SMPTE 15M-1998
Revision of
ANSI/SMPTE 15M-1992

SMPTE STANDARD

for Television Analog Recording — 1-in Type B Helical Scan — Basic System Parameters

1 Scope

This standard specifies the basic system parameters, i.e., the positions of recording head gaps, the scanning configuration, the axis of rotation of the video head wheel, and the appropriate tape tension for 1-in type B helical-scan television tape recorders for 525/60 monochrome or NTSC color systems.

2 General specifications

2.1 The dimensions in the metric system are primary. The English equivalents are derived and may deviate from established conversion practices.

2.2 The video modulation system shall be the FM type.

2.3 The tape speed shall be 245.0 mm/s ± 1.2 mm/s (9.646 in/s ± 0.047 in/s).

2.4 Tests and measurements made on the recorder to check the requirements of this standard shall be made under the following atmospheric conditions:

– temperature	23°C ± 1°C (73°F ± 2°F)
– relative humidity	(50 ± 2)%
– barometric pressure	86 to 106 kPa (860 to 1060 mbar)
– conditioning before testing	24 h

3 Video head and scanner parameters

3.1 Two video heads shall be positioned 180° ± 30″ apart, β, measured from the gap of video head 1 to the gap of video head 2, as shown in figure 1.

3.2 The drum size shall be 50.330 mm +0 mm –0.003 mm (1.98150 in +0 in –0.00012 in).

3.2.1 The nominal rotational speed of the head wheel shall be 150 r/s.

3.3 The video head tip protrusion shall be 0.060 mm (0.00236 in) max from the outer surface of the drum to the end of the head tip.

3.4 The video head gap shall be 90° nominal to the plane of rotation of the video head.

3.5 The control head gap shall be located at point Y (see figure 1) which lies on a line which is at 90° ± 2′, measured from diameter F-G which is the centerline through the plate assembly.

Approved
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4 Record tape tension

The record tape tension shall be as follows:

– T_{in}, tape tension in — measured between B and X = 2 N (204 g) ± 10%

– T_{out}, tape tension out — measured between Y and E = 2.3 N (234 g) ± 10%

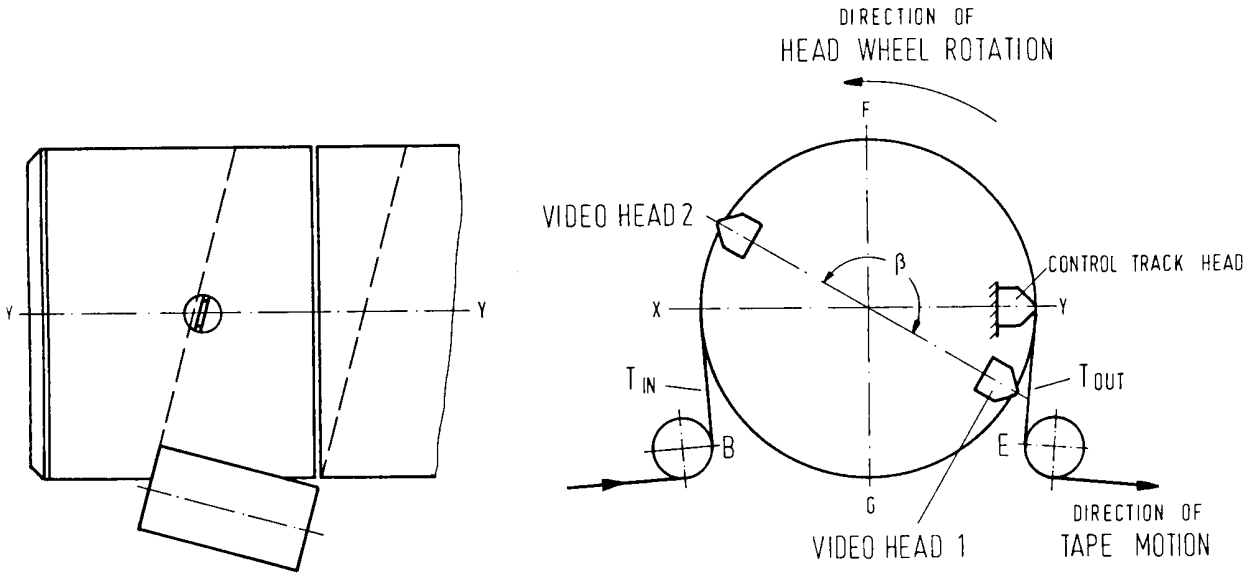

Figure 1 – Video head

Annex A (informative)
Bibliography

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ANSI/SMPTE 25M-1995, Video Recording —1-in Magnetic Recording Tape

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SMPTE RP 83-1996, Specifications of Tracking Control Record for 1-in Type B Helical-Scan Television Analog Recording

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