

# American National Standard for video recording— 2-in reels

Approved December 2, 1983

Secretariat: Society of Motion Picture and Television Engineers

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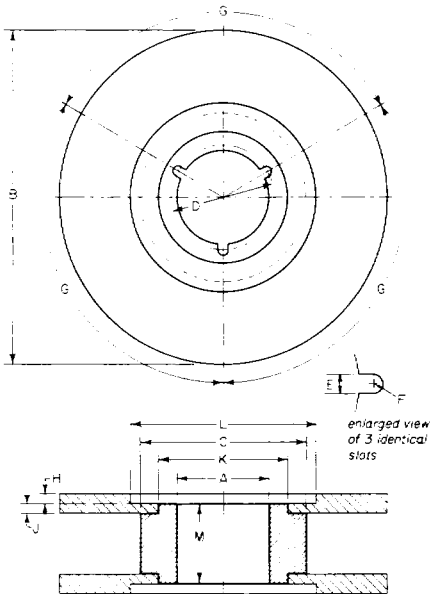
## 1. Scope

This standard specifies the dimensions of reels in maximum capacities of 750, 1650, 3600, 5540, and 7230 ft designed to accommodate the maximum thickness of 2-in wide magnetic tape for television recording, as specified in ANSI C98.1-1978.

## 2. Reference Standard

The following American National Standard is intended to be used in conjunction with this standard:

ANSI C98.1-1978, Dimensions of 2-in Video Magnetic Recording Tape.



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## 3. Reel Dimensions

3.1 The dimensions of the reels shall be as specified in the figure and tables.

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

3.3 The outside cylindrical surface of the hub (C diameter) shall be concentric with the center bore (A diameter) within 0.002 in (0.05 mm) and shall have a maximum taper of 0.0016 in (0.041 mm).

3.4 The outside diameter of the flanges (B diameter) shall be concentric to the center bore of the hub (A diameter) within 0.015 in (0.38 mm).

Table 1  
Reel Dimensions

Dimensions	Inches	Millimeters	Degrees
A	3.000 $\pm$ 0.004 — 0.000	76.20 $\pm$ 0.10 — 0.00	
B	See Table 2	See Table 2	
C	4.500 $\pm$ 0.010	114.30 $\pm$ 0.25	
D	3.250 $\pm$ 0.002	82.55 $\pm$ 0.05	
E	0.219 $\pm$ 0.006 — 0.000	5.56 $\pm$ 0.15 — 0.00	
F	0.109 ref	2.77 ref	
G			120 $\pm$ 0.1
H*	0.025 max	0.64 max	
J*	0.098 max	2.49 max	
K†	3.600 min	91.44 min	
L†	6.000 min	152.40 min	
M‡	2.212 $\pm$ 0.003	56.18 $\pm$ 0.08	

\* The surface of the flanges from B to L shall lie between the planes defined by H and J.  
† Outside surfaces of reel flanges between diameters K and L shall not extend beyond the surfaces defined by Dimension M.  
‡ The hub surfaces defined by M shall be parallel within 0.008 in (0.020 mm) and square with the hub outside diameter C within 0.003 in (0.08 mm) at maximum diameter.

Table 2  
Reel Capacities

Maximum Capacity,*	Maximum Playing Time in Min at		Dimension B	
	7.5 in (19.05 cm)	15 in (38.1 cm)	Inches	Millimeters
750	20	10	6.500 $\pm$ 0.010	165.10 $\pm$ 0.25
1650	44	22	8.000 $\pm$ 0.010	203.20 $\pm$ 0.25
3600	96	48	10.500 $\pm$ 0.010	266.70 $\pm$ 0.25
5540	148	74	12.500 $\pm$ 0.010	317.50 $\pm$ 0.25
7230	192	96	14.000 $\pm$ 0.010	355.60 $\pm$ 0.25

\* Maximum capacity is based on a minimum distance of 0.2 in (5 mm) from the reel periphery to the tape stack, utilizing maximum thickness tape.

## Appendix

(The Appendix is not a part of this American National Standard, but is included for information purposes only.)

The outside diameters of the flanges, B, will give reels the capacities suggested in Table 2. These capacities should be regarded as 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 size at this point as to facilitate easy threading.

# American National Standard for video recording— 1-in type C— records

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## 1 Scope

This standard specifies the dimensions and location of recorded video, audio and tracking control records for 1-in Type C helical-scan video tape recorders operating on the 525/60 monochrome or NTSC color systems.

## 2 Reference Standard

The following American National Standard is intended to be used in conjunction with this standard:

ANSI C98.18M-1979, Basic System and Transport Geometry Parameters for 1-in Type C Helical-Scan Video Tape Recording.

## 3. General Specifications

**3.1** Dimensions in the metric system are primary. The English equivalents are derived and may deviate from established conversion practices.

**3.2** Tests and measurements made on the tape record to check the requirements of this standard shall be made under the following conditions unless otherwise specified:

Temperature	23 ± 1°C
Relative humidity	50 ± 2 percent
Barometric pressure	86 to 106 kPa
Tape tension	1.7 ± 0.3 N

**3.3** Conditioning before recording and testing shall be as follows:

Environmental	Stabilized at measurement conditions
Tape tension	Wound on a reel at 0.5 to 3.0 N

**3.4** The reference edge of the tape for dimensions in this standard shall be the lower edge as shown in Fig. 1. The magnetic coating is on the side facing the observer in all figures.

## 4. Tape Speed

The tape speed shall be  $244.0 \pm 0.5$  mm/s (9.61 ± 0.02 in/s).

## 5. Record Location and Dimensions

**5.1** Record location and dimensions shall be as specified in Fig. 1 and the table.

**5.2** Dimensions P, Q, R, and  $\theta$  are for reference purposes only. The parameters given in ANSI C98.18M-1979 and the tape speed completely determine these values and their tolerances. The nominal values given are based on tensioned tape; therefore, direct measurement without tension must take into account tape elasticity.

## 6. Video Record Curvature

The edge of the video record shall be contained within two parallel straight lines 0.030 mm (0.0012 in) apart.

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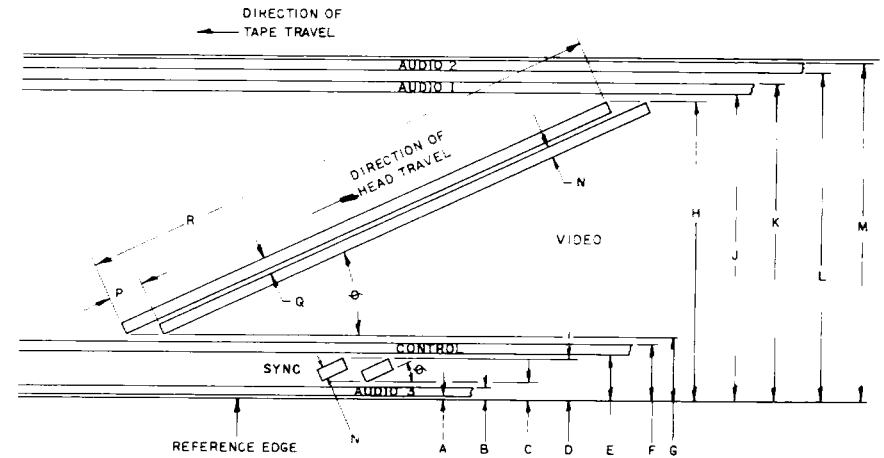


Fig. 1  
Record Location and Dimensions

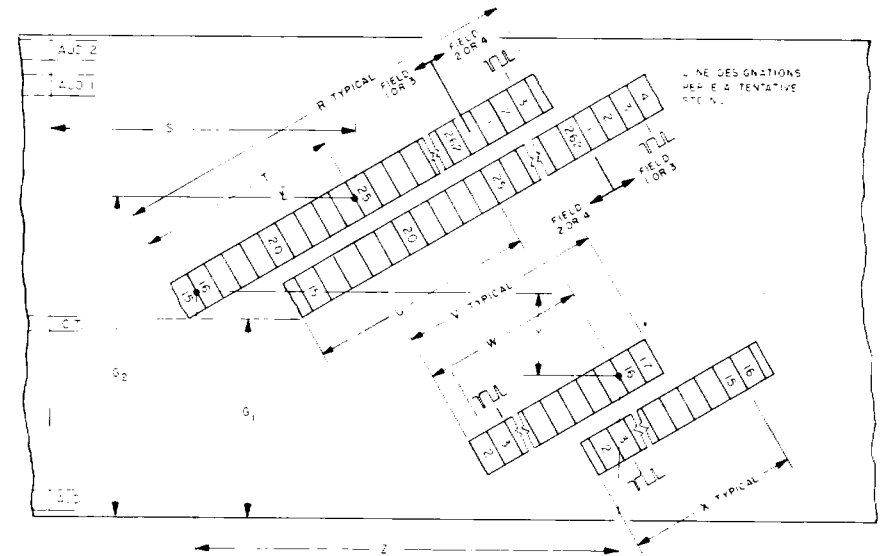


Fig. 2  
Video and Sync Record Location

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