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SMPTE 198-2003
Revision of
ANSI/SMPTE 198-1998

SMPTE STANDARD

for Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Aperture, Pressure Pad and Film Position

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 50-ft 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 SMPTE 197.

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.

NOTE – 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 SMPTE 199. Lug No. 4 should not touch the camera aperture plate (see annex A.5).

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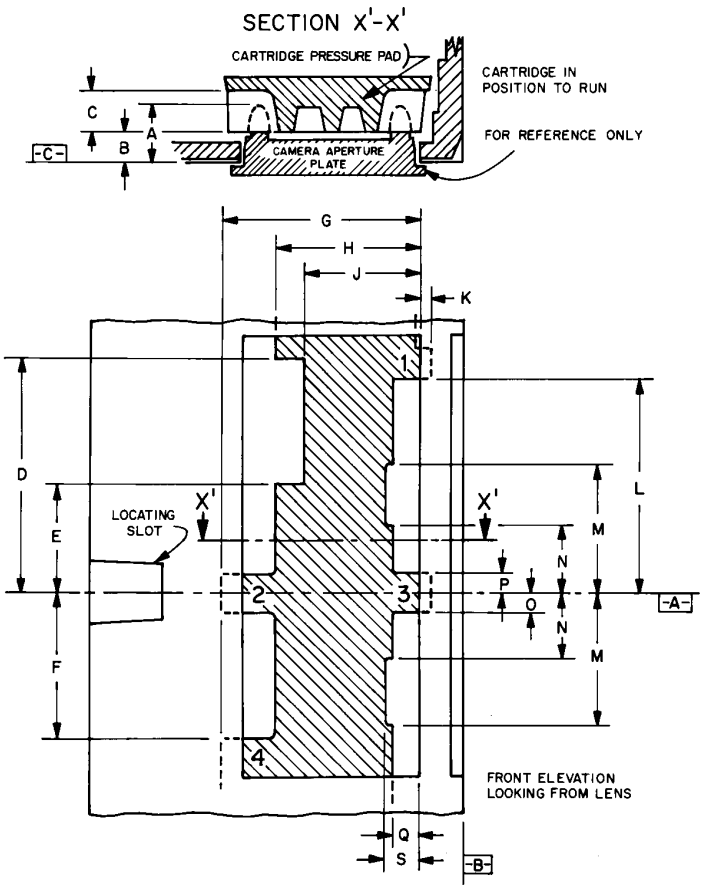

Figure 1 – Cartridge pressure pad

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

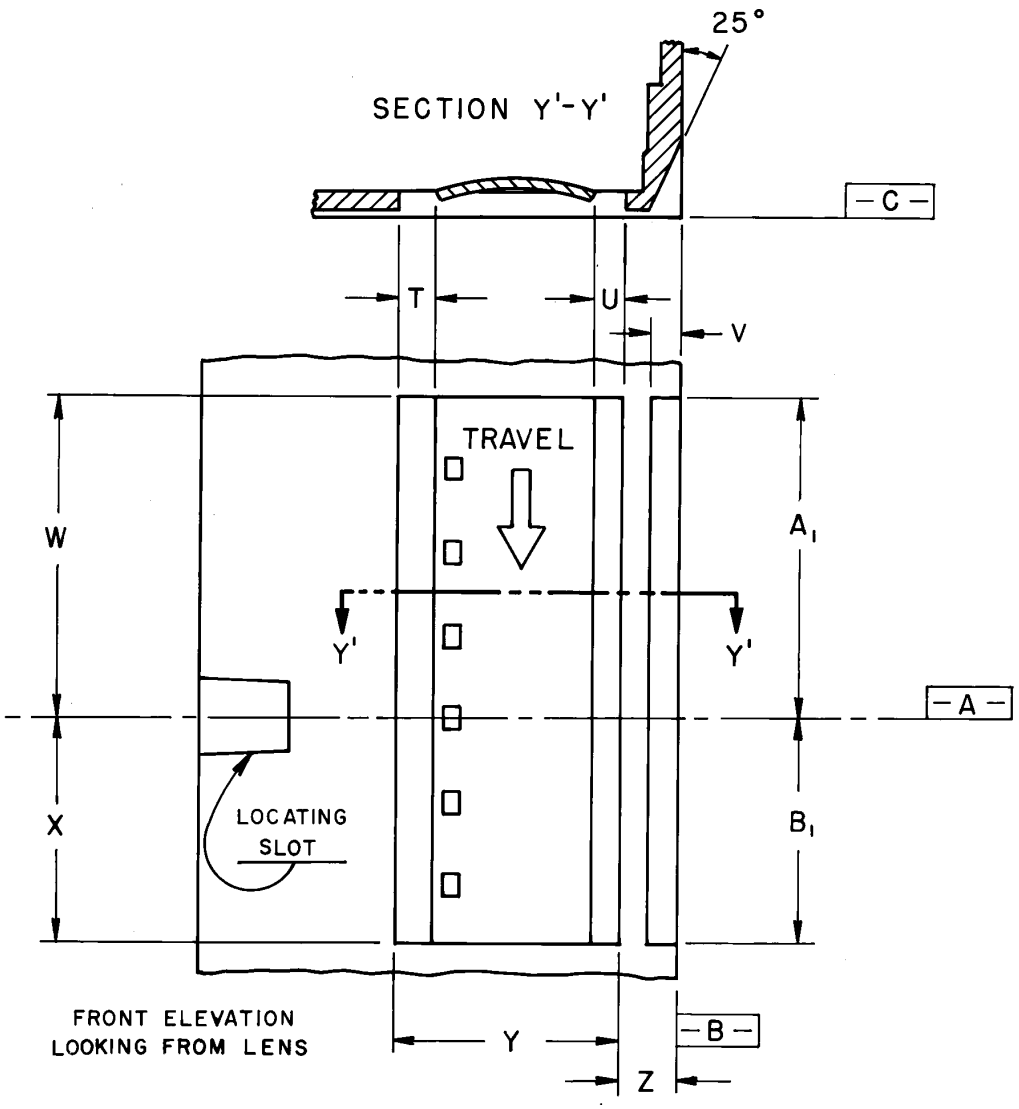

Figure 2 – Cartridge aperture opening and film position

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 ± 0.006	1.55 ± 0.15
W	0.648 ± 0.006	16.45 ± 0.15
X	0.451 ± 0.006	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

Annex A (informative)
Additional data

A.1 A force of 8 oz to 14 oz (2.2 N to 3.9 N) must be exerted on the pressure pad for proper seating against the camera aperture plate.

A.2 The two cut-out areas in the pressure pad permit the use of fingers for side-guiding. A force of 1.5 oz to 2.5 oz (0.42 N to 0.70 N) per finger is adequate to ensure picture steadiness.

A.3 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 2.6 must be provided, additional portions of the pad surface may be recessed also.

A.4 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 SMPTE 157 as minus-2 from the perforation adjacent to the image formed by the camera aperture. The horizontal centerline of the camera aperture should coincide nominally with datum plane A.

A.5 Lug No. 4 is included on the pressure pad although it serves no function after the cartridge is properly inserted in the camera. It does, however, aid in seating the pressure pad and prevent the film from being pinched at the bottom of the cartridge aperture opening.

A.6 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 surfaces of the cartridge. Drawings for a suitable cartridge-holding fixture may be obtained from the Society of Motion Picture and Television Engineers, 595 West Hartsdale Avenue, White Plains, NY 10607.

Annex B (informative)
Bibliography

SMPTE 157-1999, Motion-Picture Film (8-mm Type S) — Camera Aperture Image and Usage

SMPTE 166-1999, Motion-Picture Film (8-mm Type S) — Exposure Control and Stock Identification — Sound and Silent Camera Cartridge Notches

SMPTE 197-2003, Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Cartridge, Cartridge-Camera Interface and Take-Up Core

SMPTE 199-2003, Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Pressure Pad Flatness and Camera Aperture Profile

SMPTE 200M-2003, Motion-Picture Equipment (8-mm Type S) — Model 1 Camera Cartridge — Camera Run Length, Perforation Cutout and End-of-Run Notch