

SMPTE RECOMMENDED PRACTICE

RP 36-1984

Positioning the Headwheel and Adjacent Tape Guides for 2-in Quadruplex Video Magnetic Tape Recorders



1. Scope

This practice establishes the relative locations of critical elements in the path of the tape between the input and output guides for 2-in. (51-mm) quadruplex video magnetic tape recorders operating at 15 and 7.5 in/s (381 and 190.5 mm/s).

2. Definitions

- 2.1 Tape Input Guide. The last guiding element encountered by the tape as it approaches the vacuum guide.
- 2.2 Tape Output Guide. The first guiding element encountered by the tape after it leaves the vacuum guide.
- 2.3 Reference Line. A line which is tangent to both the input guide and the output guide and is perpendicular to the tape neutral plane defined in 2.4.
- 2.4 Tape Neutral Plane. A plane which is defined to be tangent to the input guide and output guide and also contains the reference line.

3. Dimensions

- 3.1 Primary References. The tape neutral plane, the reference plane, and the pole tip plane shall be the primary references for positioning the elements described in this practice (see Fig. 1).
- 3.2 Position of Tape Output Guide. The tape output guide shall be at a distance of 7.50 ± 0.25 in (190.5 ± 6.4 mm) from the pole tip plane (see Dimension B in Fig. 2). The guide may be on either side of the neutral plane.

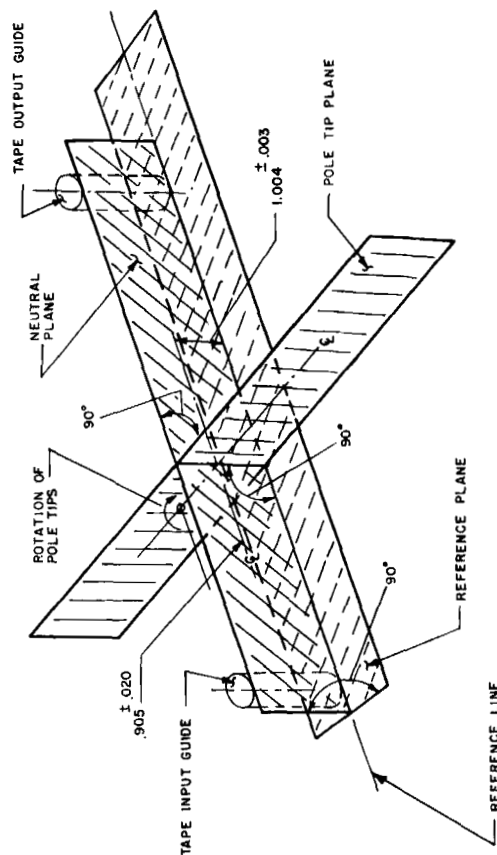


Fig. 1
Relationship Among Tape Neutral Plane, Reference Plane, and Pole Tip Plane

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- 3.3 Position of Tape Input Guide. The tape input guide shall be at a distance of 7.50 ± 0.35 in (190.5 ± 8.9 mm) from the pole tip plane and shall be located symmetrically with respect to the pole tip plane and tape output guide with a tolerance of 0.3 in (8 mm) (see Dimension A in Fig. 2). The guide may be on either side of the neutral plane.

- 3.4 Position of Tape. When undetected by the vacuum guide, the tape shall lie in the tape neutral plane with its reference edge coincident with the reference line, and the magnetic surface facing the axis of rotation of the pole tips.

- 3.5 Position of Axis of Rotation of Pole Tips. The axis of rotation of the pole tips shall be parallel to the tape neutral plane and 0.905 ± 0.020 in (22.99 ± 0.51 mm) from it (see Dimension C in Fig. 2). It shall also be parallel to the reference plane and 1.004 ± 0.003 in (25.50 ± 0.08 mm) from it.

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- 3.6 Position of Vacuum Guide. The vacuum guide shall be positioned so that the centerline of the tape when deflected by the vacuum guide is parallel to the reference plane and 1.004 ± 0.003 in (25.50 ± 0.08 mm) from it.

- 3.7 Relationship Among Pole Tip Plane, Axis of Rotation and Vacuum Guide. The relationship shall be as specified in SMPTE Recommended Practices on Tape Vacuum Guide Configuration and Position for Quadruplex Video Magnetic Tape Recording, RP 11-1984, and Specifications of Tracking Control Record for 2-in. Quadruplex Video Magnetic Tape Recordings, RP 16-1982.

- 3.8 Tape Deformation by Control Track Head. Deformation of the tape by a control track head shall be limited to 0.020 in (0.51 mm) maximum, in a direction radial from the axis of rotation of the pole tips, at a location between the pole tip plane and the tape output guide, and at a distance 0.700 ± 0.100 in (17.78 ± 2.54 mm) from the pole tip plane and no more than 0.060 in (1.52 mm) from the reference edge of the tape.

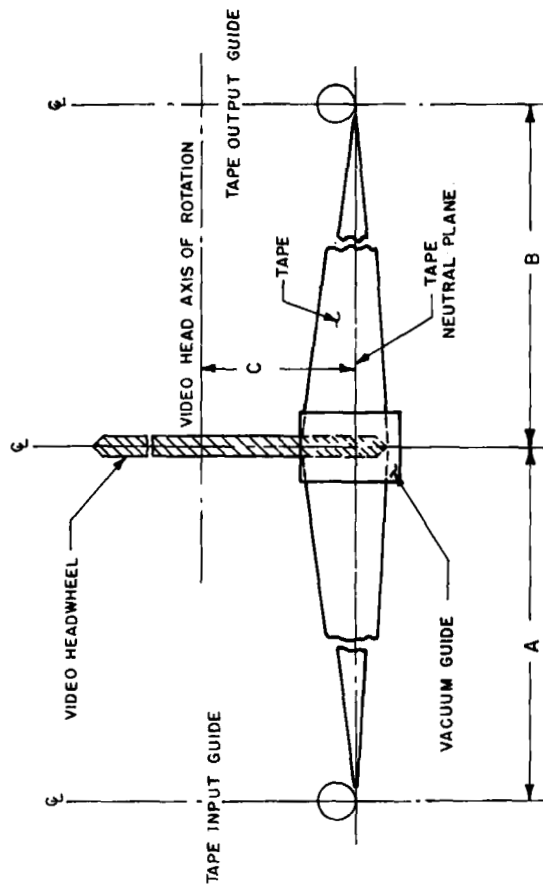


Fig. 2
Position of Tape Guides and Headwheel Assembly

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Dimensions for 16-mm Motion-Picture Projector Reel Spindles

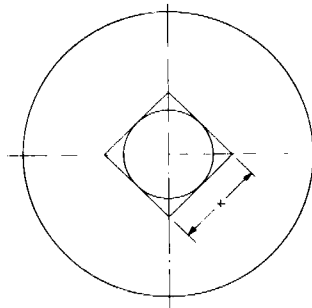
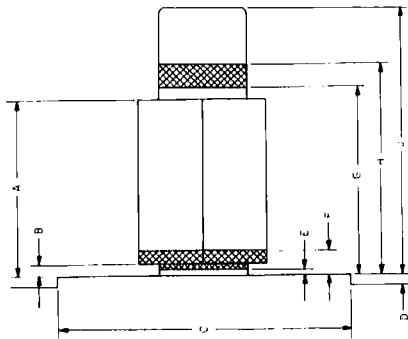


1. Scope

1.1 This practice specifies the dimensions for 16-mm motion-picture projector reel spindles.

2. Dimensions

2.1 The dimensions shall be as given in the figure and table.



Notes:

- Dimension K represents the diameter of the round portion or length of a side of the square drive portion of the spindle shaft, excluding locking means.
The figure illustrates the suggested construction for a projector spindle with a square drive portion. Alternate arrangements are also possible, providing that a minimum of two corners of the suggested square drive portion are maintained for drive and keying.
- The areas between Dimensions E and F and between Dimensions G and H, illustrated by cross-hatching in the figure, represent the spindle shaft area, including a safety factor, on which the projection reel flange will rest. The minimum Dimension K applies only to these areas, although the maximum Dimension K applies to the entire shaft. The minimum shaft thickness dimension has been fixed for these areas to help minimize loose fit and resultant noise or tilt of reels.

Dimensions	Inches	Millimeters
A	0.100 min	2.54 min
B	0.665 max	16.89 max
C	0.010 max	0.25 max
D	0.63 min	16.0 min
E*	0.97 max	24.6 max
F*	0.12 min	3.0 min
G*	0.005 max	0.13 max
H	0.080 min	2.03 min
J	0.710 max	18.03 max
K	0.850 min	21.59 min
	0.980 min	24.89 min
	0.310 min	7.87 min
	0.315 max	8.00 max

*See Notes 1 and 2.

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Cinematography — Maximum projectable image area on 35 mm motion-picture film — Position and dimensions

1 Scope and field of application

This International Standard specifies the position and dimensions for the maximum projectable image area on 35 mm motion-picture prints with rectilinear (non-anamorphic) pictures and anamorphic pictures requiring a lateral expansion ratio of 2 : 1 and an aspect ratio of 2.35 : 1.

2 Dimensions

The dimensions shall be as shown in the figure and given in table 1; they apply to measurements of the maximum projectable image area on a recently exposed and processed motion-picture print.

NOTE — It is recognized that, in many cases, the actual film image area that is projected may be smaller than the maximum projectable image area. It is intended that the actual projected image area be the largest appropriately shaped figure that can be inscribed within the specified dimension.