motion-picture standards

Proposed American Standards

Proposed American Standards Specifications for Video Magnetic Tape Leader, PH22.115, and Dimensions for 2-in. Video Magnetic Tape Reels, PH22.116, have been approved by the Video Tape Recording and Standards Committees. The standards are published here for a three-month period of trial and criticism.

All comments should be addressed to Society Headquarters, attention of J. Howard Schumacher, Staff Engineer, prior to February 15, 1960. If no adverse comments are received, the proposals will then be submitted to ASA Sectional Committee PH22 for further processing as American Standards.—*J.H.S.*

Revision of American Standard

PH22.60-1959, a revision of American Standard PH22.60-1948, reaffirmed 1953, Theater Sound Test Film for 35mm Motion Picture Sound Reproducing Systems, was approved by the American Standards Association, Incorporated, on September 28, 1959.

The standard was approved by the Society's Sound and Standards Committees and ASA Sectional Committee PH22. Since PH22.60-1959 reflects no technical change from the version published in the November 1948 Journal, it is not being published here. The changes involve (a) substitution of "record" for "track" in section 2.1, (b) updating of references and (c) correction of Note to indicate that the Society no longer supplies the test film made in accordance with the standard.

The standard may be obtained from the American Standards Association, Incorporated, 70 East 45 St., New York 17, at a nominal cost.—*J. Howard Schumacher*, Staff Engineer.

Proposed American Standard

Specifications for Video Magnetic Tape Leader

PH22.115

1. Scope

1.1 This standard specifies the audio and video information that is recorded on the synchronizing leader for television video tape recordings.

2. Alignment Signal

2.1 At the head end of the tape, at least 90 sec of composite test pattern or equivalent shall be recorded at the level and under the same conditions of equipment adjustment used for video program material.

2.2 Simultaneously, a reference level audio tone in the 400- to 1000-cps range shall be recorded under the same conditions of equipment adjustment used for audio program material.

3. Identification Information

3.1 Visual identification information shall be recorded for at least 10 sec, and shall terminate at least 10 sec ahead of the start of program material. The identification shall contain, as a minimum:

(1) Program title
(2) Identification number
(3) Date of recording
(4) Length (minutes and seconds) of recording
(5) Recording studio name

4. Cue Signals

4.1 Audio cue signals, as described below, shall be recorded on the audio program track following the above visual identification signal.

(1) The audio cue signals shall consist of a 400- to 1000-cps burst of 1/5-sec duration, occurring as a minimum at 9, 8, 7, 6, 5, 4, 3 and 2 sec ahead of the program. The recording level shall be as defined in 2.2.

(2) In addition, a steady component of the audio cue tone shall be recorded approximately 20 db below the level used in (1) above, starting with the first tone burst and ending with the last one to leave a 2-sec completely silent interval before the start of program material.

4.2 A visual cue signal or sync (or sync and setup) only shall be recorded during the entire period of the steady component of the above described tone burst. Sync (or sync and setup) only shall be recorded during the 2-sec interval from the end of the tone burst to the start of program. The recording level shall be as defined in 2.1.

NOTES

1. It is desirable that the sync signal applied to the video tape leader be the same signal and from the same source as that used with the material following the leader.

2. If a visual cue signal is used, it is recommended that it be a numerical readout coincident with and identifying the audio tone burst in 4.1 (1).

NOT APPROVED

Proposed American Standard

Dimensions for 2-in. Video Magnetic Tape Reels

PH22.116

1. Scope

1.1 This standard specifies the dimensions of reels designed to accommodate the maximum standard thickness of 2-in. wide magnetic tape for television recording in maximum capacities of 1,650, 3,600, 5,540 and 7,230 ft.

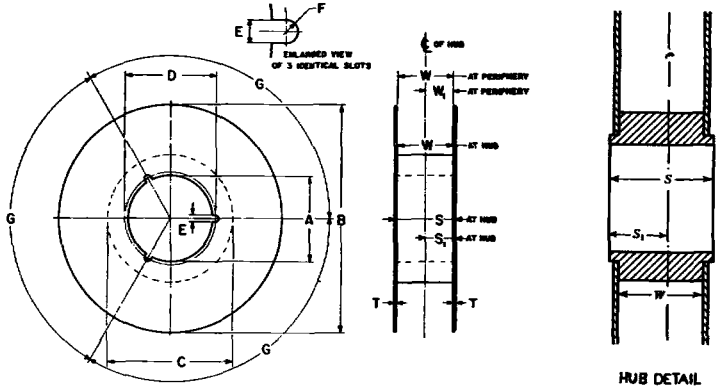
2. Reel Dimensions

2.1 The dimensions of the reels shall be as specified in the diagrams and tables.

2.2 Flange-fastening members shall be flush or below the outer surface of the flanges.

2.3 The hub concentricity is with respect to the center axis.

2.4 The flange concentricity is with respect to the hub center axis.



HUB DETAIL

TABLE 1

Dimension	Inches	Millimeters	Degrees
A	3.000 +0.004 −0.000	76.20 +0.10 −0.00	—
C	4.50 ± 0.10*	114.3 ± 2.5*	—
D	3.250 ± 0.002	82.55 ± 0.05	—
E	0.219 +0.006 −0.000	5.56 +0.15 −0.00	—
F	0.109 +0.003 −0.000	2.77 +0.08 −0.00	—
G	—	—	120 ± 0.1
S, at hub	2.212 ± 0.003	56.17 ± 0.08	—
S_1, at hub	1.106 ± 0.0015	28.086 ± 0.038	—
T	0.091 min	2.31 min	—
W, at periphery	2.013 +0.021 −0.000	51.12 +0.53 −0.00	—
W_1, at periphery	1.007 +0.010 −0.000	25.578 +0.254 −0.000	—
W, at hub	2.020 ± 0.001	51.30 ± 0.03	—
Hub concentric within	0.002 TIR†	0.05 TIR†	—
Flange concentric within	0.020 TIR†	0.50 TIR†	—

* Maximum taper on hub outside diameter is 0.0002 per inch (0.005mm) † Total indicator reading

TABLE 2

Maximum capacity* Feet	Meters	Maximum playing time in minutes at 15 inches (38.1 centimeters) per second	Dimensions	Inches	Millimeters
1,650	503	22	B, nominal	8.00	203.2
			max	8.01	203.4
			min	8.00	203.2
3,600	1,097	48	B, nominal	10.50	266.7
			max	10.51	267.0
			min	10.50	266.7
5,540	1,689	74	B, nominal	12.50	317.5
			max	12.51	317.7
			min	12.50	317.5
7,230	2,203	96	B, nominal	14.00	355.6
			max	14.01	355.8
			min	14.00	355.6

* Maximum capacity is based on a minimum distance of 3/16 in. (4.762mm) from the reel periphery to the tape stack, utilizing maximum thickness tape.

APPENDIX

(This Appendix is not a part of Proposed American Standard, Dimensions for 2-in. Video Magnetic Tape Reels, PH22.116, but is included to facilitate its use.)

The nominal value for W was chosen to provide proper lateral clearance for the tape, which has a maximum width of 2.000 in. The channel is narrow enough to prevent excessive lateral displacement of the tape as it is wound. Too wide a channel is likely to cause uneven winding resulting in damage to the tape edges when the reel is removed from the machine, due to deformation of the flanges.

Dimension W can be maintained at the hub, but control becomes more difficult as the flange diameter increases. Therefore, at the periphery, the tolerances on W have been increased to allow for out of flatness of the flanges.

Dimension W_1 has been included to prevent excessive curvature of the flanges. Without this dimension it would be possible for both flanges to be curved in the same direction and yet still be parallel, which would result in interference between the tape edge and the inside edge of the flange.

Trade marks or any other configurations on the flanges should be engraved rather than embossed so that there are no projections on either side.

The outside diameters of the flanges, B, will give reels the capacities suggested in Table 2. These capacities should be regarded as a maximum.

It is recommended that both flanges have air escape holes. If provided, these holes should extend to the hub periphery and be of such a size at this point as to facilitate easy threading.