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 **SCOTT**[®]

Perfection Is Our Standard

SERVICE MANUAL

MODEL
260/
260b

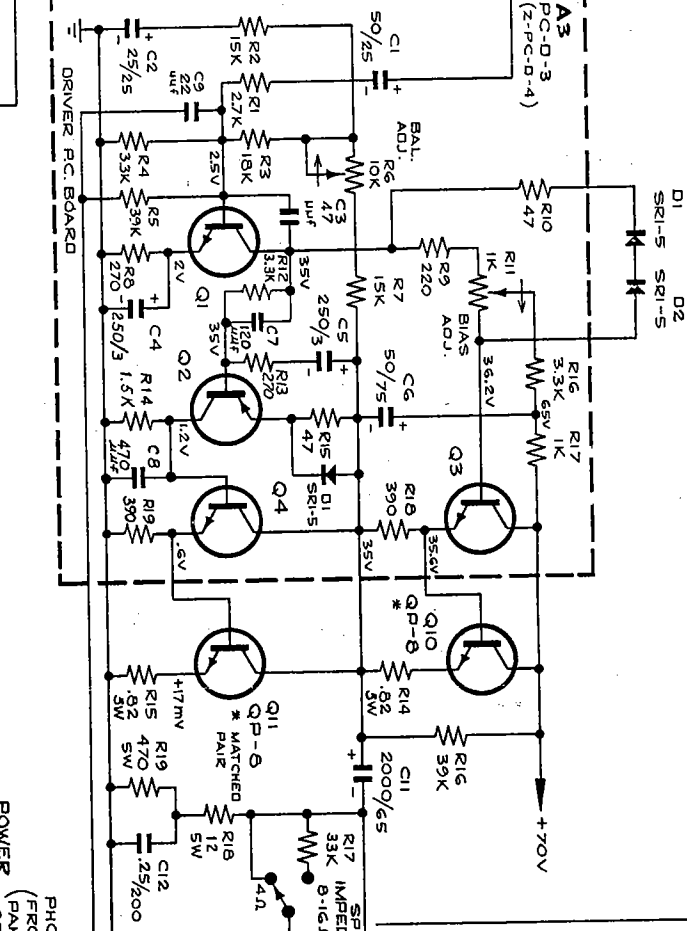
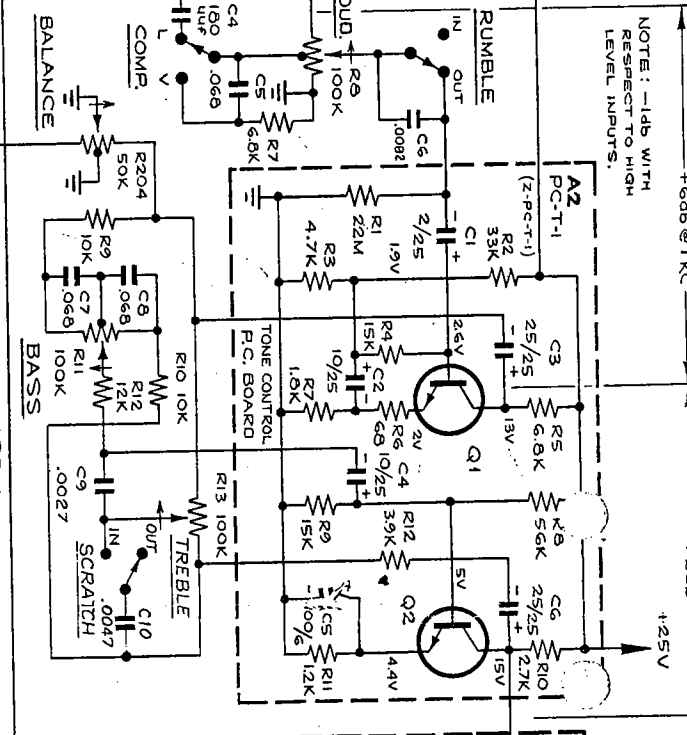
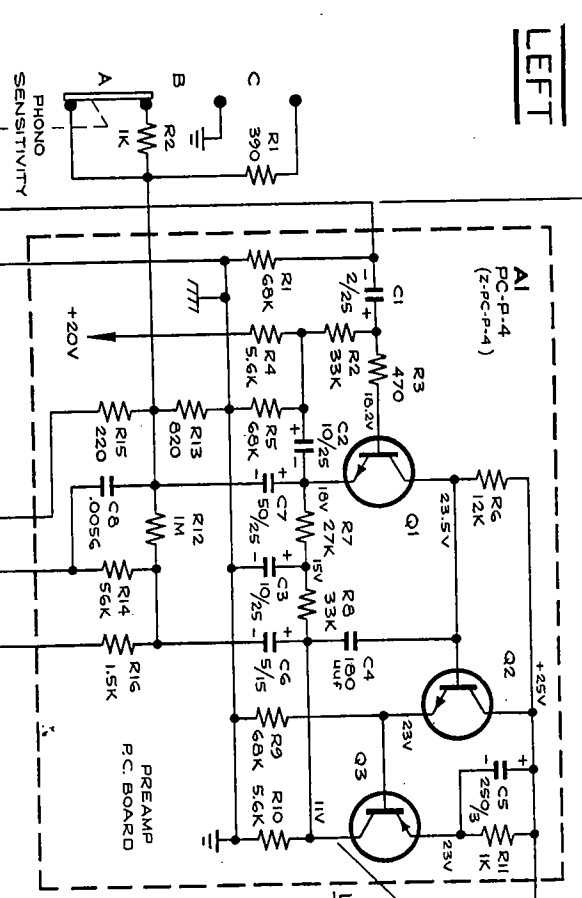
SERVICE PUBLICATION

XX-99

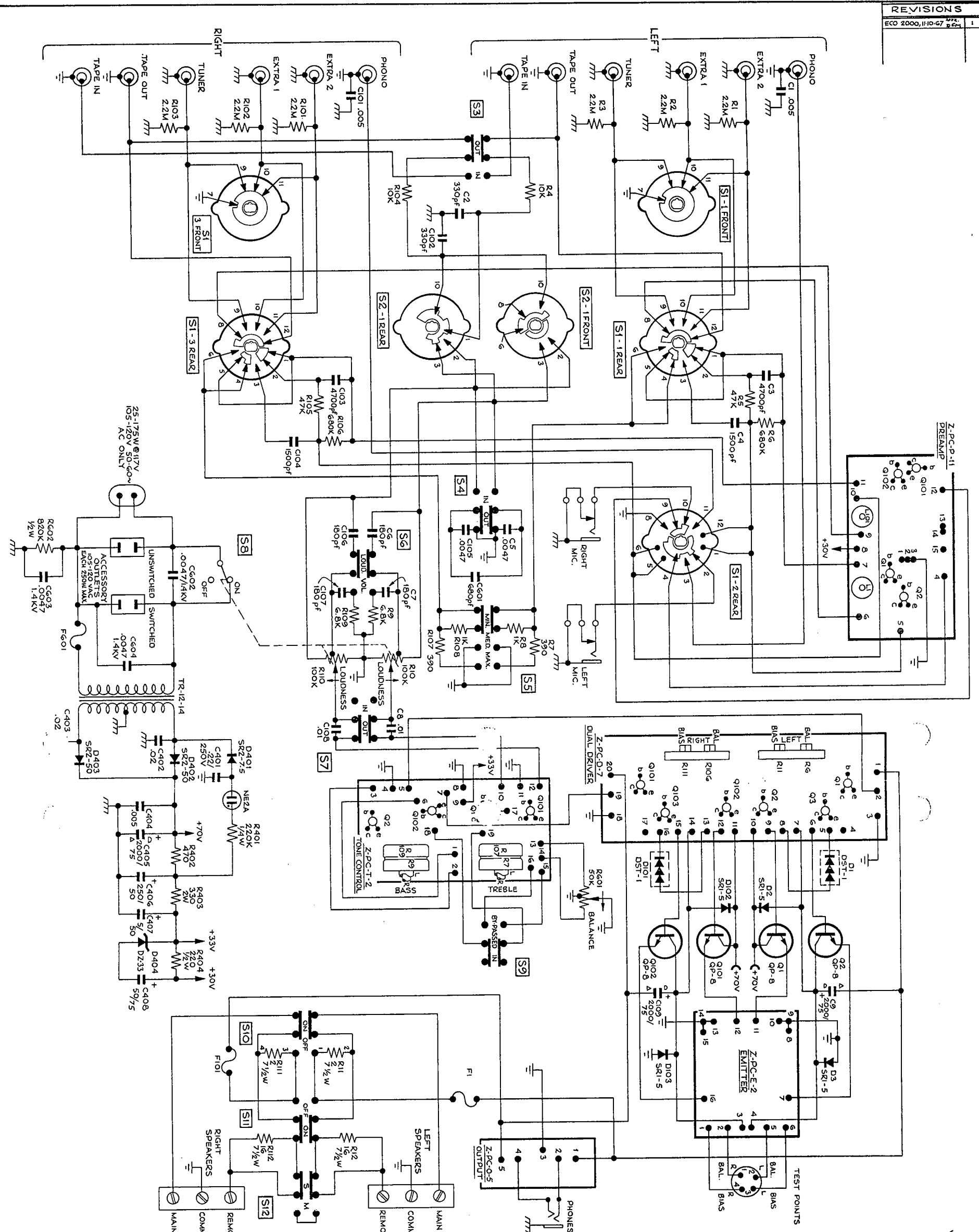


LEFT

VOLTAGE GAIN +47dB @ 1KC
PHONO SENSITIVITY IN 'C' POSITION



REVISIONS	
1	ECO 2000, IFO-C7 REV. 1



VOLTAGES:
UNLESS OTHERWISE SPECIFIED:
ALL VOLTAGES POSITIVE DC ±15% MEASURED WITH 20K Ω/V
ALL VOLTAGE 117 AC LINE.
VOLTAGES MEASURED WITH INPUT SWITCH IN EXTRA 2 POSITION AND NO SIGNAL.
▲ INDICATES LOADING BY VOM.

Z-PC-P-11	a	b	c
Q1, Q101	.2V	.65V	3.1V
Q2, Q102	2.6V	3.2V	14.5V

Z-PC-T-2	a	b	c
Q1	2.6V	2.2V ▲	14.5V
Q2	3.4V	3.8V ▲	17V
Q101	2.7V	2.3V	14V
Q102	3.5V	3.9V	16V

Z-PC-D-7	a	b	c
Q1	2.1V	2.6V	34.5V
Q2	3.6V	3.6V	70V
Q3	3.5V	34.5V	.6V
Q101	2.2V	2.8V	34.5V
Q102	3.6V	36.5V	OV
Q103	3.5V	34.5V	.60V

POWER TRANSISTORS	a	b	c
Q1, Q101	35.5V	36V	70V
Q2, Q102	OV	.6V	35V

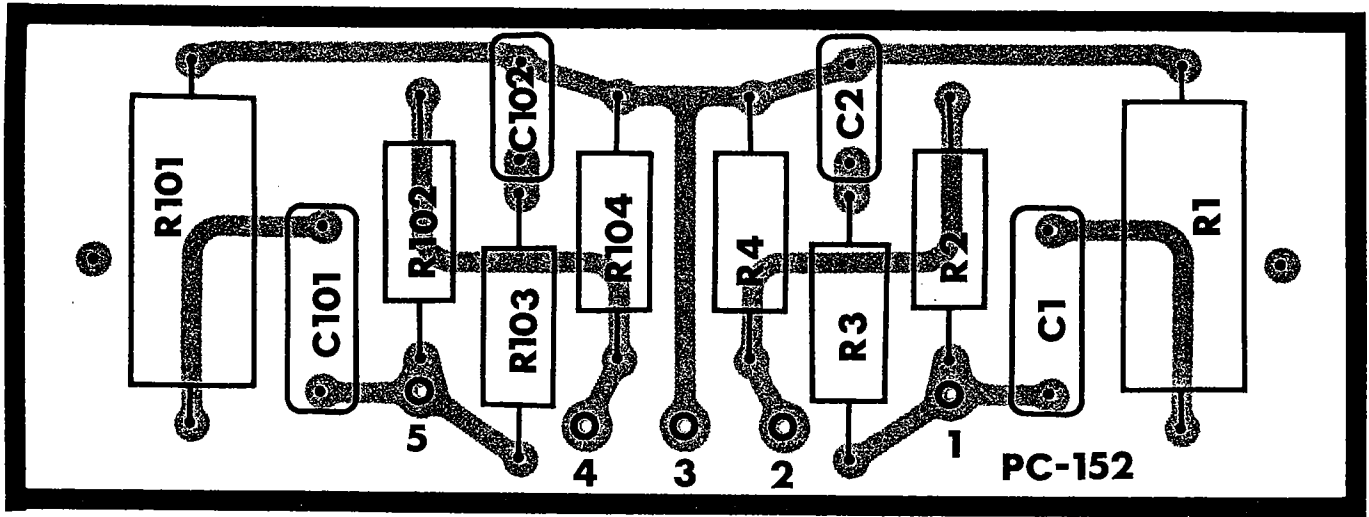
- NOTES:**
- UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS ±10%, CAPACITANCE IN MFD'S.
 - ROTAARY SWITCH (S1 & S2) SHOWN IN FULL CCW POSITION AS VIEWED FROM THE FRONT. (POSITION 1)
 - ARROW - HEADS INDICATE MAIN SIGNAL PATH.
 - ARROW ON POTENTIOMETER INDICATES CW ROTATION.
 - THE FOLLOWING CONTROLS IN THE LEFT CHANNEL ARE MECHANICALLY CLUTCHED WITH IDENTICAL CONTROLS IN THE RIGHT CHANNEL. BASS AND TREBLE.
 - S1 INPUT SWITCH - SRW-105 POSITION FUNCTION
1 MIC
2 PHONO
3 TUNER
4 EXTRA 1
5 EXTRA 2
 - SELECTOR SWITCH - SRW-37-2-1 POSITION FUNCTION
1 BAL. L
2 BAL. R
3 MONO
4 STEREO
5 RE INPUT
6 R INPUT
 - SWITCH FUNCTION
S1 INPUT
S2 SELECTOR
S3 TUNER
S4 NOISE FILTER
S5 PREAMP SENS.
S6 VOLUME COMP.
S7 RUMBLE FILTER
S8 POWER CONTROL
S9 SPEAKERS MAIN
S10 SPEAKERS REMOTE
S11 SPEAKERS MAIN
S12 REMOTE SPEAKERS
 - FUSES
F1, F101 — 2.5 AMP. SLO-BLO
F601 — 2 AMP. SLO-BLO

DATE 9-16-67	H.H. SCOTT, INC. MANHATTAN, N.Y.
DRN. J. Cassiday	
ENG. J. J. J. J.	CIRCUIT DIAGRAM
SCALE: 1/8" = 1"	REV. 1
SHEET 1 OF 1	2608-C1

HIGHEST SERIES NUMBERS

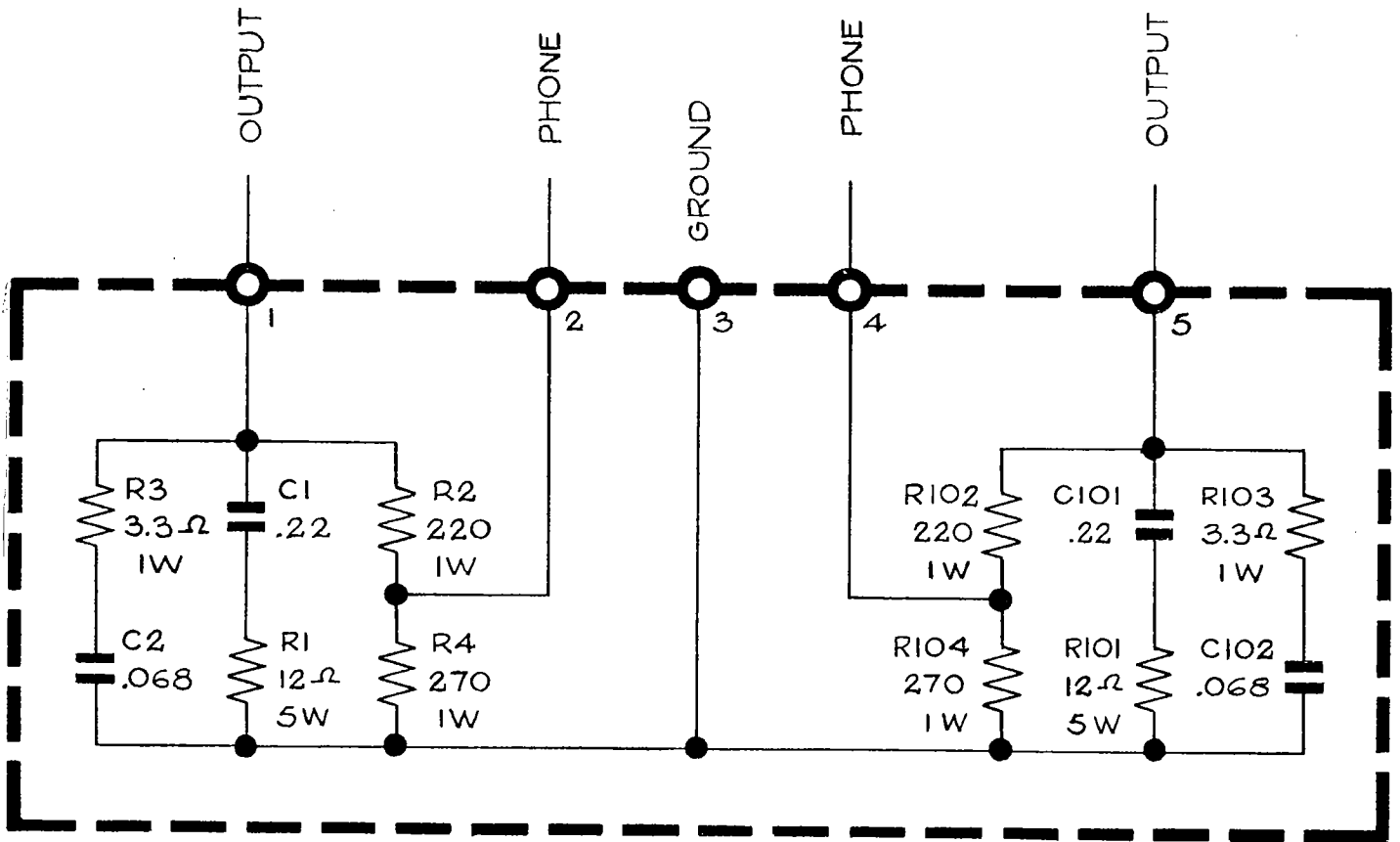
R12	C9	D3	F1
R112	C109	D103	F101
R404	C406	D404	F601
RC02	CG04		





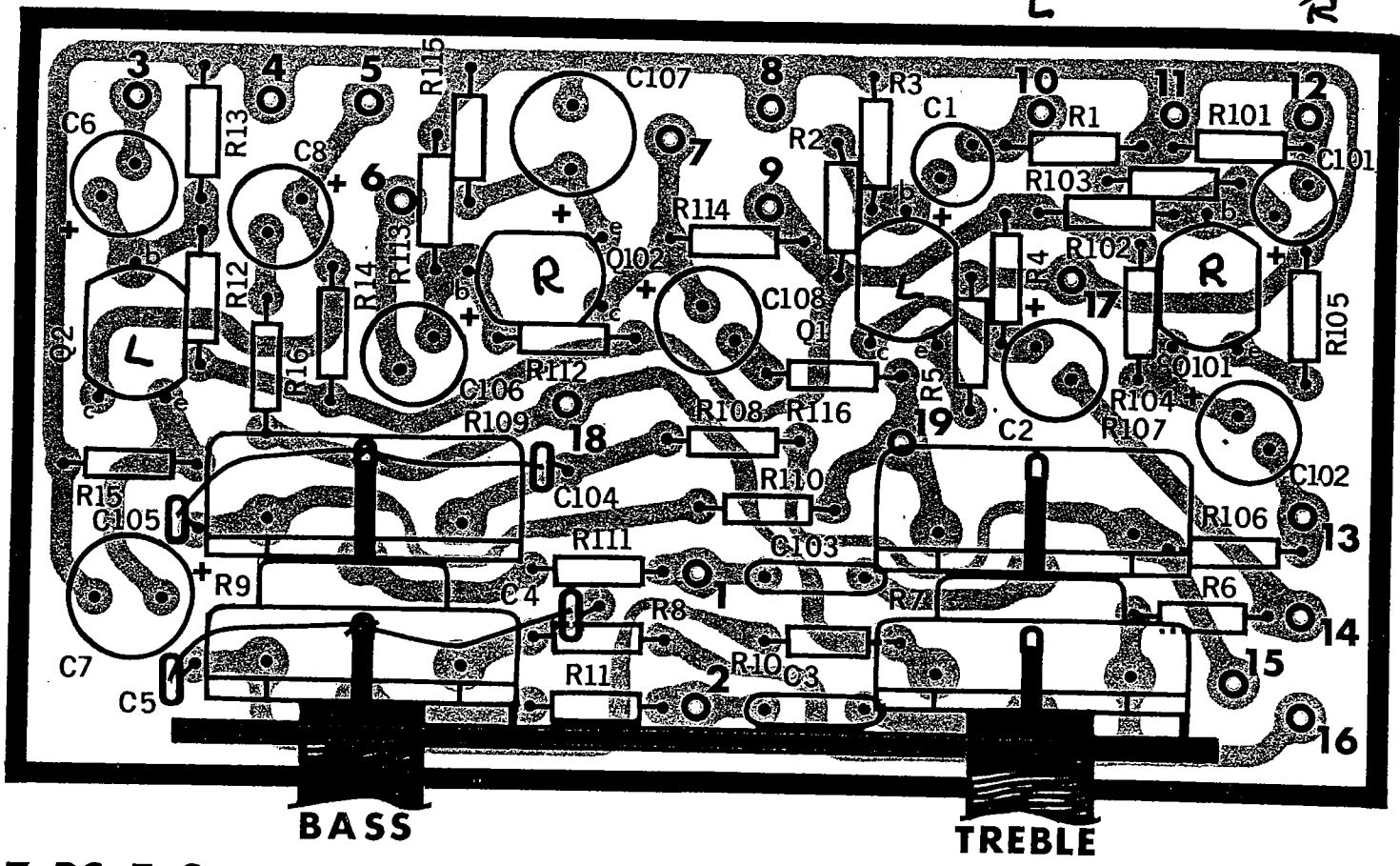
OUTPUT

Z-PC-0-5 0

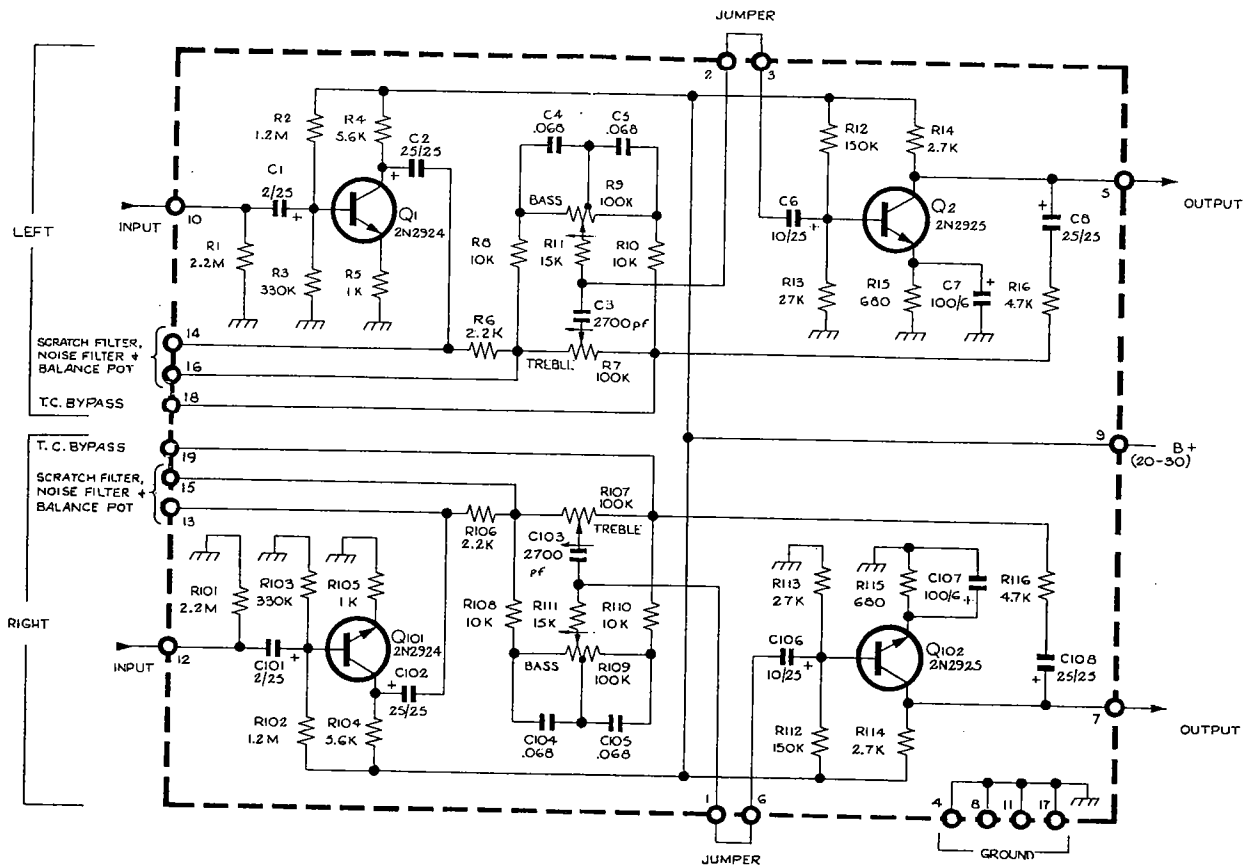


OUTPUT Z-PC-0-5

00



Z-PC-T-2



- NOTES:
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS CAPACITORS IN MFD'S RESISTORS 1/2 WATT
 2. ARROWS ON POTS INDICATE CW ROTATION
 3. RIGHT & LEFT CHANNEL BASS CONTROLS ON SAME CONCENTRIC SHAFT (FRICTION CLUTCH)
 4. RIGHT & LEFT CHANNEL TREBLE CONTROLS ON SAME CONCENTRIC SHAFT (FRICTION CLUTCH)



SERVICE BULLETIN FOR MODEL 260 SOLID STATE STEREO AMPLIFIER

Tape Output

Rated Voltage Output to Tape Recorder 0.5 v
Minimum Recommended Load Resistance 200 K ohms

Pre-Amplifier

Input:

Tape Head - Input Impedance 47 K ohms
Signal for Rated Output 2 mv
S/N Ratio 52 db
Phono - Input Impedance (All Switch Positions) 47 K ohms
Signal for Rated Output (Adjustable by Switch) 3, 5, 9 mv
S/N Ratio 55 db
High Level Inputs - Input Impedance 60 K ohms
Signal for Rated Output .5 v
S/N Ratio 75 db
Frequency Response in Flat Position 20-20 KC \pm 1.0 db
Treble Controls Measured at 10,000 cps, Boost and Cut 10 db \pm 2 db
Bass Controls Measured at 50 cps, Boost and Cut 12 db \pm 2 db
Scratch Filter -4 db/octave: -3 db @ 5 K cps
Rumble Filter -10 db @ 50 cps \pm 2 db
Loudness Compensation (Maximum) +9 db @ 50 cps
Loudness Compensation +2.5 db @ 10 K cps

Amplifiers

Power Ratio (Watts Per Channel)
@ 0.8% Harmonic Distortion
@ 4 ohms 60 watts per channel
@ 8 ohms 50 watts per channel
Continuous Power Output
Single Channel @ 0.8% Harmonic Distortion 40 watts

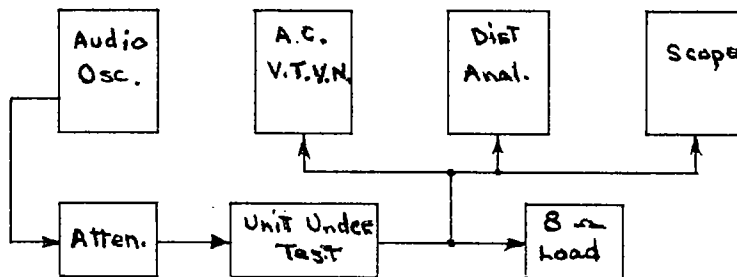
Continuous Output Both Channels
@ 0.8% Harmonic Distortion 30 watts per channel
Frequency Response 20-20,000 cps \pm 1 db
Power Bandwidth at Rated Distortion (IHF Method) 20-20,000 cps
Damping Factor 20
Range of Line Voltage and Frequency 105-120 v, 50-60 cps
Power Consumption - 117 v at 60 cps (Stand-by) 25 w



SERVICE BULLETIN
FOR
260B SOLID STATE AMPLIFIER

EQUIPMENT NEEDED

- Audio Oscillator
- VTVM
- Oscilloscope
- VOM
- Load Box
- Attenuator
- Distortion Analyzer
- Variac or 117 Regulated Line
- Factory Dielectric Test Set



Set Controls to the Following:

Front Panel

- | | |
|-------------------------------|----------|
| Input Selector | EXTRA 2 |
| Stereo Selector | STEREO |
| Tone Controls (Bass & Treble) | Flat "0" |
| Loudness/Power | Ac OFF |
| Balance Control | Flat "0" |
| Tone Controls | IN |
| Rumble Filter | OUT |
| Noise Filter | OUT |
| Tape | NORMAL |
| Compensator | LOUDNESS |
| Remote Speaker | OFF |
| Main Speaker | ON |

Rear Panel

- | | |
|--------------------|--------|
| Preamp Sensitivity | Max. |
| Remote Speakers | STEREO |

Internal

- | | | |
|----------------|---------------------------------|---------|
| Potentiometers | Z-PC-D7 R6 & R106 (Balance Pot) | Max CCW |
| Potentiometers | Z-PC-D7 R11 & R111 (Bias Pot) | Max CCW |

Measure resistance to chassis in the following locations (positive side of VOM battery to ground - chassis), meter on 1000 scale:

- | | |
|---|----------------|
| Output Transistor Collector (supply side) Q1 & Q101 | 1.6 - 2.1 kohm |
| Output Transistor Collector (midpoint) Q2 & Q 102 | 1.5 - 1.9 kohm |
| Main Speaker "H" Terminal | 450 - 500 ohm |
| 33V Source | 2.2 - 2.8 kohm |

Measure resistance across stabistors in forward direction (1.0 - 1.5 kohm) on rear panel of Rx1000 scale.

1. Bias and Balance Adjustment and Voltage Checks

With no signal input and 8 ohm loads connected to Main speaker taps, turn power on keeping loudness pot at minimum setting. Watch carefully for any signs of voltage shorts or overheating.

Measure voltage at collector of Q1 - should measure between 68 and 75 volts. Set voltage at pin 2 of Test Point jack for Left Channel, and pin 1 of Test Point jack for Right Channel on rear panel for one-half supply voltage (approx. 35 volts) using D7-R6 (Left Channel) and D7-R106 (Right Channel) balance pots.

Using Triplett Vom, set to 12mA scale; adjust bias pots for 0.8 mA current from pin 3 of Test Point jack for Left channel and pin 4 of Test Point jack for Right channel, D7-R11 for Left Channel and D7-R111 for Right Channel.

Recheck balance adjustment and reset balance pots if necessary.

a) Check voltage at 33 volt source (across DZ-33) for voltage of 30 - 36 volts.

2. Sensitivity Check

Connect audio oscillator through attenuator into Extra 2 input jack. Set attenuator for an output from attenuator of 0 dB on 0.3V scale of VTVM, 400Hz. Turn loudness pot to maximum. Observe Output at speaker terminals of 0 dB on 10 volt scale ± 2 dB. Turn loudness to minimum. At this point recheck and readjust bias if necessary. Note: Check that difference in channels is no greater than 2dB. Repeat for Extra 1 jack input, and tuner jack input.

Distortion Check

Using a 400 Hz distortion analyzer, distortion must be no greater than 0.4% at 16 volts into an 8 ohm load (32 watts)

4. Loudness Control Check

Set attenuator for output of +20 dB (0 dB on 10V scale). Check tracking of Left and Right channels in 10 dB steps to -50 dB, maximum deviation 2 dB.

Check loudness response in electrical flat position:

<u>L/V in Loudness</u>	<u>L/V in Volume</u>
1 kHz - 0 dB	Flat Response
10 kHz - +2.0 ± 1 dB	
100 Hz - +7.0 ± 2 dB	

With level control at min. OUTPUT should be -73 dB with respect to 16 volt or 32 watt level.

5. Tone Control Check

With Loudness at max., adjust attenuator to obtain 0 dB on 3 volt scale at 1kHz. Use attenuator to obtain OUTPUT on 3 volt scale for Bass and Treble Boost measurements.

<u>Bass 100Hz</u>	<u>Treble 10 kHz</u>
Boost 9 ± 2 dB	Boost 9 ± 2 dB
Cut 10 ± 2 dB	Cut 9 ± 2 dB

6. Tone Control Bypass Switch Test

Turn Bass and Treble controls for max. boost with loudness control at max. and attenuation adjusted to obtain 0 dB on 3 volt scale at 1 kHz, at the following frequencies check the effect of the tone control bypass switch:

	<u>Tone Controls In</u>	<u>Tone Controls Bypassed</u>
100 Hz	+9 ± 2 dB	-3 ± 1 dB
1 kHz	0	-3 ± 1 dB
10 kHz	+9 ± 2 dB	-3 ± 1 dB

Return Tone Control Bypass pushbutton to Normal (Tone controls in) position.

7. Frequency Response Check

Set Tone controls and Balance control flat ("0" position)

Attenuator oscillator to obtain 0 dB on 3 volt scale at 1 kHz when measured at speaker terminals with 8 ohm load. Sweep oscillator frequency and monitor OUTPUT. Maximum variation +1 dB from 40 Hz to 15 kHz. 3 dB down points should be less than 17 Hz low end and 25-40 kHz high end. Return to 1 kHz.

8. Crosstalk Check

Feed input into Right channel. Record Left channel with Stereo Selectro Switch in Mono position, 1 kHz signal. Switch Stereo Selector Switch to Stereo. Measure 45 dB loss minimum. With Noise Filter IN measure -16 to -25 dB loss minimum. Return oscillator to left input.

9. Stereo Selector Switch Check

<u>For Left Channel Input</u>	<u>Stereo Switch Position</u>	<u>For Right Channel Input</u>
Left Output		Right Output
Signal (-0.6 dB)	Bal. Left	No Signal
No Signal	Bal. Right	Signal (-0.6 dB)
Signal (-2 dB)	Monaural	Signal (-2 dB)
Signal (0 dB)	Stereo	Signal (0 dB)
No Signal	Rev. Stereo	No Signal
Signal (-1.5 dB)	Left Input	No Signal
No Signal	Right Input	Signal (-1.5 dB)

10. Rumble-Noise Filter: Normal output level 0 dB on 3V scale, Loudness pot max.

<u>Rumble In</u>	<u>Noise In</u>
100 Hz -5 +2 dB	10 kHz -10 +2 dB

11. Balance Control Check

With oscillator in Left channel input, monitor Left channel output. Turn balance pot to Balance Left. Note no loss of signal. Turn Balance pot to Balance Right. Note complete loss of signal.

Repeat for opposite effect when feeding and monitoring Right channel.

12. Speaker Switch Check

(a) Feed signal to Left input. Monitoring Left channel Main speaker output, set input for output of 0 dB on 3V scale. Switch monitor to Left channel remote output. Note no signal. Push remote speaker switch ON. Note output of approx. -2 dB on 3V scale. Push Main speaker switch OFF. Note return of output to 0 dB. Push Remote speaker switch OFF. Note loss of output. Monitor Main speaker output. Note no output. Push Main speaker switch ON. Note output of 0 dB on 3V scale.

(b) Remote Speaker Mono-Stereo Switch Check

Connect 8 ohm load to Left Remote speaker output, push Remote Speaker switch ON, Main speaker switch off. Feed signal to left input, set input for an output of 0 dB on 3V scale. Switch Remote Speaker switch (rear chassis) from Stereo to Mono. Note 12 dB + 2dB drop in output level. Switch back to Stereo and note return to "0" dB. Return load to Main speaker output and switch OFF Remote speaker pushbutton. Switch ON Main speaker pushbutton.

13. Regulation Check

With signal output of 1 kHz, 0 dB on 3V scale, remove 8 ohm load. Note 0.5 dB max. rise in output.

14. Phone Jack (Front Panel) Check: Input L channel, selector-stereo.

With signal output of 1 kHz 0 dB on 3V scale at speaker terminals, remove VTVM from 8 ohm load and connect output from phone jack to VTVM. Tip of phone jack is Right channel. Phone jack output should be -5 dB with respect to speaker terminal output.

15. Tape Monitor Switch Check

Before removing or inserting inputs, turn Loudness control to minimum. With signal output of 1 kHz, 0 dB on 3V scale at speaker terminals Extra 2 input, switch Tape Monitor switch to IN position. Note complete loss of signal. Remove signal input from Extra 2 jack and plug into Tape In jack. Note signal restored as before. Switch tape monitor to OUT position; again note signal loss. Remove signal from Tape In jack and insert in Tape Out jack. Note signal restored.

16. Preamp Gain Check

Return signal input to EXTRA input and adjust level for output at 1 kHz of 0 db on 3 volt scale with loudness control at maximum. Turn loudness control to min. Turn input selector to Phono. Attenuate -45 dB and plug input into Phono input. Turn loudness control to max. Output should be 1 \pm 1 dB on 3 volt scale. Switch preamp sensitivity from Max position to other positions and observe the following gain change with respect to Max. position:

<u>Position</u>	<u>Output</u>
Med.	-5 \pm 1 dB
Min.	-10 \pm 1 dB

Return preamp sensitivity switch to max. position. Turn loudness control to min. Turn input selector to MIC. Remove input from phono input and place in MIC input (front panel). Turn loudness control to max. Note output of -1 \pm 1 dB on 3 volt scale. Repeat sensitivity check for MIC position. Note same gain changes as in phono position.

17. Phono and Microphone Frequency Response Check

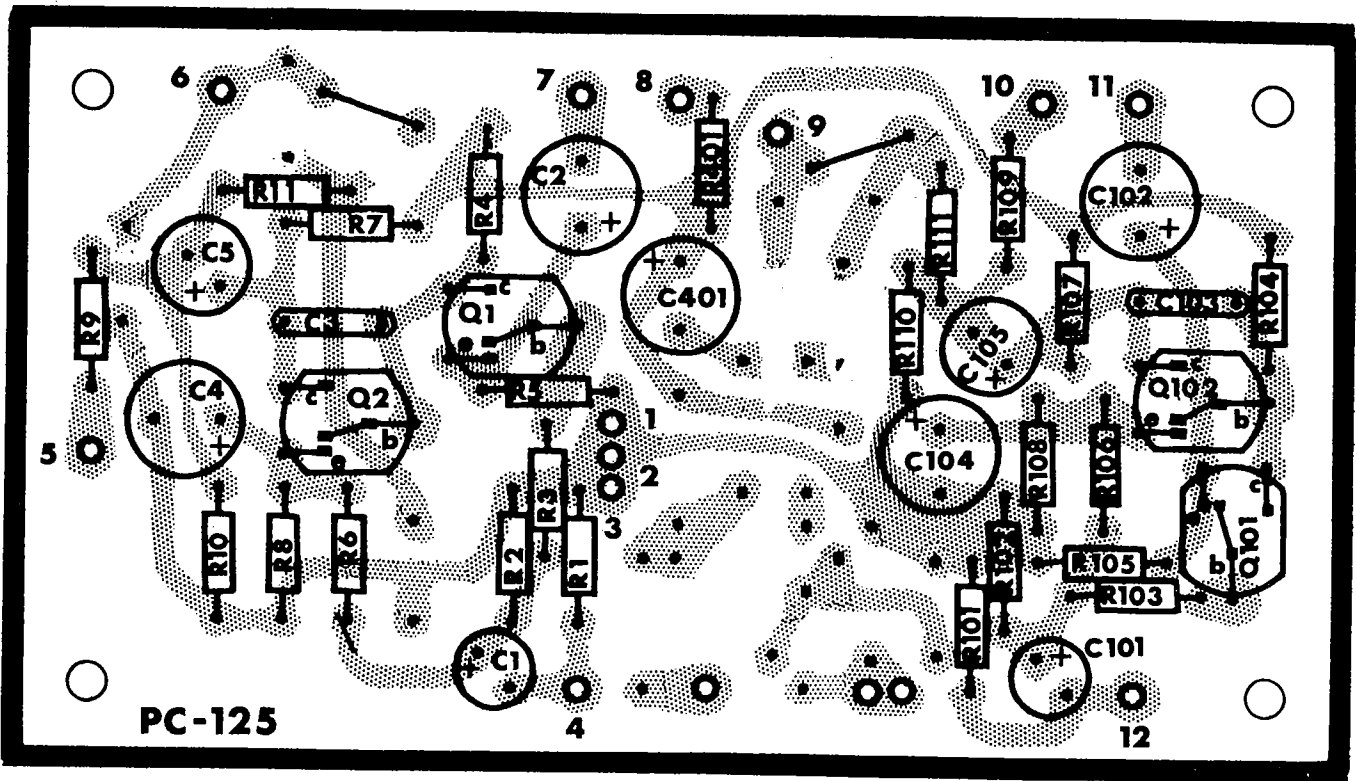
<u>Frequency</u>	<u>Phono</u>	<u>MIC</u>
1 kHz	0 dB	0 dB
10 kHz	-14 \pm 2 dB	-2 \pm 2 dB
100 Hz	+13 \pm 2 dB	-1 \pm 2 dB

18. Hum and Noise Checks

<u>Selector Switch Position</u>	<u>Loudness Max.</u>	<u>Loudness Min.</u>
EXTRA 1 and 2	5.0 mV	3.0 mV
PHONO (shorted inputs)	20.0 mV	3.0 mV
MIC (shorted inputs)	10.0 mV	3.0 mV

19. Repeat Steps 2 through 18 for Right Channel

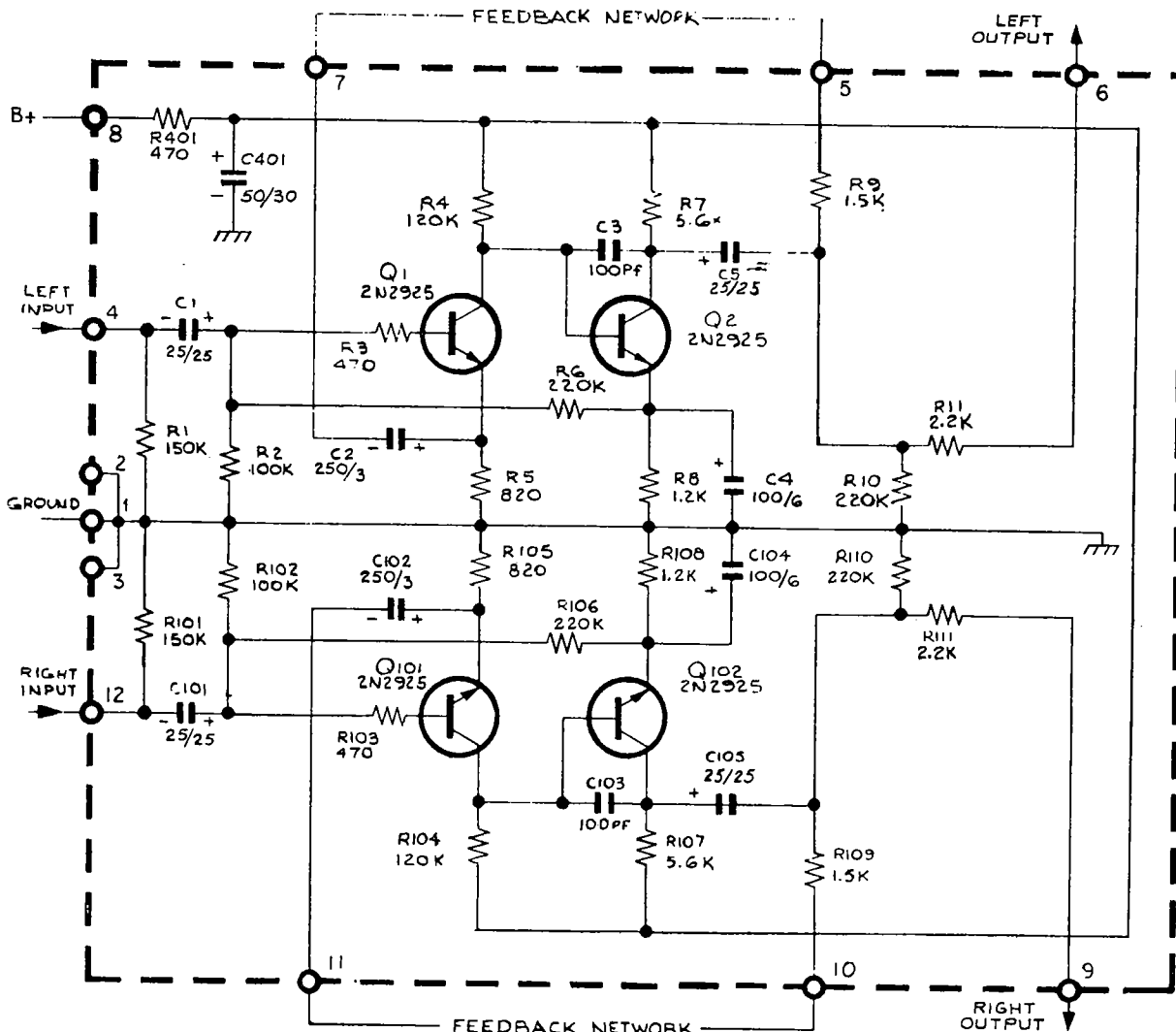
Q1 Q101, Q2, Q102—SE4010, 2N3391A, QA15



PC-125

PREAMP Z-PC-P-11

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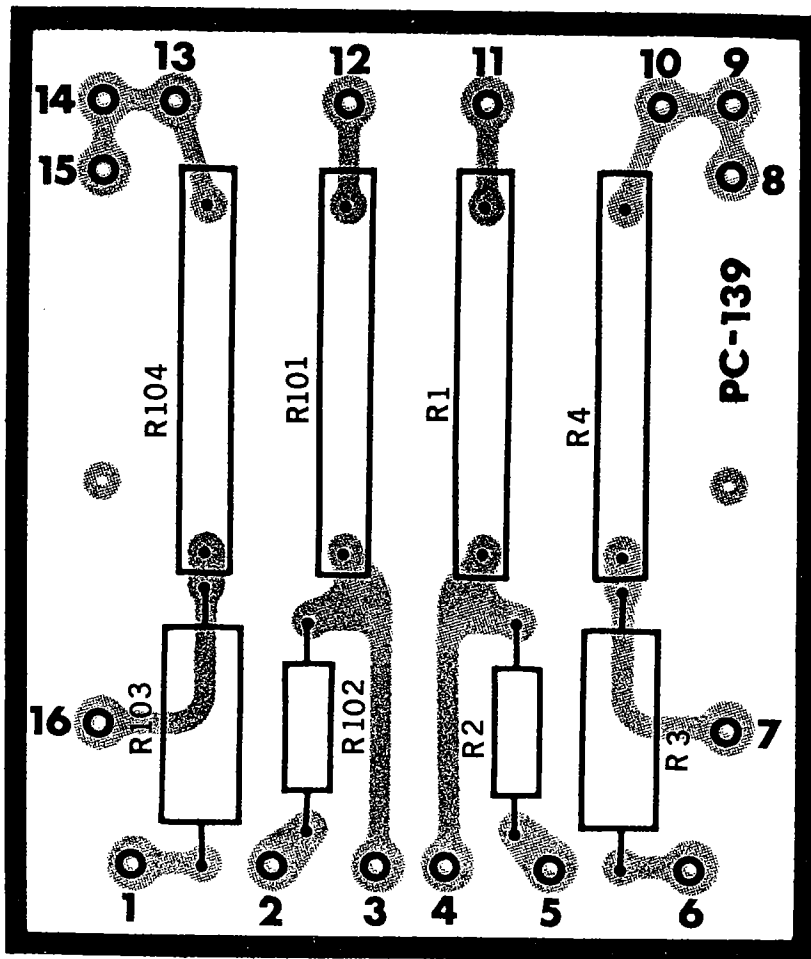


NOTES:

1. UNLESS OTHERWISE SPECIFIED
RESISTANCE IN OHMS.
CAPACITORS IN MFDS.
RESISTORS 1/4 WATT.

HIGHEST SERIES

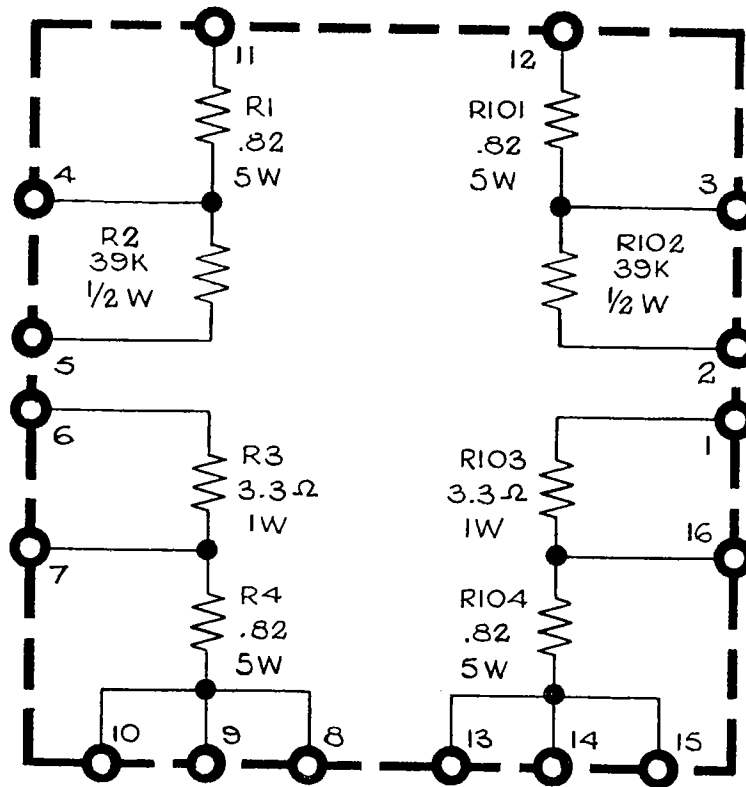
NUMBERS	
C 6	C106
R 11	R111
Q 2	Q102
	R401
	C401



EMITTER

Z-PC-E-2

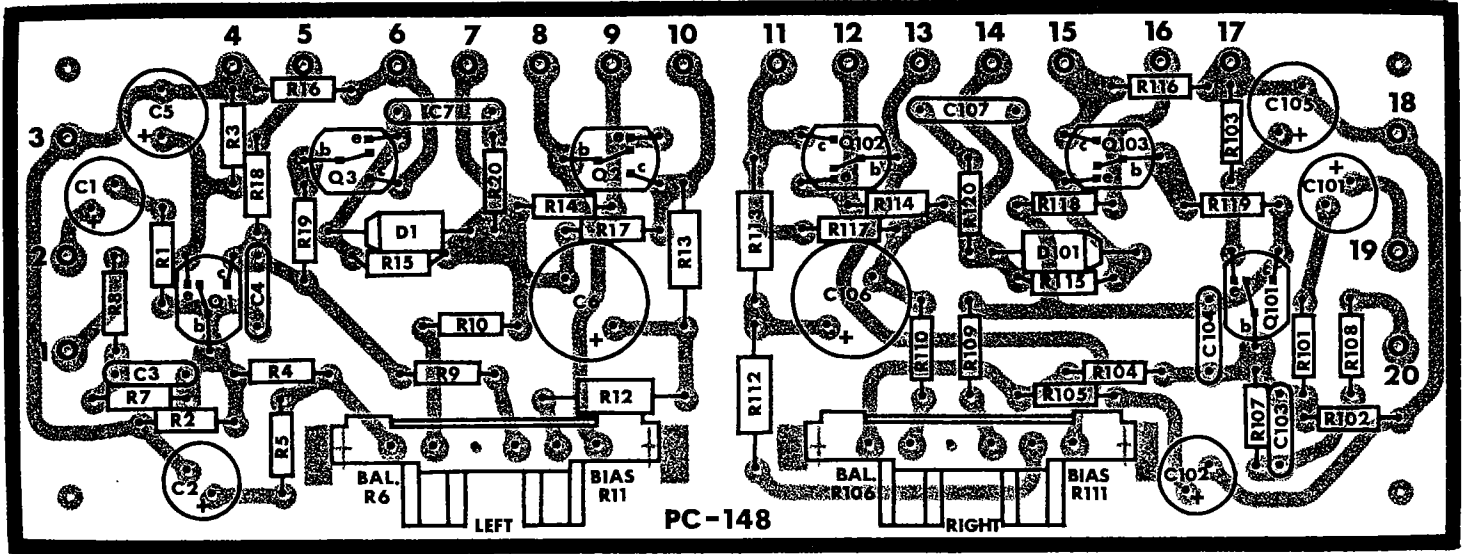
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EMITTER Z-PC-E-2

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Q1, Q2, Q101, Q102 - QA-10
 Q3, Q103 - QA-17



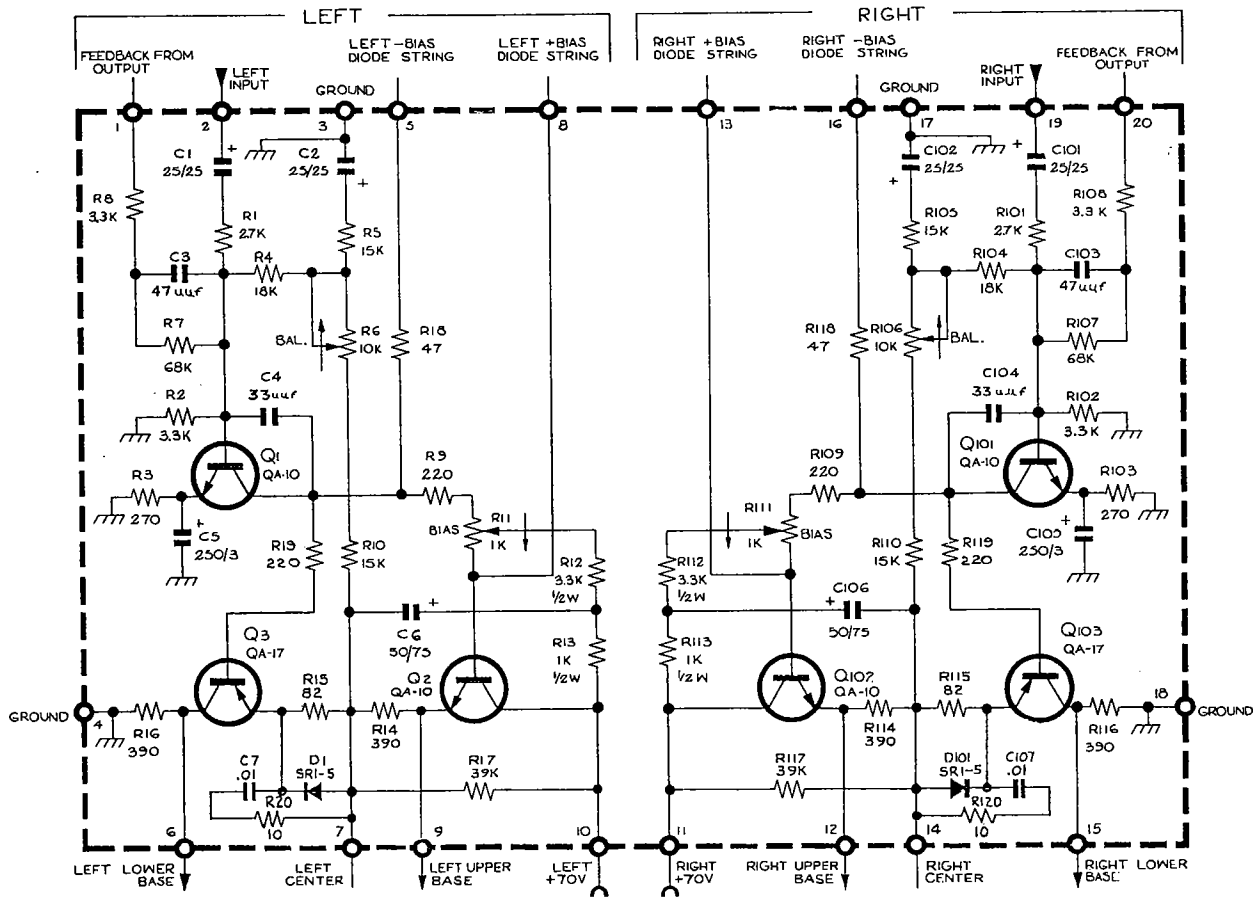
DRIVER

Z-PC-D-7

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L
IN

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IN



NOTES:
 1. UNLESS OTHERWISE SPECIFIED:
 RESISTANCE IN OHMS.
 CAPACITORS IN MFD'S.
 RESISTORS 1/4 WATT'S

ARROWS ON POTS
 INDICATE CW ROTATION.

HIGHEST SERIES NUMBERS

R20	R120
C7	C107
D1	D101
Q3	Q103

DUAL DRIVER Z-PC-D-7

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