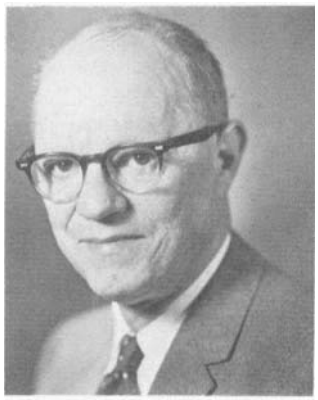
Trans/Audio, Inc., 254 West 54th St., New York, NY 10019 (212) 265-6225

New York's post-production center, offering complete sound recording facilities including transfers, live studio recordings and mixing, as well as optical sound track recording, 16mm and 35mm edge numbering services and the rental of Steenbeck or Moviola-equipped cutting rooms. All sound recording studios are equipped for either 16mm or 35mm projection with "roll-back" and "pick-up" recording capability. The largest mixing studio, 24-ft × 40-ft has been equipped to allow the mixing of as many as 24 separate sound track elements consisting of varied combinations of single or multiple 35mm magnetic or 16mm magnetic sound tracks. This studio, primarily utilized for feature film mixing, is also used by the television, documentary and industrial film producer who requires this professional service.

Address inquiries to: John F. Vorisek or Mark Wortreich, at the above address.

Obituary



Eric M. Leyton

Eric M. Leyton died 26 February 1974 in Geneva, Switzerland, where he was attending a meeting of the International Radio Consultative Committee (CCIR) at the request of the State Department. He was 58 years old.

Born 20 February 1916 in London, England, he attended Faraday House College of London University where he received the degree of DFH (equivalent to EE) in 1938. He joined the Research Laboratories of General Electric Co. in Wembley, England, in 1938 and in 1945 he joined Rediffusion Ltd. in Wandsworth, London. In 1947 he joined the Research Laboratories of Electrical & Musical Industries, Hayes, near London, where he was in charge of a group engaged on the development of television transmitters. During that time he was responsible for the design, manufacture and installation of the Kirk O'Shotts and Wenvoe television transmitters (now the property of British Broadcasting Corp. and still among the most powerful transmitters in the world).

He came to the United States in 1953 to join RCA Corp.'s Research Laboratories in Princeton, N.J., and became a citizen of the United States in 1958. At the time of his death he was a Corporate Staff Engineer for RCA Corp. During his years with RCA Laboratories he worked on color television, television tape recording and on high-power radar transmitters.

He joined the Society in 1967. Other professional organizations of which he was a member included the Institution of Electrical Engineers (England) of which he was a Fellow; the Institution of Radio Engineers; and the Institute of Electrical and Electronic Engineers (of which he was also a Fellow).

He was an active participant in many engineering committees devoted to furthering the cause of Radio and Television Broadcasting. His considerable knowledge and expertise in these fields made him a unique and invaluable contributor to the cause of the state of the art. His many, many friends and colleagues will miss him.

standards and recommended practices

Draft American National Standards

Four Draft American National Standards, which are revisions of previous issues, are published here for a trial period and public review: PH22.37, Dimensions of Raw Stock Cores for Motion-Picture Films (revision of PH22.37-1963 and PH22.38-1964); PH22.135, Position, Dimensions and Reproducing Speed of Magnetic Sound Record on Regular 8mm Motion-Picture Film (revision of PH22.135-1962); PH22.159.3, Specifications for Super-8 Model I Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile (revision of PH22.159.3-1968); and PH22.164, Position, Dimensions and Reproducing Speed of Magnetic Sound Record on Super-8 Motion-Picture Film (revision of PH22.164-1969).

Although the documents are basically editorial revisions of earlier issues, minor modifications were made to conform to international standards format. Note that PH22.135 and PH22.164 no longer specify the dimensions of the recording head, only the recorded record on the film. Both drafts include an appendix which explains the problems encountered in the past when an accurate measurement of a recorded signal level was required.

Comments should be addressed to Alex E. Alden, Staff Engineer, at Society Headquarters prior to 1 October 1974. The proposals have been submitted to American National Standards Committee PH22. All comments received through *Journal* publication will be reviewed before conclusion of action by that Committee. — Alex E. Alden, *Staff Engineer*

Draft American National Standard

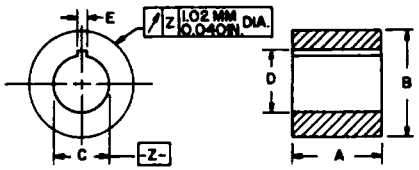
Dimensions of Raw Stock Cores for Motion-Picture Films

PH22.37

Revision of
PH22.37-1963
and
PH22.38-1964

1. Scope

This standard specifies the recommended sizes and dimensions of raw stock cores for 8, 16, 35, 65 and 70 mm motion-picture films.



Dimensions*	Nominal Size	Millimeters	Inches
A	8 mm x 50 mm (8 mm x 2 in)	7.90 $^{+0.00}_{-0.50}$	0.311 $^{-0.000}_{-0.020}$
B		50.00 ± 0.50	1.968 ± 0.020
A	16 mm x 50 mm (16 mm x 2 in)	15.90 $^{-0.00}_{-0.50}$	0.626 $^{-0.000}_{-0.020}$
B		50.00 ± 0.50	1.968 ± 0.020
A	16 mm x 75 mm (16 mm x 3 in)	15.90 $^{+0.00}_{-0.50}$	0.626 $^{+0.000}_{-0.020}$
B		75.00 $^{+2.00}_{-1.00}$	2.953 $^{+0.079}_{-0.039}$
A	16 mm x 100 mm (16 mm x 4 in)	15.90 $^{-0.00}_{-0.50}$	0.626 $^{+0.000}_{-0.020}$
B		100.00 ± 1.50	3.937 ± 0.059
A	35 mm x 50 mm (35 mm x 2 in)	34.90 $^{+0.00}_{-1.00}$	1.374 $^{+0.000}_{-0.039}$
B		50.00 ± 0.50	1.968 ± 0.020
A	35 mm x 75 mm (35 mm x 3 in)	34.90 $^{+0.00}_{-1.00}$	1.374 $^{+0.000}_{-0.039}$
B		75.00 ± 1.50	2.953 ± 0.059
A	35 mm x 100 mm (35 mm x 4 in)	34.90 $^{+0.00}_{-1.00}$	1.374 $^{+0.000}_{-0.039}$
B		100.00 ± 1.50	3.937 ± 0.059
A	65 mm x 75 mm (65 mm x 3 in)	64.90 $^{+0.00}_{-1.00}$	2.555 $^{+0.000}_{-0.039}$
B		75.00 ± 1.50	2.953 ± 0.059
A	70 mm x 75 mm (70 mm x 3 in)	69.90 $^{+0.00}_{-1.00}$	2.752 $^{+0.000}_{-0.039}$
B		75.00 ± 1.50	2.953 ± 0.059
C		25.70 $^{+0.40}_{-0.00}$	1.012 $^{+0.016}_{-0.000}$
D		29.50 $^{+0.90}_{-0.00}$	1.161 $^{+0.035}_{-0.000}$
E		3.80 $^{+0.40}_{-0.00}$	0.150 $^{+0.016}_{-0.000}$

*Millimeter dimensions are primary

2. Dimensions

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

3. Concentricity Allowance

The concentricity of the inside and outside diameters of the core shall be as specified in the figure.

Appendix

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

Means of attaching film to all cores are optional.

The keyway is provided as a means of driving the core for take-up or of providing holdback tension on a feed spindle. The dimensions of the keyway shall be adequate to clear a square-ended key.

The maximum value for Dimension A has been fixed intentionally to encourage a common manufacturing practice of keeping the maximum widths of cores very slightly less than the minimum widths of corresponding films.

The rather large tolerances on Dimension B are necessary to encompass the satisfactory existing practices of many different manufacturers. It is expected, however, that cores made by any one manufacturer would be held to a considerably smaller tolerance range. This will help prevent large variations, including undue tapering of the core from one side to the other, of any manufacturer's product.

In the interest of standardization, it is recommended that future cores with diameters greater than 100 mm (4 in) be designed to even-millimeter (nominal inch) dimensions, such as 125, 150, 175 millimeters, etc.

Cores with keys (so-called male cores) have not been included in this standard because they are in declining use. Therefore, new equipment should be designed to accept the female core (core with keyway).

Draft American National Standard

Position, Dimensions and Reproducing Speed of Magnetic Sound Record on Regular 8 mm Motion-Picture Film

PH22.135

Revision of PH22.135-1962

1. Scope

1.1 This standard specifies the position, dimensions and reproducing speed of the magnetic sound record on regular 8 mm motion-picture film having a nominal 30-mil (0.76 mm) width magnetic stripe.

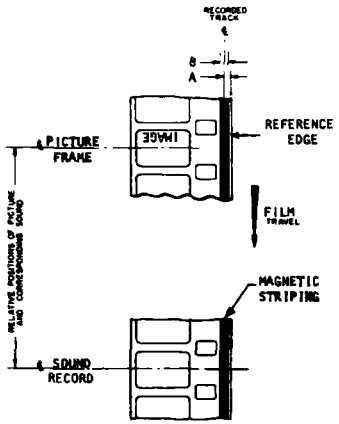
1.2 This standard also specifies the picture-sound displacement on the film.

2. Sound Record

2.1 The lateral location and width of the magnetic sound record shall be as specified in the figure and table.

2.2 The recording shall be made so that the azimuth of the record is at an angle of 90° ± 5′ to the reference edge of the film.

2.3 With the direction of travel as shown in the figure, the magnetic striping shall be on the surface of the film facing toward the projector lamp.



Dimensions	Inches	Millimeters
A	0.015 ± 0.001	0.38 ± 0.03
B*	0.019 min	0.48 min

*See Appendix A2.

3. Reproducing Speed

The recording shall be made so that the sound record will reproduce properly at 24 perforations per second (approximately 18 feet [5.5 meters] per minute or 3.6 inches [9.1 centimeters] per second). This is equivalent to the projection speed of the picture film of 24 frames per second.

4. Picture-Sound Displacement

The magnetic sound record on the film shall precede the center of the corresponding picture by a distance of 56 frames ± ½ frame.

Appendix

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

A1. Record Width

The width of the recorded area must be measured with great care as it enters directly into the calculation of flux per unit width.

When the recording head gap is narrower than the width of the coating or stripe, as is normal for all motion-picture test films, there is a measurement complication involving both the uncertainties in seeing the track and in determining the recording fringing.

If the recording head gap is available, the track width is best measured indirectly by measuring the gap width and adding to this dimension twice the thickness of the test record's magnetic coating. This correction will usually be 0.0003 to 0.0006 inch (0.008 to 0.015 mm).

If the recording head gap is unknown, the recorded record may be made visible by the use of a carbonyl iron suspension. Care should be taken to apply the minimum quantity that makes the recording visible, so that the developed image is not wider than the actual recorded area.

A2. Reproducing Head Gap Width

Dimension B applies to records produced in equipment using the same head for recording and reproducing. In commercially-produced prints intended for use on a variety of reproducers, it is recommended that a recording head be used capable of producing a 0.025-inch (0.64 mm) minimum width record having the same centerline. A recording head gap of this same minimum width takes into account edge effects or fringing.

A3. Erase Heads

Erasing head gaps used to erase the records specified in this standard should be substantially wider than the record specified.

A4. Reference Standards

Motion-picture prints conforming to this standard are usually made on film made in accordance with American National Standard Dimensions for 16 mm Motion-Picture Film, Perforated 8 mm, 2R-1500, PH22.17-1965 (R1969); magnetically striped in accordance with American National Standard Dimensions of Magnetic Striping of 8 mm Motion-Picture Film, Perforated 1R-1500, PH22.88-1963 (R1969), and projected in accordance with American National Standard Specifications for Projector Usage of 8 mm Motion-Picture Film Perforated One Edge, PH22.22-1964 (R1969).

Draft American National Standard

Specifications for Super 8 Model I Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile

PH22.159.3
Revision of
PH22.159.3-1968

1. Scope

This standard specifies the dimensions and characteristics necessary for the appropriate flatness of super 8 film cartridge pressure pads as well as the required clearances for motion-picture film in the aperture area.

2. Dimensions

2.1 The dimensions shall be as given in the figure and tables and shall apply to a cartridge that is fully assembled but does not contain film.

2.2 Datum surface A passes through the center of the cartridge locating slot and forms the centerline of the picture aperture area.

2.3 The zero plane is to be established by Surfaces 1, 2, and 3, as defined by 0.060-in (1.52 mm) circles, dimensionally centered as shown in the figure.

2.4 Dimension G specifies the clearance for film in the picture aperture area. The minimum value for this dimension should be established by taking the maximum film thickness to be used by a manufacturer and adding 0.0005 in (0.013 mm). This permits the manufacturer to vary Dimension G according to the thickness of his film product.

2.5 The upper and lower pad areas extend from Dimension C to the top and bottom of the cartridge aperture opening.

2.6 Dimension H is intended to apply from the film surface of a flat cartridge pressure pad.

2.7 The plus values given for the pressure pad film surface flatness tolerances are to be directed toward the lens.

2.8 Surface 4 of the cartridge pressure pad and Boss 4 of the camera aperture are established to aid in seating the cartridge pressure pad to the camera aperture plate. They serve no function once the pressure pad is in operating position.

NOTE 1: It is considered good practice to relieve the camera aperture plate above and below the picture area to allow a clearance for film transport and minimize the possibility of film pinching. Dimension F specifies the amount of recess for this purpose.

NOTE 2: Surfaces 1, 2 and 3, shown to establish the zero plane for the purpose of measurement of the super 8 film cartridge pressure pad film surface flatness, are circles having a diameter of 0.060 in (1.52 mm). The actual camera aperture plate bosses may deviate from this shape and size.

NOTE 3: It is intended that the cartridge pressure pad be flat, or be molded as a flat plane. Pits or depressions, however, which do not interfere with the film flatness, are acceptable. Bumps or protrusions are not acceptable. Tolerances for the flatness on the super 8 film cartridge pressure pad film surface are specified to account for slight warpage in molding if the pressure pad is made from a plastic material.

NOTE 4: In addition to this standard, there are available the following documents relating to super 8 film camera cartridges:

PH22.159.1-1968 (R1973), Specifications for Super 8 Motion-Picture Film Camera Cartridge and Cartridge-Camera Fit

PH22.159.2-1968 (R1973), Specifications for Cartridge Aperture and Pressure Pad and Position of Film in the Super 8 Motion-Picture Film Camera Cartridge

PH22.159.4-1968 (R1973), Dimensions and Characteristics of the Take-Up Core Drive for Super 8 Motion-Picture Film Camera Cartridges

PH22.159.5-1968, Specifications for Camera Run Length of Film in Super 8 Motion-Picture Film Camera Cartridges (50-Ft Capacity)

PH22.166-1970, Specifications for Super 8 Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification

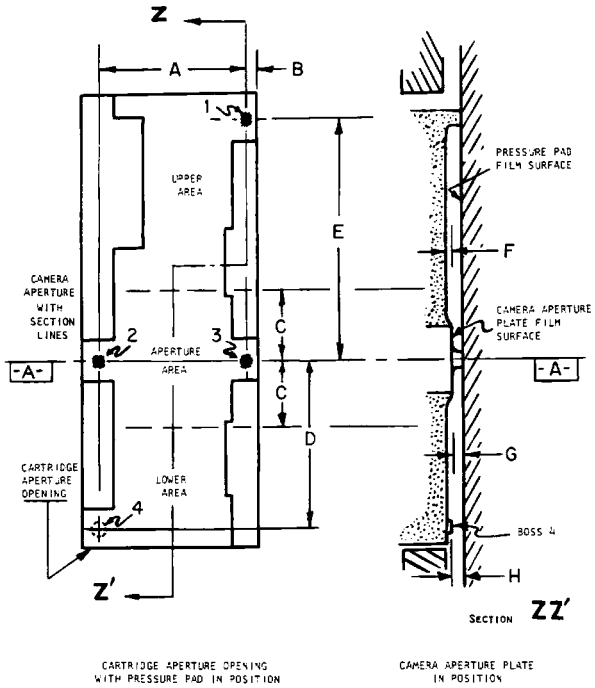


Table 1

Dimensions	Inches	Millimeters
A	0.378 ± 0.001	9.60 ± 0.03
B	0.030 +0.002 −0.000	0.76 +0.05 −0.00
C	0.153 nom	3.89 nom
D	0.393 ± 0.001	9.98 + 0.03
E	0.590 ± 0.001	14.99 ± 0.03
F	0.005 min	0.13 min
G	See 2.4	
H	0.004 min	0.10 min

Table 2

Flatness Tolerances on Pressure Pad Film Surface

Areas	Inches	Millimeters
Aperture Area (within Dimension C)	+ 0.0000 — 0.0010	+ 0.000 — 0.025
Upper Area	+ 0.002 — 0.002	+ 0.05 — 0.05
Lower Area	+ 0.002 — 0.004	+ 0.05 — 0.10

Draft American National Standard

Position, Dimensions and Reproducing Speed of Magnetic Sound Record on Super 8 Motion-Picture Film

PH22.164

Revision of
PH22.164-1969

1. Scope

1.1 This standard specifies the position, dimensions and reproducing speed of the magnetic sound record on super 8 motion-picture film having a nominal 27-mil (0.69 mm) width magnetic stripe.

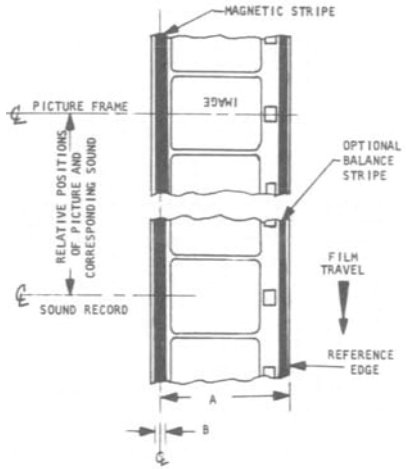
1.2 This standard also specifies the picture-sound displacement on the film.

2. Sound Record

2.1 The lateral location and width of the magnetic sound record shall be as specified in the figure and table.

2.2 The recording shall be made so that the azimuth of the record is at an angle of 90° ± 5′ to the reference edge of the film.

2.3 With the direction of travel as shown in the figure, the magnetic striping shall be on the surface of the film facing toward the projector lamp.



Dimensions	Inches	Millimeters
A	0.298 ± 0.001	7.57 ± 0.03
B*	0.019 min	0.48 min

*See Appendix A2.

3. Reproducing Speed

The recording shall be made so that the sound record will reproduce properly at 24 perforations per second (approximately 20 feet [6.1 meters] per minute or 4 inches [10.2 centimeters] per second). This is equivalent to the projection speed of the picture film of 24 frames per second.

4. Picture-Sound Displacement

The magnetic sound record on the film shall precede the center of the corresponding picture by a distance of 18 frames = ½ frame.

Appendix

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

A1. Record Width

The width of the recorded area must be measured with great care as it enters directly into the calculation of flux per unit width.

When the recording head gap is narrower than the width of the coating or stripe, as is normal for all motion-picture test films, there is a measurement complication involving both the uncertainties in seeing the track and in determining the recording fringing.

If the recording head gap is available, the track width is best measured indirectly by measuring the gap width and adding to this dimension twice the thickness of the test record's magnetic coating. This correction will usually be 0.0003 to 0.0006 inch (0.008 to 0.015 mm).

If the recording head gap is unknown, the recorded record may be made visible by the use of a carbonyl iron suspension. Care should be taken to apply the minimum quantity that makes the recording visible, so that the developed image is not wider than the actual recorded area.

A2. Reproducing Head Gap Width

Dimension B applies to records produced in equipment using the same head for recording and reproducing. In commercially-produced prints intended for use on a variety of reproducers, it is recommended that a recording head be used capable of producing a 0.025-inch (0.64 mm) minimum width record having the same centerline. A recording head gap of this same minimum width takes into account edge effects or fringing.

A3. Erase Heads

Erasing head gaps used to erase the records specified in this standard should be substantially wider than the record specified.

A4. Reference Standards

Motion-picture prints conforming to this standard are usually made on film made in accordance with American National Standard Dimensions for 8 mm Motion-Picture Film, Perforated Super 8, 1R-1667, PH22.149-1967; magnetically striped in accordance with American National Standard Dimensions of Magnetic Striping of Super 8 Motion-Picture Film Perforated 1R-1667, PH22.161-1968 (R1973), and projected in accordance with American National Standard Specifications for Projector Usage of Super 8 Motion-Picture Film, PH22.155-1967 (R1973).