Standards and Recommended Practices

Approved American National Standards

Two American National Standards were approved by the American National Standards Institute on December 15, 1987: ANSI/SMPTE 166-1988, Motion-Picture Film (8-mm Type S) — Sound and Silent Camera Cartridge Notches — Exposure Control and Stock Identification; and ANSI/SMPTE 173-1988, Motion-Picture Equipment (8-mm Type R) — Double 8-mm Camera Spools — 100-Ft Capacity. Copies of the standards are available for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

Approved SMPTE Recommended Practices

The Society's Executive Committee for Standards Approval approved two SMPTE Recommended Practices: RP 65-1987, Step Optical Reduction Printing of 35-mm Images to 16-mm Prints and Duplicate Negatives; and RP 66-1987, Step Optical Enlargement Printing of 35-mm Images from 16-mm Images. These and other SMPTE Recommended Practices are available from Society Headquarters for $3.00 each.

Withdrawal of SMPTE Recommended Practice

On January 15, 1988, the Executive Committee for Standards Approval approved withdrawal of SMPTE Recommended Practice RP 26-1981, Label Specifications for Quadruplex and Helical-Scan Video Magnetic Tape Recordings. The practice has been withdrawn because, when it was written, very few formats or variations on formats were in existence. Today, not only are there a number of different formats, but also stereo sound, closed captioning, VITC bar codes for optical program identification, and other considerations that affect the adequacy of the label. The practice is, therefore, unsuitable for today's interchange requirements.

— *Sherwin H. Becker, Director of Engineering*

ANSI/SMPTE 166-1988
Revision and Redesignation of
ANSI PH22.166-1981

American National Standard for motion-picture film (8-mm type S)—sound and silent camera cartridge notches—exposure control and stock identification

Approved December 15, 1987 Sponsor: Society of Motion Picture and Television Engineers

1. Scope

1.1 This standard specifies the dimensions and location of 8-mm Type S sound and silent motion-picture film camera cartridge notches intended to preset exposure devices automatically with respect to the film speed and color-balancing filter.

1.2 This standard also specifies the dimensions and location of cartridge notches intended for identification of the motion-picture film inside the cartridge.

2. Referenced American National Standards

This standard is intended for use in conjunction with the following American National Standards:

ANSI/SMPTE 146M-1986, Motion-Picture Film—Determination of Speed—16- and 8-mm Reversal Color Camera Films

ANSI/SMPTE 159.1-1986, Motion-Picture Film (8-mm Type S)—Model 1 Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive

ANSI/SMPTE 197-1986, Motion-Picture Film (8-mm Type S)—50-Ft Model 1 Sound Camera Cartridge—Cartridge, Cartridge-Camera Interface and Take-Up Core

3. Dimensions

3.1 The dimensions of the cartridge notches shall be as specified in the figures and tables.

3.2 The datum planes used for dimensioning are mutually perpendicular.

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

3.3.1 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 is applies regardless of feature size (RFS) of the locating slot (see Appendix A3).

3.3.2 Datum Feature B is the unnotched, unlabelled surface of the cartridge.

3.3.3 Datum Feature C is the front seating surface of the cartridge.

3.4 Dimension U applies to all film identification notch locations.

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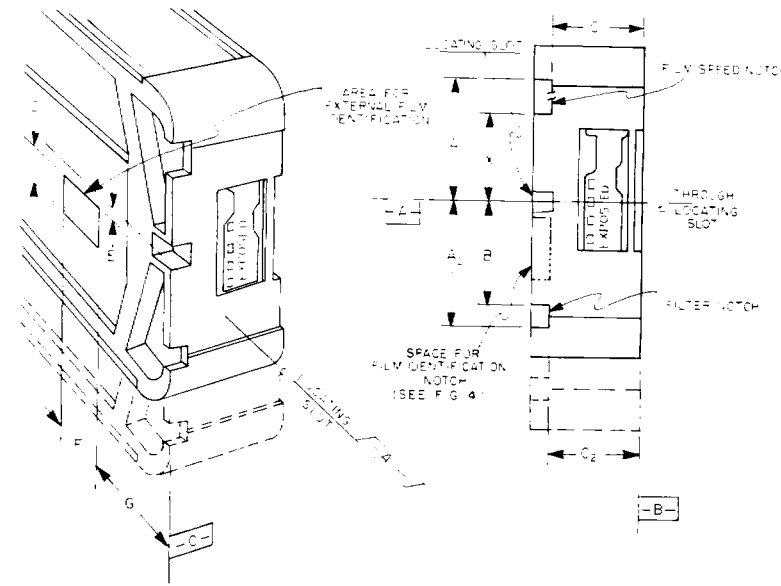

Fig. 1
External Visual Film Identification Area

Fig. 2
Film Speed and Filter Notches

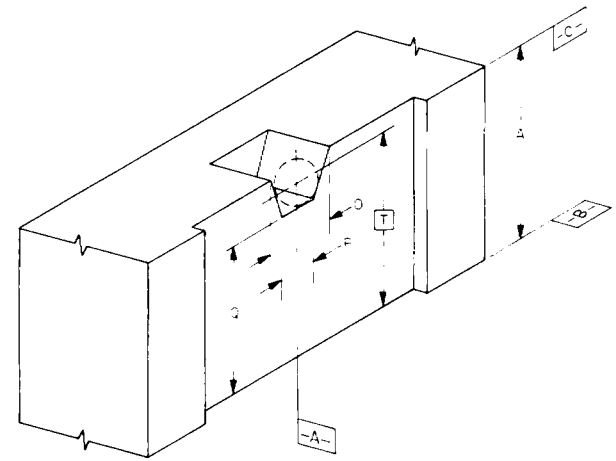

Fig. 3
Camera Locating Slot

4. Assignment Code*

4.1 The film identification notch location positions are numbered 1 through 6 from the locating slot so that combinations of notches can be assigned (see Fig. 4).

4.2 The 63 possible film identification notch combinations have been systematically arranged and identified with a notch combination code number, as shown in Table 4.

4.3 Assignment of a code for use with either 50-ft (15 m) silent or sound 8-mm Type S cartridges shall imply permission to utilize the same identification notch code for the same film offered in the alternate cartridge.

*Assignment of specific combinations of notches can be made according to the manufacturer's needs by application to the Manager, Technical Services, National Association of Photographic Manufacturers, Inc., 600 Mamaroneck Ave., Harrison, New York 10528.

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 nondiscriminatory 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.

Table 1
Film Speed and Filter Notch Dimensions

Dimensions	Inches	Millimeters
A	0.962 ± 0.018	24.43 ± 0.46
A_1	1.100 ± 0.015	27.94 ± 0.38
A_2*	1.100 ± 0.015	27.94 ± 0.38
B*	0.913 ± 0.015	23.19 ± 0.38
C_1	0.800 ± 0.015	20.32 ± 0.38
C_2	0.800 ± 0.015	20.32 ± 0.38
D	0.250 ± 0.015	6.35 ± 0.38
E	0.052 ± 0.015	1.32 ± 0.38
F	0.563 ± 0.015	14.30 ± 0.38
G	1.062 ± 0.015	26.97 ± 0.38
O	0.154 ± 0.004	3.91 ± 0.10
P	0.142 ± 0.004	3.61 ± 0.10
Q	0.770 ± 0.010	19.56 ± 0.25
T	0.870 basic	22.10 basic

*See Appendix A3.

Table 2
Film Speed Notches

Daylight Film Speed (Cartridge Has No Filter Notch)	Tungsten Light Film Speed (Cartridge Has A Filter Notch)	Dimension X*	
		Inches	Millimeters
10	16	1.000	25.40
16	25	0.900	22.86
25	40	0.800	20.32
40	64	0.700	17.78
64	100	0.600	15.24
100	160	0.500	12.70
160	250	0.400	10.16
250	400	0.300	7.62
400	640	0.200	5.08

*The tolerance for Dimension X is ± 0.015 in (0.38 mm).

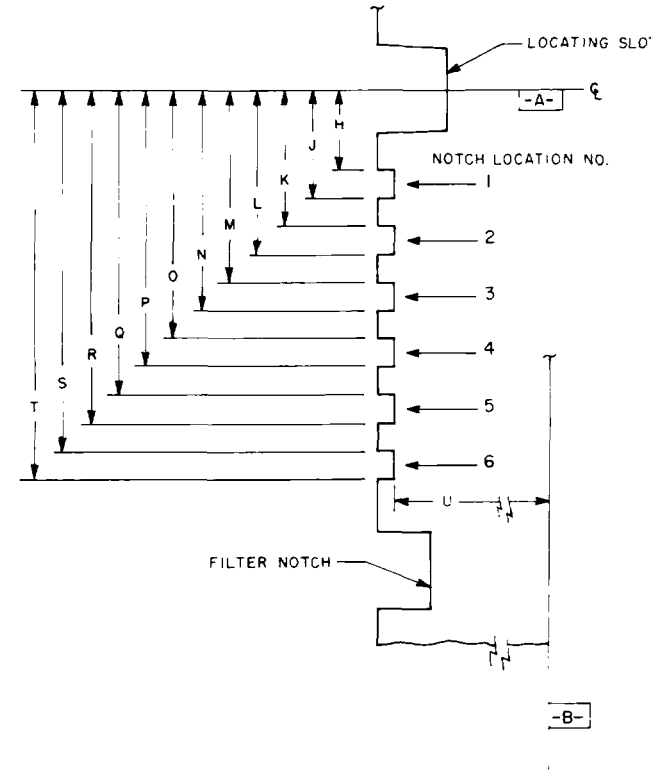

Fig. 4
Film Identification Notch Locations

Table 3

Dimensions	Inches		Millimeters	
	Minimum	Maximum	Minimum	Maximum
H	0.150	0.170	3.81	4.32
J	0.220	0.256	5.59	6.50
K	0.256	0.292	6.50	7.42
L	0.342	0.378	8.69	9.60
M	0.378	0.414	9.60	10.52
N	0.464	0.500	11.79	12.70
O	0.500	0.536	12.70	13.61
P	0.586	0.622	14.88	15.80
Q	0.622	0.658	15.80	16.71
R	0.708	0.744	17.98	18.90
S	0.744	0.780	18.90	19.81
T	0.830	0.928	21.08	23.57
U	0.894 ± 0.020		22.71 ± 0.51	

Table 4
Film Identification Notch Combinations

NOTCH COMBINATION CODE NUMBER	LOCATION NUMBER 1	2	3	4	5	6
1	1					
2		2				
3			3			
4				4		
5					5	
6						6
7	1	2				
8		2	3			
9			3	4		
10				4	5	
11					5	6
12	1		3			
13		2		4		
14			3		5	
15				4		6
16	1			4		
17		2			5	
18			3			6
19	1				5	
20		2				6
21	1					6
22	1	2	3			
23		2	3	4		
24			3	4	5	
25				4	5	6
26	1	2		4		
27		2	3		5	
28			3	4		6
29	1	2			5	
30		2	3			6
31	1	2				6
32	1		3	4		
33		2		4	5	
34			3		5	6
35	1		3		5	
36		2		4		6
37	1		3			6
38	1			4	5	
39		2			5	6
40	1			4		6
41	1				5	6
42	1	2	3	4		
43		2	3	4	5	
44			3	4	5	6
45	1	2	3		5	
46		2	3	4		6
47	1	2	3			6
48	1	2		4	5	
49		2	3		5	6
50	1	2		4		6
51	1	2			5	6
52	1		3	4	5	
53		2		4	5	6
54	1		3	4		6
55	1		3		5	6
56	1			4	5	6
57	1	2	3	4	5	
58		2	3	4	5	6
59	1	2	3	4		6
60	1	2	3		5	6
61	1	2		4	5	6
62	1		3	4	5	6
63	1	2	3	4	5	6

NOTE 1: The dimensions for the filter notch apply if the cartridge is loaded with film balanced for tungsten-light exposure and for some special cases with black-and-white film, as specified in Note 6. This area is not notched if the cartridge is loaded with color film for daylight exposure and usually is not notched for black-and-white film.

NOTE 2: The space available for notch-sensing devices is specified in ANSI/SMPTE 159.1-1986 and ANSI/SMPTE 197-1986.

NOTE 3: The dimensions in Table 3 permit the removal of material between adjacent identification notch positions, and between the number six identification notch position and the filter notch when adjacent notch positions are used. When material is retained, caution should be exercised to ensure that it is of sufficient strength to withstand normal handling without breakage.

NOTE 4: If film data, such as film name and length of film load, are to be provided on the cartridge, they should be within the area shown by Dimensions D, E, F, and G to provide for visual film identification in the camera (see Fig. 1).

NOTE 5: Many general-purpose black-and-white reversal films can be processed satisfactorily in a universal process. Notch combination code number 1, therefore, has been reserved for such general-purpose black-and-white reversal films.

NOTE 6: To ensure proper identification of film products whose production volume or market life does not warrant the assignment of a film identification notch, the absence of a notch in the area specified will require the film product to be identified by its label.

NOTE 7: The film speed notch is used to set the exposure of an automatic camera with the daylight film speed. When the cartridge is loaded with film balanced for tungsten light, the tungsten light values are those at which the films are rated by the manufacturer. The effective speeds to daylight illumination for which the camera will expose these films (unless instructed otherwise) are based on the premise that a typical tungsten-light balanced color camera original film will have a speed two-thirds of a lens stop less when exposed through an appropriate filter to daylight illumination than it has when exposed unfiltered to tungsten light. The filter notch established by Dimensions A_2 and B must, therefore, be used when the cartridge is loaded with color film balanced for tungsten illumination because this notch activates the camera to position a tungsten-to-daylight illumination correcting filter in the exposing light path. Black-and-white films are usually notched according to their daylight speed; however, a manufacturer may choose to speed notch a black-and-white film according to its speed to tungsten light, depending upon the intended use of the film. If this is done, the film would be exposed to daylight illumination through a tungsten-to-daylight correcting filter, as described above. A filter notch may also be used with black-and-white film if the manufacturer wishes to reduce the effective speed of a given film to daylight illumination by approximately two-thirds of a stop.

Appendix

(This Appendix is not part of the American National Standard, but is included for information only.)

A1. ISO (ASA) film speeds for reversal color camera-original motion-picture film are in accordance with ANSI/SMPTE 146M-1986.

A2. In order to clarify the system of speed notching specified in this standard, examples are provided below and in the table describing picture-taking situations that will require a fully automatic camera to insert or remove a color-correcting filter, and to make adjustments to the camera exposure system in order to obtain theoretically correct exposure and color balance of the resulting pictures.

CASE I. Assume an automatic exposure camera, having its exposure-sensing device separate from the camera lens system, is used. The following will apply:

Example A. 8-mm Type S film cartridge loaded with a color original film balanced for tungsten light with a film speed rating of 40. This cartridge will be notched with a filter notch and with a film speed notch dimensioned to allow the camera to sense that the appropriate exposure required is for film with an effective daylight film speed rating of 25 and a corresponding tungsten film speed rating of 40. (Effective speed is defined as the speed of a given photographic material used in conjunction with a filter and taken together as a system. The normal speed of a photographic product is defined as the speed it has when no filter is used during exposure. Effective speed ratings are useful because no filter factors or repeated exposure corrections are necessary when using such ratings.)

Situation 1. If daylight pictures are to be taken with this cartridge and camera, a color-correcting filter would be inserted into the lens axis by the camera when it senses the filter notch, and the camera exposure-sensing device would be adjusted to provide the appropriate exposure for an effective film speed rating of 25.

Situation 2. If tungsten-light pictures are taken, a means of removing the color-correcting filter inserted into the camera lens axis by the sensing of the filter notch would be required. Furthermore, the camera exposure-control system would have to be adjusted for a film speed of 40 (⅔ of a lens stop faster). These two adjustments could be accomplished when the color-correcting filter is removed from the lens axis automatically, when a lighting unit is attached to the camera, or manually by the operator.

Example B. 8-mm Type S film cartridge loaded with a color film balanced for daylight or with black-and-white film having a film speed rating of 25. The cartridge would not include a filter notch, and the film speed notch would be dimensioned to allow the camera to sense that the appropriate exposure required is for a film with a film speed rating of 25.

Situation 1. Daylight pictures would be made without a color-correcting filter in the lens axis because there is no filter notch for the camera to sense. The camera exposure-sensing device would be adjusted to properly expose a film with a film speed rating of 25.

Situation 2. Tungsten-light pictures would be made without a color-correcting filter in the lens axis because there is no filter notch for the camera to sense. If, however, the operator actuates the mechanical means of removing the color-correcting filter (which could be coupled to the lighting unit attachment), it would be necessary for the camera to distinguish this situation from that described in Case I, Example A, Situation 2, and no change in the adjustment of the camera exposure-sensing device should be made (i.e., it should remain set for a film with a speed rating of 25).

CASE II. Assume a camera designed with its automatic exposure-sensing system behind the lens and obtaining its information from the lens axis by reflex or split-beam arrangement is used. Any light correction filter used in the lens axis would, therefore, be ahead of the film and the exposure-sensing device.

Example A. 8-mm Type S film cartridge loaded with a color original film balanced for tungsten light with a film speed rating of 40. This cartridge will be notched with a filter notch and with a film speed notch dimensioned to allow the camera to sense that the appropriate exposure required is for a film with an effective speed rating of 25.

Situation 1. Daylight pictures would be made with the color-correcting filter inserted into the lens axis by the camera where it senses the filter notch. Then, if the camera exposure-control device has a spectral sensitivity comparable to that of a tungsten-light balanced color film, the film speed rating adjustment for the exposure-sensing device should be corrected to properly expose a film with a film speed rating of 40 instead of the effective daylight rating of 25, as notched. This adjustment is necessary because the light-correcting filter is in front of the exposure-sensing device, and the effective film speed rating sensitivity of 25 is accomplished by the filter's spectral density.

Situation 2. When tungsten-light pictures are made, it will be necessary to remove mechanically the light-correcting filter actuated by the camera's sensing the cartridge filter notch without allowing any change in the film speed rating adjustment of the exposure-sensing device and maintaining a film speed rating of 40.

Example B. 8-mm Type S film cartridge loaded with a color film balanced for daylight or with black-and-white film having a film speed rating of 25. The cartridge would not include a filter notch, and the film speed notch would be dimensioned to allow the camera to sense that the appropriate exposure required is for a film with a film speed rating of 25.

Situation 1. Daylight pictures would be made with no light-correcting filter in the lens axis because there is no filter notch for the camera to sense. However, the camera exposure-sensing device would have to be adjusted to provide proper exposure for a film with a film speed rating of 25 (differing from that in Case II, Example A, Situation 1). This could be accomplished because no filter notch is incorporated in the film cartridge, and the camera could sense the absence of this notch to properly adjust its exposure-sensing device (⅔ of a lens stop less exposure).

Situation 2. If tungsten-light pictures are made, there would be no light-correcting filter in the lens axis because there is no filter notch for the camera to sense, and the camera exposure-sensing device should be adjusted, as described in Situation 1 above (for a film with a speed rating of 25).

Film speed ratings of 25 for daylight and 40 for tungsten illumination were selected for camera original color films used in the examples above. The same principles and color film speed rating relationships would apply if other film speed ratings had been selected.

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 surfaces of the cartridge.

SUMMARY OF APPENDIX

Case	Example	Situation	Exposure System Ind*	Exposure System TTL†	Film Color Balance Tungsten	Film Color Balance Daylight	Film Speed Tungsten (40)	Film Speed Daylight (25)	Exposure Light Tungsten	Exposure Light Daylight	Camera Speed Setting	Filter
I	A	1	x		x		40	25 effective		x	25	in
I	A	2	x		x		40	25 effective	x		40	out
I	B	1	x			x		25		x	25	out
I	B	2	x			x		25	x		25	out
II	A	1		x	x		40	25 effective		x	40	in
II	A	2		x	x		40	25 effective	x		40	out
II	B	1		x		x		25		x	25	out
II	B	2		x		x		25	x		25	out

*Independent
†Through the lens

ANSI/SMPTE 173-1988
Revision and Redesignation of
ANSI PH22.173-1975

American National Standard
for motion-picture equipment (8-mm type R)—double 8-mm camera spools—100-ft capacity

Approved December 15, 1987 Sponsor: Society of Motion Picture and Television Engineers

1. Scope

The dimensions shown in this standard are for double 8-mm Type R motion-picture film spools with a nominal capacity of 100 ft (30 m). These spools are used in cameras of the type in which each roll of film is passed through the camera twice for exposure in accordance with ANSI/SMPTE 231M-1987. The spindle holes in the spool are shown with splines which are intended to assist in assuring correct orientation of the spool in the camera.

2. Referenced American National Standards

This standard is intended for use in conjunction with the following American National Standards:

ANSI/SMPTE 174-1988, Motion-Picture Equipment (16-mm)—Daylight-Loading Camera Spools —50- to 400-Ft Capacity

ANSI/SMPTE 231M-1987, Motion-Picture Film (8-mm Type R)—Double-Width Film Perforated Two Edges—Camera Usage

3. Dimensions

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

3.2 If rivet heads or other fastening devices extend beyond the outer surfaces of the flanges, they shall lie at a larger diameter than the minimum K diameter and within the boundaries defined by other portions of the Volume of Rotation Diagram.

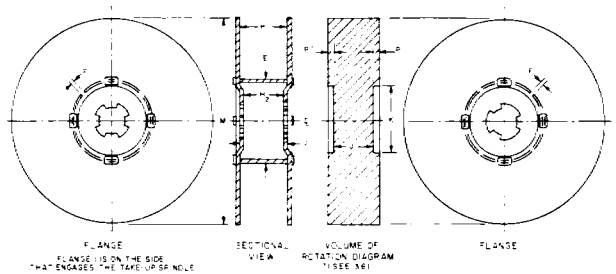

Fig. 1

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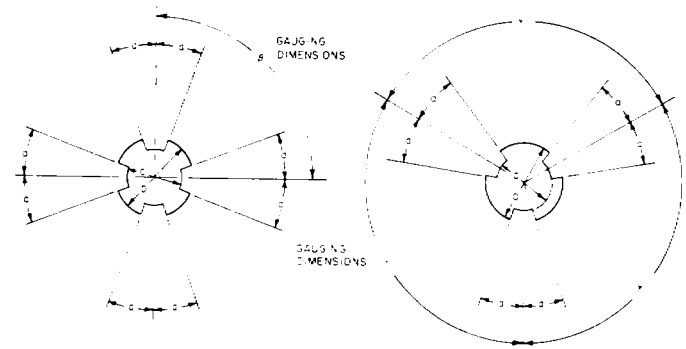
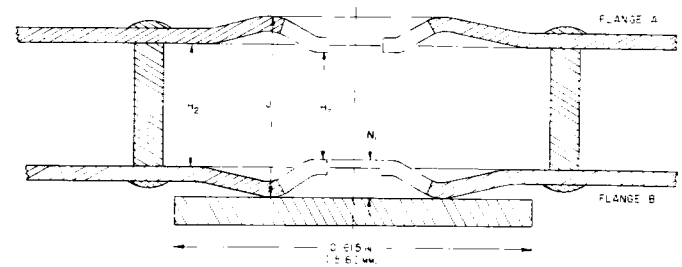


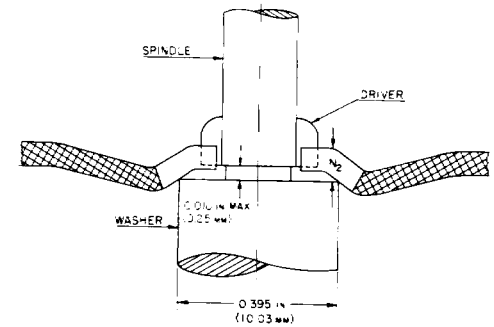
ENLARGED VIEW OF SPLINED HOLES

Fig. 2



ENLARGED SECTION FOR DIMENSION N_1

Fig. 3



SPINDLE AND SPOOL RELATIONSHIPS

Fig. 4

Dimensions	Inches	Millimeters
C	0.287 $^{+\ 0.008}_{-\ 0.000}$	7.29 $^{+\ 0.20}_{-\ 0.00}$
D	0.384 min	9.75 min
E (See 3.9)	0.750 ± 0.015	19.05 ± 0.38
F	0.035 ± 0.020	0.89 ± 0.51
H_1	0.632 $^{+\ 0.014}_{-\ 0.000}$	16.05 $^{+\ 0.36}_{-\ 0.00}$
H_2	0.630 min	16.00 min
H_3	0.622 min	15.80 min
J	0.73 $^{+\ 0.00}_{-\ 0.02}$	18.5 $^{+\ 0.0}_{-\ 0.5}$
K	0.615 min	15.62 min
M	3.62 $^{+\ 0.00}_{-\ 0.04}$	91.9 $^{+\ 0.0}_{-\ 1.0}$
N_1	0.038 min	0.97 min
N_2	0.025 min	0.64 min
P (See 3.6)	0.020 max	0.51 max
	Degrees	
α	20 ± 0—1	
β	90	
γ	120	

3.3 Dimension H_2 is the space between the flanges inside the core, but outside the D diameter zone.

3.4 Dimension H_3 applies within a diameter of 0.38 in (9.7 mm) centered on the spindle hole of each flange.

3.5 Dimension J represents the thickness of the spool within the K-diameter area, which is centered on the spindle hole axis of each flange.

3.6 A reference plane of rotation for each flange is defined by a plane perpendicular to the axis of the spindle and coincident with the surface of a flat, 0.615-in (15.62-mm) diameter support, which is in contact with the flange and centered on the spindle hole axis of the flange.

Dimension P is the distance measured outwardly from the reference plane of rotation to the farthest plane of rotation described by any point on the flange outside the K-diameter zone when the spool is rotated on an accurate, tight-fitting spindle. This includes rivets or other fastening devices, variations in flange thickness, flatness, and lateral runout of the flanges. (The reference plane from which P is measured is not necessarily coincident with all points within the K-diameter zone but only with those which are in contact with the reference support which has a diameter smaller than K.)

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).

3.7 The maximum effective thickness of spools (including all the characteristics mentioned in 3.6) outside the K-diameter area has not been stated because it is a function of a spool's specific J value between the 0.615-in (15.62-mm) diameter reference zones on each flange. The largest overall effective thickness, however, will be J max + 2P max = 0.77 in (19.6 mm).

3.8 The eccentricity of the core with respect to the spindle hole axis should not exceed a total radius variation (total indicator reading) of 0.03 in (0.8 mm).

3.9 A dimension of 1.26 ± 0.02 in (32.0 ± 0.5 mm) should be considered for the diameter of the core. All future design should be directed toward this dimension to aid in the design of metering devices.

3.10 When thin material is used for flanges, Appendixes A3 and A4 should be taken into account.

3.11 Dimension F (Fig. 1) specifies the width of the slot in the core for attaching the end of the film.

NOTE 1: When the loaded camera is viewed from the side, with the lens to the left, and the bottom of the housing downward (regardless of whether or not the spool-loading mechanism is visible from that side), both the supply and the take-up spools rotate in a clockwise direction.

NOTE 2: Flanges should be opaque and their surfaces should have low-reflectance characteristics.

NOTE 3: Spool capacity is based on a film thickness of approximately 0.006 in (0.15 mm).

Appendix

(This Appendix is not part of the American National Standard, but is included for information only.)

A1. It is expected that every spool manufacturer will hold H_1 within the narrowest limits that his design and manufacturing process permit.

A2. Camera spindles should allow for a radius of not more than 0.015 in (0.38 mm) at each corner of each tongue.

A3. Figures 3 and 4 represent special examples of how the needs of certain dimensions critical to proper performance in some cameras can be met by appropriate shaping or embossing of the spool stock if spools are made of a thin-gage material (much less than 0.040 in, 1.02 mm). For a number of years, the effective thickness of the 4-splined webs which engage most camera drivers, Dimension N_1, was the stock thickness, nominally 0.040 in (1.02 mm). Recently, spools have been made from thinner materials which required embossing to maintain Dimension J in order to enable the splines to engage the camera drivers, some of which have a clearance approaching 0.025 in (0.64 mm). Dimension N_1 is normally measured to a flat support having a diameter of 0.615 in (15.62 mm). Many cameras have spool support washers with diameters considerably less than 0.615 in (15.62 mm). In order to assure proper operation with such cameras, the dimension from the inside of the 4-splined flange to the plane of a flat support 0.395 in (10.03 mm) in diameter centered on the spindle hole axis of the flange, Dimension N_2 (Fig. 4), shall be at least 0.025 in (0.64 mm).

The enlarged section for Dimension N_1 (Fig. 3) illustrates one method of shaping the splines in the 4-splined flange so they will engage the camera driving spindle when the flange thickness is less than 0.025 in (0.64 mm).

A4. Camera spindles engaging the 4-splined flange of the spool should not have a gap greater than 0.010 in (0.25 mm) between the bottom of the spindle driving spline and the top of the spindle shoulder or washer that supports the spool.

It is recommended that, in newly designed cameras, the diameter of the supporting spindle shoulder or washer be not less than 0.500 in (12.70 mm) and no greater than 0.615 in (15.62 mm).

A5. To facilitate the distinction between a roll of film which has been exposed along only the first side (one-half width) and a roll of film which has not been exposed at all or has been exposed along both the first and second sides (both one-half widths), it is recommended that the flanges of spools be marked prominently as follows:

Raw Stock Spools Numeral	*Camera Accessory Spools* Numeral and/or Phrase
Flange with 4-splined spindle hole — 1	2 No Phrase (or numeral) necessary if phrase shown below is included on other flange.
Flange with 3-splined spindle hole — 2	1 Phrase or equivalent as follows: Film on this spool is half exposed.

Attention is called to the fact that if a camera accessory spool wound with the first exposure run of film is removed from the camera, identification of the film exposure status is more obvious if the spool has been marked with a phrase instead of (or in addition to) numerals. Some camera accessory spools have identical 4-splined holes in each flange. (Supply spindles of such cameras have one small lug or none.) Both flanges of such accessory spools should be marked with the phrase suggested above. To ensure proper orientation for the second exposure in this case, in addition to the phrase, it is helpful to have the numeral 1 on one flange and the numeral 2 on the other.

A6. Neither this document nor ANSI/SMPTE 231M-1987 restrict the perforation type of double-perforated 8-mm film that can be supplied with the spools. Generally, these spools are used only with conventional 8-mm motion-picture films, i.e., those cut and perforated 16-mm 2R-1500. Double super 8 motion-picture films (16-mm 2R-1664 or 1667) are usually supplied on 16-mm camera spools having square spindle holes aligned as specified in ANSI/SMPTE 174-1988.