

122nd SMPTE Technical Conference and Equipment Exhibit

9-14 November 1980, New York Hilton Hotel

Film Papers for the SMPTE Technical Conferences

As in previous years, the thrust of this year's technical papers on motion picture film will be aimed at meeting the needs of those involved in one or more phases of motion picture engineering or technology. In addition to the usual types of papers dealing with new products and techniques in the use of film and related equipment, there will be a number of presentations having, as their theme or keynote, *development*.

These papers will deal more specifically with the historical data and significance of a technological development and its consequential effect on current and future applications of this idea or invention. Illustrating this theme will be a special exhibit of early motion picture equipment, films, and related literature. This keynote of "historical development" will, of course, be reflected also in the television and sound recording papers which will be interspersed with the film papers throughout the program. — *Calvin M. Hotchkiss, Associate Program Chairman for Motion Pictures*

This year's conference will feature five days of papers sessions, as well as a number of workshops that will be presented in the form of seminars, discussions, and hands-on demonstrations. The workshop program will be held on Tuesday, 11 November, and Wednesday, 12 November.

Program Chairman **Richard S. Marcus**, Rombex Productions Corp., and his committee are arranging a program that will appeal to anyone interested or involved in the subject of communication.

The program outline, registration forms, hotel information, and



Calvin M. Hotchkiss,
Eastman Kodak Co.

workshop information will be mailed to all members of the Society in early September. The Advance Program will be printed in the October *SMPTE Journal*.

According to **Jeffrey B. Friedman**, SMPTE Exhibit Manager, this should again be a sold out exhibit and all rooms on the second floor of the New York Hilton will house the largest exhibit the Society has had to date in New York.

Join your friends, co-workers, and other people in your field at the SMPTE Conference, the place to learn about new technology and exchange ideas.

Standards & Recommended Practices

Approved American National Standards

Four new American National Standards were approved by the American National Standards Institute on 18 March 1980: ANSI PH22.197-1980, Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive; ANSI PH22.198-1980, Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Aperture, Pressure Pad and Film Position; ANSI PH22.199-1980, Specifications for 8-mm Type S Model 1 Sound

Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile; and PH22.200M-1980, Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Camera Run Length, Perforation Cut-out and End-of-Run Notch (15-m [50-ft] Capacity).

Copies of the standards may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018. — *Alex E. Alden, Manager of Engineering Services*

American National Standard specifications for 8-mm type S model 1 sound motion-picture film camera cartridge, cartridge-camera interface and take-up core drive

Approved March 18, 1980

Secretariat: Society of Motion Picture and Television Engineers

Page 1 of 5 pages

1. Scope

This standard specifies the dimensions of the 8-mm Type S Model 1 sound motion-picture film camera cartridge and cartridge-camera interface. Also specified are the dimensions of the take-up core drive opening and critical dimensions of the take-up core as well as the driving force, direction of drive, and recommended drive ratio. An optional means of retaining the film supply scroll configuration until the cartridge is placed in the camera is also described.

2. Dimensions

- 2.1 The dimensions shall be as given in the figures and tables.
- 2.2 The dimensions apply to an assembled cartridge with a film load at the time of manufacture.
- 2.3 Datum Planes B, C, and A are referred to as first, second, and third, respectively. These planes, which are used for dimensioning, are

The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a

license under these rights on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the publisher.

No representation or warranty is made or implied that this is the only license that may be required to avoid infringement in the use of this standard.

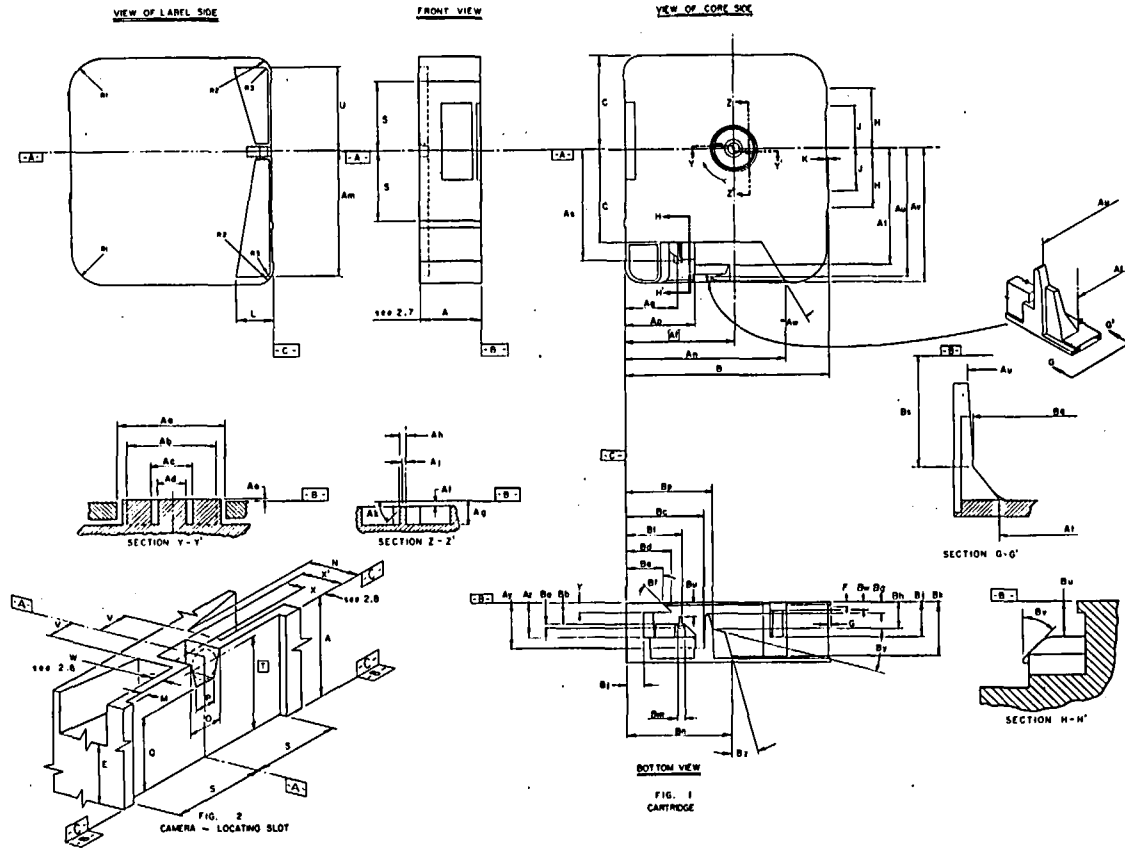
2.3.1 Datum Plane A is coincident with the center of a circle located by basic Dimension T. The circle is in contact with edges of the locating slot defined by Dimensions A, O, P, and Q. The diameter of this circle is such that it applies regardless of feature size (RFS) of the locating slot. (See Appendix A3.)

2.4 Datum Features B, C, and A are primary, secondary, and tertiary, respectively.

2.4.1 Datum Feature B is the unmatched, unlabeled surface of the cartridge. It is the primary datum feature and relates the cartridge to the datum reference frame by having a minimum of three points contact the first datum plane, B.

2.4.2 Datum Feature C is the front seating surface of the cartridge. It is the secondary datum feature and relates the cartridge to the datum reference frame by having a minimum of two points contact the second datum plane, C.

2.4.3 Datum Feature A is the front seating surface of the cartridge. It is the tertiary datum feature and relates the cartridge to the datum reference frame by having a minimum of two points contact the third datum plane, A.



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2.5 Dimensions L, N, U, Am, V, M, W, and R₁ measured from Datum Planes A and C to the depth of Dimension E, as shown in the view of the label side, describe the extent of both triangular recessed areas. The inboard wall of the recessed area, defined by Dimensions L and N, shall be a smooth surface and may be tilted sufficiently from the perpendicular to Datum Plane B to allow proper release from a mold, when the cartridge is manufactured in a molding process.

2.6 The thickness of the wall of the cartridge used for notching, Dimension W, shall be sufficient to withstand a force of at least 2.2 lbf (10 N), while deflecting no more than 0.04 in (1.0 mm). (For purposes of measurement, the force is applied by a solid round pin of nominal 0.05-in (1.3-mm) diameter centered 0.03 in (0.8 mm) nominally above or below the film speed or filter notch coincident with basic Dimension T on Datum Feature C.)

2.7 Dimension A specifies the normal overall thickness of the cartridge.

2.8 Some cartridge manufacturers may desire to provide a means of retaining the film supply scroll configuration until the cartridge is placed in the camera. One method employs a film locking slide which is activated by the camera locating pin. The film is released when the cartridge is inserted in the camera. Dimension X specifies the minimum depth of the camera locating slot as the cartridge is received from the manufacturer, that is, the distance from Datum Plane C to the end of the slide. Dimension X' is the minimum distance from Datum Plane C to the end of the camera locating pin. Dimension X'' is the distance from Datum Plane C to the end of the camera locating pin having a maximum di-

ameter of 0.140 in (3.56 mm) and a length of 0.155 ± 0.003 in (3.94 ± 0.08 mm) from Datum Plane C shall be sufficient to activate the film locking slide. (See Appendix A5.) Allowance must be provided within the camera to accommodate a bowing of the notched, labeled side of the cartridge cover of up to a maximum of 1.009 in (25.63 mm) from Datum Plane B. The labeled side of the cartridge is shown in Fig. 1.

2.9 Dimensions B and M are measured from Datum Plane C. Dimensions C, J, H, and S are measured from Datum Plane A.

2.10 The take-up core axis shall be located within 0.010 in (0.25 mm) of the true center formed by Datum Plane A and basic Dimension Af.

2.11 Dimensions Aa, Ab, Ac, and Ad are diameters.

2.12 Dimensions Bt, Bu, and Bv define an optional guide provided to facilitate film loading at the time of cartridge manufacture.

3. Take-Up Core Drive

3.1 The direction of rotation for the take-up core shall be clockwise when viewed from the core side of the cartridge. (See Appendix A5.)

3.2 After disengagement of any core anti-back-up device, the cartridge shall operate with a nominal torque of 0.85 ounce-force inch with a permissible range of 0.5 to 1.5 oz/in (6.0 x 10⁻³ newton meters with a permissible range of 3.5 x 10⁻³ to 10.6 x 10⁻³ N·m) as applied to the cartridge. (See Appendix A2.)

Dimensions	Inches	Millimeters	Dimensions	Inches	Millimeters	Dimensions	Inches	Millimeters
A	0.944 min 0.980 max	23.98 min 24.89 max	Aa	0.680 max	17.27 max	Ba	0.060 ± 0.008	1.52 ± 0.20
B	2.99 ± 0.01	75.9 ± 0.3	Ab	0.575 min	14.60 min	Bb	0.319 ± 0.008	8.10 ± 0.20
C	1.390 ± 0.010	35.31 ± 0.25	Ac	0.327 max	8.31 max	Bc	1.152 min	29.26 min
E	0.780 max	19.81 max	Ad	0.264 max	6.71 max	Bd	0.660 max	16.76 max
F	0.09 ± 0.01	2.3 ± 0.3	Ae	0.030 max	0.76 max	Be	0.533 max	13.54 max
G	0.06 ± 0.01	1.5 ± 0.3	Af	1.608 basic	40.84 basic	Bf	45° nom	45° nom
H	0.88 ± 0.03	22.4 ± 0.8	Ag	0.100 min	2.54 min	Bg	0.162 ± 0.015	4.11 ± 0.38
J	0.61 ± 0.03	15.5 ± 0.8	Ah	0.040 ± 0.005	1.02 ± 0.13	Bh	0.347 min	8.81 min
K	0.015 ± 0.010	0.38 ± 0.25	Aj	0.020 max	0.51 max	Bj	0.502 min	12.75 min
L	0.470 min	11.94 min	Ak	45° nom	45° nom	Bk	0.840 min	21.34 min
M	0.007 ± 0.005	0.18 ± 0.13	Al	0.030 max	0.76 max	Bl	0.260 max	6.60 max
N	0.177 min	4.50 min	Am	1.835 min	46.61 min	Bm	0.093 ± 0.015	2.36 ± 0.38
O	0.154 ± 0.004	3.91 ± 0.10	An	2.340 min	59.44 min	Bn	1.550 max	39.37 max
P	0.142 ± 0.004	3.61 ± 0.10	Ap	1.032 max	26.21 max	Bp	1.280 max	32.51 max
Q	0.770 ± 0.010	19.56 ± 0.25	Aq	0.733 ± 0.008	18.62 ± 0.20	Bq	1.888 min	47.96 min
R ₁	0.50 ± 0.10	12.7 ± 2.5	As	1.710 ± 0.012	43.43 ± 0.30	Bs	0.658 min	16.71 min
R ₂	0.25 ± 0.05	6.4 ± 1.3	At	1.730 min	43.94 min	Bt	0.787 max	19.99 max
R ₃	0.160 max	4.06 max	Au	1.890 min	48.01 min	Bu	0.200 min	5.08 min
S	1.02 ± 0.01	25.9 ± 0.3	Av	2.000 ± 0.010	50.80 ± 0.25	Bv	45°	45°
T	0.870 basic	22.10 basic	Aw	30° ± 1° 5°	30° ± 1° 5°	Bw	0.151 ± 0.012	3.84 ± 0.30
U	1.225 min	31.12 min	Ay	0.620 min	15.75 min	By	15° ± 2°	15° ± 2°
V	0.125 max	3.18 max	Az	0.502 min	12.75 min	Bz	15° ± 2°	15° ± 2°
W	See Sec. 2.6							
X	0.070 min	1.78 min						
X'	0.158 min	4.01 min						
Y	0.151 ± 0.012	3.84 ± 0.30						

NOTE 1: Placement of film data, such as name, number, and length of load, and the inclusion of any notches, shall be in accordance with American National Standard Specifications for 8-mm Type S (Super 8) Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification, ANSI PH22.166-1977.

NOTE 2: Although two driving lugs are shown in the core and one recommended, only one is essential for satisfactory operation.

NOTE 3: In addition to this standard, there are available the following documents relating to 8-mm Type S Model 1 sound motion-picture film camera cartridges:

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Aperture, Pressure Pad and Film Position, ANSI PH22.198-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile, ANSI PH22.199-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Camera Run Length, Perforation Cut-Out and End-of-Run Notch (1.5-in. [30-ft] Capacity), ANSI PH22.200M-1980

American National Standard Specifications for 8-mm Type S (Super 8) Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification, ANSI PH22.166-1977

NOTE 4: The use of datum planes, datum features, dimensions, and tolerances in this standard is in accordance with American National Standard for Dimensioning and Tolerancing, ANSI Y14.5-1973.

Appendix

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

A1. In designing the camera driver, consideration should be given to the fact that tooth-on-tooth engagement of the core lug on the camera driver pin is a possibility.

A2. It is recommended that the core be tendency driven (by some form of slip-drive mechanism) with a drive ratio of at least one turn of the core for every fifteen strokes of the pull-down claw.

A3. To provide a consistent method of measurement, it is recommended that a cartridge gauging fixture be used which incorporates datum surfaces, a locating pin, and means of exerting locating forces on appropriate sur-

faces of the cartridge. Drawings for a suitable cartridge-holding fixture may be obtained from the Society of Motion Picture and Television Engineers, 862 Scarsdale Avenue, Scarsdale, NY 10583.

A4. The camera locating pin should be capable of withstanding a force sufficient to activate the film locking slide.

A5. If an anti-backup mechanism is employed, such as described in Sec. 2.8, the mechanism should be capable of disengagement when the cartridge is placed in the camera, permitting the core to turn silently.

American National Standard specifications for 8-mm type S model 1 sound motion-picture film camera car- tridge aperture, pressure pad and film position

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1. Scope

This standard specifies the dimensions and location of the cartridge aperture and pressure pad as well as the position of the film in the aperture of 8-mm Type S Model 1 sound motion-picture film camera cartridges.

2. Dimensions

- 2.1 The dimensions shall be as given in the figures and tables.
- 2.2 The dimensions apply to an assembled cartridge with a film load at the time of manufacture.
- 2.3 The datum planes and datum features used for dimensioning are as defined in Secs. 2.3, 2.3.1, 2.4, 2.4.1, and 2.4.2 of American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, ANSI PH22.197-1980.
- 2.4 Dimensions T and U denote the lateral location of the film in the cartridge before insertion in the camera. After insertion, Dimension T becomes 0.060 in (1.52 mm) minimum and Dimension U becomes 0.050 in (1.27 mm) minimum.
- 2.5 All dimensions in Table 1, except Dimensions A and C, apply at the front surface of the pressure pad. A draft of 5 degrees to the recess area is permitted as well as an inside or outside radius of 0.005 in (0.13 mm) at all corners to provide satisfactory mold release.
- 2.6 Dimension A denotes the space available from Datum Plane C for penetration of the camera film alignment guide wings or the camera claw into the recessed area of the cartridge pressure pad.
- 2.7 Dimension B is measured from Datum Plane C and determines the operating position of the cartridge pressure pad.

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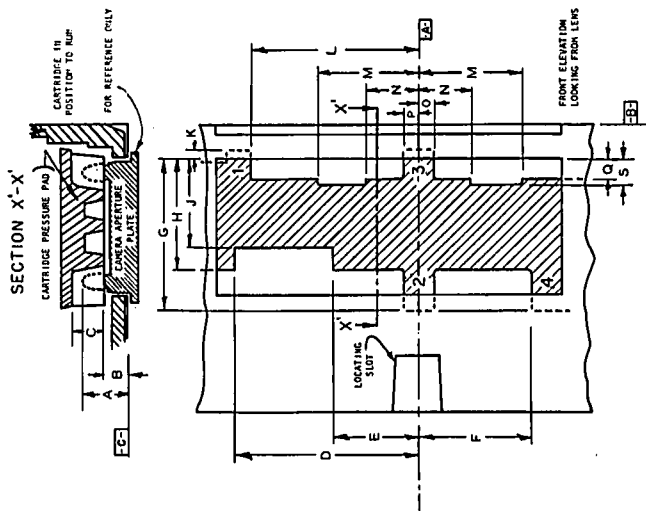


Fig. 1
Cartridge Pressure Pad

Table 1
Pressure Pad Dimensions

Dimensions	Inches	Millimeters
A	0.140 ± 0.010	3.56 ± 0.25
B	0.077 ± 0.005	1.96 ± 0.13
C	0.090 min	2.29 min
D	0.540 min	13.72 min
E	0.260 max	6.60 max
F	0.360 ± 0.020	9.14 ± 0.51
G	0.455 min	11.56 min
H	0.365 max	9.27 max
J	0.300 max	7.62 max
K	0.000 min	0.00 min
L	0.540 ± 0.015	13.72 ± 0.38
M	0.300 min	7.62 min
N	0.140 max	3.56 max
O	0.058 ± 0.022	1.47 ± 0.56
P	0.038 ± 0.022	0.97 ± 0.56
Q	0.055 min	1.40 min
S	0.090 min	2.29 min

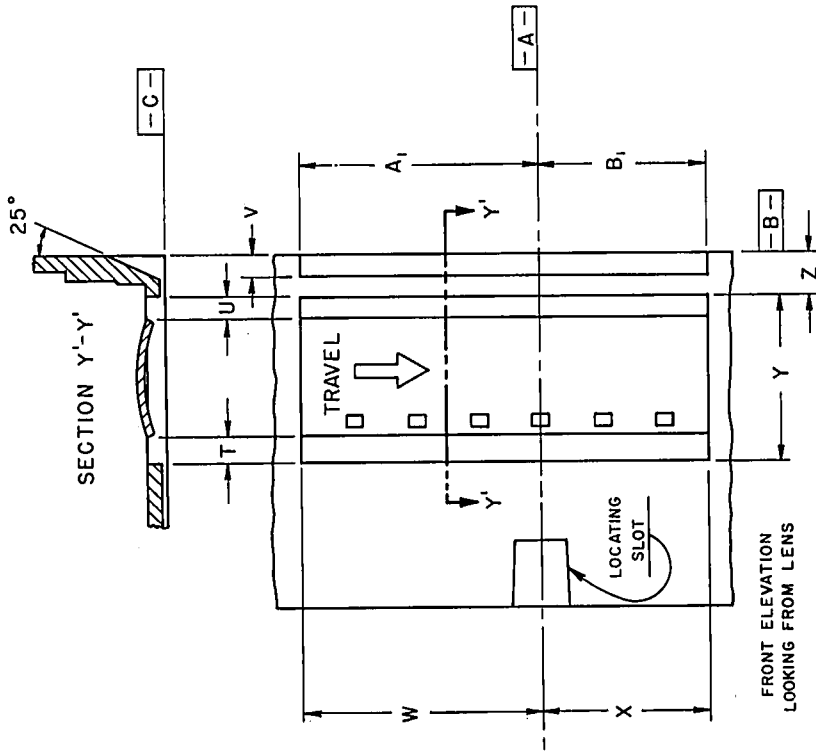


Fig. 2
Cartridge Aperture Opening and Film Position

Table 2
Aperture Opening and Film Position Dimensions

Dimensions	Inches	Millimeters
T	0.050 min	1.27 min
U	0.040 min	1.02 min
V	0.061 ± 0.005	1.55 ± 0.15
W	0.648 ± 0.005	16.46 ± 0.15
X	0.451 ± 0.005	11.46 ± 0.15
Y	0.451 ± 0.004	11.46 ± 0.10
Z	0.111 ± 0.003	2.82 ± 0.08
A ₁	0.642 min	16.31 min
B ₁	0.445 min	11.30 min

American National Standard specifications for 8-mm type S model 1 sound motion-picture film camera car- tridge pressure pad flatness and camera aperture profile

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Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, ANSI PH22.197-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile, ANSI PH22.199-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Camera Run Length, Perforation Cut-Out and End-of-Run Notch (15-m [50-ft] Capacity), ANSI PH22.200A-1980

American National Standard Specifications for 8-mm Type S (Super 8) Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification, ANSI PH22.166-1977

NOTE 1: Three lugs, Nos. 1, 2, and 3, on the pressure pad are intended to touch the camera aperture plate and thereby determine the film plane alignment and the clearance allowed for the thickness of the film. The required clearance is defined in American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile, ANSI PH22.199-1980. Lug No. 4 should not touch the camera aperture plate. (See Appendix A.5).

NOTE 2: In addition to this standard, there are available the following documents relating to 8-mm Type S Model 1 sound motion-picture film camera cartridges:

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera

Appendix

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

A1. A force of 8 to 14 oz (2.2 to 3.9 N) must be exerted on the pressure pad for proper seating against the camera aperture plate.

A2. The two cut-out areas in the pressure pad permit the use of fingers for side-guiding. A force of 1.5 to 2.5 oz (0.42 to 0.70 N) per finger is adequate to ensure picture steadiness.

A3. Although sufficient recess from the front surface of the pressure pad to allow for camera claw and camera aperture guide finger penetration, as defined by Dimension C and Sec. 2.6, must be provided, additional portions of the pad surface may be recessed also.

A4. The cartridge pressure pad recess, defined by Dimensions D, E, and J, is available for camera claw film transport engagement. The perforation used for the film vertical registration at its stopping position is specified in American National Standard Dimensions of Cam-

1. Scope

This standard specifies the dimensions and characteristics necessary for the appropriate flatness of the cartridge pressure pads as well as the required clearances for the film in the aperture area in 8-mm Type S Model 1 sound motion-picture film camera cartridges.

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 Plane A, which is used for dimensioning, shall be established in accordance with Sec. 2.4.1 of American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, ANSI PH22.197-1980.

2.3 Dimensions relative to the surface of the pressure pad are measured from a plane established through Surfaces 1, 2, and 3, as defined by 0.060-in (1.52-mm) circles dimensionally centered. (See figure.)

2.4 Dimension G specifies the clearance for film in the camera aperture area, based on Dimension T, the thickness of the film in the center of the picture area.

2.4.1 Dimension G' specifies the extension of the camera aperture plate boss points (corresponding to 1, 2, and 3) beyond the aperture plate plane at the aperture opening.

2.5 The upper and lower pad areas extend from Dimension C to the top and bottom of the cartridge pressure pad within Dimension K.

2.6 Dimension H is intended to apply from a plane as described by Sec. 2.3.

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.

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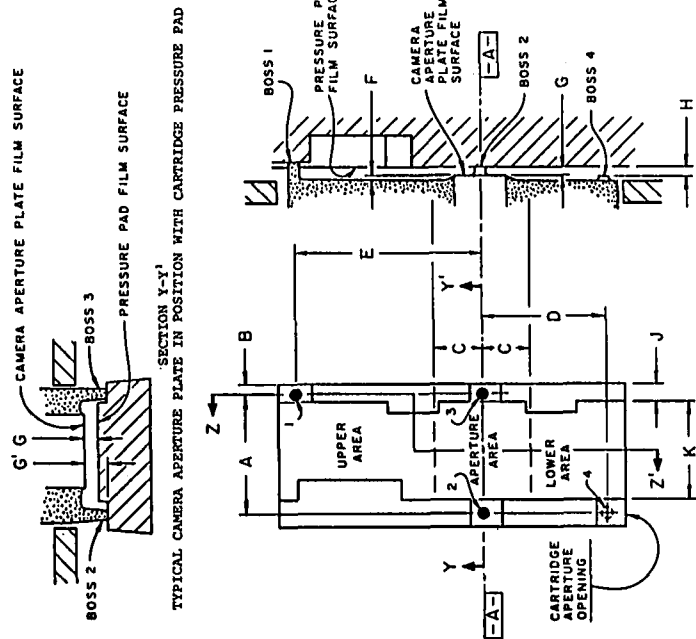
PH22.198-1980

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 purposes of measurement of the 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 film surface of 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. Tolerances for the flatness on the 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: Relief in the pad surface equal to the sound stripe thickness may be provided beneath those areas of the film which are striped by adding material to the backing of the film.



SECTION Z-Z'
TYPICAL CAMERA APERTURE PLATE
IN POSITION WITH CARTRIDGE
PRESSURE PAD

SECTION Y-Y'
TYPICAL CAMERA APERTURE PLATE
IN POSITION WITH CARTRIDGE
PRESSURE PAD

Table 1
Pressure Pad Dimensions

Dimensions	Inches	Millimeters
A	0.378 ± 0.001	9.60 ± 0.03
B	0.030 ± 0.002	0.76 ± 0.05
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	T + 0.0007 min	T + 0.018 min
G'	T + 0.0012 max	T + 0.030 max
H	0.0065 min	0.165 min
H	0.0070 max	0.178 max
I	0.004 min	0.10 min
J	0.055 min	1.40 min
K	0.310 max	7.87 max

Table 2
Flatness Tolerances on Pressure Pad
Film Surface

Areas	Inches	Millimeters
Aperture Area (within Dimension C)	+ 0.0058 -T	+ 0.147 -T
Upper Area	+ 0.0048 -T	+ 0.122 -T
Lower Area	+ 0.0078 -T	+ 0.198 -T
	+ 0.0038 -T	+ 0.097 -T
	+ 0.0078 -T	+ 0.198 -T
	+ 0.0018 -T	+ 0.046 -T

Table dimensions are measured from the zero plane defined by Surfaces 1, 2, and 3. (See figure and Notes 3 and 4.)

American National Standard specifications for 8-mm type S model 1 sound motion-picture film camera cartridge camera run length, perforation cut-out and end-of-run notch (15-m [50-ft] capacity)

Approved March 18, 1980

Secretariat: Society of Motion Picture and Television Engineers

Page 1 of 3 pages

1. Scope

1.1 This standard describes the camera run length, perforation cut-out notch, and end-of-run notch of film supplied in 8-mm Type S Model 1 sound motion-picture film camera cartridges of 15-m (50-ft) nominal capacity and the length of film returned to the customer.

1.2 The purpose of this standard is to provide a uniform basis for the operation of footage counters in cameras.

2. Specifications

2.1 The camera run length of film may vary between 3666 and 3715 perforation pitch intervals (15.52 and 15.73 m [50.9186 and 51.6076 ft]). (See Note 1.) The overall length of the film shall be determined by the manufacturer to provide the camera run length specified.

2.2 A complete film as returned to the customer shall contain a minimum customer return length of 3600 perforation pitch intervals. The customer return length shall be that portion of the camera run length available for subject matter which starts at least 13 perforation pitch intervals (55 mm [2.17 in]) after the frame located at the camera aperture, as the cartridge is supplied by the manufacturer, and ends at least 37 perforation pitch intervals (1.57 mm [6.18 in]) short of

the limit as provided by a perforation cut-out. (See Appendix A1.)

2.3 The end of the film shall have a visual marking in the frame area and a means provided so that the final portion of the film stops in the film cartridge aperture, affording the user visual confirmation that all the film has been exposed. (See Appendix A2.)

3. Perforation Cut-Out and End-of-Run Notches

3.1 The dimensions shall be as given in Fig. 2 and the table.

3.2 Datum Line X is established by the leading edge of the perforation cut-out. It is nominally perpendicular to the edge of the film.

3.3 The beveled cut at the trailing end of the perforation cut-out is shown as a matter of convenience and not as a specification. Some bevel is desirable, however, to reduce the possibility of catching or snagging the edge of the notch in the internal mechanism of the cartridge.

3.4 The beveled cuts of 30 degrees minimum at the ends of the end-of-run notch are to facilitate the entry of the camera sensing finger and to reduce the possibility of catching or snagging the edge of the notch in the internal mechanism of the cartridge.

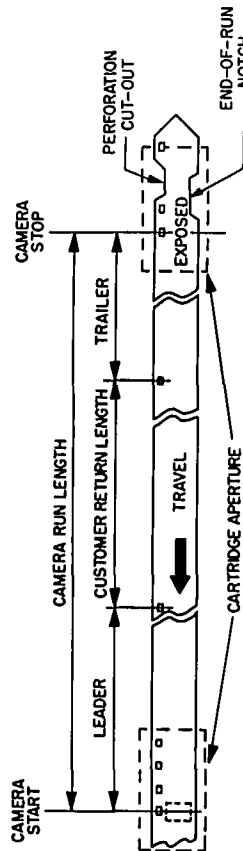


Fig. 1
Camera Run Length and Notches

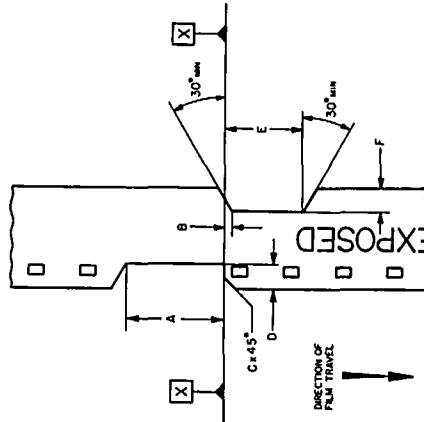


Fig. 2
Notch Dimensions

Dimensions	Millimeters*		Inches	
	min	max	min	max
A†	5.38		0.2118	
B‡	0.3		0.012	
C	0.55		0.0217	
D	1.50		0.0591	
E	4.52 ± 0.50		0.1780 ± 0.020	
F	0.80		0.0315	

*Metric units are primary.
†See Sec. 3.1.
‡See Sec. 3.4.

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3.5 The inside and outside corners of the notches may have a radius of 0.3 mm (0.012 in) maximum.

3.6 Dimension B for the end-of-run notch shown in Fig. 2 is expressed as a maximum to ensure a minimum notch length. There is no functional need to specify a maximum notch length. The trailing edge of the notch, specified by Dimension B, may approach or cross Datum Line X so that the notch length could extend to the end of the film provided the notch depth, Dimension F, is maintained.

NOTE 1: A nominal pitch, based on 72 perforation pitch intervals per foot, of 4.234 mm (0.16669 in) is assumed for all comparisons of the number of perforation pitch intervals in a given film length.

NOTE 2: In addition to this standard, there are available the following documents relating to 8-mm Type S Model 1 sound motion-picture film camera cartridges:

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, ANSI PH22.197-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Aperture, Pressure Pad and Film Position, ANSI PH22.198-1980

American National Standard Specifications for 8-mm Type S Model 1 Sound Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile, ANSI PH22.199-1980

American National Standard Specifications for 8-mm Type S (Super 8) Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification, ANSI PH22.166-1977

Appendix

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

A1. The lengths of the leader and trailer are necessary to ensure that the fog produced near the aperture is removed. Removing the material also provides space for identification numbers and allows for manufacturing variability of film lengths.

A2. It is suggested that positive means of stopping the film at the end of the camera run be provided to prevent the film end from being completely wound into the cartridge. This could be accomplished by a mechanical latching arrangement which is activated by changes in the film path through the cartridge at the time that film transport through the picture aperture ceases as a result

of the presence of the perforation cut-out notch. A technique to accomplish this involves the use of a projection over which a hole in the film can be made to drop during the collapse of the loop between the picture and sound recording area of the cartridge.

A3. The user is cautioned that some 8-mm Type S camera cartridge films currently available do not meet the minimum specifications of Dimension E in Fig. 2. It is anticipated, however, that manufacturers will comply with the minimum specifications as it becomes necessary to change punches and dies through attrition or new machine design.

Call for Papers

1981 SMPTE Television Conference

6-7 February 1981, St. Francis Hotel, San Francisco, California

Planning for the 1981 Television Conference is proceeding and **Louis (Dee) Pourciau** has been appointed program chairman. The theme for the 15th Annual Television Conference will be "Production and Post-Production in the Eighties" and will include the following planned topics:

Anyone interested in submitting a paper for consideration on this program should contact any of the above (addresses follow) or **Lynne Robinson**, Manager, Conference Programming, SMPTE Headquarters.

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