

TANDBERG

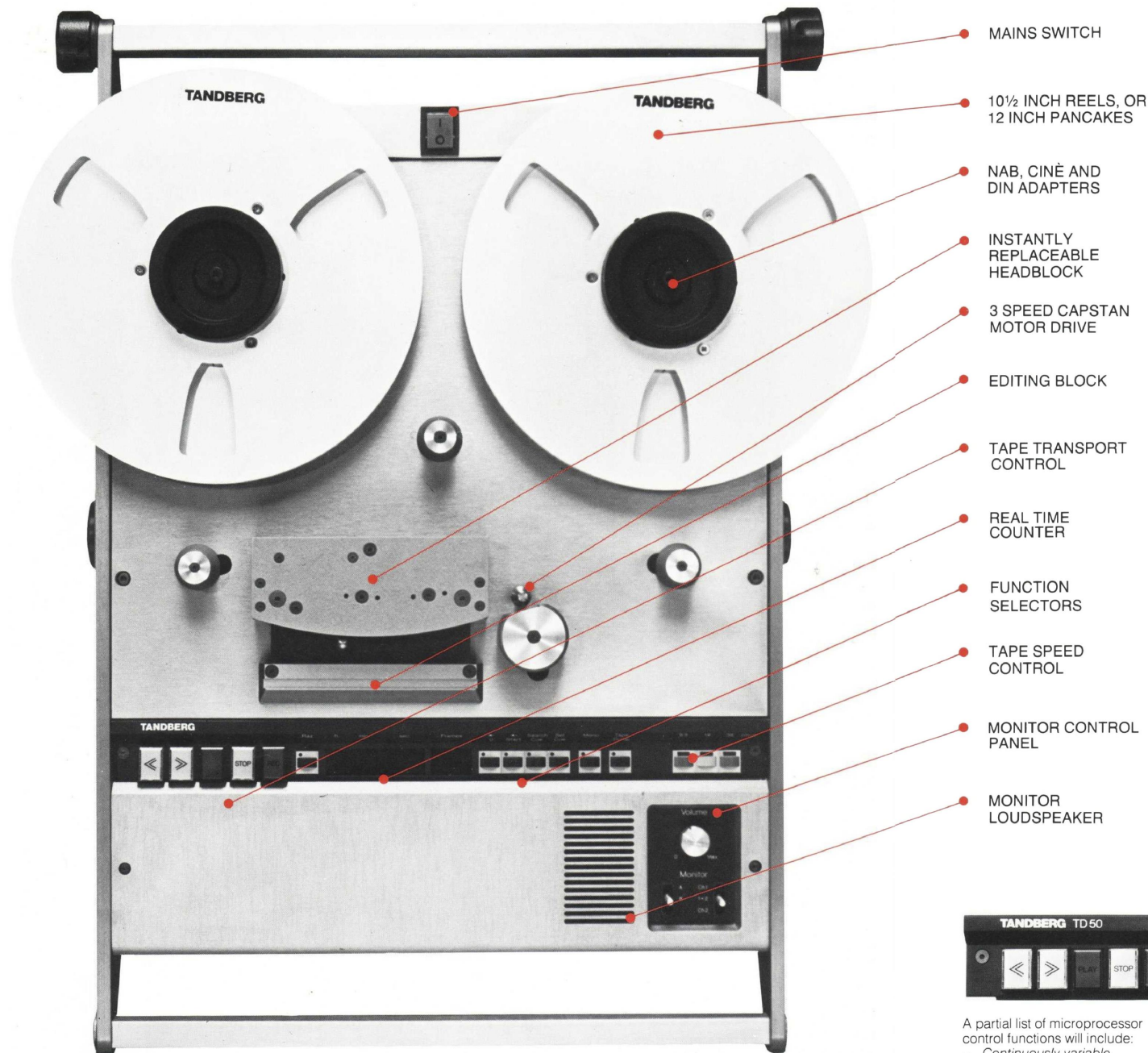
SERIES TD 50 PROFESSIONAL TAPE RECORDERS

Tandberg's new TD 50 is the first series of professional tape recorders from one of Europe's oldest and most respected electronics manufacturers (established 1933). Famous the world over for tape recorders, audio electronics, as well as the full range of electronic educational equipment. Years of experience, development and research have been invested in the new series TD 50 professional tape recorders. The TD 50 has been created with the close help of broadcast and studio engineers. The culmination of this cooperation and research is a design which solves the problems and satisfies the requirements of the professional user today.



The TD 50 tape transport is based on exclusive licence agreement from Mondial Electronique S.A. France.

TOP PANEL



MAINS SWITCH

10½ INCH REELS, OR
12 INCH PANCAKES

NAB, CINÉ AND
DIN ADAPTERS

INSTANTLY
REPLACEABLE
HEADBLOCK

3 SPEED CAPSTAN
MOTOR DRIVE

EDITING BLOCK

TAPE TRANSPORT
CONTROL

REAL TIME
COUNTER

FUNCTION
SELECTORS

TAPE SPEED
CONTROL

MONITOR CONTROL
PANEL

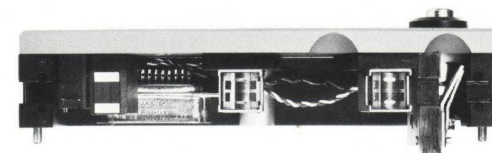
MONITOR
LOUDSPEAKER

Tape transport.

TD 50 series machines are built with a new and unique design. All mechanical components are mounted directly to a 10 mm thick plate of Alcoa Alca Plus Aluminum. This direct mounting design offers the ultimate in ease of service and maintenance. Alca Plus alloy has unique properties.

- It can be produced perfectly flat to extreme tolerance through a special moulding process.
- It has the ability to return to its original shape should deformation occur from extreme stress or temperature change.

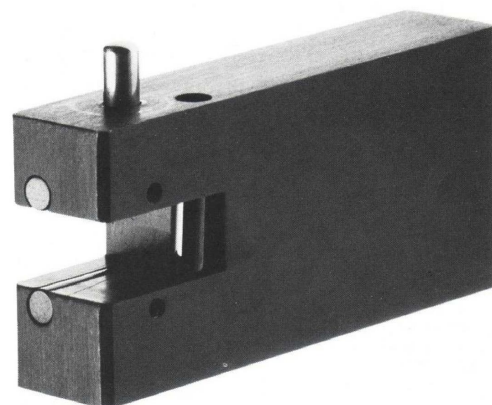
The 3-speed direct drive capstan motor is controlled by a quartz reference oscillator and includes pitch control. Microprocessors and optoelectronic sensors regulate spool motors in terms of direction, speed and torque for precise tape handling.



Head Block.

The TD 50 Head Block Module is instantly replaceable with the removal of a single screw and includes three locating pins. All head block components are mounted to a 8 mm thick plate of Alca Plus alloy.

Tape path and guide geometry has been computer optimized for minimum modulation noise and tape stress. A built-in push button tape cutter set to industry accepted standards facilitates editing. Head blocks are available in all standard ¼ inch tape track configurations.



Tape Guides.

One of the most important aspects of transport and headblock design are the tape guides. These guides must position the tape with critical accuracy for optimum performance. Under constant studio use tape guides are subject to unusually high wear and abuse.

Our patented solution is to utilize two precise machined locating blocks. The tape guides themselves are highly polished, solid ruby cylinders. These cylinders are held to a tolerance of +0-20 microns. Since ruby has grade 9 on the Mohs hardness scale (diamond is 10), wear becomes a meaningless factor. Tandberg uses only two tape guides to prevent tape curl at the head contact point.



A partial list of microprocessor control functions will include:

- Continuously variable wind/rewind speed with audible cue
- Return to zero
- Return to start
- Set cue/Search cue
- Fader start
- 5 digit real time counter (HRS., MINS., SECS.)
- Time code (optional)

- Frame sync. (optional)
- RS-232 computer interface (optional)

Tandberg's Custom Software Control Package allows for custom design of other functions.

Audio circuits.

Tandberg engineers use the same principles of design in TD 50 as in our state of the art audio separates, series 3000 A. Audio circuits are comprised of only discrete components (no IC's). Optimum compensation provides clean square-wave response. Open loop bandwidth has been kept as wide as possible and a minimum of capacitors are in the signal path.

The audio circuitry as well as all other electronic circuitry is located on easily accessible modular plug-in circuit boards.

Bias, level, EQ, and mono/stereo switching are controlled by the microprocessor via a serial data buss. Also included is a built-in monitoring speaker and amplifier.

Editing.

With Tandberg's 8 bit microprocessor and 64 K of EPROM memory, editing control is simple and precise. Multiple search and cue functions combined with our real time counter means rapid location of desired tape sections. The built-in tape cutter is used in conjunction with 4 locating marks on the left tape tension roller. This enables accurate positioning of the tape for cutting.

The Editing headblock contains a special tape cutter which flips out in front of the tape head for extreme accuracy.

Tape dumping is easily achieved by touching the button marked «TAPE DUMP». Further control is available by disengaging power to either spooling motor, or both, while the capstan is active.

Service and maintenance.

A major design criteria of any professional tape unit is, of course, ease of service and maintenance. The TD 50 transport can swing through a 120° arc to allow access to all transport mechanics and power electronics. All mechanical assemblies are positioned and mounted to enable removal of any component without having to disturb other assemblies. In fact, any single mechanical assembly can be replaced in under 10 minutes. Simple removal of the lower front panel gains access to all audio electronic adjustments.

VU/CONTROL CONSOLE

Included on this console are VU meters, all record/reproduce electronic controls, peak LED's, individual channel record lock out, Track Sync. Monitor amplifier/speaker can be located in Control Console.



VARIATIONS

TD 50 series will consist of three models:

- **TD 50 E (Editing).** Standard TD 50 transport with reproduce only electronics and monitor amplifier/speaker. The headblock consists of reproduce head only with special flip out cutter.

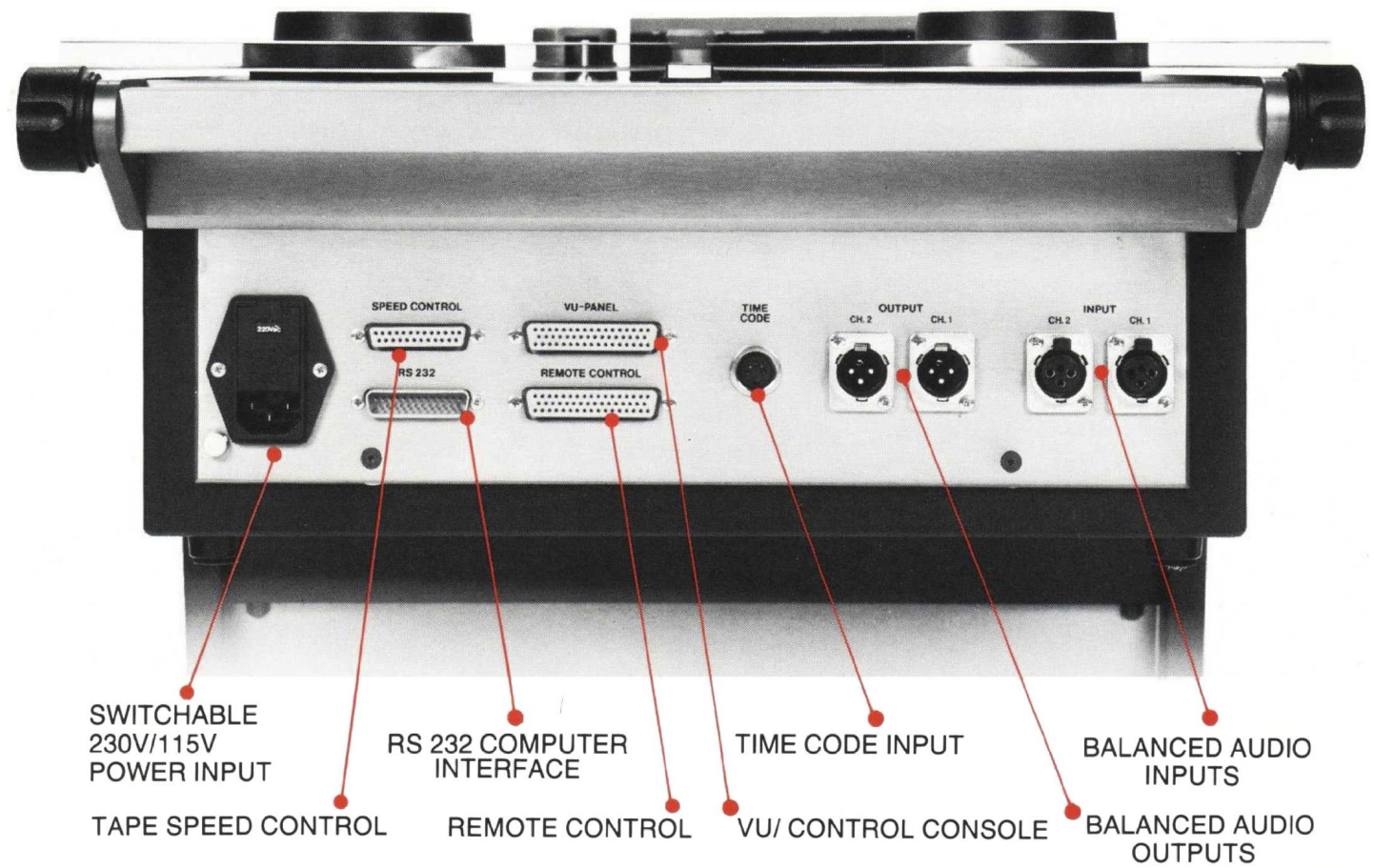
- **TD 50 B (Broadcast).** Standard TD 50 transport with complete record and reproduce electronics. Monitor amplifier/speaker are also included. Headblock consists of a dual gap erase head, and any standard 1/4 inch tape track format ordered.

- **TD 50 SM (Studio Master).** Standard TD 50 transport with record/reproduce electronics and head configurations as in TD 50 B. Separate VU Control Console mounts above transport.

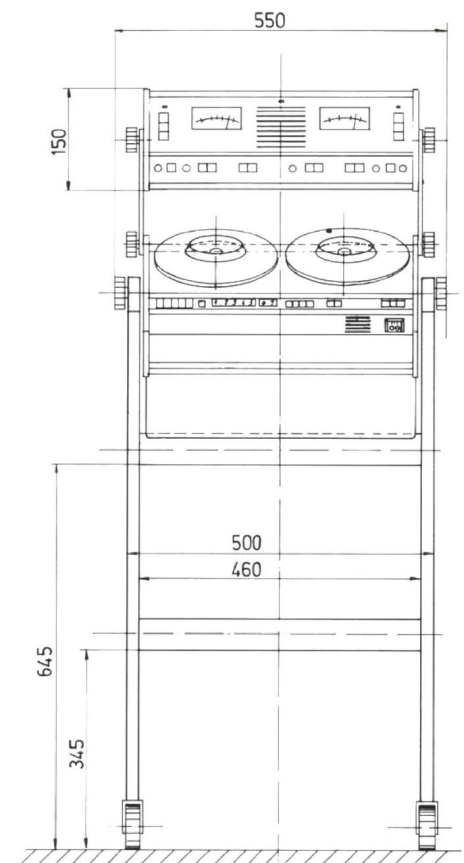
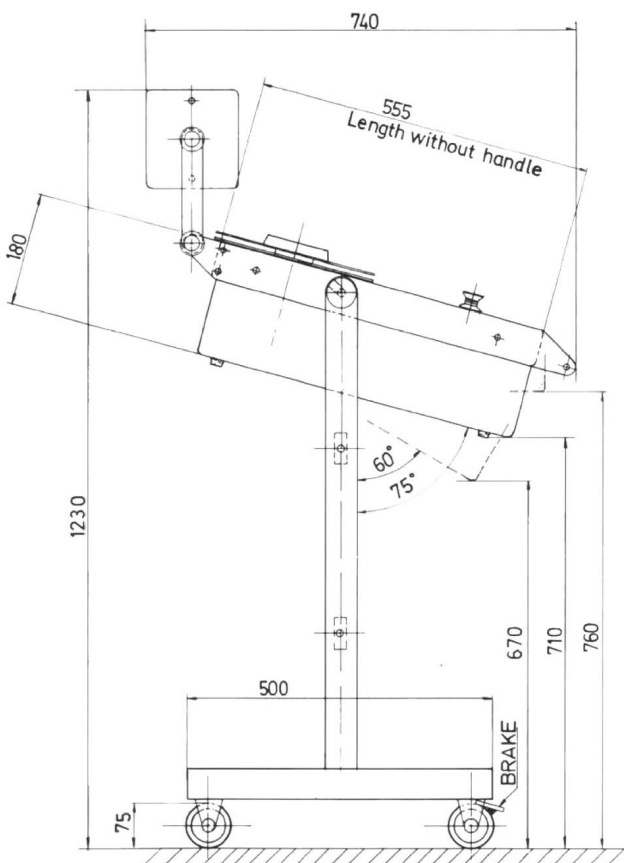
Options and Accessories.

- RS 232 computer interface
- VU/Control Console
- Time Code System (SMPTE, EBU.)
- Transformer Coupled Line input and output
- Transportable floor stand
- Head Blocks with all 1/4 inch tape track standards
- 19" Rack mount kit
- Integrated handles
- Multiple installation deck separation unit.
- Tape/bookshelf

REAR PANEL – CONNECTIONS



DIMENSIONS



SPECIFICATION

Power requirements	115V ± 10%, 60 Hz or 230V ± 10%, 50 Hz		
Power consumption	150 W		
Operating temperature	50–115° F / 10–45° C ambient.		
Track configuration			
Stereo	2 × 2,75 mm + 0,75 mm		
Mono	2 × 2 mm + 2 mm		
Mono	full track		
Tape	10½'' reel or «PAN CAKE» up to 12''		
Adapters	Ciné, NAB and DIN.		
Tape Speeds	38 cm/s, 19 cm/s and 9,5 cm/s (15 IPS, 7½ IPS and 3¾ IPS)		
Start-time	≤ 0,5s for W&F within double of specified value.		
Wow & Flutter (DIN 45507)	38 cm/s	≤ 0,04% p	
	19 cm/s	≤ 0,05% p	
	9,5 cm/s	≤ 0,1 % p	
Counter	Real time in all speeds		
	hours	1 digit	
	minutes	2 digits	
	seconds	2 digits	
Wind/rewind-time	≤ 120s for 750 m tape (10½'' reel)		
Stop-time	≤ 5s from wind/rewind		
Tape-tension	0,9 N ± 10% in play or record Max. 6 N at start, stop and change of wind direction		
Motors	Wind/rewind AC (direct-drive) Capstan DC (direct-drive)		
End stop	Automatic		

Frequency response		± 1 dB	± 3 dB
38 cm/s		40–18000Hz	30–22000Hz
19 cm/s		40–15000Hz	30–20000Hz
9,5 cm/s		40–12000Hz	30–16000Hz
Signal to noise ratio		CCIR	NAB ref. to
		468-2 peak	+ 6dB
weighted/unweighted		ref. 510nWb/m	rel 185 nWb/m
38 cm/s		56 dB/56 dB	57 dB/57 dB
19 cm/s		53 dB/53 dB	57 dB/57 dB
9,5 cm/s		50 dB/50 dB	55 dB/55 dB
Distortion	185 nWb/m	320 nWb/m	510 nWb/m
38 cm/s	1%	1%	2%
19 cm/s	1%	1%	2%
9,5 cm/s	1,5%	2%	3%
Equalizer		IEC/CCIR and NAB.	
Erasure ≤ 80 dB at 1 kHz			
Crosstalk (60 – 12000 Hz)		≤ 40 dB.	
Bias frequency		200 KHz (chrystal controlled)	
Erase frequency		66⅔ KHz (chrystal controlled)	
Inputs			
Input level		0, + 6 or + 12 dBu adjustable ± 6 dB	
Maximum input level		≥ 22 dBu	
Input impedance		≥ 10 Kohms	
Outputs			
Output level		0, + 6 or + 12 dBu adjustable ± 6 dB	
Maximum output level		≥ 22 dBu in 200 ohms	
Specification subject to change without notice.			

SUBSIDIARIES:

Tandberg of America, Inc.
1 Labriola Court
Armonk
N.Y. 10504
U.S.A.

Tandberg Radio Deutschland GmbH
Heinrich Hertz Strasse 24
4006 Erkrath 1
W. Germany

Tandberg Ltd.
Revie Road
Elland Road
Leeds LS 11 8JG
West Yorkshire
England

Tandberg Audio AB
P.O. Box 20104
16 120 Bromma
Sweden

WORLD HEADQUARTERS:

Tandberg A/S
Fetveien 1
Kjeller-Norway
Postal address
P.O. Box 53
N-2007 Kjeller
Norway
Telephone
(472) 71 68 20
Telex
71886 tand n
Cables
TANRA-OSLO

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