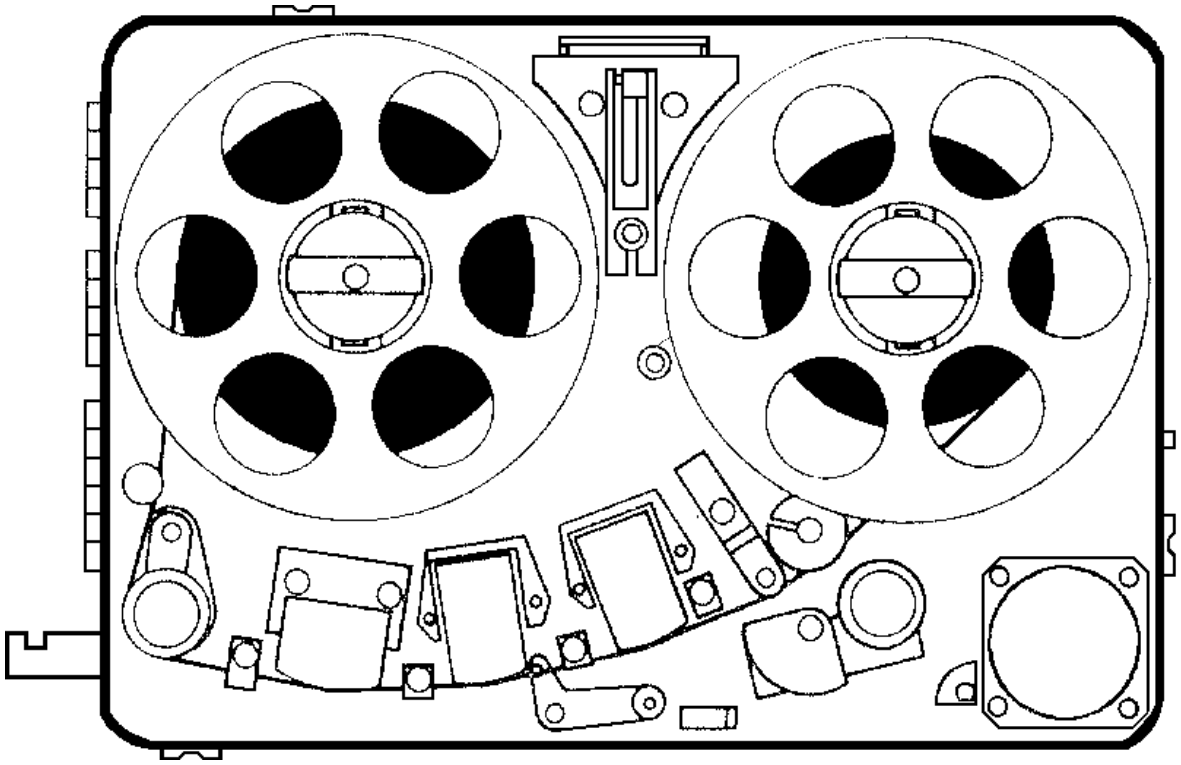
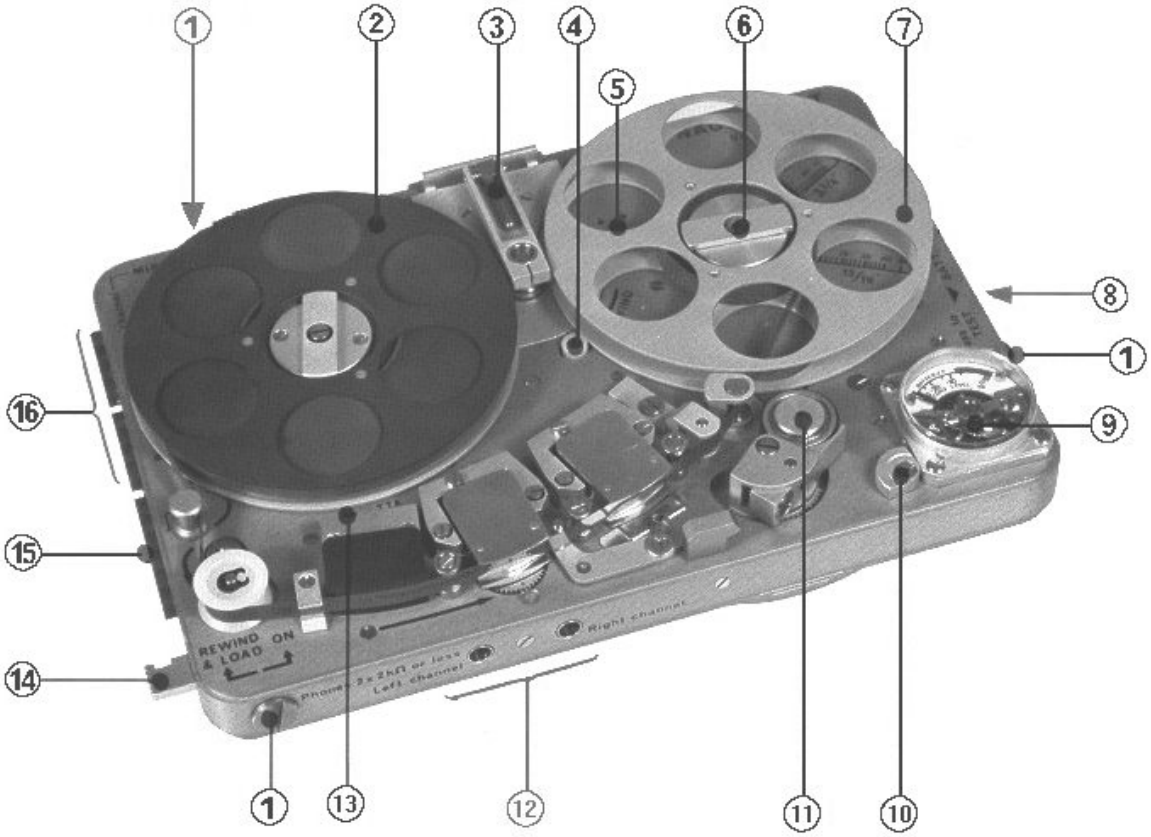
NAGRA SNST-R



OPERATING INSTRUCTIONS FOR THE NAGRA SNST-R **KSA PART NUMBER 20 24002155**


1
2
3
4
5
6
7
8
1
9
16
15
14
1
13
12
11
10
REWIND
& LOAD ON
Right channel
Left channel

Parts indicated on the photograph on the previous page:

1 Case –lower half attachment screws
2 Supply reel
3 Rewind handle
4 Standstill brake
5 MAN / AUTO selector
6 Reel holder fixation
7 Take-up reel
8 TEST / BATT Control
9 Meter
10 OFF position lock
11 Pinchwheel
12 Phones Jack 2 x 600 Ω
13 Tape Tension Adjustment
14 Operating lever
15 Power and Remote socket
16 Mike / Line sockets

POWER SUPPLY

Batteries or rechargeable cells

Turn the SNST-R over and remove the base by loosening the three attachment screws (1) with a coin or screwdriver.

Insert two “AA” batteries or two 1.2 V rechargeable cells, with the positive pole (head) towards the spring-loaded contact and the negative pole (base) against the serrated contact. To facilitate insertion and removal of batteries, the spring-loaded contact is compressed (Fig 1). Replace the SNST-R’s base and tighten the three screws.

(Fig 1)

IMPORTANT

NEVER LEAVE DISCHARGED BATTERIES IN THE SNST-R: they could leak and the corrosive liquid would cause a great deal of damage.

TO OPEN THE SNST-R

To open and to close the lid, see Fig. 2 and Fig. 3.

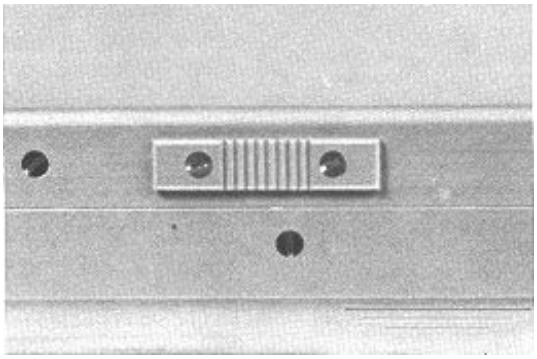


Fig 2

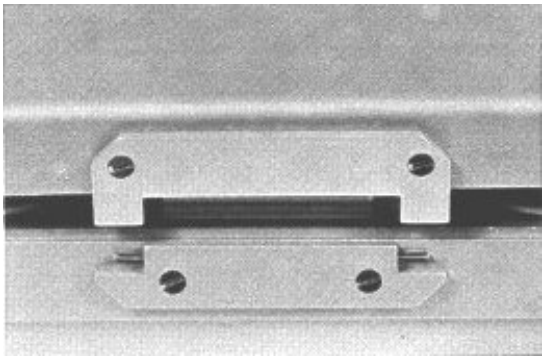


Fig 3

Slide the thumb piece (Fig. 2) a short distance to the right and lift the lid. Disengage the rear hinge (Fig 3) to remove the cover completely.

OFF position lock

This locking mechanism (10) blocks the control knob in the OFF position to avoid inadvertent functioning of the recorder during transportation (Fig. 4). If the main control lever (14) cannot be pressed, then verify the position of the lock.

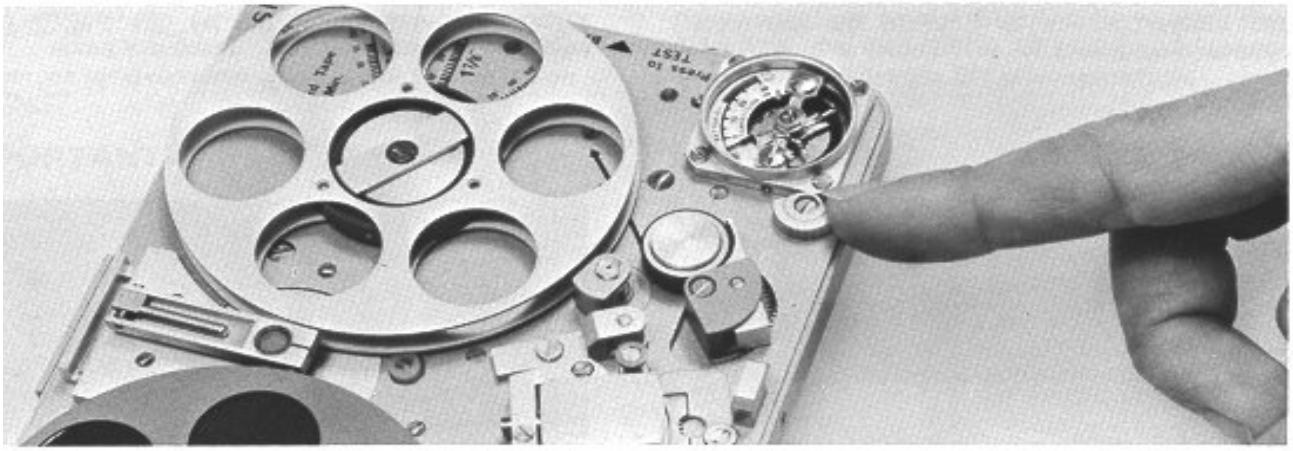


Fig. 4

“MAN” OR “AUTO” SWITCH

This switch is not used in the SNST-R and should be left in the “MAN” position.

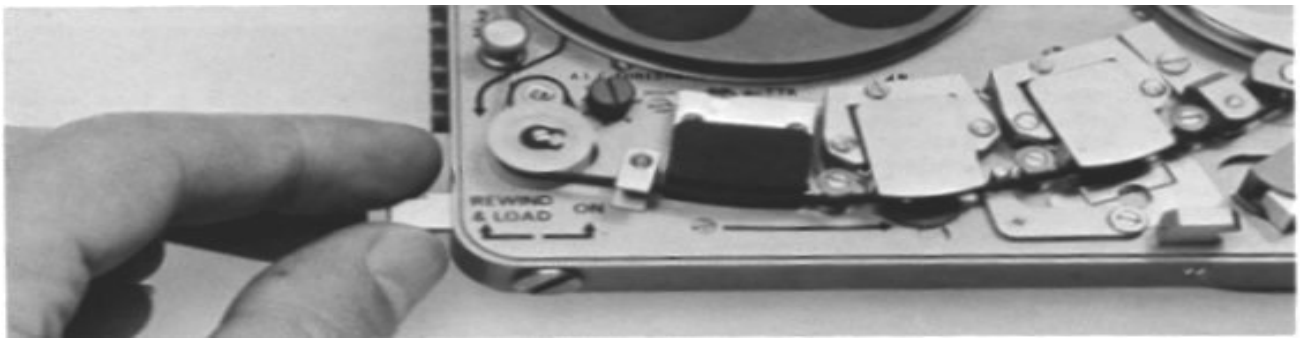
TAPE SELECTION

The desired capacity and quality of the recording dictate the choice of the tape. 18µ standard tape (TAA – RED reel) produces a better sound quality than extra-thin 9µ tape (THA – BLUE reel), which in turn has the advantage of allowing a longer recording time. A good compromise is the 12.5µ tape (TEA – GREEN reel) which gives the same quality recording as 18µ, although mechanical behaviour is slightly less. The SNST-R is factory adjusted and optimised for our 12.5µ TEA tape (in this case 0 dB=250 nWb/m).

	Red Reel 18µ	Green Reel 12.5µ	Blue Reel 9µ
Recording time	28 mins	38 mins	45 mins

Tape loading

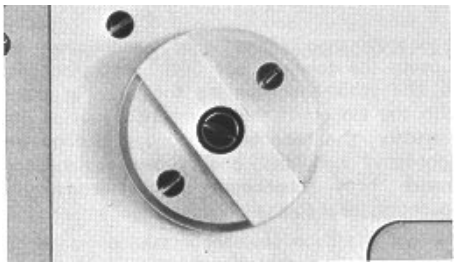
The operating lever (14) is pulled out and locked in “REWIND & LOAD” position (Fig. 5). This disengages both pinchwheel (11) and standstill brake (4).



Ensure that reel fixations (6) are aligned with catches (Fig. 6) of the reel holders to allow the reels to be fitted easily.

The supply reel (2) is placed on the left and the take-up reel on the right and both are held in position by rotating fixation bars (6) through an angle of 90° (Fig. 7).

Fig. 6



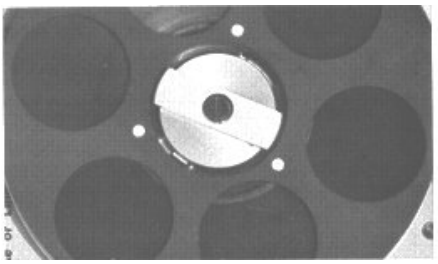
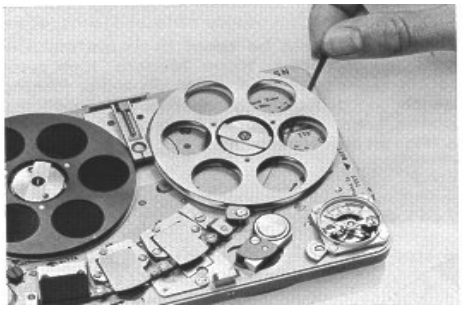


Fig. 7

The tape is threaded as shown in Fig. 8, by passing the index finger through one of the holes closer to the centre of the reel, the tape is pressed against the reel holder. Then by slowly turning the supply reel clockwise, the tape is rewound until only a few millimetres extended beyond the point where it is held by the finger (Fig. 9).

Fig. 8



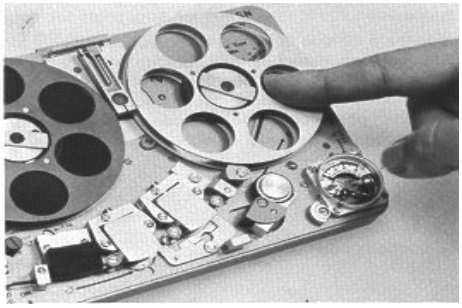


Fig. 9

It is now possible to wind on the tape by turning the take-up reel 360° anti-clockwise all the while maintaining the tape with the finger. If the operation is carried out correctly then the tape will no longer slip on the right-hand reel and a few more turns will ensure firm positioning. Now return the operating lever to the OFF position. The above method is most commonly used, being quicker and preventing the possibility of any noise from the free end of the tape rubbing against the lid of the SNST-R.

CONNECTIONS

INPUTS

The two rear most green plastic connection sockets on the left-hand side allow the connection the microphones, or the SCLST-R line input cable. The front most green connector is not used on the SNST-R.

“MIKE or LINE” (16)

The left channel corresponds to the upper track and the right channel to the lower track; the input signals originate from the SCLST-R line input cable or from the Beyer MCE-7 microphones connected to the microphone connectors. The input impedance is 10 kΩ and for 0 dB during record the input level is 630 mV.

OUTPUTS

The outputs of the SNST-R are available on the two 3.5mm jack plugs (12) located on the front edge of the SNST-R where the HD 25-13 stereo headphones can be connected with an impedance of 2 x 600 Ω. If a line output is to be used then the output cable SCUCSTR is also connected to this point. The output impedance is 2 kΩ and the output voltage from a 0 dB signal is 630 mV.

OPERATION

TO OPERATE

The operating lever (14) has three positions for the following functions :

- OFF or Neutral : Position in which it can be locked using the locking cam (10) located next to the meter.

- ON position: The SNST-R functions when the operating lever is pressed in. The tape runs and the reproduced signal is present at the output. However recording is not possible unless there is a connection at “Mike or Line” (16) input.

- REWIND & LOAD : By pulling the operating lever (15), the pinchwheel and the standstill brake (4) disengage.

IMPORTANT

Care should be taken not to leave the operating lever (14) in the ON position when there are no batteries installed in the SNST-R, since prolonged pressure of the pinchwheel against the immobile capstan could cause damage to the rubber tyre.

METER INDICATIONS

The meter (9) has two scales: “BATTERIES” and “RECORD LEVEL” .It registers the state of the internal batteries or gives the recording level.

Battery check

To test batteries, switch on the SNST-R and depress the TEST BATT. Control (8). Their voltage is shown in the green zone of the meter (9) (Fig. 11). At the extreme right end of the scale, the needle indicates maximum voltage, whereas to the left it shows minimum voltage and the batteries must be replaced.

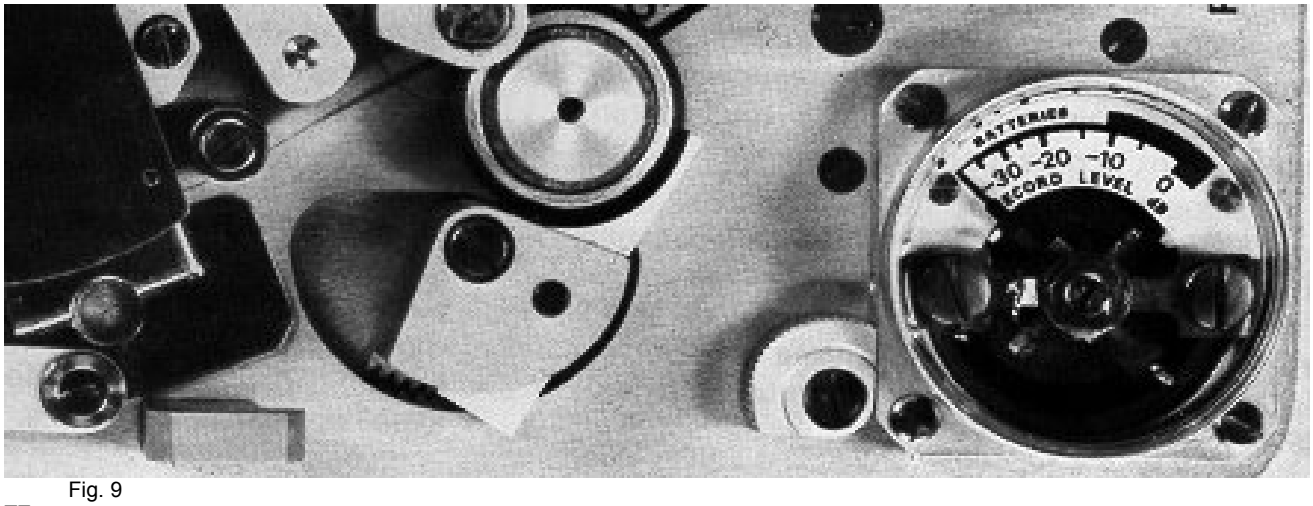


Fig. 9

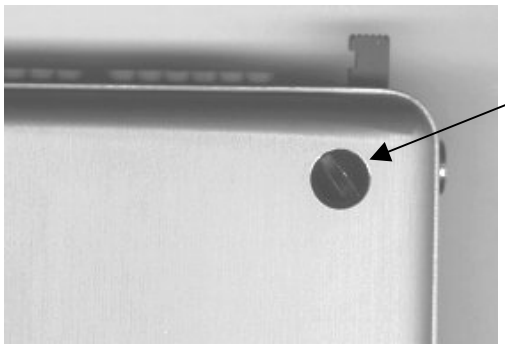
NOTE

- As far as possible, use Manganese alkaline batteries to ensure more than 5 hours of non-stop recording.
- For intermittent use, ordinary zinc-carbon batteries are quite adequate. However the overall recording time will be somewhat shorter, approximately 2 hours. Obviously the freshness of the batteries is a determining factor influenced by storage conditions.
- 0.5 Ah rechargeable cells enable 5 hours of continuous recording.

COMPRESSION

In record mode the meter automatically becomes operational and will indicate both the recording level and the compression on the same scale. The channel with the highest level is continuously selected automatically.

In fact the SNST-R is equipped with a compressor which, contrary to the ALC on the SNN does not level off dynamic range, but compresses it to a ration of 2.
In this way a dynamic of 30 dB on the input is reduced to a dynamic of 15 dB on the tape. A potentiometer located on the bottom of the recorder allows the threshold of intervention of the compressor to be adjusted.



Compression Threshold Potentiometer

When turned fully clockwise, the compressor is turned off and the recording is completely linear. Under these conditions, the global gain of the SNST-R through the input and output cables (SCLST-R and SCUCSTR) is unity.
For 0 dB during recording an input of 630 mV is needed and this in turn will give 630 mV on the output.
This adjustment should be used when recording from an external source such as a pre-amplifier, radio etc. In such a case, turn the potentiometer until the needle of the meter is on the limit of the red zone. In this way the level of the source is being adjusted in such a way as the peaks in the signal will cause the needle to jump into the red zone. In this way the recording will be exempt of compression and the entire dynamic of the tape will be used.

RECORD

SNST-R Operation

The record function is determined by the connection of either a MIKE or LINE input (16). Thus when the Beyer Dynamic MCE-7 microphones (or SCLST-R cable) are connected and the SNST-R is switched ON, the record chain becomes operative. The tape is first ERASED then recorded.

Since the SNST-R has separate record and reproduce heads, it is possible to listen to what is being recorded with a headset. There is a slight time lag between the input and output signals corresponding to the distance between the two heads. The record-reproduce mode is extremely useful as it allows for an immediate check whilst recording is underway.

Stereo Recording

How to set up microphones is important: if they too close to each other, the recording becomes practically monophonic; if too distant, phase discrepancies may attenuate the sound level during replay.

A realistic technique if listening with stereo headphones is to place the microphones on either side of an acoustic baffle at head-width distance from each other.

PLAYBACK

No input plug should be connected when tape is to be replayed otherwise all recordings will be erased.

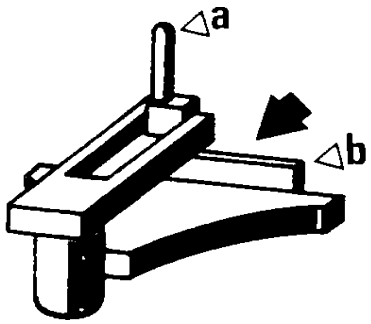
Press operating level (14) to ON.

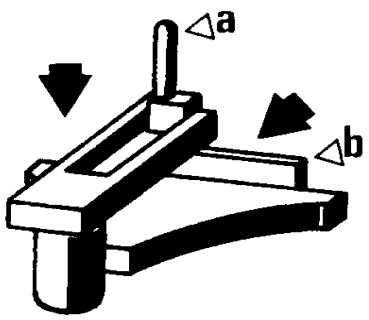
The tape runs and the recorder signal is present at ”PHONES” output where it can be picked up with a HD 25-13 stereo headphones. Alternatively the SNST-R can be connected to a Hi-Fi system using the SCLST-R cable supplied with the unit.

It should be noted that there is no indication on the meter of the SNST-R during playback.

REWIND

Pull the control lever (14) to the REWIND and LOAD position: Lift the handle (a), press the release key (b), which causes the whole winding unit to be raised approximately 1 mm above the reels.
Should this not happen, turn the supply reel slightly whilst maintaining pressure on (b).





To rewind, turn the handle clockwise without pressing downwards so that the reels turn freely.
Once the operation is completed, centre the handle between the two reels, disengage it by pressing (b) and push back into place; fold down (a).

Specifications

All given values are typical. Exact values are given on the accompanying final measurement protocol sheet.

Size and Weight

Size	147 x 101 x 26 mm (5 ¾" x 4" x1")
Weight	590 g (1.30 lb)

Power supply

Normal power supply:
2 Batteries AA size 1.5 V

Average battery life
Continuous use (Eveready E91 > 5 ½ hours)

Rechargeable cells

2 rechargeable cells	1.2 V 0.5 Ah
Average non-stop operation	Approx. 5 hours

It is recommended to recharge cells after use rather than waiting for complete expiry.

Typical power consumption in record mode, end of tape 125 mA

Tape

Width	3.81 mm (approx. 1/8")
Thickness	
- Standard play tape, Red TAA reel	0.7 mil
- Long play tape, Green TEA reel	0.5 mil
- Extra Long play tape, Blue reel THA	0.35 mil

Special metal reel: ∅ 68 x 6.35 mm
(∅ 2.75 x 0.25 “)

INPUT and OUTPUT

Microphone input
Voltage input, Source ≤ 2 KΩ 60 mV rms

Playback output
Recommended load 2 x 2 kΩ
Nominal playback level with 0.95 mA DC Current through 2 kΩ 630 mV ± 2 dB

Playback standard 240 µS / 50 µS

Performance

Overall frequency response: 50 Hz to 15 kHz ±2 dB
S/N Ratio, ASA Weighted: >57 dB
THD at 250 Hz, Nominal level >1%

Wow and flutter:
Peak to peak value DIN 45507 Weighted ±0.05%

Operating temperature –40 °F to 158 °F
Note that normal batteries do not operate below –11 °F