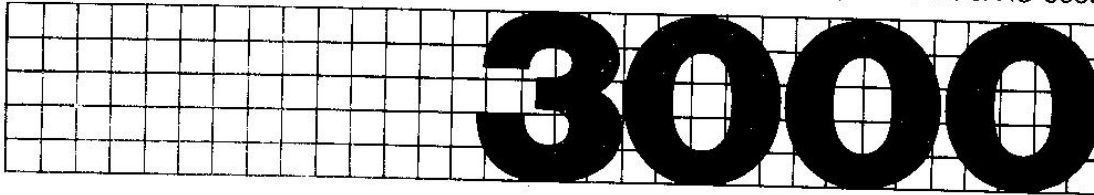


TANDBERG

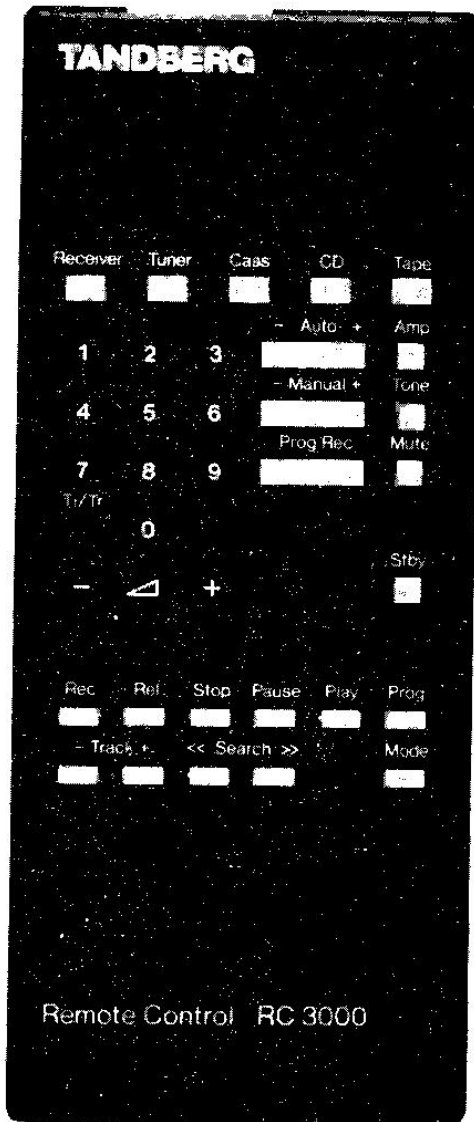


REMOTE CONTROL

The RC 3000 Remote Control transmitter allows easy and convenient operation of different audio equipment in the Tandberg 3000-series.

The new Compact Disc Player 3015A, the Tuner 3031A, Preamp. 3038A and Programable Receiver 3080A are all operated by this unit.

The set to be operated are selected with one of six pushbuttons.



Receiver/Tuner

Tuner operation includes 16 channel pre-select. Direct access to station by entering pre-set number (enter 1 and 6 for 16).

Features include auto/manual up/down tuning and mute.

Volume, tone defeat, program and record choice are operated from the remote control.

Pushing the Volume button actually operates a servo motor tuning the potmeter up or down.

CD Player/Cassette deck

All functions are remote controlled on Tandberg TCP 3015A.

Even track/index and repeat are included.

Future cassette decks will also be remote controlled with the RC 3000.

Preamp.

Volume, tone defeat, loudness, program and record choice are operated from the remote control.

Pushing the Volume button actually operates a servo motor tuning the potmeter up or down.

Technical Data

Infrared P.A.M. channel 36 kHz, RC-5 code
 Operation: 4 x R03S, 1.5 v batteries (included)
 Width: 70 mm
 Height: 173 mm
 Depth: 14 mm
 Weight: 140 g
 Black cabinet

Specifications are subject to change without notice.

SUBSIDIARY:

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 122 Dupont Street
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 N.Y. 11803
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 (516) 349-9206
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 14 31 54 orto plvw
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 Fetveien 1
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 P.O. Box 49
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 Norway

Telephone
 (476) 81 58 81
 Telex
 71886 tand n

TANDBERG

TANDBERG

3001
3011

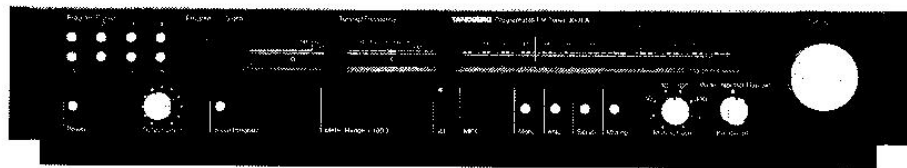
TUNERS

The new analog tuners TPT 3001A and TPT3011A are the result of a long term development in the Tandberg labs.

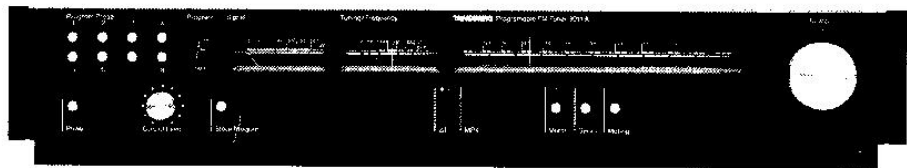
Although they are designed for different market segments they do have one major common denominator: The musi-

quality of the reproduced sound. This is ensured by their many design similarities.

TPT 3001A



TPT 3011A



The front end

The front ends employ ganged, tuned circuits where DC voltage controlled capacitance diodes are used as tuning elements, and Dual-Gate MOSFETs are used in the RF

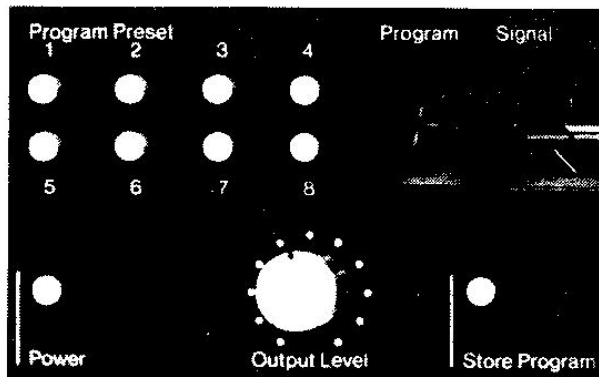
and Mixer stages. This achieves respectively; stable, accurate tuning and excellent sensitivity combined with superior headroom.

The TPT 3001A utilizes 8 tuned circuits, the TPT 3011A, 5, to prevent Mirror image (21,4 MHz) and other out of band distortion.

Programming unit

Both tuners employ the same ingenious tuning system.

In addition to the main tuning, there is a second stage which stores 8 pre-tuned FM stations in an electronic memory. This pre-tuning system is based on a voltage synthesis principle combined with a fast analog servo loop to achieve maximum S/N ratio and frequency stability.



IF selectivity

The IF amplifier of the tuners is where the adjacent and the alternate channel selectivity is created.

In TPT 3001A the selectivity can be switched to three different band-widths; WIDE, NORMAL and NARROW, each one optimum for its particular combination of station density and conditions of reception.

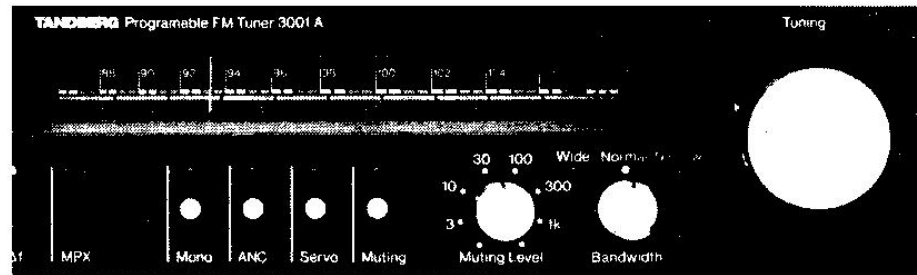
In WIDE and NORMAL the fil-

ters are discrete LC types with 6 and 20 poles respectively.

In NARROW two symmetrical high selectivity ceramic filters are added to the 20 pole LC filter of the NORMAL position, resulting in an unsurpassed combination of selectivity and distortion free sound reproduction.

In TPT 3011A the selectivity of the IF circuits is determined by

a computer designed filter whose characteristics are slightly narrower than the NORMAL position of TPT 3001A with four, selected, high quality ceramic filters of constant group delay. This to take advantage of a high selectivity combined with a bandwidth that permits undistorted reception also of strongly modulated broadcasts.



The limiter

Both limiters have exceptionally good AM suppression and interference rejection. Moreover they guarantee a constant

signal level output over a very wide range of signal input level.

The detector

Important for the overall quality of a tuner is the performance of the detector both with respect to linearity, bandwidth and signal to noise ratio.

In TPT 3001A a fully discrete,

modified "Foster Seeley" detector is used having a bandwidth of more than 4 MHz, to avoid any distortion caused by bandwidth limitations.

In TPT 3011A the detector is

part of the limiter with adjustable LC filters for perfect matching to the IF amplifier.

The stereo decoder

Equally important as all other stages is the stereo decoder for the final result. The most common deficiency of a stereo decoder is the generation of beat tones on heavy modulated signals. This property is never specified for a tuner, but

very well audibly annoying for a discerning listener.

To avoid this beat tone generation and to allow use of Tandberg's unique Automatic Noise Cancelling circuit, a discrete stereo decoder is used in

the TPT 3001A, more complex in design than most complete tuners.

In TPT 3011A a specially selected IC is used for optimal performance.

The audio circuit

To make a good tuner takes a special knowledge of radio frequency technology, but in many cases the audio section is neglected in terms of component quality and design criteria.

It is often in the audio stage

that the inferior sound quality of FM is generated, and not as is commonly believed that FM is inherently an inferior source.

This is dealt with in TPT 3001A and TPT 3011A by using the same high standards of component selections (polyester

and polypropylene caps, metal film resistors) and design philosophies (minimum negative feedback applied in short loops, etc.). As in the series 3000 audio components

Technical Data**Tandberg Programable
Tuner TPT 3001A**

Power requirements:	230/115 V \pm 10%, 50/60 Hz
Power consumption:	34 W
Outlets:	Fixed Output, Variable Output, FM-Multipath and Detector Output
Dimensions:	Width: 17 1/8" (43.5 cm) Depth: 13 3/4" (35.0 cm) Height: 3 1/4" (8.3 cm) Weight: 15.3 lbs (7 kg)

**Technical Data according to
IHF-T-200, 1975
IEEE Std. 185, 1975**

Tuning range:	87.5 – 108 MHz
Antenna impedance:	75 ohms unbalanced
Usable sensitivity (measured with notch filter): Mono	Wide 0.8 μ V (7.5 dBf) Normal 0.8 μ V (6.8 dBf) Narrow 0.9 μ V (8.2 dBf)
50 dB quieting sensitivity:	Mono 1.0 μ V (11.25 dBf) 0.9 μ V (10.3 dBf) 0.8 μ V (9.3 dBf) Stereo 11.0 μ V (32.1 dBf) 11.0 μ V (32.1 dBf) 11.0 μ V (32.1 dBf)
With noise filter ANC 10 dB channel separation:	5.0 μ V (25.2 dBf) 5.0 μ V (25.2 dBf) 5.0 μ V (25.2 dBf)
Signal to noise ratio at 65 dBf, 0.5 mV:	Mono 95 dB 95 dB 95 dB Stereo 82 dB 82 dB 82 dB
Signal to noise ratio at 85 dBf, 5 mV:	Mono 92 dB 92 dB 92 dB Stereo 92 dB 92 dB 92 dB
Muting threshold: Muting hysteresis 3 dB	Mono 1 μ V – 3 mV (11.25 – 81.0 dBf) 1 μ V – 3 mV (11.25 – 81.0 dBf) 1 μ V – 3 mV (11.25 – 81.0 dBf)
Stereo threshold: Stereo hysteresis 3 dB:	5 μ V (25.2 dBf) 5 μ V (25.2 dBf) 5 μ V (25.2 dBf)
Frequency response 30 Hz to 15 kHz	Mono +0.2 dB – 0.5 dB +0.2 dB – 0.5 dB +0.2 dB – 0.5 dB Stereo +0.2 dB – 0.5 dB +0.2 dB – 0.5 dB +0.2 dB – 0.5 dB
Distortion at 50 dB quieting:	Mono < 0.1 % 0.2 % 0.9 % Stereo 0.3 %
Distortion at 65 dBf: Mono	100 Hz 0.03 % 0.06 % 0.12 % 1 kHz 0.03 % 0.06 % 0.25 % 6 kHz 0.03 % 0.055 % 0.45 % 10 kHz 0.025 % 0.025 % 0.035 %
Distortion at 65 dBf: Stereo	100 Hz 0.04 % 0.05 % 0.08 % 1 kHz 0.04 % 0.05 % 0.2 % 6 kHz 0.1 % 0.25 % 1.0 % 10 kHz 0.1 % 0.7 % 2.0 %
Intermodulation distortion: 14 kHz mod. 50%, 15 kHz mod. 50% Measured 1 kHz in %	Mono < 0.1 % 0.15 % 0.5 % Stereo < 0.1 % 0.15 % 0.8 %
Capture ratio:	0.4 dB 1 dB 3 dB
Adjacent channel selectivity \pm 200 kHz:	3 dB 12 dB 40 dB
Alternate channel selectivity \pm 400 kHz:	30 dB 90 dB < 90 dB
Spurious response ratio:	> 135 dB > 135 dB > 135 dB
Image response ratio:	> 135 dB > 135 dB > 135 dB
IF-response ratio, balanced;	135 dB 135 dB 134 dB
RF intermodulation:	72 dB 72 dB 72 dB
AM suppression ratio:	> 70 dB > 70 dB > 70 dB
Stereo separation:	100 Hz 60 dB 60 dB 55 dB 1 kHz 70 dB 60 dB 55 dB 6 kHz 60 dB 50 dB 40 dB 50 dB 45 dB 35 dB
Subcarrier product ratio:	95 dB 95 dB 95 dB
19 kHz suppression:	95 dB 95 dB 95 dB
38 kHz suppression:	> 103 dB > 103 dB > 103 dB
Signal meter autorange I:	0.3 μ V – 1000 μ V 0.3 μ V – 1000 μ V 0.3 μ V – 1000 μ V
Signal meter autorange II:	1.0 mV – 3000 mV 1.0 mV – 3000 mV 1.0 mV – 3000 mV

Technical Data
Tandberg Programable
Tuner TPT 3011A

Power requirements:		230/115 V \pm 10%, 50/60 Hz
Power consumption:		23 W
Dimensions:	Width:	17 1/8" (43.5 cm)
	Depth:	13 3/4" (35.0 cm)
	Height:	3 1/4" (8.3 cm)
	Weight:	12.6 lbs (5.8 kg)

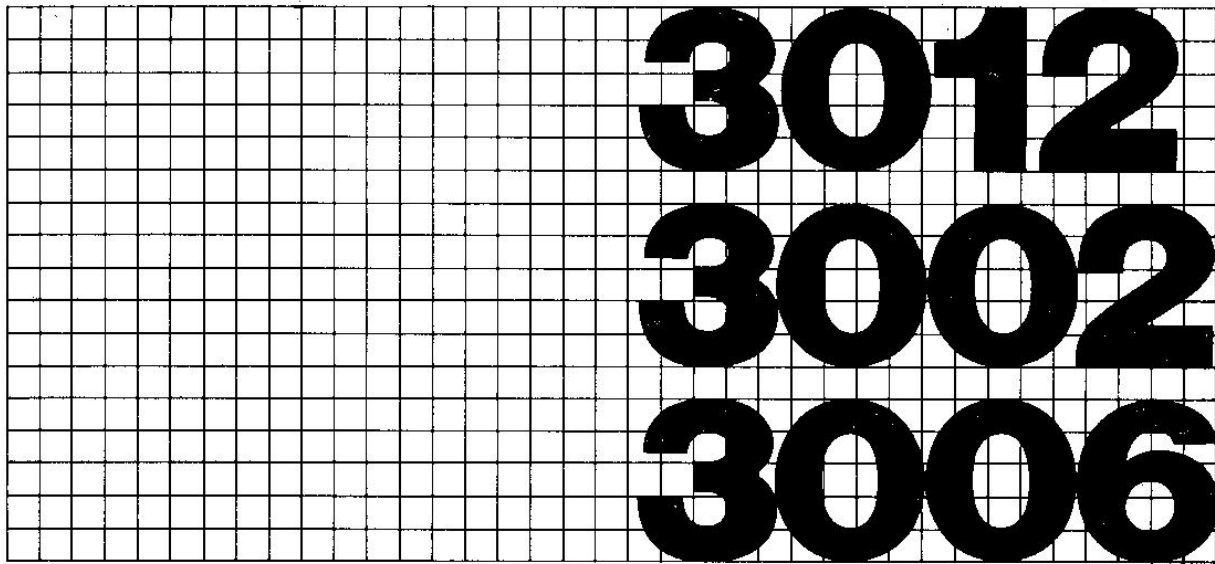
Technical Data according to
IHF-T-200, 1975
IEEE Std. 185, 1975

Tuning range:		87.5 – 108 MHz
Usable sensitivity:	Mono	0.85 μ V/75 ohms
50 dB quieting sensitivity:	Mono	1.5 μ V/75 ohms
	Stereo	20.0 μ V/75 ohms
Signal to noise ratio:	Mono	78 dB
	Stereo	75 dB
Muting threshold:		3 μ V/75 ohms
Muting hysteresis:		6 dB
Stereo threshold:		7.5 μ V/75 ohms
Stereo hysteresis:		8 dB
Frequency response 30 Hz to 15 kHz:	Mono	+ 0.5 dB – 1 dB
	Stereo	+ 0.5 dB – 1 dB
Distortion at 50 dB quieting:	Mono	0.3%
	Stereo	0.3%
Distortion at 65 dBf (0.5 mV/75 ohms at 1 kHz):	Mono	0.2%
	Stereo	0.3%
Distortion at 65 dBf (30 Hz to 15 kHz)	Stereo	0.4%
Intermodulation distortion:	Mono	0.2%
	Stereo	0.2%
Capture ratio, selectively measured:		0.9 dB
Adjacent channel selectivity \pm 200 kHz:		14 dB
Alternate channel selectivity \pm 400 kHz:		> 100 dB
Spurious response ratio:		> 70 dB
Image response ratio, balanced:		> 95 dB
RF intermodulation:		> 70 dB
AM suppression ratio:		> 70 dB
Stereo separation: (60 Hz to 10 kHz, selectively measured):		> 40 dB
Subcarrier product ratio:		60 dB
19 kHz suppression:		70 dB
38 kHz suppression:		60 dB
Dynamic range of signal meter:		0.5 μ V – 100 mV/75 ohms

- Specifications are subject to change without notice.

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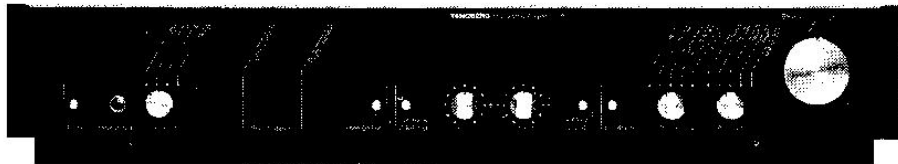
AMPLIFIERS

Tandberg's amplifier designs are state of the art technology packaged with flexibility of control and beautiful Scandi-

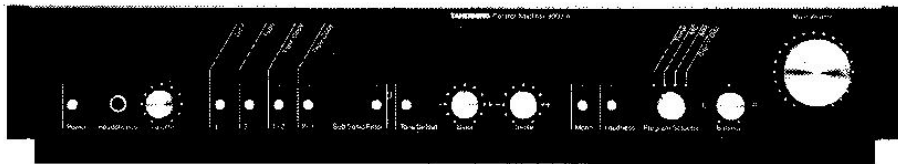
navian design. The amplifiers share a common heritage of musical accuracy based on superior engineering.

Their overall design philosophy is based on:

**TIA 3012
INTEGRATED
AMPLIFIER**



**TCA 3002A
CONTROL
AMPLIFIER**



**TPA 3006A
POWER
AMPLIFIER**



**Component
selection**

1. All audio stages are comprised exclusively of polyester capacitors and metal film

resistors. These components have been chosen for several reasons.

**Dielectric
losses**

a) Commonly used electrolytic capacitors exhibit 5 % or more dielectric absorption. This refers to the capacitor's tendency to «hang on» to the

signal passing through it and thus superimpose its characteristics on the following signal. This causes a subtle sonic «blurring» and loss of inner

detail. Polyester capacitors exhibit 0.01 % dielectric absorption, an improvement on the order of 500 times.

**Capacitance
change**

b) Ceramic capacitors suffer from an allied problem. They tend to be voltage sensitive and their rated capacitance changes as the signal voltage

swings through its normal range. The high frequency phase shift that results is the elusive cause of a harsh, metallic sound character.

Again, the solution was to replace the ceramic with highly stable polyester types.

Discrete components

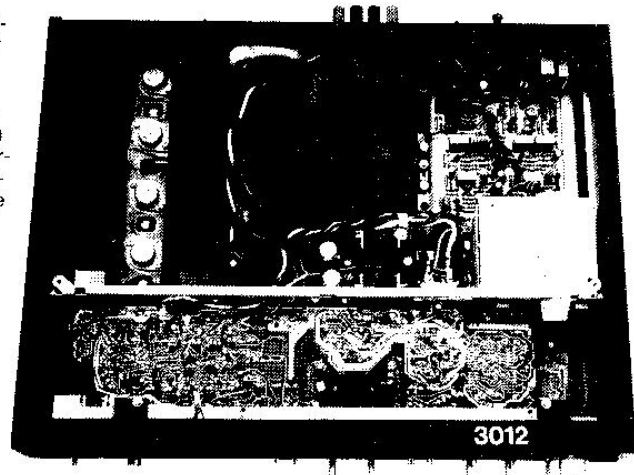
c) Component selection also includes all discrete audio circuitry (no IC's) for minimum

distortion and optimum signal-to-noise. All critical stages are comprised of 1 % tolerance

devices. This insures accurate performance and unit to unit consistency.

High current capability

2. High current amplifier design with fully regulated power supply. Both TIA-3012 and TPA-3006A feature toroidal power transformers for maximum efficiency and minimum hum generation. The high current design guarantees superior performance under all the most dynamic signal conditions, no matter what type of loudspeaker is used.



Digital Disc

3. Digital Disc input on TCA 3002A and TIA 3012 offers an overload rating in excess of 20

volts. No matter how dynamic the source it will not overload the input.

RIAA

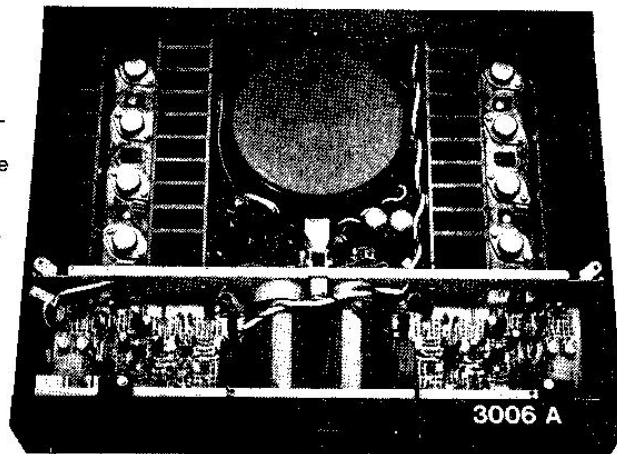
4. Passive/Active Phono EQ. Both phono sections, MC/MM, are split into passive H. F. and

active L. F. sections. This eliminates the need for negative feedback in the high end with

its resultant sonic degradation.

MOSFET Output stages

5. Both TIA 3012 and TPA 3006A feature MOSFET output stages. These output devices require no voltage or current limiting protection circuits. They are also much faster than commonly used Bi-Polar transistors and are more frequency linear when driven by Tandberg's exclusive constant impedance driver stage.



Negative feedback

6. Negative feedback must be properly applied in order to minimize distortion and not cause its own sound deterioration. In TCA 3002A and TIA 3012 negative feedback is applied in minimal amounts

with individual loops, only to those amplifier stages which require it. TPA 3006A has, in fact, no feedback at all. This revolutionary amplifier maintains low distortion by use of our Voltage Comparator Cir-

cuit. This proprietary system maintains constant low distortion and stability without any of the detrimental effects of negative feedback.

Thermic Servo Loop

7. Both TIA 3012 and TPA 3006A maintain 0. D. C. volt potential at the outputs by use

of a Thermic Servo Loop. This system works without any connection to the signal path,

which translates into better, more natural sound with absolute safety for the loudspeaker.

Technical Data
Tandberg Integrated
Amplifier TIA 3012

Power requirements:	115/230 V ± 10 %, 50/60 Hz
Power consumption:	56 W – 600 W
AC-outlets:	Unswitched 1 Switched 1
Dimensions:	Width 17 1/8" (43.6 cm) Height 3 1/4" (8.3 cm) Depth 13 3/4" (35.0 cm) Weight 22 lbs (9.7 kg)

Technical Data according to
IHF-A-202, 1978

Continuous Average Power Output:	(8 ohms, 20 – 20,000 Hz, THD < 0.02 % \times 100 W)
Dynamic Headroom:	0,35 dB
Frequency response:	
Linear inputs	5 – 100,000 Hz \pm 0/- 3 dB
Phono MC and MM inputs	20 – 20,000 Hz \pm 0.2 dB
Sensitivity	
Phono MC	15 μ V
Phono MM	190 μ V
Tuner, Tape 1, and Tape 2	15 mV
Digital	15 mV
A-weighted Signal-to-noise Ratio:	
Phono MC	73 dB
Phono MM	78 dB
Tuner, Tape 1, and Tape 2	87 dB
Digital	87 dB
Maximum Input Signal:	
Phono MC	20 mV
Phono MM	250 mV
Tuner, Tape 1, and Tape 2	5 V
Digital	> 20 V
Input Impedance:	
Phono MC	150 ohms
Phono MM	47 kohms
Tuner, Tape 1, and Tape 2	100 kohms
Digital	13 kohms

Technical Data
Tandberg Control Amplifier
TCA 3002A

Power requirements:	115/230 V \pm 10%, 50/60 Hz
Power consumption:	30 W max.
AC-outlets:	Unswitched 1 Switched 3
Dimensions:	Width 17 1/8" (43.5 cm) Depth 13 3/4" (35.0 cm) Height 3 1/4" (8.3 cm) Weight 12.5 lbs (5,7 kg)

Technical Data according to
IHF-A-202, 1978

Frequency response:	
Phono MM:	20 – 20,000 Hz + 0.2 dB
Phono MC:	20 – 20,000 Hz - 0.2 dB
Tape 1, Tape 2:	20 – 20,000 Hz - 0/-0.1 dB
Tuner, Digital:	20 – 20,000 Hz + 0/-0.1 dB
Maximum Voltage Output:	
Preamp output:	5 V at THD = 0.004 %
Preamp 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:	< 0.004 %
Phono MC:	< 0.004 %
Tape 1, Tape 2:	< 0.004 %
Tuner, Digital:	< 0.004 %
Input Sensitivity – Ref. 0.5 V output voltage:	
Phono MM:	1 mV
Phono MC:	80 μ V
Tape 1, Tape 2:	70 mV
Tuner, Digital:	70 mV
A-weighted Signal-to-Noise Ratio:	
Phono MM:	80 dB
Phono MC:	74 dB
Tape 1, Tape 2:	95 dB
Tuner, Digital:	95 dB
Maximum Input Voltage (1 kHz):	
Phono MM:	290 mV
Phono MC:	22 mV
Tape 1, Tape 2:	11 V
Tuner:	11 V
Digital:	20 V

TANDBERG

3014

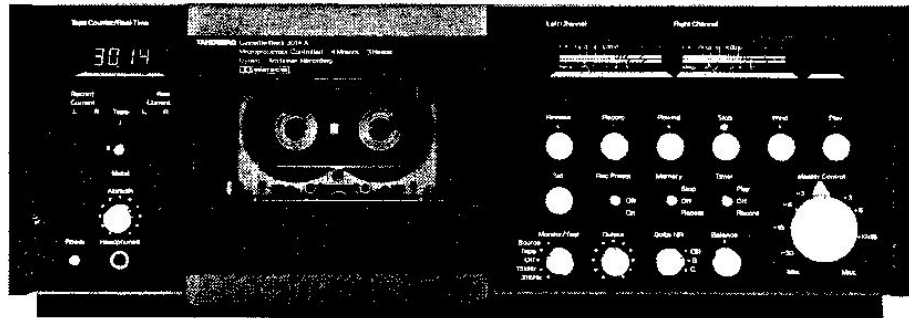
CASSETTE DECK

There are more demands on cassette technology today than ever before.

In designing and manufacturing the TCD 3014 A,

Tandberg's engineers combined significant advantages in performance with computer technology in an easy to use system.

The result is a deck with the most sophisticated micro-processor control system available today for true simplicity of operation.



Electronics

The TCD 3014 A uses no integrated circuits in the signal path except new, re-designed Dolby B and C NR* accuracy and uses phase compensating circuitry and ultra-wideband design to pass a signal with no audible degradation in sound or imaging.

Polystyrene or polypropylene capacitors rather than electrolytic or ceramic types are used in all critical circuits that carry musical information to insure optimum sound quality.

The TCD 3014 A refuses to compromise musical

* Trademark, Dolby Labs., Inc.

DYNEQ

DYNEQ® Tandberg's patented headroom extension system for tape recording, helps overcome the severe high frequency

limitations inherent in the cassette recording process. This is accomplished by a DYNAMIC record EQUALIZER which controls high

frequency boost during record to enable more signal on the tape without loss of highs or increase of intermodulation products.

ACTILINEAR

ACTILINEAR® II is a great breakthrough in eliminating "the cassette sound" as was Tandberg's proprietary Actilinear. Actilinear II

offers a totally re-designed transconductance amplifier which takes the music and bias signals as pure voltage and converts them to pure

current. Actilinear II is a research-grade amplifier with a bandwidth so wide that it can actually pass square wave bias frequencies.

Metering Circuits

The TCD 3014 A utilizes peak-reading meters which show high velocity peaks in all their subtlety (unlike bar graphs which generally leave large gaps between segments). Yet these meters have slow decay to give good averaging results as well as easy visibility. These meters will respond to a 2 millisecond peak within 1 dB and are full wave peak detectors regardless of phase. The meters on the Tandberg TCD 3014 A indicate the signal after this record equalization has been applied. Therefore, they monitor the signal being recorded on the tape, not the signal coming into the



record amplifier as most other recorders do. As all Tandberg cassette meters in the past, these are set to the new industry standard of 0 dB = 250 nWb/meter.

While the TCD 3014 A is recording, the source/tape

switch controls only the output of the deck; the meters show input levels to the tape at all times. This feature makes possible audible tape monitoring and simultaneous visual monitoring of input levels to the tape.

Counter

The electronic counter can be used to measure either revolutions of the tape or elapsed time in both wind modes and play/record. Instant switching with memory between revolution and real time counting is possible.

Timer play/timer record is available with an external clock. A built-in 6-second turn-on delay is programmed for all electronic circuits to stabilize before the transport can be engaged.

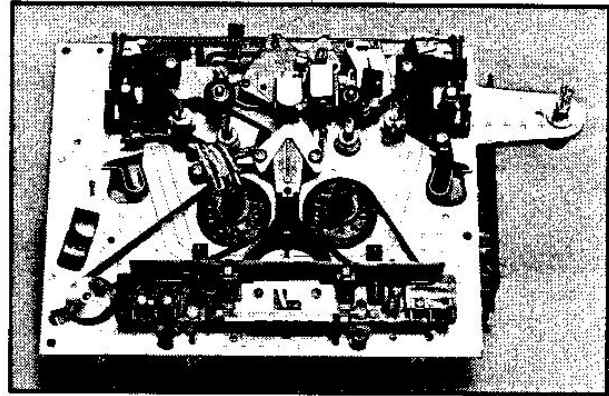


Tape transport

The TCD 3014 A features four servo controlled motors in the tape transport system linked to sensors which monitor the speed and direction of the tape. The sensors then apply the proper voltage to insure accurate tape handling.

In fast-forward or rewind both the supply-side motor and the take-up motor speeds are controlled. This means that a constant speed is maintained at all times in both wind and rewind functions.

The transport mechanism offers superb construction. It is built on a 5 mm thick aluminum baseplate rolled under 40 tons of pressure to eliminate stress and greatly increase strength. It also features an 8.2 and an 8.4 cm diameter flywheel, a dual-capstan, closed-loop drive system,



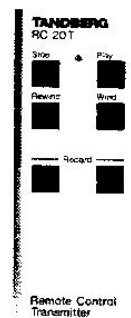
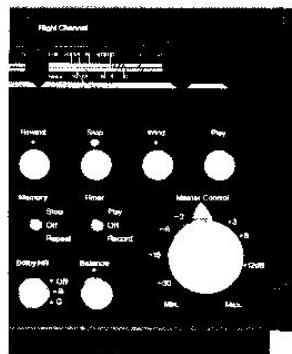
and a cassette locking mechanism which guarantees accurate positioning of the tape every time.

The TCD 3014 A transport also features:

- Tandberg built, discrete three-head system.
- Azimuth alignment for all tapes utilizing a built-in test system.
- Linear motor drive to position the head bridge and pinch rollers to tape accurately.

Remote Control

A wireless infrared remote control allowing most functions (including flying start/record) with the built-in receiver section (optional).



Accessories

Optional side panels in rosewood to unify the TCD 3014 A with the rest of the Series 3000 A line.

Machined extruded aluminum professional rack mounts are also available.

Technical Data

Supply voltage:	230 V ± 10%, 50 Hz 115 V ± 10%, 60 Hz
Power consumption:	50 watts
Tape speed:	1 7/8 ips
Speed tolerance*:	± 0.5%
Wow and flutter:	
WRMS (Play)	0.06%
WRMS (Rec. – Play)	0.09%
DIN – IEC	0.12%
Frequency response:	
Metal IV (– 20 dB)	18 Hz – 23 kHz ± 1.5 dB
With Dolby C NR	± 3.0 dB
Tape II (– 20 dB)	18 Hz – 20 kHz ± 1.5 dB
Tape I (– 30 dB)	18 Hz – 20 kHz ± 1.5 dB
Harmonic distortion – 250 nW/m, Dolby B NR:	
Metal IV	< 1%
Tape II	< 2%
Tape I	< 1.5%
Signal-to-noise ratio, A-curve weighted (Dolby C NR):	
Metal IV	> 74 dB
Erase (1 kHz):	
Metal IV	> 80 dB
Crosstalk:	
Side A – B (1 kHz)	> 80 dB
Track 1 – 2 (1 kHz)	> 40 dB
Inputs:	
Input impedance	150 kohm
Sensitivity:	
Low	100 mV
High	10 mV
Outputs:	
Minimum load impedance/max. voltage at unloaded output	
Play 700 mV (Fixed line output)	100 ohm/700 mV
Play Variable (Variable line output)	100 ohm/0 – 4 V
Headphones	8 ohm/3.5 V
Dimensions:	
Width	43.5 cm (17 1/8")
Height	16.6 cm (6 9/16")
Depth	35.0 cm (13 3/4")
Weight	9.8 kg (21.6 lbs)

* At nominal mains voltage and normal operating temperature.

Specifications are subject to change for further improvement without notice.

YOUR AUTHORIZED TANDBERG REPRESENTATIVE

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TANDBERG[®]

TANDBERG



The CD Player for the experienced listeners

Before we decided to enter the CD player market, certain qualities had to be fulfilled. Only in 1986 is the advanced technology available, and is further

extended by Tandberg, the superior leader of the revolutionary zero feedback technology.

TCP 3015 A Compact Disc Player



16 bit 4 times oversampling

Tandberg is using 16 bit resolution at a sampling frequency of 176.4 kHz instead of the standard

44.1 kHz. This implies that the unwanted supersonic frequency components are placed 4 times longer away

from the audio signal than usual, and thereby less audible.

Flat phase response

By using a combination of digital filtering, oversampling and a phase

linear analogue filter, it has been possible to realize flat phase response. This results

in remarkable reproduction of transients.

Component selection

Audiostages are all discrete and comprised exclusively of polypropylene capacitors

and high precision metal film resistors.

The shortest path from Digital to Analogue

The signal path, from the output of the D/A-converter to the gold output sockets, is the cleanest possible. It is totally direct-coupled, with total absence of series

or coupling capacitors. All equalization and the digitally-controlled deemphasis is done with passive filter techniques. As a result we have ensured

that no information is lost in the critical conversion from the digital to the analogue world.

Zero Negative Feedback

All stages are designed without using negative feedback loops, with analogue stages having equal or lower distortion than traditional feedback designs,

which reduces signal capacity drastically. Experienced listeners are very aware of it.

By using special circuit topology, and components with quality and tolerances never used in regular produced products, we have managed total elimination of negative feedback loops.

Separate Headphone amplifier

Separate headphone amplifier utilizing zero negative feedback and feedforward error correction

design, with its own independent volume control.

Full programmability

Programming of random playback sequence of the tracks of a loaded disc is possible. By engaging the

repeat function the selected sequence will be repeated.

Reviewing of the program ensures easy operation and modification of the sequence.

Wireless Remote Control for all functions

Remote controlled functions include all play, forward, backward and stop functions. Programming of

playback sequence and repeating is also possible.

The commands are transmitted by infrared light.

Keep the signal capacity

By using Tandberg Matched Audio Transmission cables, you assure that the high

performance is transferred to your system with the least degradation.

Technical Data

Tandberg Compact
Disc Player 3015A

Power requirements:	115/230 V \pm 10%, 50/60 Hz
Power consumption:	30 W
Safety requirements:	IEC
Dimensions:	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)
Frequency range:	2 - 20,000 Hz, \pm 0.3 dB
Dynamic range:	96 dB
Signal-to-Noise ratio:	100 dB
Channel separation:	94 dB (at 1000 Hz)
Total harmonic distortion:	0.008% (at 1000 Hz)
Wow and flutter:	Quartz crystal precision
D/A conversion:	16 bit oversampling frequency 176.4 kHz with digital filter and two D/A converters
Error correction system:	Cross Interleaved Reed Solomon Code (CIRC)
Audio output level:	2 V rms
Optical Readout System	
Laser:	Semi-conductor AlGaAs
Wave length:	800 nm
Signal Format:	
Sampling frequency:	44.1 kHz
Quantization:	16 bit linear/channel

Specifications are subject to change for further improvement without notice.

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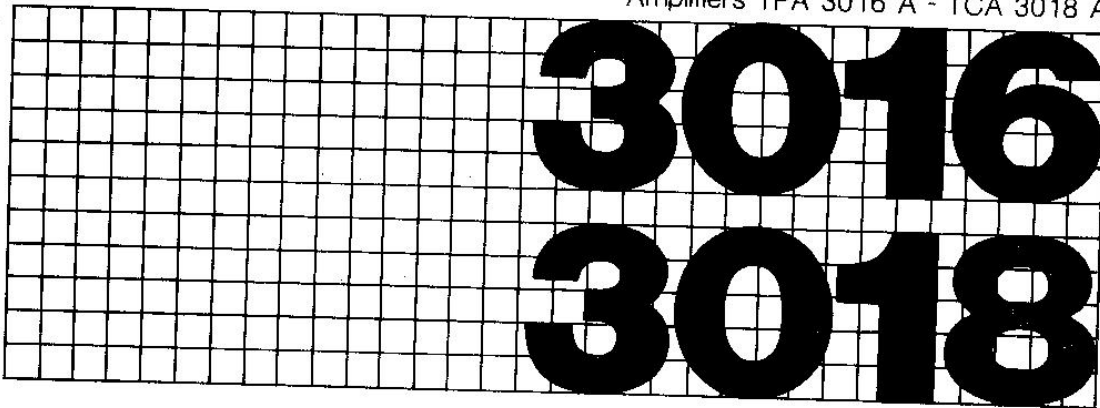
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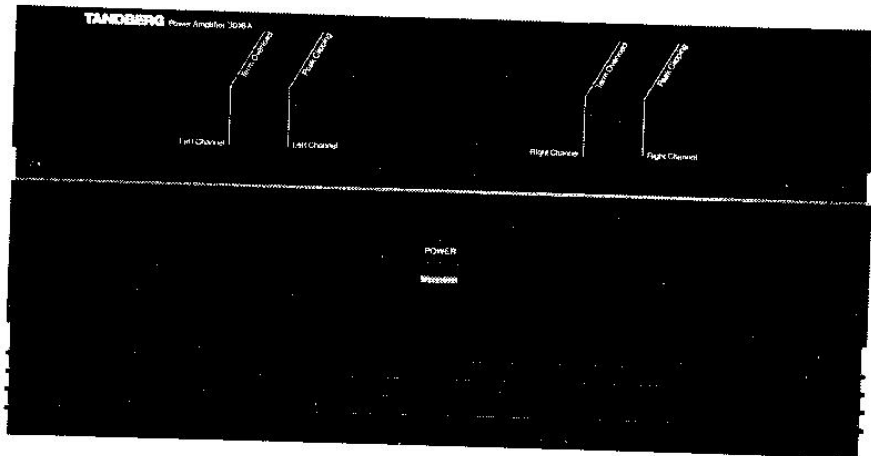
AMPLIFIERS

Tandberg's amplifier designs represent the latest advancement in state of the art. Packaged in a handsome black anodised solid aluminum case, it provides the user with well thought controls for optimum

enjoyment of the listening material as well as flexibility of interconnections to additional audio components.

The amplifiers share a common heritage of musical accuracy resulting not only from innovative circuit design, but also from meticulous attention to the engineering details, as listed below —

**TPA 3016 A
POWER
AMPLIFIER**



**TCA 3018 A
CONTROL
AMPLIFIER**



**Component
selection**

All audio stages are comprised exclusively of polypropylene capacitors and metal film resistors, selected for the optimum audio performance.

These selected polypropylene capacitors eliminate dielectric losses and

dynamic capacitance changes in conventional components, with their subtle sonic blurring of details, loss of perspective and focus, and a harsh metallic sound.

All metal film resistors used provide high accuracy and long term stability.

The audio section employs only discrete selected active elements.

To ensure long trouble free interconnections all input and output sockets are gold plated.

Zero Negative Feedback

Tandberg's preamplifiers and power amplifiers contain zero negative feedback. The result of this is remarkable sound reproduction. Purity, transients, openness, resolution and imaging are unparalleled — an distinct improvement over widely employed by the industry negative feedback design.

regular mass production, together with an ingenious layout of the circuit boards and component selection, it has been possible to build a zero feedback amplifier.

No negative feedback also means no need for stability compensation, no stability problems, no internal circuit overload or conditional stability. How this affect sound reproduction is remarkable! Transients, openness, perspective, focus, resolution . . . everything is enhanced with this technology. The best proof is to compare the performance of the Tandberg sets with any other "high end" product.

By using very special circuit topology elements with high quality and tolerances unheard of in

In addition, distortion has been kept at the same or lower levels than traditional designs.

The linearity of the amplifiers are maintained at all levels and with all loads.

TCA 3018 A High level inputs

All high level inputs on TCA 3018A offer an overload rating in excess of 20 Volts!

No matter how dynamic the source is, it will not overload the input.

RIAA

Passive Phono EQ. Both phono sections, MC/MM, use passive H.F. and L.F. sections.

Therefore the phono stages have zero feedback resulting in no sonic degradation.

Separate power supplies

Through a common transformer the TCA 3018A has separate windings and, therefore, separate power supplies for left and right

channels. This means that the channels are completely separated without interference between left and right. The two power

supplies, which incorporate high speed regulated voltages and stiffness, result in better sound.

TPA 3016 A Two mono amplifiers, AC electronic governed fan

TPA 3016A consists of two separate power stages with only mains switch and fan in common. The fan is electronically controlled by the temperature of each separate heatsink. Only under very demanding situations will the fan be activated, and only as much

as needed to keep the transistors at an optimum working temperature.

The fan automatically starts at 60°C and accelerates its speed to ensure that the amplifiers temperature does not exceed 70°C.

The heatsinks are also very effective without the fan since the transistors are mounted on the outside of the amplifier improving the cooling through natural convection.

"Rock solid" power supplies

A power amplifier's ability to maintain control with all loads, is very dependent on the stability of the power supply where it is bound to get the current whenever it needs.

Even small voltage modulations of power are audible (unstable perspective and not fully controlled bass). Therefore the power supplies have two rugged mains transformers

and 120,000 microfarads of storage capacity to ensure rigidity. This makes the power amplifier able to drive loads even below 2 ohm.

Superior current capability

16 MOSFET power transistors, 8 MOSFETS per channel, each MOSFET rated to 8 Ampere continuous current. Combined with a large, efficient power supply this make the amplifier able to

deliver superior current capability, approaching the 100 Ampere barrier.

The output devices require no protection and are therefore able to draw all

current required from the rigid power supply. These advanced features also make the TPA 3016A an ideal choice for professional applications.

Feedforward driver stages, MOSFET output stages

This takes full advantage of the MOSFET speed and inherent current sharing. The feedforward circuit eliminates the ON-resistance in the MOSFET's

completely. This results in very low output impedance at even several hundred kHz assuring full control over all elements in the speakers.

This results in highly detailed and accurate midrange and high-end unmatched by any other design.

Thermic Servo Loop

No negative feedback would have caused DC stability problems without special servo systems. Usually this

is done electronically with a lowpass filter and negative feedback, which affects the sound. Controlling by means

of circuit elements temperature coefficients have no negative effects and solves the problem perfectly.

Technical Data

Tandberg Power Amplifier
3016A

Power requirements: 115 V \pm 10%, 60 Hz
or 230 V \pm 10%, 50 Hz

Power consumption: 210 – 2500 W

Dimensions: Width: 17 1/8" (43.5 cm)
Depth: 13 3/4" (35.0 cm)
Height: 8 11/16" (22.1 cm)
Weight: 62 lbs (28 kg)

Technical Data according to
IHF-A-202, 1978

Continuous Average Power Output: (8 ohm, 20 – 20.000 Hz, THD < 0.05%) 220 W

Frequency range: + 0/– 0.1 dB, 20 – 20.000 Hz

A-weighted Signal-to-Noise ratio: (Ref. 1 W/8 ohm) 92 dB

Secondary Disclosures

Output Impedance (20 – 20.000 Hz): typical 0.02 ohm

Wideband Damping Factor: typical 400

SMPTE Intermodulation Distortion: typical 0.05%

IHF Intermodulation Distortion: typical 0.05%

Channel Separation: > 90 dB

Transient Overload Recovery Time: Immeasurable

Other Technical Data

Continuous Average Power Output in 4 ohm: 400 W

Continuous Average Power Output in 2 ohm: 600 W

Frequency range: + 0/– 0.2 dB, 0.07 – 1.5 MHz

Sensitivity (1 W/8 ohm/1 kHz): 100 mV

A-weighted Signal-to-Noise ratio: (Ref. 220 W/8 ohm) 117 dB

Pulse power: 2500 W in 0.5 ohm

Specifications are subject to change for further improvement without notice.

Optional Extras

- Rosewood side walls for freestanding units.
- Rack mounting kit.

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Technical Data

Tandberg Control Amplifier
3018A

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

115/230 V \pm 10%, 50/60 Hz
56 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: < 0.009%
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 $^{\circ}$ /– 0.5 $^{\circ}$
Tuner, Digital Disc, AUX: + 0.5/– 0.5

Specifications are subject to change for further improvement without notice.

Optional Extras

– Rosewood side walls for freestanding units.
– Rack mounting kit.

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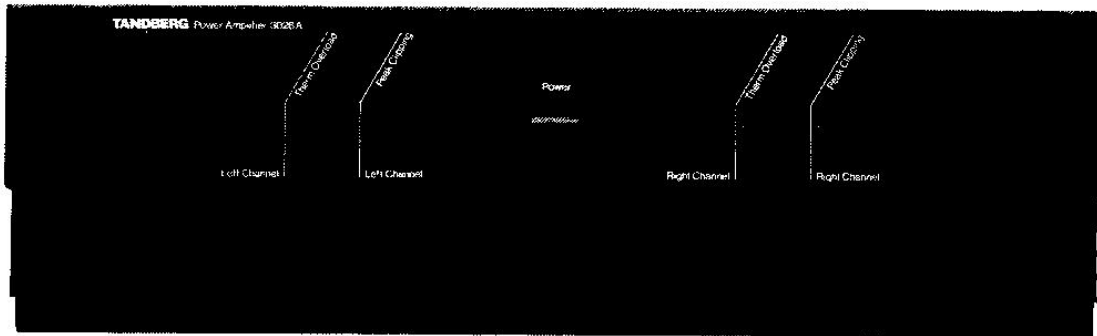
3026

AMPLIFIER

Tandberg Power Amplifier 3026A is a 2 x 150 W audio-ophile power amplifier with high current capacity

combined with a very rugged design and ability to drive difficult loads. The 3026A includes many features

adopted from the "state of the art" power amplifier Tandberg 3016A.



Component selection

All components used in 3026A are selected for maximum accuracy and best audio performance.

Capacitors in the signal paths are selected polypropylene types. The use of high

quality polypropylene capacitors greatly improves audible performance compared to other commonly used capacitors. Improvement relates to openness, resolution and purity.

All resistors are metal film types for high accuracy and long term stability.

Active elements are discrete selected types throughout the entire circuitry.

Well dimensioned power circuits

A major feature of this new amplifier is a well dimensioned high current power supply. A massive torodial transformer reduces voltage modulations usually

resulting in unstable perspective and lack of control in the bass area.

The high current design guarantees superior

performance even under the most dynamic signal conditions, no matter what type of loudspeaker used.

High current capability

Output devices are MOSFET's and have the advantage of high speed and inherent current sharing.

The use of MOSFET's allows high current to pass without

those limitations presented in bi-polar devices and no protection is needed — assuring a deep and well controlled bass, as well as striking reproduction of transients.

The 3026A offers a peak current of 45 A.

Zero Feedback

The Zero Feedback design of 3026A greatly increases the signal capacity of the active stages.

Usually feedback is applied to reduce overall distortion and linearity errors.

Our unique design offers all the advantages of zero feedback without any sacrifice in linearity or raised distortion levels.

Feed forward driver design

The feed forward circuitry eliminates the on-resistance in the output transistors.

all through the audio band up to several hundred kHz – assuring full control over all elements in the speakers.

This results in highly detailed and accurate midrange and high-end – hardly matched by other amplifier designs.

This results in extremely low output impedance –

Thermic Servo Loop

To control DC stability servo loops are required. Usually this is done electronically with a lowpass filter and a negative feedback loop injecting its control

signals into the audio path. This will degrade sound quality.

The Tandberg Thermic Servo Loop controls, in a

unique way, by means of temperature to achieve 0 DC – with absolute no interference to the audio signal.

Technical Data

Tandberg Power Amplifier
3026A

Power Requirements:	115/230 W ± 10%, 50/60 Hz
Power Consumption:	110 – 830 W
Dimensions:	Width: 17 1/8" (43.5 cm) Depth: 13 3/4" (35.0 cm) Height: 5 1/4" (13.0 cm) Weight: 31.4 lbs (14.25 kg)

Technical Data according to
IHF-A-202, 1978

Continuous Average Power Output:	(8 ohm 20 – 20,000 Hz, THD > 0.02%)	2 x 150 W
Frequency Response:		20 – 20,000 Hz + 0/– 0.1 dB
A-weighted Signal-to-Noise Ratio:	(Ref. 1 W/8 ohm)	96 dB

Secondary Disclosures

Output impedance (20 – 20,000 Hz):	< 0.01 ohm	
Wideband Damping Factor:	> 800	
Low Frequency Damping Factor:	> 2500	
SMPTE Intermodulation Distortion:	0.02%	
IHF Intermodulation Distortion:	0.02%	
Transient Overload Recovery Time:	Immeasurable	
Sensitivity:	(1 W) (150 W)	150 mV 1.5 V
Pulse Power:		2000 W in 1.0 ohm

Specifications are subject to change for further improvement without notice.

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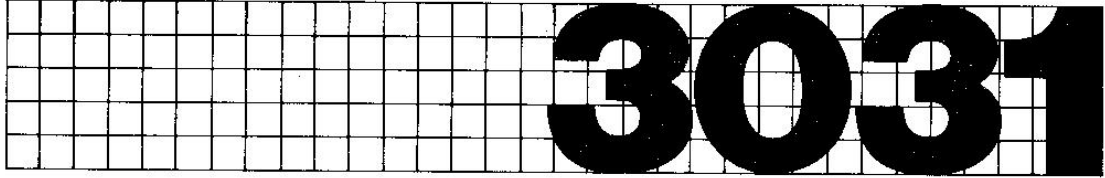
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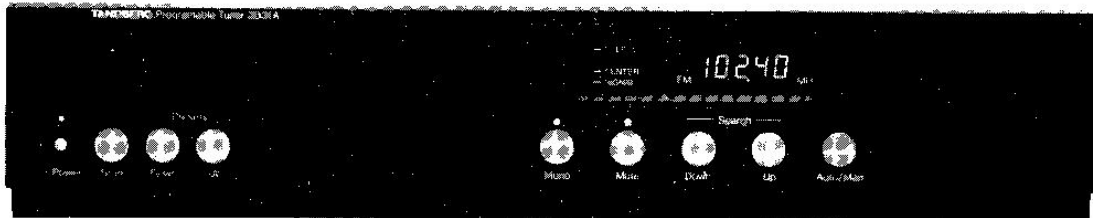


TUNER

The new digital tuner TPT 3031A is the result of long term development in the Tandberg labs.

This new digital tuner offers a high degree of stability in combination

with an easy-to-read, and accurate LED display.



The front end

The front end employs ganged, tuned circuits where DC voltage controlled capacitance diodes are used as tuning elements, and Dual-Gate MOSFETs

are used in the RF stages. This achieves stable, accurate tuning and good sensitivity combined with superior headroom.

The TPT 3031A utilizes 4 tuned circuits to prevent Mirror Image (21.4 MHz) and other out of band distortion.

Programming unit

In addition to the main tuning, there is a second stage which stores 16 pre-tuned FM stations

in an electronic memory. This pre-tuning system is based on microprocessor

technology to achieve maximum S/N ratio and frequency stability.

Easy operation

The TPT 3031A offers both manual and automatic tuning. Advanced microprocessor technology limits the number of buttons to

a minimum, and all functions are easy to control with a logical lay-out.

The display incorporates LED's indicating signal-strength, center-tuning and stereo-reception.

The audio circuit

To make a good tuner takes a special knowledge of radio frequency technology, but in many cases the audio section is neglected in terms of component quality and design criteria.

The TPT 3031A Tuner shares the design-philosophy of the other well recognized high-end products in the Tandberg

3000-series. Design highlights are carefully selected components.

Full remote operation

The TPT 3031A Tuner is built for full remote operation, like several other new Tandberg products. The optional RC-3000 Remote Control

operates all these different units from one single transmitter. The remote control offers direct access to all presets.

To secure the set against unattended re-programming, all presets must be set/programmed on the tuner itself.

Technical Data

Tandberg Programable Tuner TPT 3031A

Power requirements:		110 – 115 V/220 – 230 V/240 V ± 10 %, 50/60 Hz
Power consumption:		20 W
Dimensions:	Width:	17 1/8" (43.5 cm)
	Depth:	13 3/4" (35.0 cm)
	Height:	3 1/4" (8.3 cm)
	Weight:	10.7 lbs (4.85 kg)

Technical Data according to IHF-T-200, 1975 IEEE Std. 185, 1975

Tuning range:		87.5 – 108 MHz
Usable sensitivity:	Mono	1.1 μ V/75 ohm
50 dB quieting sensitivity:	Mono	2 μ V/75 ohm
	Stereo	20.0 μ V/75 ohm
Signal-to-noise ratio:	Mono	82 dB
	Stereo	78 dB
Muting threshold:		15 μ V/75 ohm
Muting hysteresis:		15 dB
Stereo threshold:		1 μ V/75 ohm
Frequency response:	Mono	+0.5 dB – 1 dB
	Stereo	+0.5 dB – 1 dB
Distortion at 50 dB quieting:	Mono	0.2 %
	Stereo	0.3 %
Distortion at 65 dBf (0.5 mV/75 ohm at 1 kHz):	Mono	0.15 %
	Stereo	0.15 %
Distortion at 65 dBf	Stereo	0.4 %
Intermodulation distortion:	Mono	0.2 %
	Stereo	0.2 %
Capture ratio, selectively measured:		1.0 dB
Adjacent channel selectivity \pm 200 kHz:		14 dB
Alternate channel selectivity \pm 400 kHz:		> 100 dB
Spurious response ratio:		> 90 dB
Image response ratio, balanced:		> 100 dB
RF intermodulation:		> 70 dB
AM suppression ratio:		> 70 dB
Stereo separation (60 Hz to 10 kHz, selectively measured):		> 45 dB
Subcarrier product ratio:		70 dB
19 kHz suppression:		70 dB
38 kHz suppression:		100 dB
Center LED on:		20 dBf
Signal LED on:		30 dBf

Specifications are subject to change without notice.

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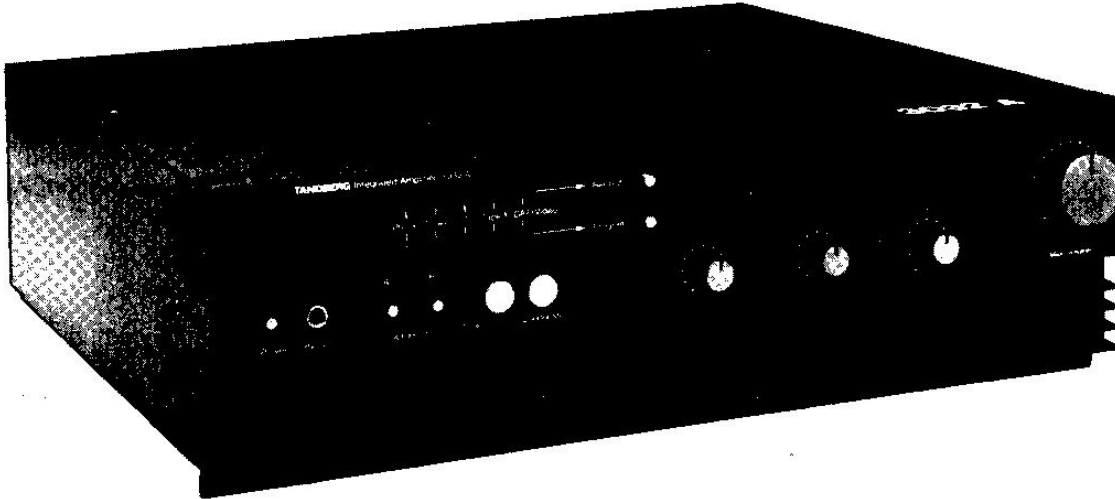
3032

Design Philosophy

It has been our aim to build an integrated amplifier matching the performance of two separates.

The result is a unit setting new standards in both audible performance and ease of operation

A major feature of the 3032A is full remote control without the usual degradation of audio performance



Pre-amp. section

All components used in the 3032A are selected for maximum accuracy and best audio performance. The phono pre-amp has separate MM and MC inputs, automatically switched.

Separate program-select and record-select switches allows maximum user flexibility, recording one source and listening to another source.

A generous number of inputs and outputs allows even video-in and separate pre-out for multi-amplifier systems.

Amplifier section

A major feature of the amplifier section is a well dimensioned high current power supply

The high current design - hardly found in any other receiver - guarantees

superior performance under all signal conditions

Continuous Average Power Output:

(8 ohm, 20 - 20.000 Hz, THD < 0.09%) 2 x 100W
 (4 ohm, 20 - 20.000 Hz, THD < 0.09%) 2 x 120W
 0.35 dB

High current capability

Years of experience with MOSFET and BI-POLAR technology is incorporated in the design of

the TIR 3032A This bi-polar design is hardly matched by any other amplifier

With 20.000 uF capacitors, the 3032A offers a peak current of 30 A

Thermic Servo Loop

The Tandberg Thermic Servo Loop controls the output DC voltage, in a unique way, by means of temperature sensing to achieve 0 Volt — with

absolutely no interference to the audio signal.

This replaces the usual lowpass filter and negative

feedback loop which inject control signals into the audio path and degrade the sound quality.

Fully remote controlled

The Tandberg infrared remote control RC 3000 (not included) can control most of the 3032A functions

All sources and rec. out can be selected remotely.

The functions also include volume, tone defeat and muting. The remote control will also operate other Tandberg products, such as the 3015A Compact Disc Player

Technical Data

Tandberg Integrated Amplifier TIR 3032 A

Power requirements: 110-115 V/220-230 V/240 V \pm 10%, 50/60 Hz

Power consumption: 60 — 500 W

Dimensions: Width 435 mm
Height 137 mm
Depth 354 mm
Weight 12 kg

AMPLIFIER

Continuous Average Power Output: (8 ohm, 20-20.000 Hz, THD \ll 0.09%) 2 x 100 W
(4 ohm, 20-20.000 Hz, THD \ll 0.09%) 2 x 120 W
> 800

Technical data according to IHF-A-202, 1978

Wideband damping factor:

Frequency response:

Linear inputs 5-100.00 Hz \pm 0/3 dB
Phono MC and MM inputs 20-20.000 Hz \pm 0.5 dB

Sensitivity

Phono MC 15 μ V
Phono MM 160 μ V
FM, Tape 1, Tape 2, Video, Aux, CD 15 μ V

A-weighted Signal-to-noise ratio:

Phono MC 68 dB
Phono MM 72 dB
FM, Tape 1, Tape 2, CD 74 dB

Maximum input signal: Phono MC

Phono MM 5.0 mV
FM, Tape 1/2, CD, Video, DAT, Aux 70 mV
3.5 V

Input impedance:

Phono MC 150 ohm
Phono MM 47 kohm
FM, Tape 1/2, CD, Video, DAT, AUX 10 kohm

Specifications are subject to change without notice

Secondary Disclosures

Output impedance:

Power Amplifier 0,01 ohm
Headphones 2,70 ohm
Headphones (min. load) 8 ohm

Tone-control response:

Bass \pm 9 dB at 100 Hz
Treble \pm 9 dB at 10.000 Hz
Loudness Max. 7 dB at 50

Crosstalk (100 Hz - 10 kHz):

Phono MM, Phono MC > 70 dB
Tape 1, Tape 2, DAT, Video, Tuner, CD > 70 dB

Separation (100 Hz - 10 kHz):

Phono MM, Phono MC > 45 dB
Tape 1, Tape 2, DAT, Video, Tuner, CD > 45 dB

Transient Intermodulation:

All inputs: Immeasurable

Other Technical Data

Frequency range:

Tape 1, Tape 2, Tuner, CD 1.6 - 250.000 Hz \pm 0/3 dB

Phase Shift (20 Hz - 20.000 Hz):

Tape 1, Tape 2, DAT, Video, Tuner, CD \pm 5°/—5°

Specifications are subject to change without notice

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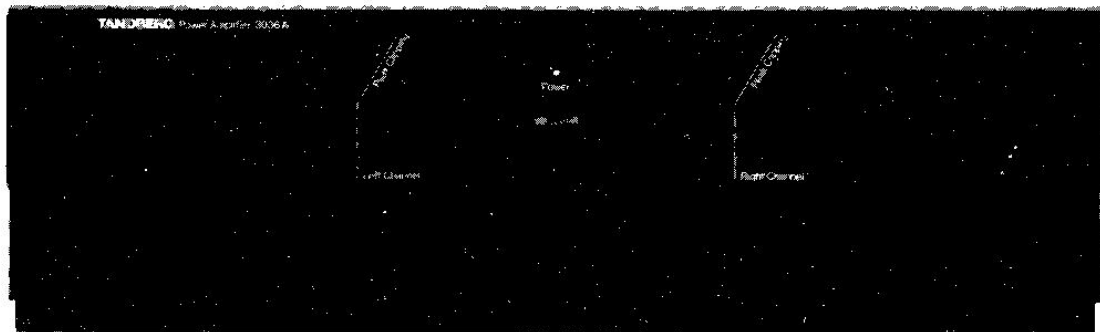
3036

AMPLIFIER

The TPA 3036A Power Amplifier is a 2 x 100 W audiophile power amplifier with high current capacity

combined with a very rugged design and ability to drive difficult loads.

The TPA 3036A includes many features adopted from the Top of the line Tandberg TPA 3016A Power Amplifier and TPA 3026A.



Component selection

All components used in the TPA 3036A are selected for maximum accuracy and best audio performance.

Optimum performance is ensured by means of eliminating coupling-capacitors in the signal-path. This special design offers improvements relating to openness, resolution and purity.

All resistors are metal film types for high accuracy, low noise and long term stability.

Active elements are discrete selected types throughout the entire circuitry.

Well dimensioned power circuits

A major feature of this new amplifier is a well dimensioned high current power supply. A massive

Dual C transformer reduces voltage modulations usually resulting in unstable perspective and lack of control in the bass area.

The high current design guarantees superior performance even under the most dynamic signal conditions.

High current capability

Years of experience with MOSFET and BI-POLAR technology is incorporated in the design of the

TPA 3036A. This bi-polar design is hardly matched by any other amplifier.

With 20.000 uF capacitors, the 3036A offers a peak current of 30 A.

Zero Feedback

The Zero Feedback design of 3036A greatly increases the signal capacity of the active stages.

Usually feedback is applied to reduce overall distortion and linearity errors.

Our unique design offers all the advantages of zero feedback without any sacrifice in linearity or raised distortion levels.

Feed forward driver design

The feed forward circuitry eliminates the on-resistance in the output transistors.

This results in extremely low output impedance —

all through the audio band up to several hundred KHz — assuring full control over all elements in the

speakers, insuring a highly detailed and accurate midrange and high-end performance.

Thermic Servo Loop

DC stability is usually controlled by means of negative feedback, injecting its control signals into the audio path.

The Tandberg Thermic Servo Loop, further refined since its introduction, uniquely controls stability,

by means of temperature, to achieve zero DC — with absolutely no interference to the audio signal.

Technical Data

Tandberg Power Amplifier 3036A

Power Requirements:	110 — 115 V/220 — 230 V/240 V ± 10 %, 50/60 Hz
Power Consumption:	50 — 500 W
Peak Power, 4 ohm:	2 x 240 W
Continuous Average Power Output (4 ohm, 20 — 20.000 Hz):	2 x 120 W
Dimensions:	Width: 17 1/8" (43.5 cm) Depth: 13 3/4" (35.0 cm) Height: 5 1/4" (13.0 cm) Weight: 23.4 lbs (10.6 kg)

Technical Data according to IHF-A-202, 1978

Continuous Average Power Output:	(8 ohm 20 — 20.000 Hz, THD < 0.08 %) 2 x 100 W
Frequency Response:	20 — 20.000 Hz + 0/— 0.1 dB
A-weighted Signal-to-Noise Ratio:	(Ref. 1 W/8 ohm) 90 dB

Secondary Disclosures

Output impedance (20 — 20.000 Hz):	< 0.01 ohm
Wideband Damping Factor:	> 800
Low Frequency Damping Factor:	> 2500
SMPTE Intermodulation Distortion:	0.08 %
IHF Intermodulation Distortion:	0.08 %
Transient Overload Recovery Time:	Immeasurable
Sensitivity:	(1 W) 100 mV (100 W) 1.0 V

Specifications are subject to change without notice.

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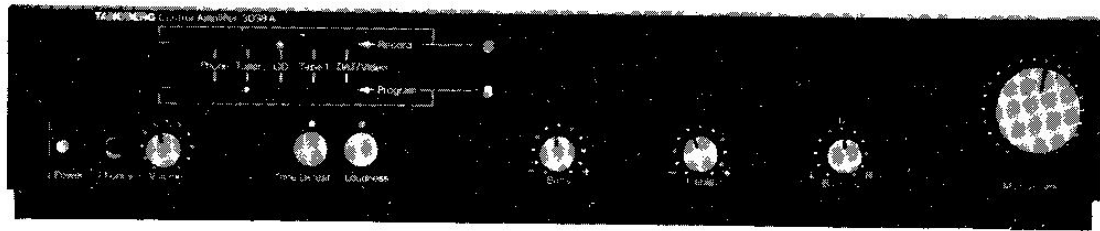
3038

AMPLIFIER

The new Tandberg TCA 3038A Pre-amplifier is a full remote controlled unit, sharing many design-

features with the "state of the art" TCA 3018A Pre-amp.

This new pre-amplifier is a true audiophile product, incorporating a large number of inputs, including MM and MC phono sections.



Component selection

All audio stages are comprised exclusively of high quality capacitors and metal film resistors, selected for optimum audio performance. These selected capacitors eliminate dielectric losses and dyna-

mic capacitance changes found in conventional components, with their subtle sonic blurring of details, loss of perspective and focus, and harsh metallic sound.

All metal film resistors used, provide high accuracy and long term stability.

The audio section employs only discrete selected active elements.

High level inputs

All high level inputs on the TCA 3038A offer an overload rating in excess of 6 volt.

No matter how dynamic the source is, it will not overload the input.

RIAA

The design philosophy is based on a passive/active Phono EQ. Both phono sections, MC/MM, are split into passive H.F. and active L.F. sections.

This eliminates the need for negative feedback in the high end with its resultant sonic degradation.

The design incorporates separate input-stages for the MC/MM sections with automatic switching.

Zero Negative Feedback

The Tandberg TCA 3038A Pre-amplifier is a true zero negative feedback line-amplifier.

are distinct improvements over the widely employed negative feedback design of other industry manufacturers.

stability compensation, no stability problems, no internal circuit overload nor conditional stability.

The result of this is remarkable sound reproduction. Purity, transients, openness, resolution and imaging, only surpassed by the more expensive Tandberg TCA 3018A,

The linearity of the amplifiers is maintained at all levels and with all loads. No negative feedback also means no need for

How this affects sound reproduction is remarkable. The best proof is to compare the performance of the TCA 3038A with any other product in this price category.

Full remote operation

All functions are micro-processor controlled, and can be remote operated by the RC 3000 transmitter (optional).

Program select, record select, tone/tone-defeat and loudness are all monitored by means of LED's.

The volume control is operated by a servo-motor to avoid degradation of sound, normally apparent in voltage controlled amplifiers (VCA's).

Technical Data

Tandberg Control Amplifier TCA 3038A

Power Requirements:	110 – 115 V/220 – 230 V/240 V ± 10 %, 50/60 Hz
Power consumption:	35 W max.
Dimensions:	
Width	17 1/8" (43.5 cm)
Depth	13 3/4" (35.0 cm)
Height	3 1/4" (8.3 cm)
Weight	10.7 lbs (4.85 kg)

Technical Data according to IHF-A-202, 1978

Frequency range:		
Phono MM, Phono MC:	20 – 20.000 Hz	± 0.5 dB
Tape 1, Tape 2, Tuner, CD:	20 – 20.000 Hz	+ 0/- 0.5 dB
Maximum Voltage Output:		
Preamp output:	5.5 V at THD = 0.05%	
Preamp output:	5.5 V at clipping level	
Tape 1, Tape 2:	5.5 V	
Headphone output:	10 V unloaded	
Total Harmonic Distortion (20 Hz – 20.000 Hz):		
Phono MM, Phono MC:	< 0.08 %	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	< 0.04 %	
Input Sensitivity – Ref. 0.5 V output voltage:		
Phono MM	1.5 mV	
Phono MC:	60 µV	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	60 mV	
A-weighted Signal-to-Noise ratio:		
Phono MM:	75 dB	
Phono MC:	70 dB	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	85 dB	
Maximum Input Voltage (1 kHz):		
Phono MM:	70 mV	
Phono MC:	5 mV	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	6 V	
Input impedance:		
Phono MM:	47 kohm	
Phono MC:	150 ohm	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	min. 10 kohm	

Secondary Disclosures

Output impedance:	
Preamp:	200 ohm + 22 µF in series
Headphones:	150 ohm
Headphones (min. load):	150 ohm
Tone-control response:	
Bass:	± 9 dB at 100 Hz
Treble:	+ 9 dB at 10.000 Hz
Loudness:	Max. 7 dB at 50 Hz
Crosstalk (100 Hz – 10 kHz):	
Phono MM, Phono MC:	To any of the other sources > 75 dB
Tape 1, Tape 2, DAT, Video, Tuner, CD:	To any of the other sources > 75 dB
Separation (100 Hz – 10 kHz):	
Phono MM, Phono MC:	> 50 dB
Tape 1, Tape 2, DAT, Video, Tuner, CD:	> 50 dB
Transient intermodulation:	
All inputs:	Immeasurable

Other Technical Data

Frequency range:	
Tape 1, Tape 2, Tuner, CD:	1.6 – 250.000 Hz + 0/- 3 dB
Phase shift (20 Hz – 20.000 Hz):	
Tape 1, Tape 2, DAT, Video, Tuner, CD:	+ 5°/- 5°

– Specifications are subject to change without notice.

YOUR AUTHORIZED TANDBERG REPRESENTATIVE:

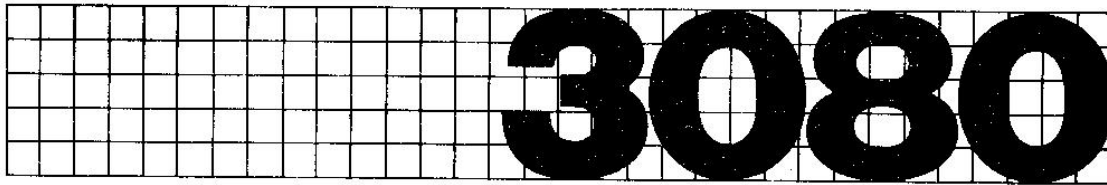
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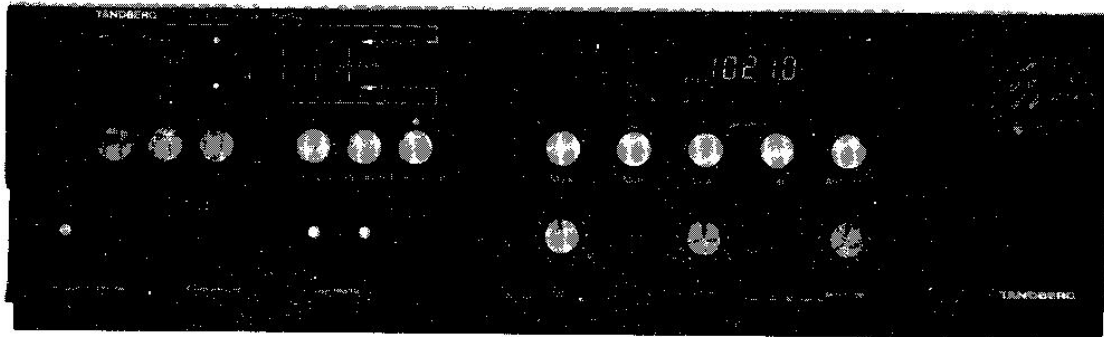


**RECEIVER
Design
Philosophy**

It has been our aim to build a receiver matching the performance of three separates.

The result is a unit setting new standards in both audible performance and ease of operation.

A major feature of the 3080A is full remote control without the usual degradation of audio performance.



Tuner section

The tuner section features a 16 preset FM tuner with digital control and readout.

The unique Tandberg technology — rated state of the art for a decade — ensures high performance

under all conditions. The IF selectivity is determined by a computer designed filter giving the necessary bandwidth to permit undistorted reception.

The digital readout is in 50 kHz steps (100 kHz in USA). Up-/down search is by manual or automatic operation.

**Pre-amp.
section**

All components used in the 3080A are selected for maximum accuracy and best audio performance. The phono pre-amp. has separate MM and MC inputs, automatically switched.

Separate program-select and record-select switches allows maximum user flexibility, recording one source and listening to another source.

A generous number of inputs and outputs allows even video-in and separate pre-out for multi-amplifier systems.

**Amplifier
section**

A major feature of the amplifier section is a well dimensioned high current power supply.

The high current design — hardly found in any other receiver — guarantees

superior performance under all signal conditions.

**High current
capability**

Years of experience with MOSFET and BI-POLAR technology is incorporated in the design of

the TPR 3080A. This bi-polar design is hardly matched by any other amplifier.

With 20,000 uF capacitors, the 3080A offers a peak current of 30 A.

**Thermic
Servo Loop**

The Tandberg Thermic Servo Loop controls the output DC voltage, in a unique way, by means of temperature sensing to achieve 0 Volt — with

absolutely no interference to the audio signal.

This replaces the usual lowpass filter and negative

feedback loop which inject control signals into the audio path and degrade the sound quality.

**Fully remote
controlled**

The Tandberg infrared remote control RC 3000 (not included) can control most of the 3080A functions.

16 FM presets can be selected as well as manual/ auto up-down tuning. All sources and rec. out can be selected remotely.

The functions also include volume, tone defeat and muting. The remote control will also operate other Tandberg products, such as the 3015A Compact Disc Player.

Technical Data

Tandberg Programmable
Receiver TPR 3080A

Power requirements: 110 – 116 V/220 – 230 V/240 V ± 10 %, 50/60 Hz

Power consumption: 60 – 500 W

Dimensions: Width 435 mm
Height 137 mm
Depth 354 mm
Weight 12 kg

AMPLIFIER

Technical Data according to
IHF-A-202, 1978

Continuous Average Power Output: (8 ohm, 20 – 20.000 Hz, THD < 0.09%) 2 x 80 W
(4 ohm, 20 – 20.000 Hz, THD < 0.09%) 2 x 100 W
0.35 dB

Dynamic headroom:
Frequency response: 5 – 100.000 Hz + 0/– 3 dB
Linear inputs 20 – 20.000 Hz ± 0.5 dB
Phono MC and MM inputs

Sensitivity:
Phono MC 70 µV
Phono MM 500 µV
FM, Tape 1, Tape 2, Video, AUX, CD 75 mV

A-weighted Signal-to-noise ratio:
Phono MC 68 dB
Phono MM 72 dB
FM, Tape 1, Tape 2, CD 85 dB

Maximum input signal:
Phono MC 5.0 mV
Phono MM 70 mV
FM, Tape 1, Tape 2, CD, Video, DAT, AUX 3.5 V

Input impedance:
Phono MC 150 ohm
Phono MM 47 kohm
FM, Tape 1, Tape 2, CD, Video, DAT, AUX 10 kohm

FM TUNER

Technical Data according to
IHF-T-200, 1975
IEEE Std. 185, 1975

Tuning range: 87.5 – 108 MHz
Usable sensitivity: Mono 1.2 µV/75 ohm

50 dB quieting sensitivity: Mono 2 µV/75 ohm
Stereo 20.0 µV/75 ohm

Signal-to-noise ratio: Mono 75 dB
Stereo 75 dB

Muting threshold: 10 µV/75 ohm
Muting hysteresis: 6 dB
Stereo hysteresis: 8 dB

Frequency response (30 Hz to 15 kHz): Mono + 0.5 dB – 1 dB
Stereo + 0.5 dB – 1 dB

Distortion at 50 dB quieting: Mono 0.1 %
Stereo 0.2 %

Distortion at 65 dBf (0.5 mV/75 ohm at 1 kHz): Mono 0.09 %
Stereo 0.2 %

Distortion at 65 dBf (30 Hz to 15 kHz): Stereo 0.3 %

Intermodulation distortion: Mono 0.2 %
Stereo 0.2 %

Capture ratio, selectively measured: 0.9 dB
Adjacent channel selectivity ± 200 kHz: 14 dB

Alternate channel selectivity ± 400 kHz: > 100 dB
Spurious response ratio: > 70 dB
Image response ratio, balanced: > 85 dB
RF intermodulation: > 70 dB
AM suppression ratio: > 70 dB
Stereo separation (60 Hz to 10 kHz, selectively measured): > 45 dB
Subcarrier product ratio: 60 dB
19 kHz suppression: 70 dB
38 kHz suppression: 60 dB

Specifications are subject to change without notice.

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