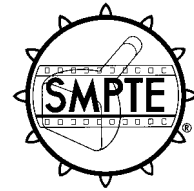


SMPTE STANDARD**ANSI/SMPTE 160M-1995**Revision of
ANSI/SMPTE 160M-1990

for Motion-Picture Equipment (8-mm Type S) — Projection Reels — 100- to 312-mm Diameter



Page 1 of 6 pages

1 Scope

This standard specifies the dimensions of 8-mm type S motion-picture projection reels of 100- to 312-mm (3.94- to 12.28-in) diameter with nominal film capacities up to 360 m (1200 ft).

2 Dimensions

2.1 The dimensions shall be as given in the figures and tables.

2.2 The dimensions apply regardless of the material used for construction (see note 1).

2.3 Dimension H applies from the surface of the hub to the periphery of the flanges.

2.4 The minimum dimension K represents the diameter of the central portion of the reel centered on the spindle hole axis, over which the effective central thickness, J, of the reel is intended to apply (see 2.5).

2.5 Dimension J applies only within the maximum K diameter area and represents the distance or effective distance between the respective reference planes of rotation for each flange.

2.6 Selection of a value for dimension P is dependent upon the thickness of the material used for the flanges. According to the flange material thickness: 1) the K diameter area may be depressed (with P greater than zero); or 2) the outside surfaces of the flanges may be flat from the spindle hole area to the periphery (with P equal to zero); or 3) in the case of flanges made of very thin material, the K diameter area

may be raised rather than recessed (effectively, P less than zero).

2.6.1 The P value for one flange should not differ from the corresponding P value for the other flange by more than 0.5 mm (0.02 in).

2.6.2 Any chosen flange thickness shall be maintained within ± 0.13 mm (0.005 in) from 5.0 mm (0.20 in) of the hub to within 5.0 mm of the periphery of the reel flange for reel size 10, and 10.0 mm (0.39 in) from the hub to within 10.0 mm of the periphery for reel size 13 and larger. Intentional special configurations, art work, depressions, or cutouts are excluded from this tolerance limitation.

2.7 If film attachment is provided by a slot in the reel hub, a minimum cutout in the hub is required for easy access to the film end, and to provide for insertion of a film-retention plug or clip for automatic rewind equipment. The area shown in figure 1 represents one type of cutout which might be used. The cutout area should be in both flanges so that a retaining clip of width J could be accommodated. The minimum cutout is outlined within the area and defined by dimensions R₂, S, and T (dimension S is perpendicular to dimension T). However, the manufacturer may provide an incorporated means of film retention in the design of the reel by use of a special retention plug or clip or other suitable means of film attachment. If a plug or clip is used, it shall not protrude beyond dimension J for reel-to-reel operation. The cutout area is not required when this is done; however, its supplemental inclusion is recommended when feasible (see note 2 for film attachment details).

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2.8 Dimension P_M for each flange is measured at the periphery of the flange and is the greatest distance measured outwardly from the flange reference plane of rotation when the reel is rotated on a test spindle and held against the reference K minimum zone surface (see figure 2.)

2.9 Dimension P_E for each flange applies anywhere between the K minimum zone and the point on the outside flange surface opposite the junction of the hub periphery and the flange, and is measured to the same reference plane of rotation used in measuring P_M . An angular envelope is defined by the conical surfaces joining the P_M (max) loci with the particular P_E (max) loci on the outside surfaces of the flanges

directly opposite the junction of the hub periphery and the flanges. All other points on the flanges (including rivets or other fastening devices, variations in flange thickness, flatness, and lateral runout) shall fall within the angular volume-of-rotation envelope.

2.10 The runout of the hub, dimension E, is specified by dimension U referenced from the axis through the center of the spindle hole, dimension C. A similar allowance is provided for the concentricity of the spindle hole and the flanges in the maximum volume-of-rotation diagram by having dimension V exceed dimension M maximum by 0.5 mm (0.02 in) for reel sizes up to and including No. 16, and by 0.8 mm (0.03 in) for larger reel sizes.

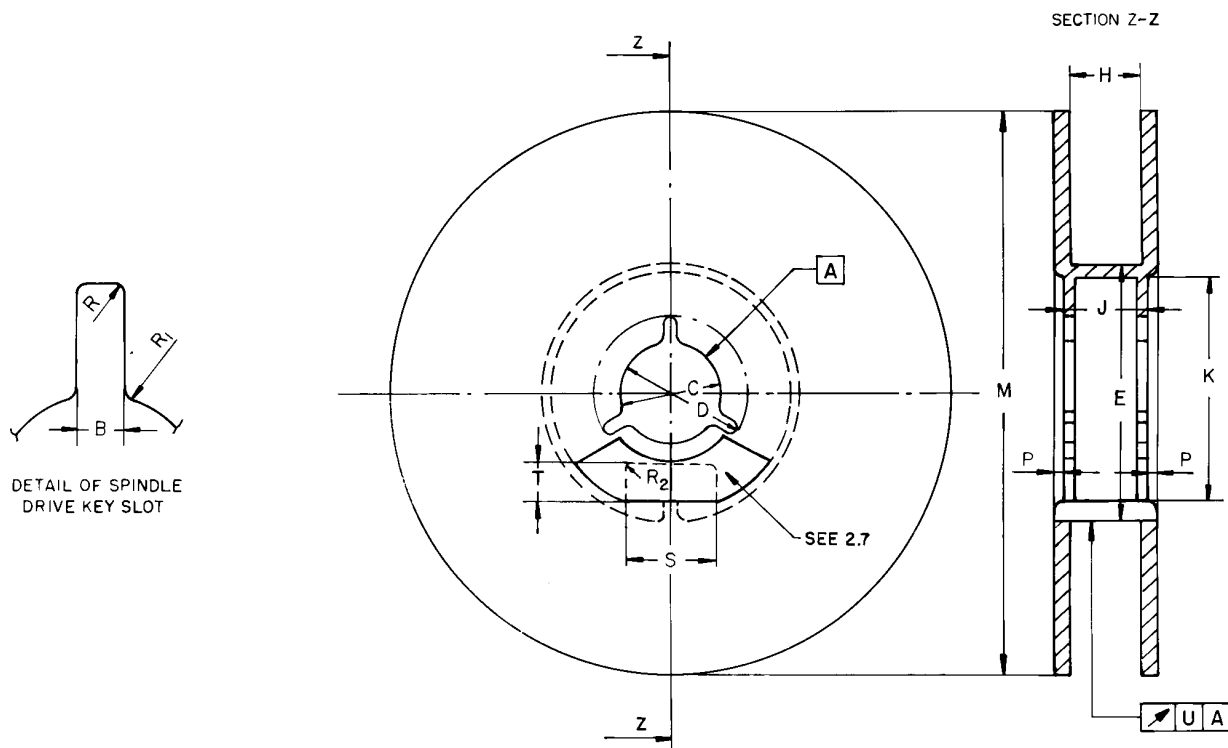


Figure 1 – Reel dimensions