC, full wave rectified. The D.C. voltage is smoothed by two large electrolytic capacitors.

The power supply provides about ± 15 volts and 8 volts. Three sub regulators provide supplies. The 3 regulators are based around LM7815, LM7915 and LM7808. R201 & R202 provide heat dissipation in the regulators. C203 & C204 are bypass capacitors for the ± 15 volt regulators. The +8 volt regulator uses an R-C network, R207 & C213. The +8 volt regulator is used to supply the

Mute Circuit

The speaker outputs are protected from the mute circuit which provides a 5 sec delay. The delay is set by the charging of C217 via R217. The mute circuit has its own supply from the transformer via C218.

TEST POINTS

TEST POINT	FUNCTION	TYPICAL VOLTAGE
1 (L), 2 (R)	Moving coil stage	+0.9V
3 (L), 4 (R)	Disc amp 1st stage	0V
5 (L), 6 (R)	Disc amp 2nd stage	< 0.5V
7 (L), 8 (R)	Power amp in	0V
9 (L), 10 (R)	Power amp in AC coupled	0V
11 (L), 12 (R)	Servo voltage	-1.6V
13 (L), 16 (R)	Bias for Q9, Q109	+1.1V
14 (L), 15 (R)	Bias for Q8, Q108	-1.1V
17 (L), 20 (R)	Protection circuit bias	+0.3V
18 (L), 19 (R)	Protection circuit bias	-0.3V
21 (L), 23 (R)	Quiescent current	16mV w.r.t TP22, TP24
22 (L), 24 (R)	Quiescent current	16mV w.r.t TP21, TP23
25 (L), 26 (R)	Speaker output	< 20mV
27 (L), 28 (R)	Power amp sub rail	-36V
29	Mute circuit supply	+33V
30	Relay turn on voltage	0.3V (on)
31	Mute turn on transistor	+37V (off)
32	Relay coil voltage	+37V (on)
33	+ve regulator input	+25V
34	-ve regulator input	-29V

REMOVAL OF PCB FOR SERVICING

To service the Delta 60 requires removal of the pcb from the case. To do this follow the instructions below.

- 1) Disconnect the mains supply from the unit.
- 2) Undo the 2 screws holding the top plate on and remove this plate.
- 3) Remove the volume knob by loosening the hex grub screws in the knobs.
- 4) Unplug the power led supply connector from the pcb.
- 5) Remove the 2 screws holding the pcb and then remove 3 screws on the base plate near rear panel and the 2 screws which attaches the rear panel to the side panels.
(see Fig 1)
- 6) The rear panel, still attached to the pcb can now be pulled out of the case leaving just the baseplate, front panel and two sides.

Replacement is a reversal of the above procedure taking care that the transformer washer locates in the slots on the base plate and that the volume pot shaft does not miss the hole in front panel and crack the pot.

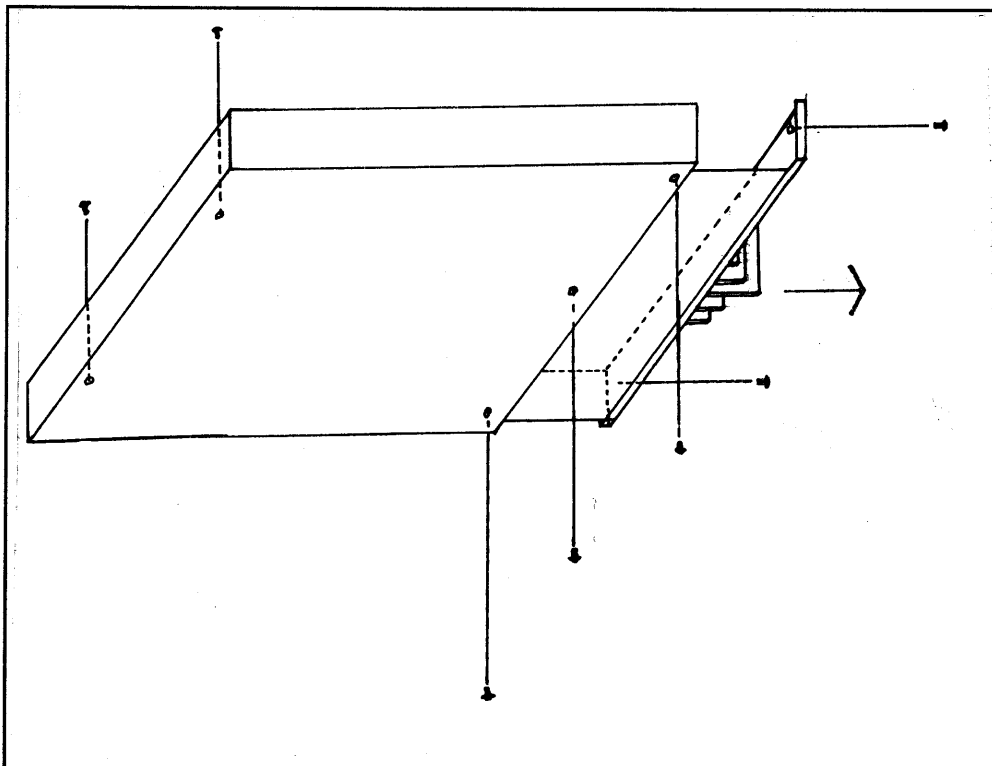


Figure 1

CHANGE OF MAINS

WARNING - The unit wiring or the mains fuse off.

To convert the Delta position of 2 wires from to 110V conversion and
To convert to other var

240

0
ORANGE

120

0
ORANGE & BROV
0

No.
1
2
3
4

BOARD MODIFICATIONS

Issue P2 up to serial number 700

Issue P3 serial number 701 onwards Q17 added to provide better thermal feedback for quiescent current setting stage.

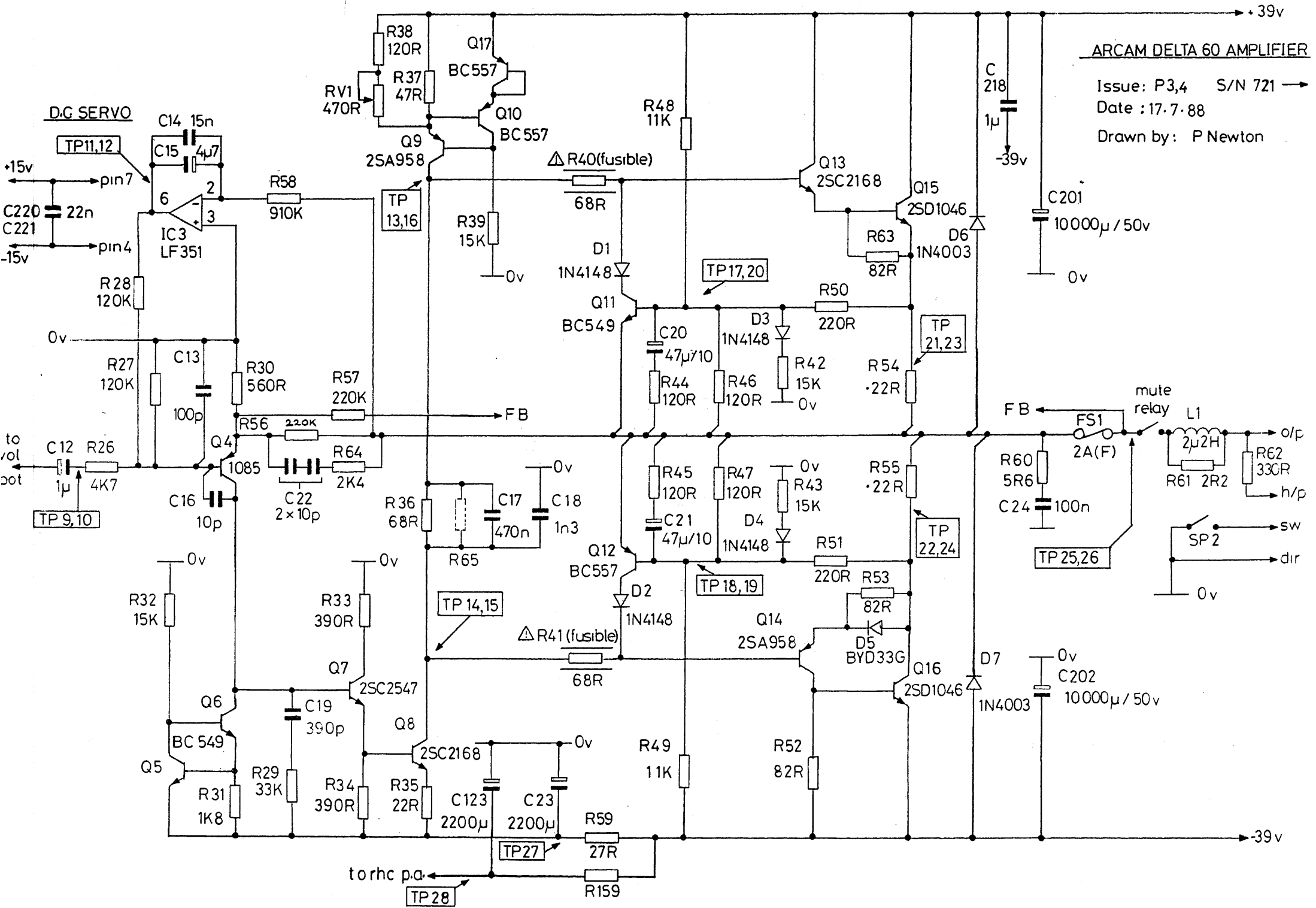
Issue P4

ARCAM DELTA 60 AMPLIFIER

Issue: P3,4 S/N 721 →

Date : 17.7.88

Drawn by: P Newton

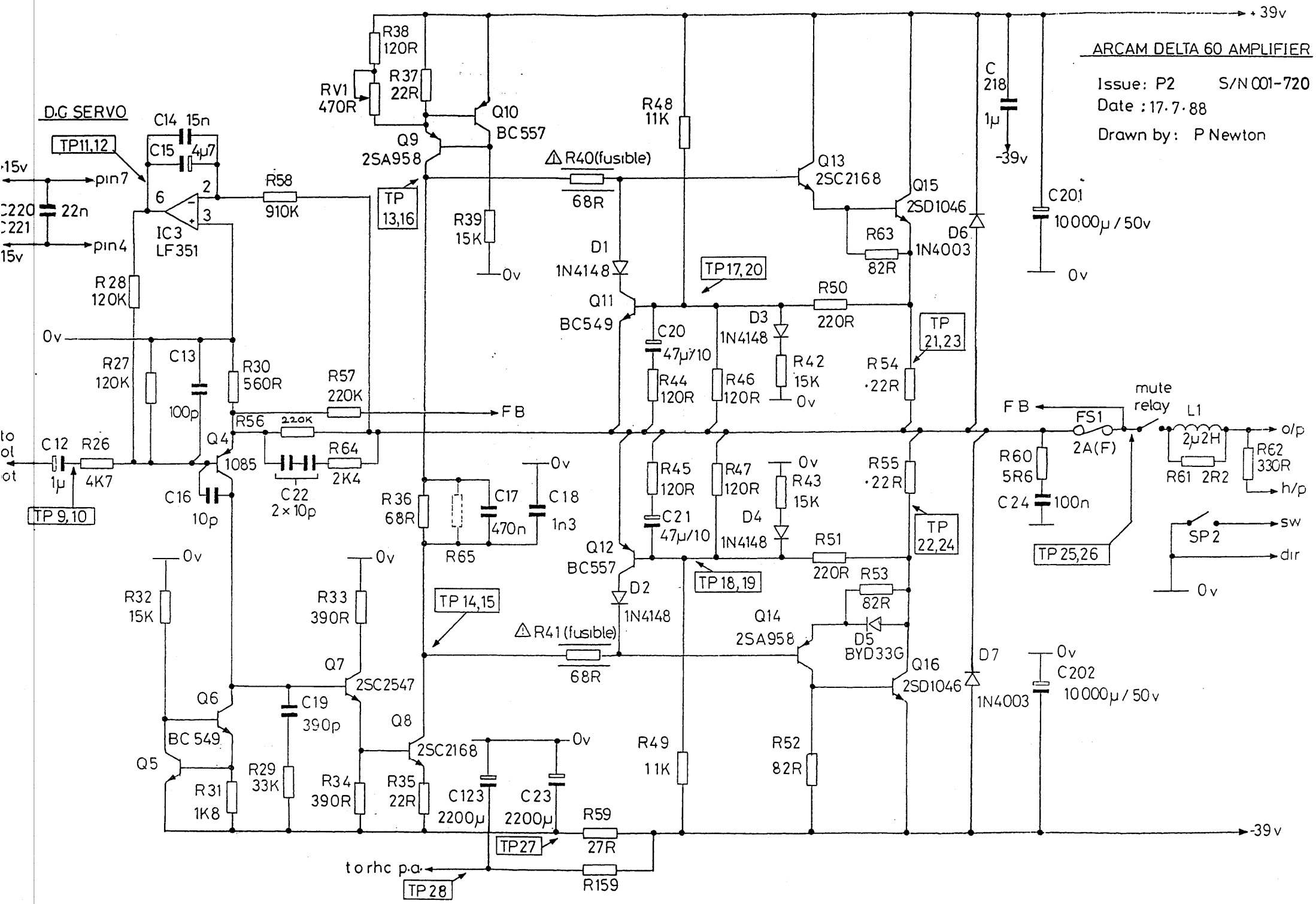


ARCAM DELTA 60 AMPLIFIER

Issue: P2 S/N 001-720

Date: 17.7.88

Drawn by: P Newton



ARCAM DELTA 60 AMPLIFIER

DISC STAGE & REGULATED SUPPLIES

Issue: P2,3,4 S/N 001 →

Date : 17.7.88

Drawn by: P. Newton

