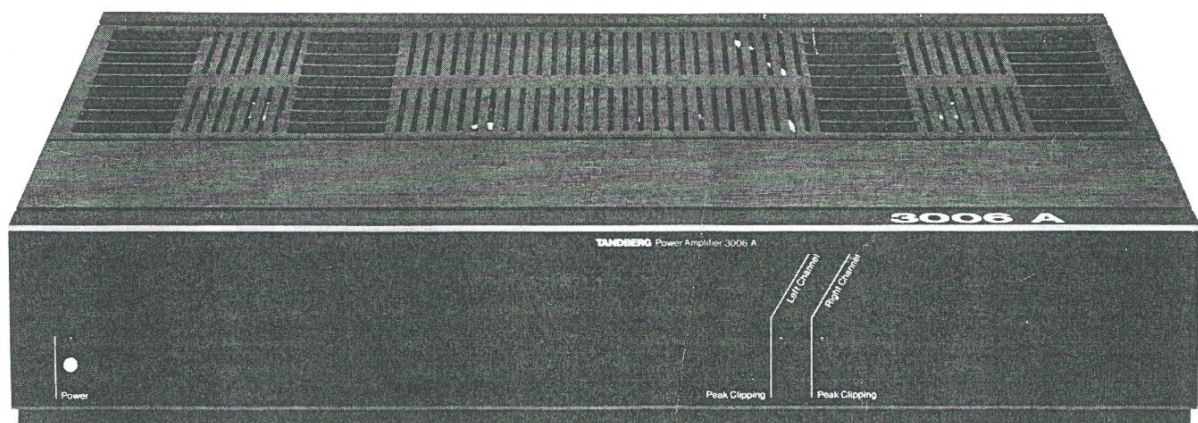


TANDBERG® TPA 3006 A

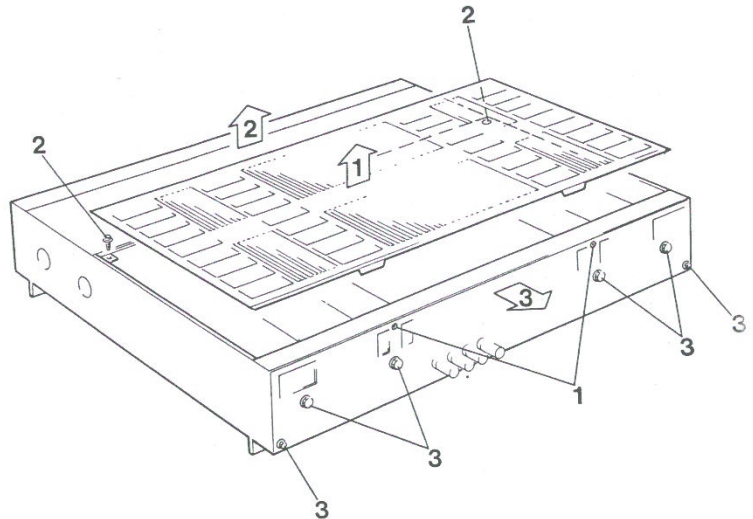
Circuit Diagram and Alignment Instructions



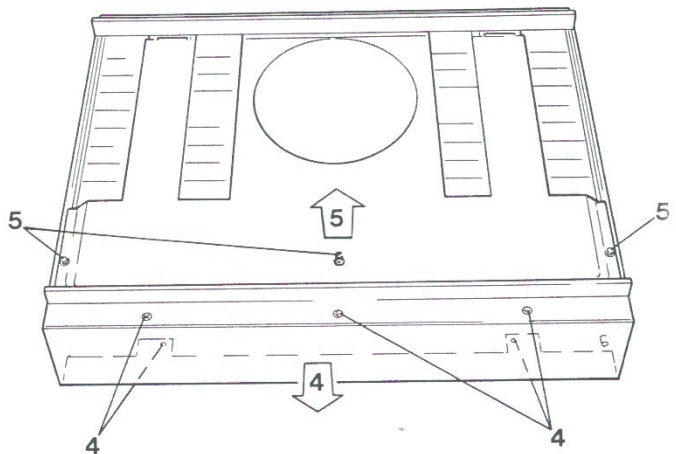
To serial No. 01000

Dismantling

- Top cover, rear (1)
- Top cover, front (2)
- Rear panel (3)
- Front panel (4)
- Bottom cover (5)



Dismantling the rear and top covers.



Dismantling the front and bottom covers.

Adjustments

Test condition

Approx. 10 minutes warming up time without signal applied. The top and bottom cover should not be removed, otherwise the unit must be covered.

D.c. offset adjustment

- Solder two LED's (light emitting diodes) with opposite polarity together in parallel and connect them to the contacts J106 (left) and J206 (right) on the power amplifier boards (collectors on Q111/Q112 left and Q211/Q212 right).
- Adjust R104 (left) and R204(right) until both LED's are switched off.
- Remove the LED's and measure the d.c. voltage on the output terminals. The d.c. voltage should be less than ± 50 mV.

Quiescent current

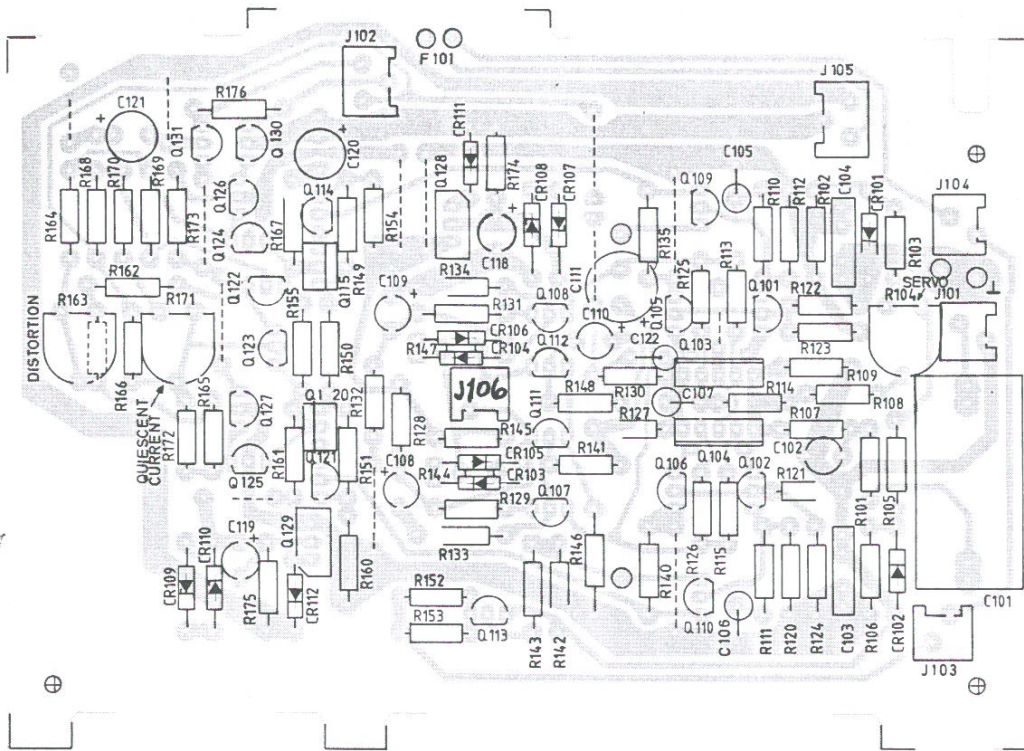
The quiescent current should be adjusted without load and the volume control must be set to minimum.

- Adjust R171 (left) and R271 (right) on the output amplifier boards to 35 mV across R505 (left) and R605 (right) on the power supply board.

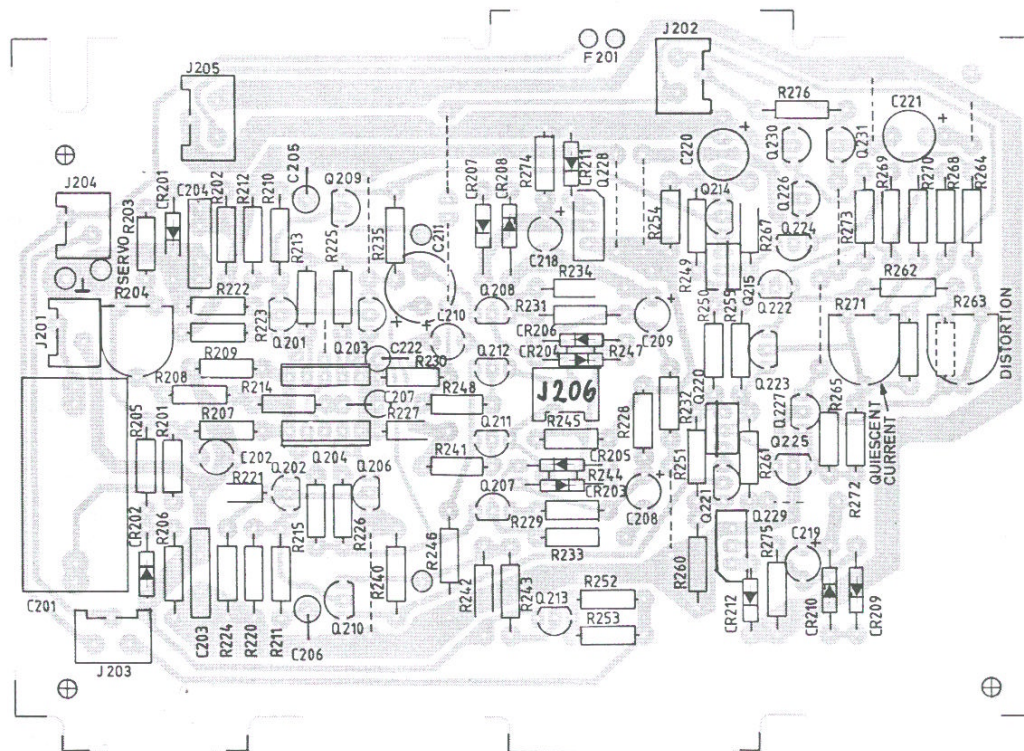
Distortion

Apply a signal of 1 kHz and drive the amplifier to 12 V on the output terminals when the load is 4 ohms.

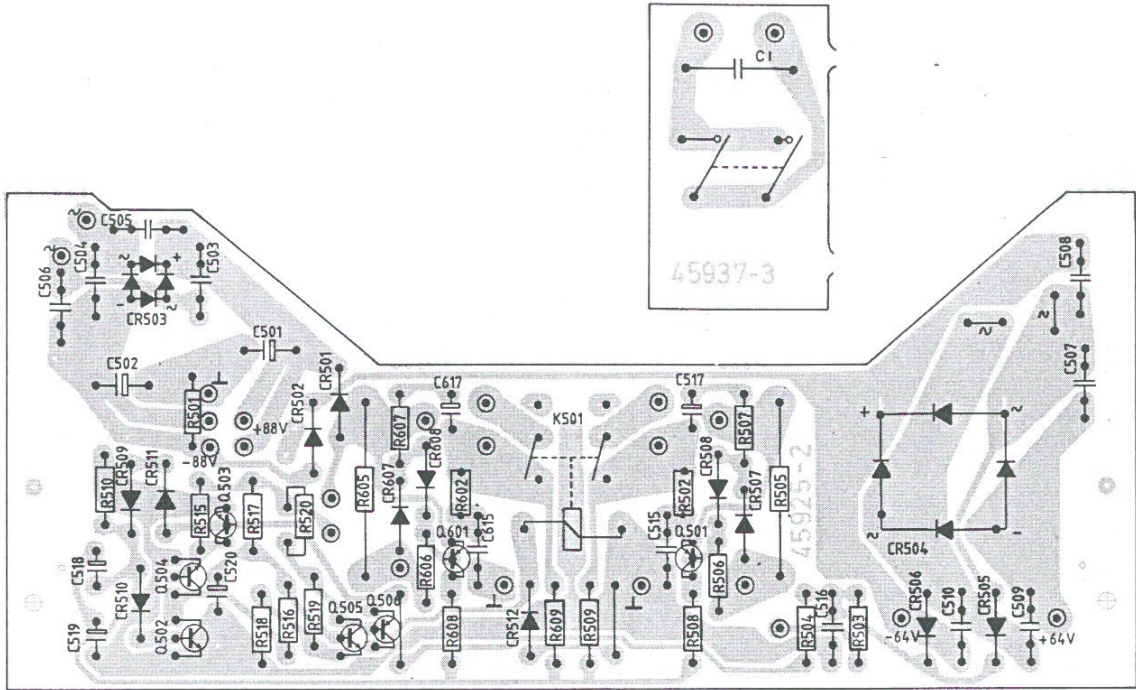
- Adjust R163 (left) and R263 (right) to minimum distortion. The distortion should be less than 0.005%.



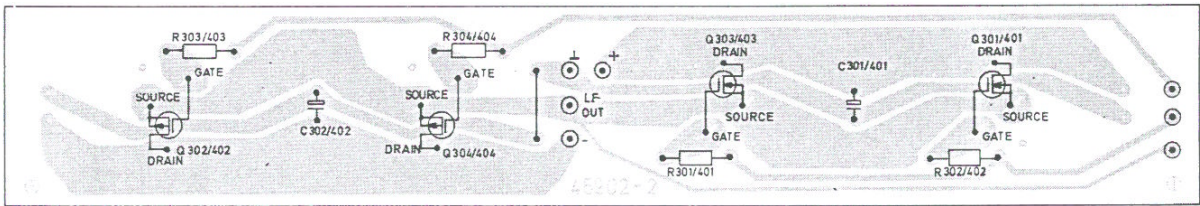
Power amplifier board, left channel, component side



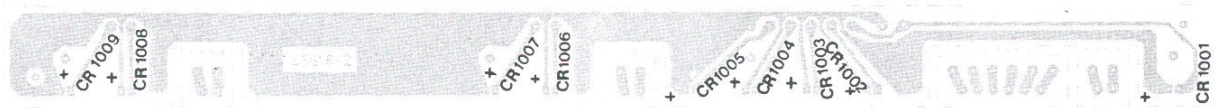
Power amplifier board, right channel, component side



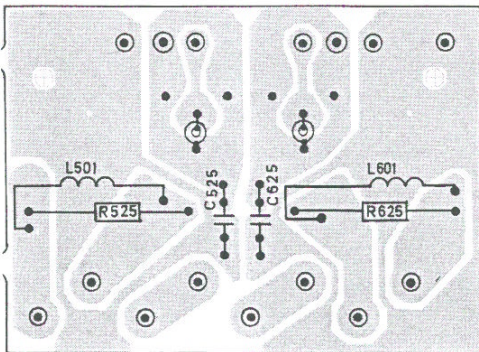
Power supply board, solder side



Output power amplifier board, solder side



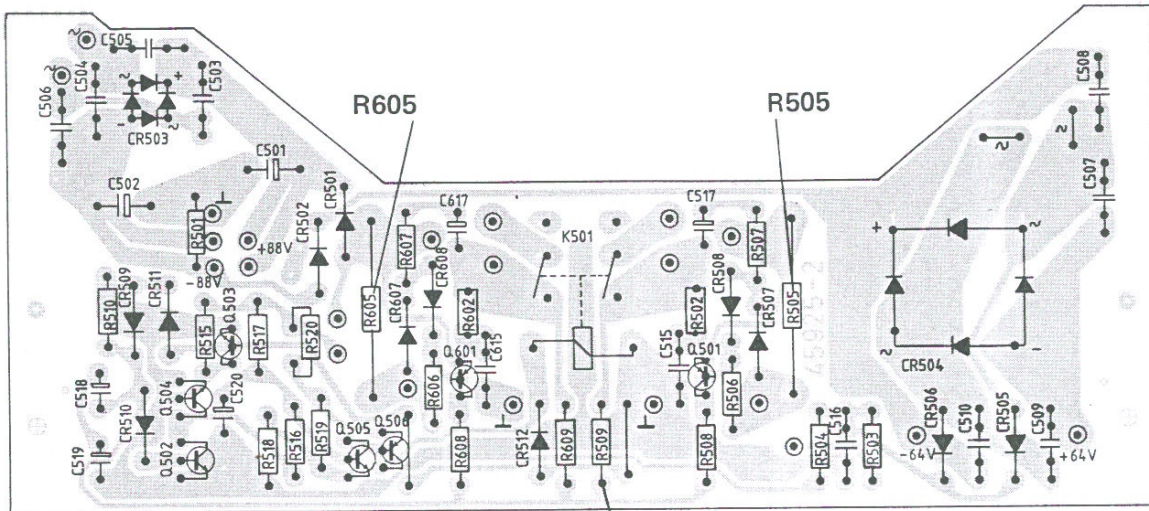
LED board, solder side



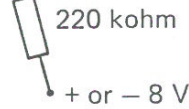
Input board, solder side

Checking the speaker protection relay

- Disconnect speaker load.
- Apply 6 to 8 V d.c. with 220 kohm in series (+ and – alternately) to R508/R509. The relay should then open.



The power supply board seen from the component side.



Tandberg Power Amplifier TPA 3006 A

Technical Data

Power requirements: 115/230 V \pm 10%, 50/60 Hz
Power consumption: 50 – 770 W
Dimensions: Width: 17 1/8" (43.5 cm)
Depth: 13 3/4" (35.0 cm)
Height: 3 3/4" (8.3 cm)
Weight: 25 lbs (11.3 kg)

Technical Data according to IHF-A-202, 1978

Continuous Average Power Output:
(8 ohms, 20 – 20.000 Hz, THD < 0.02%)
2 x 150 W
Frequency Response: 20 – 20.000 Hz, + 0/– 0.2 dB
Sensitivity: 80 mV
A-weighted Signal-to-Noise Ratio:
(Ref. 1 W/8 ohms) 96 dB

Secondary Disclosures

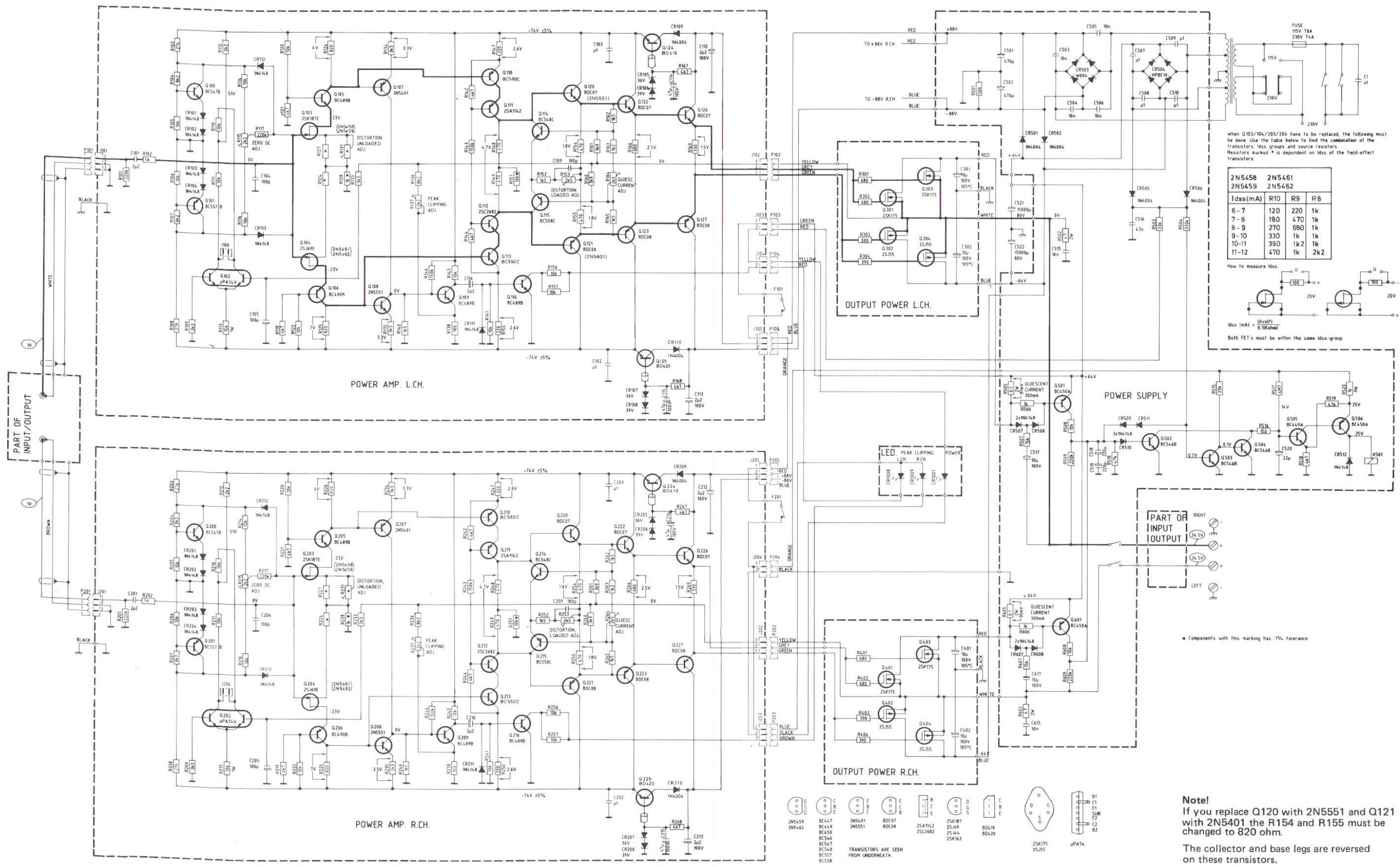
Output Impedance (20 – 20.000 Hz): 0.07 ohms
Wideband Damping Factor: 120
Low Frequency Damping Factor: 200
SMPT E Intermodulation Distortion: 0.02%
IHF Intermodulation Distortion: 0.02%
Transient Overload Recovery Time: Immeasurable
Reactive Load Factor: 1.2
Reactive Load Rating: 0.8 dB
Separation: > 75 dB
Difference of Frequency Response: < 0.1 dB

Other Technical Data

Frequency Response: 1 – 150.000 Hz + 0/– 3 dB
Output Impedance (20 – 1000 Hz): 0.04 ohms
Slew rate: > 500 V/ μ S
A-weighted Signal-to-Noise Ratio:
(Ref. 150 W/8 ohms) 118 dB

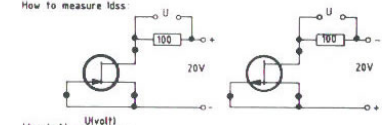
o Specifications are subject to change for further improvement without notice.

Tandberg A/S
Fetveien 1, P.O. Box 53
N-2007 Kjeller, Norway



When Q103/104/203/204 are to be replaced, the following must be done. Use the table below to find the combination of the transistors I_{dss} groups and source resistors. Resistors marked * is dependent on I_{dss} of the field-effect transistors.

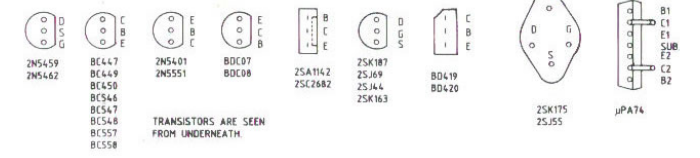
I_{dss} (mA)	2N5458		2N5461	
	R10	R9	R10	R8
6-7	120	220	1k	
7-8	180	470	1k	
8-9	270	680	1k	
9-10	330	1k	1k	
10-11	390	1k2	1k	
11-12	470	1k	2k2	



I_{dss} (mA) = $\frac{U_{(off)}}{0.1(Kohm)}$
Both FET's must be within the same I_{dss} -group

• Components with this marking has 1% tolerance

Note!
If you replace Q120 with 2N5551 and Q121 with 2N5401 the R154 and R155 must be changed to 820 ohm.
The collector and base legs are reversed on these transistors.



Circuit diagram