

# TANDBERG series 1700



## Operating Manual

# Tandberg Series 1700

Series 1700 is a fully transistorized mono tape recorder in which simple operation, robust and modern design and low weight have been emphasized. In addition to the record and playback functions, the tape recorder can be

used as an amplifier for microphone and record player.

Careful reading of this instruction book will enable you to achieve the greatest possible satisfaction from your tape recorder.

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## Power requirements

The tape recorder is designed for operation on 230V, 50 Hz. Power consumption is approx. 50W.

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## Automatic end-stop

Power is automatically switched off at the end of tape, or if the tape should break. The feeler operating the stop switch is located in a slot of the right hand guide post. The automatic stop mechanism will prevent rotation of capstan and tape reels until the tape has been properly

inserted in the tape path. If the operating lever is in position FREE, the motor will, however, start and merely serve as a mains transformer because the motor pulley is disengaged from the tape drive.

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## Tape

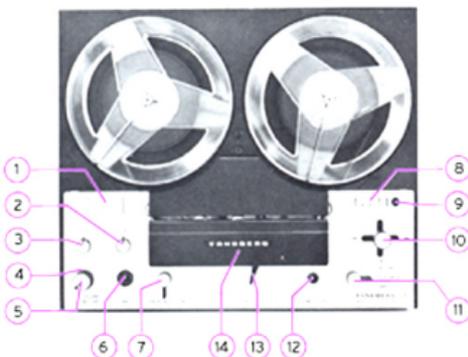
The tape recorder is designed for recording on low noise tape to obtain the best possible signal to noise ratio. If ordinary tape is used for recording, the highest frequencies will be slightly attenuated, and some impairment of treble reproduction will result. For splicing of the tape, use only adhesive tape

of a quality particularly intended for this purpose. The splicing tape must be put on the shiny side of recording tape only. The head cover has a groove on the top which can be used to hold the tape ends together while splicing. Maximum reel size is 5 3/4".

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## Operating Controls



**1. Record level indicator.** For optimal record level the needle should deflect to the red area (0 dB)

**2. Treble control.** Active in playback, monitor and amplifier modes.

**3. Bass control.** Active in playback, monitor and amplifier modes.

**4. Record level control (lower knob).**

**5. Volume control** for playback and amplifier modes and monitoring (upper knob). The monitoring level depends on the record level, but is lower than the volume in playback and amplifier modes.

**6. Microphone socket.** Signals from radio- and pick-up inputs are inhibited when microphone is plugged in.

**7. Track selector.** (4-track model only) NORM: Track one when side 1 of the tape reel is up, and track 4 when side 2 is up. EXTRA: Track 3 when side 1 of the tape reel is up, and track 2 when side 2 is up. DUO: Tracks 1 and 3 together when side 1 is up, and tracks 4 and 2 when side 2 is up. The DUO-position can be used for playback only.

**8. Counter** with 4 digits indicating the tape position (accumulated number of revolutions for take-up turntable).

**9. Zero button** for counter.

**10. Operating lever.** Controls tape motion and power on/off switch, Centre position: Stop, and

power off. FREE: For insertion of tape and for use as an amplifier. The motor is on. Position →: Normal forward drive for recording and playback. →→: Fast forward winding. ←←: Fast reverse winding. The operating lever should be in centre position when the tape recorder is not used. In all other positions the counter is illuminated indicating that power is on.

**11. Function selector:** RECORD: Recording when operating lever is in position →. The function selector is normally locked in this position by the operating lever. PLAYBACK: Playback when the operating lever is in position → AMPL: Amplifier mode when operating lever is in position FREE.

**12. Flying Start.** When the button is depressed, operation can be switched directly from recording to playback without stopping tape motion.

**13. START/STOP.** In playback or record mode tape motion is instantaneously stopped by moving lever to the STOP position.

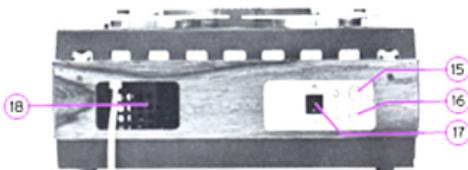
**14. Head cover.** Can be removed for cleaning of heads and tape path by pulling straight upwards.

**15. RADIO DIN-socket.** Connection for recording/playback via tuner/amplifier.

**16. P. UP. DIN-socket.** For connection of record player with ceramic or crystal pick-up.

**17. EXT.SPKR.DIN-socket** for connection of external speaker or headphones. I + E: Internal and external speakers are connected. E: External speaker only, is connected.

**18. Compartment** for power cable and microphone.

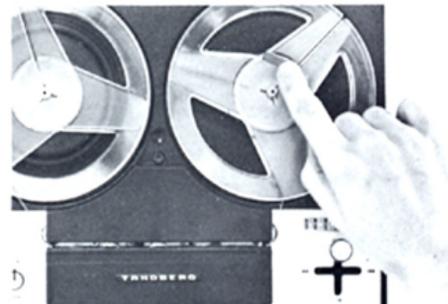


## Preparation for use

Pull out the power cable from the recess at the rear, and connect the tape recorder to the mains. Put the full tape reel on the left hand turntable and the empty reel on the right hand turntable. Remove the piece of adhesive tape at the beginning of the tape to avoid that adhesive substance deposits on the heads.



Pull out some tape, hold it tight between the hands and insert it into the slot. Set the operating lever to FREE, to allow the turntables to rotate independently. Insert the tape leader (usually green or red) into the slot of the

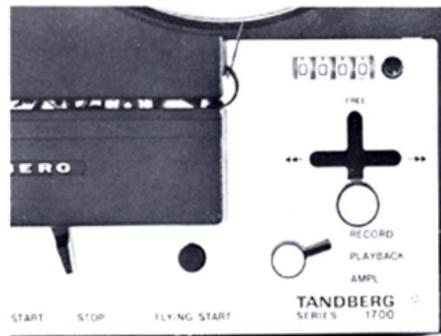


reel hub, and hold it while rotating the reel counterclockwise until the tape is firm. Reset the counter.

## Recording

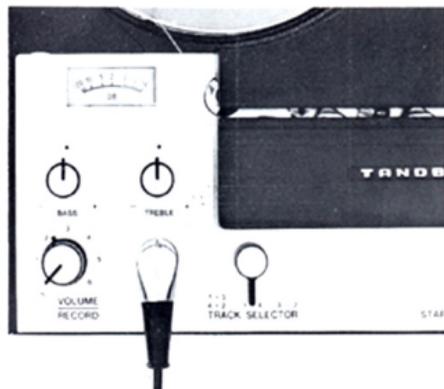
### — from microphone

Use a low impedance dynamic microphone (Tandberg TM4 or TM5). Push the microphone plug fully home into the jack MIC. Programme fed to radio or pick-up inputs is then disconnected. Set the track selector (on 4-track model only) in position NORM 1-4 and the START/STOP lever to STOP. Set the function selector to RECORD while moving the operating lever to →. The indicator will now become illuminated. Turn up the record level control (lower knob) to obtain a deflection up to the red sector when speaking into the microphone.



### — from tuner or record player

Check that the microphone is unplugged and connect the furnished DIN cable between socket TAPE on the tuner or record player, and RADIO socket on the tape recorder. This cable also establishes the necessary connection for playback via the tuner/amplifier. Record player with ceramic or crystal pick-up must be connected to socket P.U.P. which is connected so that the two channels from stereo discs are merged to a mono recording. For tuners or record players not furnished with DIN sockets, adapter cables can be used.



Start the recording by moving the START/STOP lever to START. This lever can also be used for pauses in the recording.

At the end of recording, return the operating lever to its centre position, whereby the function selector returns to position PLAYBACK.

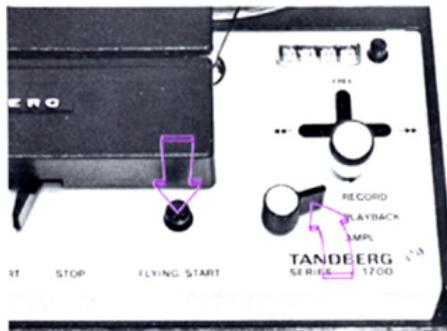
Programmes simultaneously fed to RADIO and P.U.P. sockets do not interact but will be mixed in the same relative ratio as they are received from the respective signal sources. Recording from disc offers the opportunity to check the level of the entire programme prior to recording. During such a test run set the record level so that the strongest passages give an indicator deflection to 0 dB. This procedure is otherwise as explained for recording from microphone.

### Monitoring during recording

A programme being recorded can be monitored via internal or external speaker or headphones. Monitoring level is set with VOLUME control (upper knob), and bass- and treble controls operate normally without affecting the recording. To avoid oscillations caused by acoustic feedback when recording from microphone, the monitoring level in loudspeakers must be kept sufficiently low, or the distance between microphone and loudspeakers must be increased. This problem can be completely eliminated by disconnecting the speaker and using headphones for monitoring. See paragraph on connection of separate speaker.

### Recording with flying start

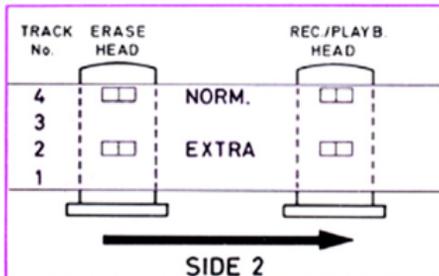
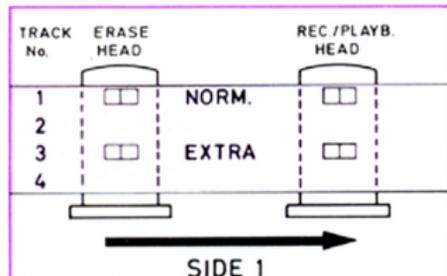
Recording with flying start implies that switching from playback to recording can be accomplished directly without any intermediate stop of the tape motion. This is particularly useful when recording from microphone. Set the recorder for playback and listen to the programme. When the spot for the new recording has been reached, depress the FLYING START button, and switch the function selector from PLAYBACK to RECORD. The function selector is locked in RECORD position when the FLYING START button is released. Using the flying start technique, pauses between programme parts can be determined quite accurately because the tape continuously moves at constant speed. Speaking at the same speed and with the same rhythm as the preceding recording also becomes easier. These advantages also apply for recording of song or music and for tape editing. Recording level and



playback volume should be set prior to the actual recording, preferably by a test run. See chapter on recording.

The function selector will automatically return from RECORD to PLAYBACK when the FLYING START button is depressed.

## Track Selector (4-track model)



### Recording

Recording can take place on 4 separate tracks. When side 1 of the tape reel is up, position NORM will give recording on track 1, while position EXTRA will give recording on track 3. Correspondingly, track 4 (NORM) or track 2 (EXTRA) is recorded when side 2 of the tape

reel is up. The track selector is locked when the function selector is in position RECORD to prevent accidental switching to a track where an existing programme is not to be erased. In position DUO, which is intended for playback only, a mechanical interlock prevents the function selector from being set to RECORD.

### Playback

During playback, the track selector can be set to any position. The tracks can be selected separately as in record mode. In position DUO, two tracks are played back simultaneously: tracks 1 and 3 when side 1 of the tape reel is up, and tracks 4 and 2 when side 2 is up. Both programmes are fed to the same speaker. Special effects can thus be obtained, such as background music for speech, and mono playback of prerecorded stereo tapes.

# Playback

## — via internal speaker

Wind the tape to the beginning of the recording. To facilitate spotting of a particular programme, use the counter and turn the VOLUME control fully clockwise to obtain cueing. Owing to the high winding speed, the cueing sound will have a character that is completely different from the original recorded programme. Nevertheless, cueing is very useful for exact location of programme parts, once the approximate location has been determined.

Set the function selector to PLAYBACK and the operating lever to  $\rightarrow$  (normal forward drive). The playback volume can be set with the knob VOLUME, while bass and treble can be continuously varied over a  $\pm 10$  dB range with the BASS and TREBLE controls respectively.

For short stops, use the START/STOP lever. Return the operating lever to neutral position when the playing is finished.

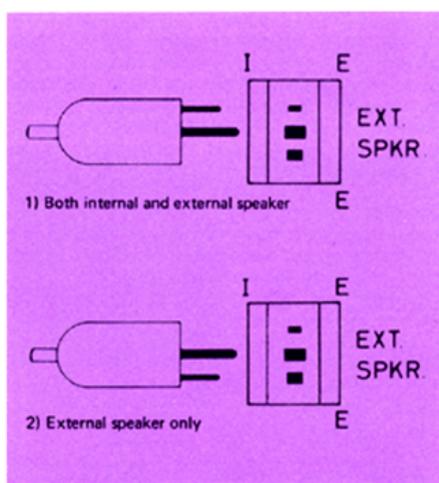
## — via auxiliary amplifier

Connect the tape recorder to the amplifier by means of the DIN cable furnished with the tape recorder. The programme supplied to the amplifier is the same as the one fed to the speaker, but is independent of the volume, bass and treble controls on the tape recorder.

## Connection of external speaker

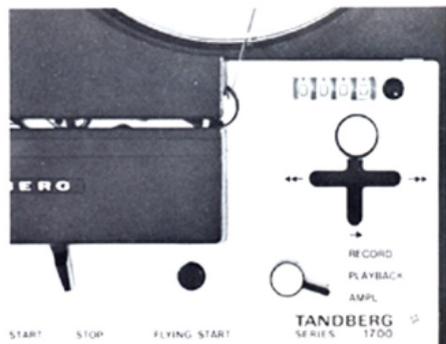
To obtain higher output and a wider frequency range than what can be reproduced by the internal speaker, connect a speaker of adequate characteristics to the DIN socket EXT. SPEAKER. Depending on which way the speaker plug is inserted, the programme is fed to the external speaker alone, or to both internal and

external speakers (see figures). The external speaker should have an internal impedance of 4–8 ohms. Optimal matching is obtained when a 4 ohm speaker is used alone or when an 8 ohms speaker is used together with the internal speaker.



## Model 1700 as Amplifier

When the function selector is in AMPL position, the tape recorder can be used as an ordinary amplifier. To turn on power, set the operating lever in position FREE. Programme from tuner, microphone or record player can be fed to the inputs as for recording, and controls for volume, treble and bass can be used normally. The amplified signal is, however, not passed on to a tuner or amplifier connected to the DIN socket RADIO.



If microphone is used as programme source, oscillations through acoustic feedback can occur if the volume is turned up too much. Higher volume can be used if the microphone is moved closer to the sound source or by locating the speaker at a greater distance from the microphone.

If a microphone announcement is to be made while the tape recorder is used for playback, this can be made without stopping the tape motion. Connect the microphone to the MIC socket, and set the function selector to AMPL. The programme from tape is then interrupted and the microphone programme is heard via external and/or internal speaker. The VOLUME control is used to set the level of tape programme as well as microphone programme. If desirable, the tape can be stopped with the START/STOP lever during the announcement.

**Note:** When the recorder is used as amplifier and the tape is moving (operating lever in position  $\rightarrow$ ), the programme from tape is still available on pin 3 in the RADIO socket as in normal playback.

## Erasure

When a new programme is recorded on a track, an already existing programme on the same track is automatically erased. Before recording is started, always make sure that no programme of interest exists on the track to be used.

Accidental erasure during operation is prevented by the function selector returning to

PLAYBACK when the operating lever is moved from position → to neutral position. If erasure of a track is wanted without a new recording being made, run the tape through in record mode with the record level control fully counterclockwise.

## Cleaning of Heads and Tape Path

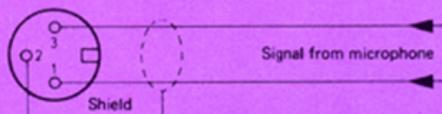
Heads and tape path should be cleaned at regular intervals to remove dust and particles which tend to deposit from the tape coating. This contamination is most pronounced for tape of inferior quality and will cause impaired signal-to-noise ratio and poor treble reproduction. Deposits on the heads may also cause drop-outs. If any of these symptoms are noticed, the heads and tape guide posts should be cleaned as follows: Remove the head cover (with the TANDBERG sign) by lifting at both

ends. Wipe off dirt with a piece of clean cloth or cotton moistured in benzine and wrapped around a small stick. Do not use acetone or trichlorethylene as these solvents will damage the heads. A head cleaner kit available from your Tandberg dealer is particularly recommended. After cleaning, replace head cover.

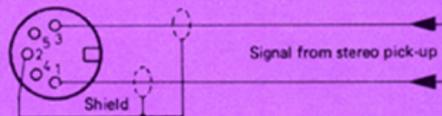
**Note:** The adjustment screws for the heads must under no circumstances be disturbed.

## Connecting plugs

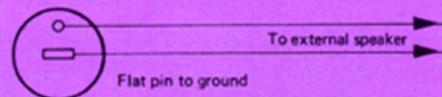
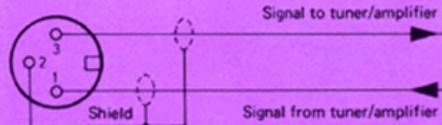
**Note:** The plugs are seen from the wiring side.



Pins 1 and 2 are connected together within the socket



Pins 1, 3, and 5 are connected together within the socket



## Accessories

### Microphone TM4

This dynamic microphone is specially designed for Tandberg tape recorders. It is omnidirectional and has technical specifications that makes it well suited for both music and speech.

**Tandberg TM4 Handy** is delivered with a small table stand and a string for hanging the microphone around the neck.

**Tandberg TM4 Complete** is delivered with an adjustable table stand and a string for hanging the microphone around the neck. It furthermore has a cap to be used as a wind screen for outdoor use. The microphone with accessories is packed in an unbreakable plastic case.



**Dust Cover** for the tape recorder is available in a grey-toned unbreakable plastic.

# Technical Specifications

**Power requirements:** 230V, 50 Hz, 50W maximum.

**Motor:** 2-pole shadow-pole motor combined with mains transformer.

**Tape:** Low Noise tape should be used for recording. Maximum reel size 5 3/4".

**Tape Speed:** 3 3/4 ips.

**Speed Tolerance:** 2%.

**Playing Time** for 1200 ft reels:  
2-track 4-track  
2 x 64 minutes 4 x 64 minutes

**Winding Time:** Approximately 125 seconds for 1200 ft reels.

**Heads:** Erase head, record/playback head, 2-track or 4-track.

**Transistors:** 17.

**Record Level Indicator:** Meter indicates peak recording level. 0 dB corresponds to 5% distortion.

**Inputs:** MIC input, unbalanced, for dynamic microphone with impedance 200-700 ohms. Sensitivity 0,1 mV. Maximum input voltage 10 mV (at 400 Hz).

**RADIO** input, impedance 56 kohms. Sensitivity: 7 mV. Maximum input voltage 0,7 V (400 Hz).

**P.U.P.** input for ceramic- or crystal pick-up, impedance 1 Mohm, Sensitivity: 35 mV. Maximum input voltage: 3,5V (1000 Hz).

**Outputs:** **RADIO** output (playback amplifier output). Minimum load impedance: 5 kohms. Output voltage, unloaded, 0,75V for playback of tape recorded at 0 dB level. Output voltage is independent of volume and tone controls.

**EXT. SPKR.** output (power amplifier output). Minimum load impedance 4 ohms. Maximum output power 9W into 4 ohm load.

**Distortion**, max, at 400 Hz.  
From record amplifier at 0 dB: 0,5%  
From playback amplifier at 0,75V: 0,3%  
From tape at 0 dB record level: 5%

**Wow:**  
DIN 45511, peak: Less than 0,2 %  
RMS: Less than 0,14%

**Signal/Noise**, at 5% distortion:

DIN 45511, weighted	2-track	4-track
DIN 45511, unweighted	53 dB	51 dB
IEC, A-curve	50 dB	50 dB
IEC, unweighted RMS	58 dB	56 dB
	55 dB	55 dB

**Frequency Range:**  
DIN 45511: 30-13 000 Hz  
 $\pm 2$  dB: 40-12 500 Hz  
Amplifier mode  $\pm 3$  dB: 30-16 000 Hz

**Treble Control:**  $\pm 10$  dB at 8 kHz, continuously variable.

**Bass Control:**  $\pm 10$  dB at 60 Hz, continuously variable.

**Speaker:** Built-in 7" x 4", 8 ohm speaker. Output power in built-in speaker is limited to 4,5 W. Maximum output power, 9W, is obtained from external speaker with impedance 4 ohms.

**Mounting:** Horizontal.

**Dimensions:** Length 13 1/4" (33,5 cm), height 6 3/4" 16cm), depth 11" (27,8 cm).

**Weight:** 14,5 lbs (6,6 kg).

**Carrying case** model 6, weight 5 lbs. The case is fitted with locks.

TANBERGS RADIOFABRIKK A/S  
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NORWAY

DEALER: THE  
TAPE RECORDER CENTRE (B'POOL)  
(C. BRADDOCK LTD.)  
266, WATERLOO ROAD  
BLACKPOOL