

American National Standard for video recording— plastic reels— 1/2-in magnetic tape

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Sponsor: Society of Motion Picture and Television Engineers

1. Scope

This standard specifies for nominal 5/8 and 7/8 x 1/2 in (130 and 181 x 12.7 mm) plastic reels the dimensions which are considered essential for successful interchange among equipments designed for home, industrial, and institutional video recording applications.

2. Dimensions

2.1 The dimensions of the reels shall be as specified in the figures and table.

2.2 Flange holes shall be optional as well as their number, size, and shape, when provided. Their position and number shall be chosen to maintain static balance about the axis of rotation.

2.3 Reels shall be constructed so that any profile section taken through the center axis of the reel, when it is rotated on its center axis, will fall within the cross-hatched envelope shown in Fig. 1. This includes warpage and lateral runout of the flanges. Bosses, ribs, and other raised designs shall be permitted on the outside of the flange surfaces provided they do not extend beyond the cross-hatched envelope.

2.4 Reels shall have one or more drive holes whose size and location with respect to the center hole are such that both will fit simultaneously upon the drive hole gauge shown in Fig. 3.

2.5 To ensure proper mounting, reels shall be nonsymmetrical with drive holes and key slots on one side only.

2.6 The outside cylindrical hub surface (Dimension C) shall be concentric to the center diameter (Dimension U₁) within 0.010 in (0.25 mm) full indicator movement (FIM), and the flange rim (Dimension B) shall be concentric to the center diameter within 0.020 in (0.51 mm) FIM.

2.7 The outside cylindrical hub surface (Dimension C) shall have a taper no greater than 0.003 in (0.08 mm) measured with respect to a lateral mounting surface.

2.8 The lateral mounting surfaces, defined by M for Dimension L, shall be parallel within 0.0025 in per in (0.064 mm per mm) of their diameter.

NOTE: The metric dimensions in the table are based upon the practice of countries using the metric system; similarly, the inch dimensions follow the practice of those using that system.

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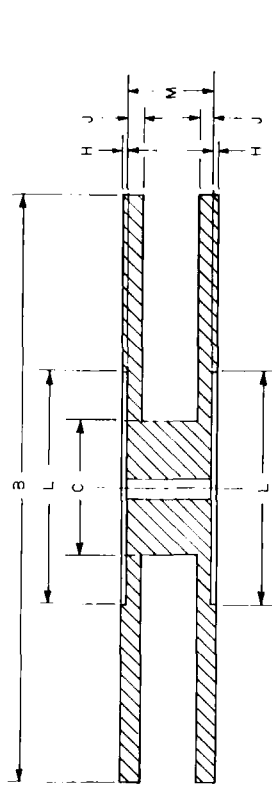


Fig. 1
Reel Profile Envelope

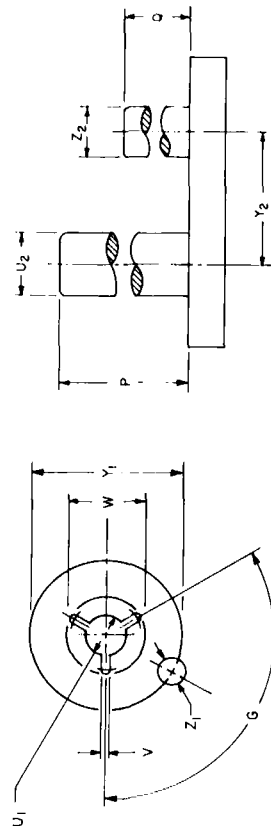


Fig. 2
Reel Center and Drive Holes

Fig. 3
Drive Hole Gauge

Dimensions	Inches		Millimeters	
	5/8	7/8	130	182
B Rim diameter of flange	5.118 ± 0.020	7.165 ± 0.020	130.00 ± 0.51	181.99 ± 1.52
C Outside hub diameter (without friction ring)	1.732 ± 0.020	2.362 ± 0.020	43.99 ± 0.51	59.99 ± 2.54
G Gauge angle for key slots (respect to reel mounting surface)	0.050	max	1.27	max
H Tolerance space for lateral runout (respect to inside flange in mounting zone diameter)	0.110	max	2.79	max
L Mounting zone diameter	2.250	min	57.15	min
M Center zone overall thickness	0.787 ± 0.012		19.99 ± 0.30	
P Height of spindle stud	1.181	min	30.00	min
Q Height of driving stud	0.590	min	15.00	min
U ₁ Spindle hole diameter	0.630	max	16.00	max
U ₂ Spindle stud diameter	0.319 ± 0.004		8.10 ± 0.10	
V Width of key slots	0.3165 ± 0.0004		8.040 ± 0.010	
W Key slot zone diameter	0.079 ± 0.004		2.00 ± 0.10	
Y ₁ Drive hole locating diameter	0.630 ± 0.012		16.00 ± 0.30	
Y ₂ Distance between centers of gauge studs		See Sec. 2.4 and Dimension Y ₁		
Z ₁ Drive hole diameter	0.6300 ± 0.0004		16.000 ± 0.010	
Z ₂ Driving stud diameter	0.3149 ± 0.0004		8.000 ± 0.010	