

TANDBERG® TCA 3018A

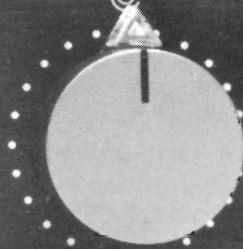
Circuit Diagram and Alignment Instructions

Preliminary



Sub Sonic Filter

Balance Volume

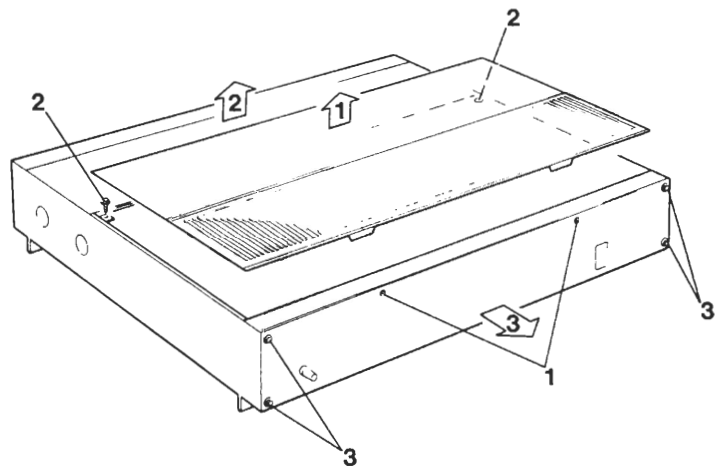


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Dismantling

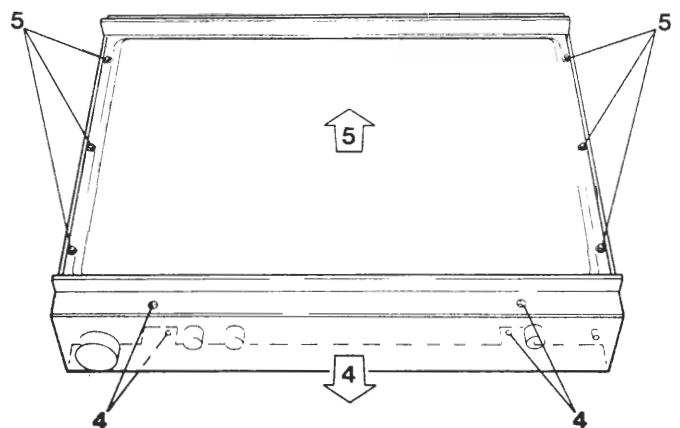
- Top cover, rear (1).
- Top cover, front (2).
- Rear panel (3).



Dismantling the rear and top covers

- Front panel (4). Remove rotary knobs.
- Bottom cover (5).

NOTE! Before removing the front panel, the bracket between the Record and Program switch control units (seen from the top) must be removed.



Dismantling the front and bottom covers

Electrical adjustments

Common for all adjustments: Balance control in mid position.

Line amplifiers

Distortion

Supply a 2 V, 1 kHz sinusoidal signal to the Tape 1 input L.ch/R.ch. Adjust the volume pot. meter until the signal on the variable output L.ch/R.ch. is 2 V. Measure at the variable output L.ch/R.ch. using a distortion analyzer. Adjust R344/R444 for minimum distortion on the analyzer, $< 0.03\%$.

Headphone amplifiers

Offset

Adjust the Headphones Volume to minimum. Measure using a DC voltmeter at TP501/TP601 on the Headphones output L.ch/R.ch. Adjust R504/R604 for minimum deflection on the meter, $\leq \pm 5$ mV.

Distortion

Adjust the Headphones Volume to 2 V at TP501/TP601 on the Headphones output L.ch/R.ch. Use a distortion analyzer on the same terminals and adjust R524/R624 for minimum distortion, $\leq 0.03\%$.

Phono amplifiers

Offset MC input

Measure at TP102/TP202 (L.ch./R.ch.) using a DC voltmeter. Adjust R177/R277 to minimum deflection on the meter, ≤ 100 mV.

Offset MM input

Measure at TP104/TP204 (L.ch./R.ch.) using a DC voltmeter. Terminate the MM input terminals with 1 kohm. Adjust R116/R216 to minimum deflection on the meter, $\leq \pm 100$ mV.

Distortion

Supply a sinusoidal signal, 1 kHz 5 mV to the MM input L.ch./R.ch. Turn the MM/MC switch on the rear panel to MM and the program switch to phono. Measure distortion using a distortion analyzer at TP105/TP205 (the variable outputs can also be used). Adjust R146/R246 for minimum distortion, $\leq 0.05\%$.

Phono Buffer Amplifier

Turn the MM/MC switch to MM. Measure at TP301/TP401 (L.ch./R.ch.) using a DC voltmeter. Adjust R310/R410 for minimum deflection on the meter, $\leq \pm 5$ mV.

Power supply

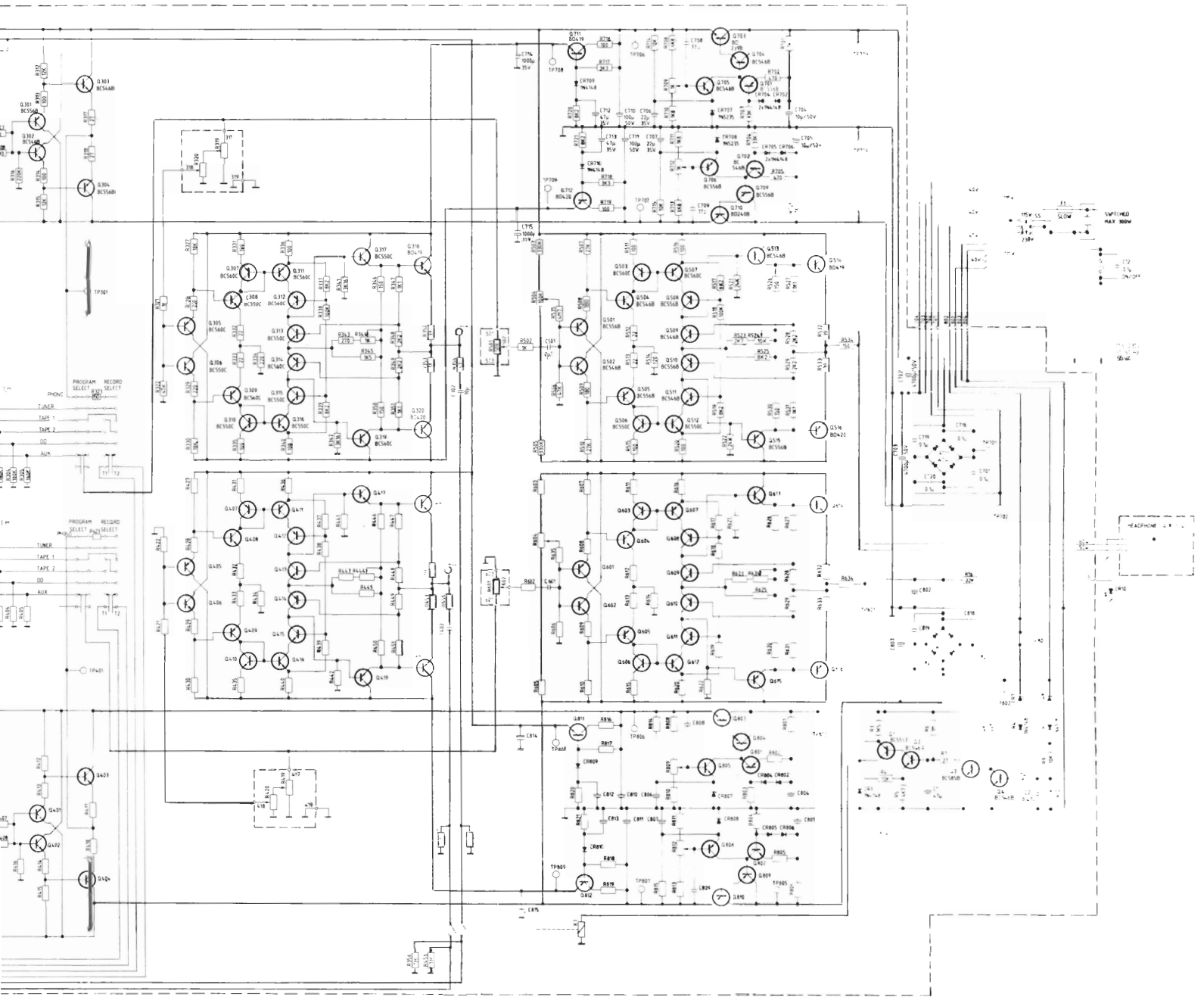
Measure at TP706/TP707 using a DC voltmeter. Adjust R709/R712 to $+ 32$ V/ $- 32$ V ± 0.1 V.

Measure at TP806/TP807 using a DC voltmeter. Adjust R809/R812 to $+ 32$ V/ $- 32$ V ± 0.1 V.

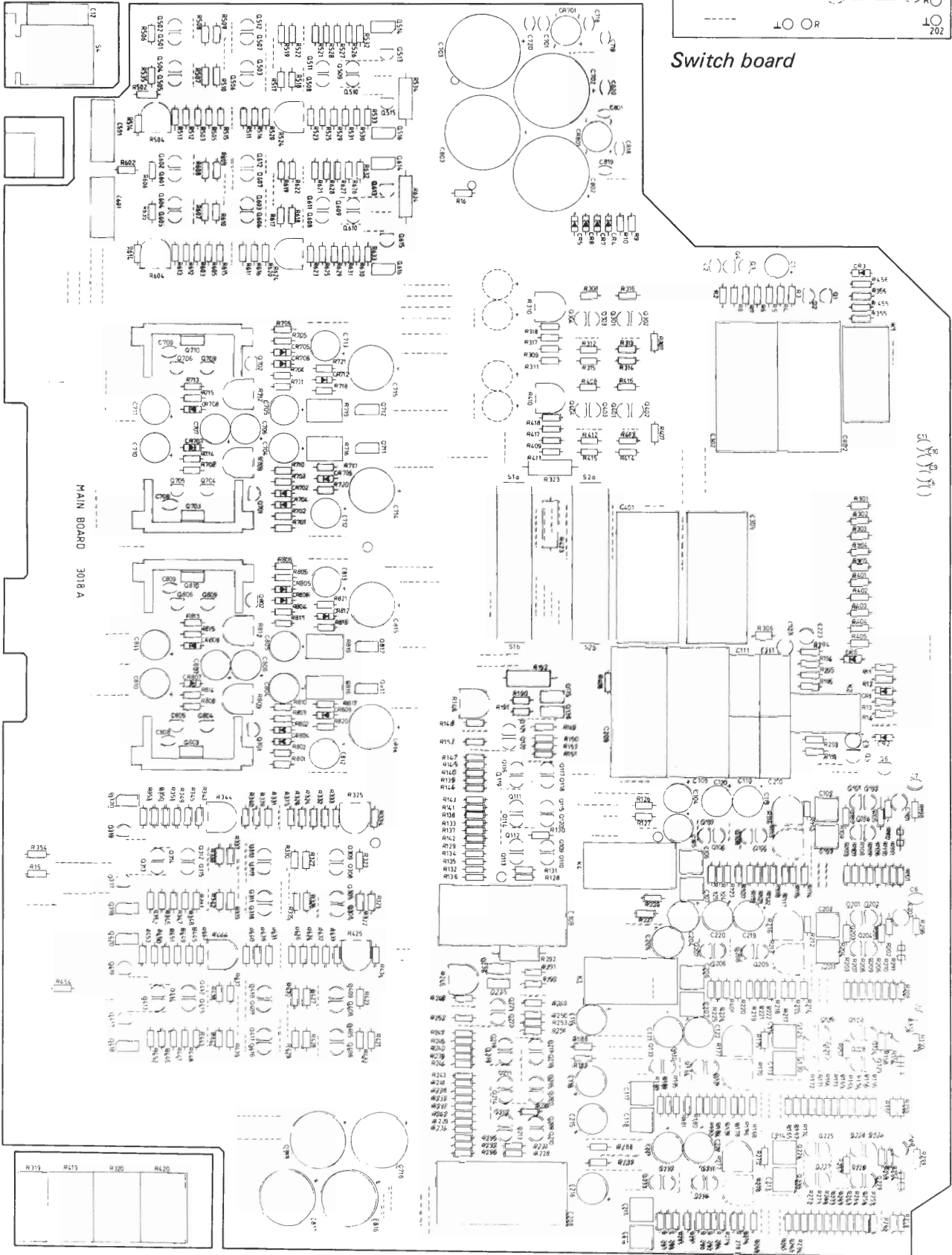
Check the voltage at TP708/TP709 and TP808/TP809, $+ 22$ V/ $- 22$ V ± 0.5 V.

Specification measurements

Use the input and output terminals and measure against the given specifications.



P.c. boards



Main board

Technical data

Tandberg Control Amplifier 3018A

Power requirements:
Power consumption:
Ac.-outlets:
Dimensions:

115/230 V \pm 10%, 50/60 Hz
40 W max.
Switched 1
Width 17 1/8" (43.5 cm)
Depth 13 3/4" (35.0 cm)
Height 3 1/2" (8.9 cm)
Weight 12.5 lbs (5.7 kg)

Technical Data according to IHF-A-202, 1978

Frequency range:
Phono MM: 20 – 20,000 Hz \pm 0.2 dB
Phono MC: 20 – 20,000 Hz \pm 0.2 dB
Tape 1, Tape 2: 20 – 20,000 Hz + 0/– 0.1 dB
Tuner, Digital Disc, AUX: 20 – 20,000 Hz + 0/– 0.1 dB

Maximum Voltage Output:
Variable output: 5 V at THD = 0.006%
Variable output: 10 V at clipping level
Tape 1, Tape 2: 7.5 V
Headphone output: 20 V unloaded

Total Harmonic Distortion (20 Hz – 20,000 Hz):
Phono MM: < 0.009%
Phono MC: < 0.009%
Tape 1, Tape 2: < 0.005%
Tuner, Digital Disc, AUX: < 0.005%

Input Sensitivity – Ref. 0.5 V output voltage:
Phono MM: 1 mV
Phono MC: 60 μ V
Tape 1, Tape 2: 80 mV
Tuner, DD, AUX: 80 mV

A-weighted Signal-to-Noise ratio:
Phono MM: 78 dB
Phono MC: 74 dB
Tape 1, Tape 2: 90 dB
Tuner, DD, AUX: 90 dB

Maximum Input Voltage (1 kHz):
Phono MM: 290 mV
Phono MC: 14 mV
Tape 1, Tape 2: 20 V
Tuner, DD, AUX: 20 V

Input impedance:
Phono MM: 47 kohm
Phono MC: 150 ohm
Tape 1, Tape 2: 10 kohm
Tuner, DD, AUX: 10 kohm

Secondary Disclosures

Output impedance:
Variable: 47 ohm + 10 μ F in series
Headphones: 150 ohm
Headphones (min. load): 4 ohm

Filter:
Sub Sonic: – 12 dB/oct., – 3 dB at 15 Hz

Crosstalk (100 Hz – 10 kHz):
Phono MM: To any of the other sources > 70 dB
Phono MC: To any of the other sources > 70 dB
Tape 1, Tape 2: To any of the other sources > 70 dB
Tuner, Digital Disc, AUX: To any of the other sources > 70 dB

Separation (100 Hz – 10 kHz):
Phono MM: > 53 dB
Phono MC: > 53 dB
Tape 1, Tape 2: > 58 dB
Tuner, Digital Disc: > 58 dB

Transient intermodulation:
All inputs: Immeasurable

Other Technical Data

Frequency range:
Tape 1, Tape 2: 1.6 – 1,500,000 Hz + 0/– 3 dB
Tuner, Digital Disc: 1.6 – 1,500,000 Hz + 0/– 3 dB

Phase shift (20 Hz – 20,000 Hz):
Tape 1, Tape 2: + 0.5°/– 0.5°
Tuner, Digital Disc, AUX: + 0.5°/– 0.5°

Specifications are subject to change for further improvement without notice.

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