International Standard



INTERNATIONAL ORGANIZATION FOR STANDARDIZATION MEX CHAPOCHAR OPPAHUSALUN TO CTAH CAPTUSALUNO ORGANISATION INTERNATIONALE DE NORMALISATION

Cinematography — Sound motion-picture camera cartridge, 8 mm Type S, Model 1 — Cartridge-camera interface and take-up core drive — Dimensions and specifications

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Cinématographie — Chargeur, modèle 1, pour caméra sonore 8 mm type S - Ajustement du chargeur dans la caméra et entraînement du noyau récepteur — Dimensions et spécifications and the second second

First edition - 1980-10-15

U-15 <u>ISO 5759:1980</u> https://standards.iteh.ai/catalog/standards/sist/7f00f765-3efe-4d72-9700-17136a6a727c/iso-5759-1980

Descriptors : cinematography, motion picture film, motion picture film 8 mm, cameras, cores, drives, dimensions, specifications.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5759 was developed by Technical Committee ISO/TC 36; VIE W *Cinematography*, and was circulated to the member bodies in October 1979.

It has been approved by the member bodies of the following countries :

Austria Belgium Canada Czechoslovakia Denmark Egypt, Arab Rep. of	Japan 17130 Mexico South Africa, Rep. of Spain	ISwitzenando logUnited Kingdom)0f765-3efe-4d72-9700- 5a6USA USSR Yugoslavia
France	Śweden	

No member body expressed disapproval of the document.

 $^{\odot}$ International Organization for Standardization, 1980 \bullet

Cinematography — Sound motion-picture camera cartridge, 8 mm Type S, Model 1 – Cartridge-camera interface and take-up core drive - Dimensions and specifications

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3.2 The dimensions apply to a cartridge assembled with a Scope and field of application 1 standards, film load at the time of manufacture.

This International Standard lays down the dimensions of the

https://standards.iteh.ai/catalog/standards/s This International Standard also lays down the dimensions of iso-5 the take-up core drive opening and critical dimensions of the take-up core. In addition, the driving force, direction of drive and recommended drive ratio of the take-up core are specified.

An optional means of retaining the film supply scroll configuration until the cartridge is placed in the camera is described.

2 References

ISO 3067, Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model 1 – Notches for film speed, film identification and colour-balancing filter – Dimensions and positions.

ISO 5760, Cinematography – Sound motion-picture camera cartridge, 8 mm Type S, Model 1 – Aperture opening, pressure pad and film position - Dimensions and specifications.

ISO 5761, Cinematography — Sound motion-picture camera cartridge, 8 mm Type S, Model 1 - Pressure pad flatness and camera aperture profile - Dimensions and characteristics.

ISO 5762, Cinematography - Sound motion-picture camera cartridge, 8 mm Type S, Model 1 - Camera run length, perforation cut-out and end-of-run notch in film - Specifications.

3 Dimensions

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

8 mm Type S sound motion-picture film camera cartridge, Model 1, and gives cartridge-camera interface specifications,759:198**3.3** Datum planes B, C, and A are referred to as first, second and third respectively. These planes, which are used for dimensioning, are mutually perpendicular and jointly called a datum réference frame.

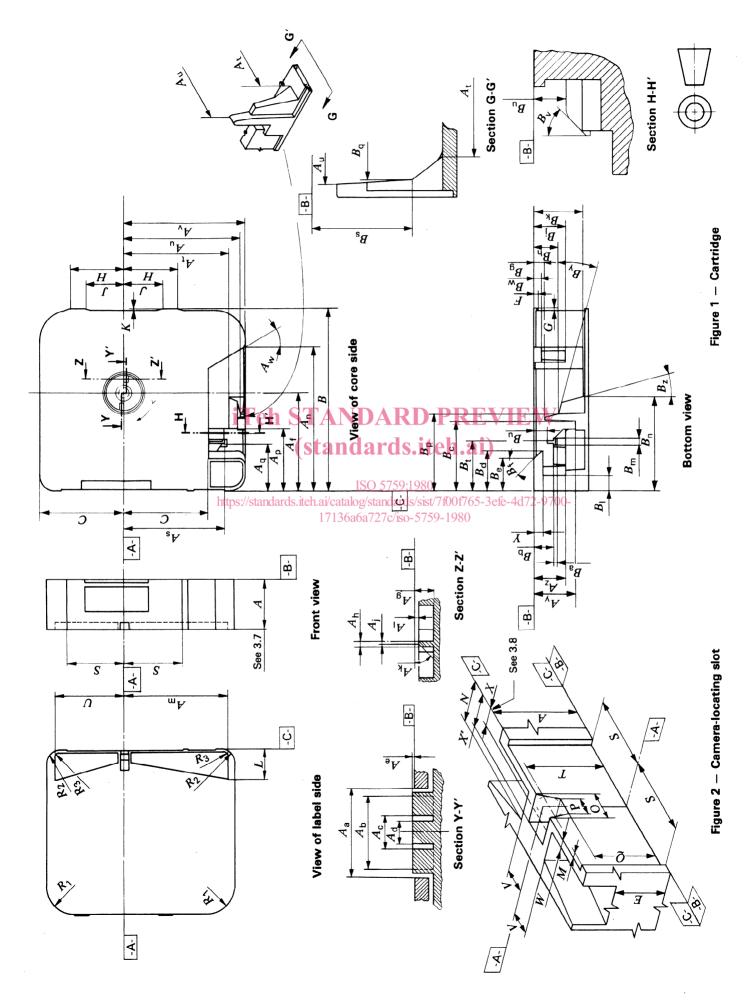
> 3.3.1 Datum plane A is coincident with the centre of a circle, located by basic dimension T. The circle is in contact with edges of the locating slot defined by dimensions A, O, P, and Q. The diameter of this circle is such that it applies regardless of feature size (RFS) of the locating slot. (See the annex, clause A.3.)

> 3.4 Datum features B, C and A are primary, secondary and tertiary respectively.

> 3.4.1 Datum feature B is the unnotched, unlabelled 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 in contact with the first datum plane B.

> 3.4.2 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 in contact with the second datum plane C.

> **3.5** Dimensions L, N, U, A_m , V, M, W, and R_3 , measured from datum planes A and C, describe the extent of both triangular recessed areas having a depth controlled by dimension E, as shown in the view of the label side. The inboard wall of the recessed area, defined by dimensions L and N, shall be a smooth surface and may be tilted from the perpendicular to the datum plane B sufficiently to allow proper release from a mould when the cartridge is manufactured in a moulding process.



2

Table 1

Table 2

Dimension

 A_{a} A_{b} $A_{
m c}$ $A_{\rm d}$ $A_{\rm e}$

Table 3

Dimension	mm	in
×	23,98 min.	0.944 min.
र	24,89 max.	0.9 8 0 max.
В	75,9 ± 0,3	2.99 ± 0.01
С	35,31 ± 0,25	1.390 ± 0.010
E	19,81 max.	0.780 max.
F	2,3 ± 0,3	0.09 ± 0.01
9	1,5 ± 0,3	0.06 ± 0.01
H	22,4 ± 0,8	0.88 ± 0.03
ſ	15,5 ± 0,8	0.61 ± 0.03
X	0,38 ± 0,25	0.015 ± 0.010
Г	11,94 min.	0.470 min.
W	0,178 ± 0,13	0.007 ± 0.005
N	4,50 min.	0.177 min.
0	3,91 ± 0,10	0.154 ± 0.004
Р	3,61 ± 0,10	0.142 ± 0.004
8	19,56 ± 0,25	0.770 ± 0.010
R1	12,7 ± 2,5	0.50 ± 0.10
R_2	6,4 ± 1,3	0.25 ± 0.05
R_3	4,06 тах.	0.160 max.
S	25,9 ± 0,3	1.02 ± 0.01
T^*	22,10	0.870
U	31,12 min.	1.225 min.
А	3,18 max.	0.125 max.
М	See	3.6
X	1,78 min.	0.070 min.
Χ'	4,01 min.	0.158 min.
Y	3,84 ± 0,30	0.151 ± 0.012
Basic dimension	ansion - No tolerance intended.(See	ntended.(See 3.3.1.)

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 A_{f}^{**}

 A_{g} Ą۲

mm	. <u>c</u>	Dimension	шш
17,27 max.	0.680 max.	B_{a}	1,52 ± 0,20
14,60 min.	0.575 min.	$B_{ m b}$	8,10 ± 0,20
8,31 max.	0.327 max.	$B_{ m c}$	29,26 min.
6,71 max.	0.264 max.	$B_{ m d}$	16,76 max.
0,76 max.	0.030 max.	$B_{ m e}$	13,54 max.
40,84	1.608	$B_{\mathfrak{f}}$	45° nom.
2,54 min.	0.100 min.	B_9	4,11 ± 0,36
1,02 ± 0,13	0.040 ± 0.005	$B_{ m h}$	8,81 min.
0,51 max.	0.020 max.	Bj	12,75 min.
45° nom.	45° nom.	$B_{\rm k}$	21,34 min.
0,76 max.	0.030 max.	B	6,60 max.
46,61 min.	1.835 min.	Bm	2,36 ± 0,36
59,44 min.	2.340 min.	B_{n}	39,37 max.
26,21 max.	1.032 max.	$B_{ m p}$	32,51 max.
18,62 ± 0,20	0.733 ± 0.008	B_{q}	47,96 min.
43,43 ± 0,30	1.710 ± 0.012	Bs	16,71 min.
43,94 min.	1.730 min.	$B_{ m t}$	19,99 max.
48,01 min.	1.890 min.	$B_{ m u}$	5,08 min.
50,80 ± 0,25	2.000 ± 0.010	B_{V}	45° nom.
30 ° - 5°	+ 1° 30° - 5°	$B_{\rm w}$	3,84 ± 0,30
1.5	0.620 min.	B_{V}	+1
12,75 min.	0.502 min.	B_{z}	15°±2°

 $A_{\rm m}$ $A_{\sf n}$ A_{p} $A_{\rm q}$ $A_{
m s}$

 $\mathbf{A}_{\mathbf{k}}$ A

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B_a 1,52 ± 0,20 0.060 ± 0.008 B_b 8,10 ± 0,20 0.319 ± 0.008 B_d 1,152 min. 1.152 min. B_d 1,6,76 max. 0.660 max. B_a 15,76 max. 0.660 max. B_d 1,574 max. 0.660 max. B_f 4,11 ± 0,38 0.162 ± 0.015 B_h 8,81 min. 0.347 min. B_h 8,81 min. 0.347 min. B_h 2,1,34 min. 0.347 min. B_h 0.162 max. 0.0162 max. B_h 39,37 max. 1.550 max. B_h 39,37 max. 1.550 max. B_h 39,37 max. 1.550 max. B_h 16,71 min.	Dimension	ш	Ē
$8,10 \pm 0,20$ 0.319 ± 1.152 29,26 min. 1.152 16,76 max. 0.660 15,76 max. 0.660 13,54 max. 0.533 45° nom. $45°$ no 4,11 \pm 0,38 0.162 ± 3.4 8,81 min. 0.347 8,81 min. 0.347 12,75 min. 0.347 21,34 min. 0.260 21,34 min. 0.260 21,34 min. 0.260 21,34 min. 0.260 3,37 max. 1.550 39,37 max. 1.550 33,37 max. 1.550 15,9 max. 0.093 15,9 max. 0.263 19,9 max. 0.260 5,08 min. 0.200 5,08 min. 0.200 15,9 max. 0.151 ± 1.45 15,9 ± 2.9 0.151 ± 1.45	B_{a}	+1	++
29,26 min. 1.152 n 16,76 max. 0.660π 13,54 max. 0.533π 45° nom. $45°$ no 45° nom. $45°$ no 45° nom. $45°$ no 45° nom. $45°$ no 8,81 min. $0.162 \pm$ 8,81 min. $0.347 n$ 12,75 min. $0.502 n$ 21,34 min. 0.640π 21,34 min. 0.260π 33,37 max. 1.550π 32,51 max. 1.550π 32,51 max. $1.288 n$ 16,71 min. $0.658 n$ 15,94 max. 0.787π 5,08 min. $0.200 n$ 45° nom. $0.200 n$ 38,4 \pm 0,30 $0.151 \pm$ 15° \pm $15° \pm$	$B_{ m b}$	+1	+1
16,76 max. 0.660 π 13,54 max. 0.533 π 45° nom. 45° no 4,11 \pm 0,38 0.162 \pm 8,81 min. 0.347 n 12,75 min. 0.347 n 21,34 min. 0.347 n 21,34 min. 0.260 n 32,351 max. 1.550 n 32,51 max. 1.550 n 32,51 max. 1.550 n 16,71 min. 0.658 n 15,98 min. 0.787 n 5,08 min. 0.200 n 5,08 min. 0.200 n 45° nom. 45° no 3,84 \pm 0,30 0.151 \pm 15° \pm 15° \pm	$B_{\rm c}$	29,26 min.	1.152 min.
13,54 max. $0.533 \ \pi$ 45° nom.45° nom.45° nom.45° no45° nom.45° no4,11 \pm 0,380.162 \pm 8,81 min.0.347 n12,75 min.0.340 n21,34 min.0.502 n21,34 min.0.260 n21,34 min.0.260 n21,34 min.0.260 n33,37 max.1.550 n33,37 max.1.550 n33,37 max.1.550 n33,51 max.1.550 n15,96 min.1.550 n15,96 min.0.093 \pm 15,96 min.0.288 n19,99 max.0.787 n19,99 max.0.787 n19,99 max.0.151 \pm 15° \pm 15° \pm 15° \pm 15° \pm 15° \pm 15° \pm	$B_{ m d}$	16,76 max.	0.660 max.
45° nom.45° no4,11 \pm 0,380.162 \pm 8,81 min.0.347 n8,81 min.0.347 n12,75 min.0.502 n21,34 min.0.840 n21,34 min.0.840 n6,60 max.0.260 n2,36 \pm 0,380.093 \pm 39,37 max.1.550 n39,37 max.1.550 n1550 n1.280 n15,06 min.1.280 n16,71 min.0.658 n19,99 max.0.787 n19,99 max.0.787 n19,99 max.0.787 n15,08 min.0.200 n45° nom.45° no15° \pm 15° \pm 15° \pm 15° \pm	$B_{ m e}$	13,54 max.	0.533 max.
$4,11 \pm 0.38$ $0.162 \pm 8,81$ min. $8,81$ min. 0.347 n $12,75$ min. 0.502 n $12,75$ min. 0.502 n $21,34$ min. 0.260 m $21,34$ min. 0.260 m $21,34$ min. 0.260 m $21,36 \pm 0.38$ 0.093 ± 3.50 m $33,37$ max. 1.550 m $33,37$ max. 1.550 m $32,51$ max. 1.550 m $16,71$ min. 0.668 n $16,71$ min. 0.658 n $15,90$ max. 0.787 m $19,90$ max. 0.787 m $5,08$ min. 0.787 m $15,90$ m 0.780 m $15,90$ m 0.780 m $15,90$ m 0.780 m $15,90$ m 0.780 m $15^{\circ} \pm 2^{\circ}$ $0.151 \pm 15^{\circ} \pm 15^{\circ}$	₿ţ	45° nom.	45° nom.
8,81 min. 0.347 n 12,75 min. 0.502 n 21,34 min. 0.502 n 21,34 min. 0.840 n 21,34 min. 0.260 m $6,60$ max. 0.260 m $5,50$ max. 0.260 m $39,37$ max. 1.550 m $39,37$ max. 1.550 m $32,51$ max. 1.550 m $37,51$ max. 1.550 m $37,51$ max. 1.550 m $37,51$ max. 1.550 m $37,51$ max. 1.550 m $16,71$ min. 0.658 n $15,90$ max. 0.787 m $19,90$ max. 0.787 m $5,08$ min. 0.200 n $5,08$ min. 0.200 n 45° nom. 45° no $3,84 \pm 0,30$ 0.151 ± 1 $15^{\circ} \pm 2^{\circ}$ $15^{\circ} \pm 1$	B_{g}	4 ,11 ± 0,38	0.162 ± 0.015
12,75 min. 0.502 n 21,34 min. 0.840 n 21,34 min. 0.840 n 6,60 max. 0.260 n 2,36 \pm 0.38 0.093 \pm 39,37 max. 1.550 n 39,37 max. 1.550 n 32,51 max. 1.550 n 32,51 max. 1.280 n 16,71 min. 0.658 n 19,99 max. 0.787 n 5,08 min. 0.200 n 45° nom. 0.200 n 45° nom. 0.200 n 384 \pm 0,30 0.151 \pm 15° \pm 2° 15° \pm	Bh	8,81 min.	0.347 min.
$21,34 \text{ min.}$ 0.840 n $6,60 \text{ max.}$ 0.260 r $2,36 \pm 0.38$ $0.093 \pm 1.550 \text{ r}$ $39,37 \text{ max.}$ 1.550 r $39,37 \text{ max.}$ 1.550 r $39,37 \text{ max.}$ 1.280 r $39,37 \text{ max.}$ 1.280 r $39,37 \text{ max.}$ 1.280 r $37,51 \text{ max.}$ 1.280 r $1,796 \text{ min.}$ 1.280 r $15,71 \text{ min.}$ 0.658 r $16,71 \text{ min.}$ 0.658 r $15,99 \text{ max.}$ 0.787 r $15,99 \text{ max.}$ 0.787 r $15,99 \text{ max.}$ 0.787 r $19,99 \text{ max.}$ 0.787 r 45° non. 0.200 n 45° non. 45° no $3,84 \pm 0,30$ 0.151 ± 1 $15^{\circ} \pm 2^{\circ}$ $15^{\circ} \pm 1^{\circ}$	B	12,75 min.	0.502 min.
$6,60 \max$ 0.260π $2,36 \pm 0.38$ $0.093 \pm$ $39,37 \max$ 1.550π $32,51 \max$ 1.280π $47,96 \min$ 1.280π $16,71 \min$ 0.658π $19,99 \max$ 0.787π $19,99 \max$ 0.787π $19,99 \max$ 0.787π $7,90 \min$ 0.787π $19,99 \max$ 0.787π $19,90 \min$ 0.780π $15,90 \pi$ $0.151 \pm$ $15^{\circ} \pm 2^{\circ}$ $15^{\circ} \pm$	B_{k}	21,34 min.	0.840 min.
$2,36 \pm 0.38$ $0.033 \pm 33,37 \text{ max}.$ 1.550 m $39,37 \text{ max}.$ 1.550 m $32,51 \text{ max}.$ 1.550 m $32,51 \text{ max}.$ 1.550 m $32,51 \text{ max}.$ 1.550 m $37,96 \text{ min}.$ 1.288 m $47,96 \text{ min}.$ 0.658 m $16,71 \text{ min}.$ 0.658 m $19,99 \text{ max}.$ 0.787 m $9,99 \text{ max}.$ 0.787 m $19,99 \text{ max}.$ 0.787 m $7,96 \text{ min}.$ 0.200 m $45^{\circ} \text{ nom}.$ 0.200 m $45^{\circ} \text{ nom}.$ 0.151 ± 4 $15^{\circ} \pm 2^{\circ}$ $15^{\circ} \pm 2^{\circ}$	B	6,60 max.	0.260 тах.
$39,37$ max. $1.550 \ \pi$ $32,51$ max. $1.280 \ \pi$ $32,51$ max. $1.280 \ \pi$ $47,96 \ min. 1.280 \ \pi 17,96 \ min. 1.280 \ \pi 17,96 \ min. 0.658 \ \pi 16,71 \ min. 0.658 \ \pi 16,71 \ min. 0.658 \ \pi 15,99 \ max. 0.787 \ \pi 19,99 \ max. 0.200 \ \pi 45^{\circ} \ nom. 45^{\circ} \ no 3,84 \pm 0,30 0.151 \pm 15^{\circ} \pm 16^{\circ} \pm 15^{\circ} \pm$	$B_{\rm m}$	2,36 ± 0,38	
$32,51 \text{ max}.$ 1.280 m $47,96 \text{ min}.$ 1.888 n $16,71 \text{ min}.$ 0.658 n $15,71 \text{ min}.$ 0.658 m $19,99 \text{ max}.$ 0.787 m $5,08 \text{ min}.$ 0.787 m $45^{\circ} \text{ nom}.$ $45^{\circ} \text{ no}.$ $3,84 \pm 0,30$ $0.151 \pm 15^{\circ} \pm $	Bn	39,37 max.	1.550 max.
47,96 min. 1.888 n 16,71 min. $0.658 n$ 16,71 min. $0.658 n$ 19,99 max. $0.787 n$ 5,08 min. $0.200 n$ 45° nom. $45° no$ 3,84 ± 0,30 $0.151 \pm$ 15° ± 2° $15° \pm$	Bp	32,51 max.	1.280 max.
16,71 min. 0.658 n 19,99 max. 0.787π 5,08 min. 0.200π 45° nom. $45° no$ 3,84 ± 0,30 $0.151 \pm$ 15° ± 2° $15° \pm$	B_{q}	47,96 min.	1.888 min.
19,99 max. 0.787 m 5,08 min. 0.200 n 45° nom. $45°$ no $3,84 \pm 0,30$ $0.151 \pm 15° \pm 15°$	$B_{\rm s}$	16,71 min.	0.658 min.
5,08 min. 0.200 n 45° nom. 45° no $3,84 \pm 0,30$ $0.151 \pm 15^{\circ} $	$B_{\rm f}$	19,99 max.	0.787 max.
45° nom. 45° no $3,84 \pm 0,30$ $0.151 \pm 15^{\circ} \pm 15^$	$B_{ m u}$	5,08 min.	0.200 min.
3,84 ± 0,30 0.151 ± 15° ± 2° 15° ± 15° ± 2° 15° ±	$B_{ m V}$	45° nom.	45° nom.
15° ± 2° 15° ± 15° ± 2° 15° ±	$B_{\rm W}$	+1	+I
15º ± 2º 15º ±	$B_{ m V}$	+1	H
	B_{z}	+I	.++

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Чu \mathcal{A}_{v}

 $A_{\mathfrak{l}}$

 A_{w}

 A_{V} A_{z}

> Basic dimension - No tolerance intended. (See 3.10.) Basic dimension - No tolerance intended. (See 3.3.1.)

> > *

3.6 The thickness of the wall of the cartridge used for notching, dimension W, shall be sufficient to withstand a force of at least 10 N (2.2 lbf), while deflecting no more than 1 mm (0.04 in).

NOTE — For the purpose of measurement, the force is applied by the end of a solid cylindrical pin of diameter nominally 1,27 mm (0.05 in), applied at a point nominally 0,8 mm (0.03 in) below the film speed notch or above the filter notch. The axis of the pin shall be situated within a plane parallel to datum plane B and at the distance T. Force is to be exerted in a direction away from and normal to datum plane C.

3.7 Dimension *A* specifies the normal overall thickness of the cartridge.

3.8 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 uses a film locking slide which is actuated by the camera locating pin and releases the film when the cartridge is inserted in the camera. Dimension X specifies the minimum depth of the camera locating slot in the cartridge as provided by the manufacturer, i.e. 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 slide after the cartridge is positioned in the camera. A camera locating pin having a maximum diameter of 3,56 mm (0.140 in) and a length of 3,94 \pm 0,08 mm (0.155 \pm 0.003 in) from datum plane C shall be sufficient to actuate the film locking slide. (See the annex, clause A.4.)

Allowance shall be provided within the camera to accond all modate a bowing of the notched, labelled side, of the cartridge

cover of up to a maximum of 25,63 mm (1.009 in) from datum plane B. The labelled side of the cartridge is shown in figure 1.

3.9 Dimensions B and M are measured from datum plane C. Dimensions C, J, H, and S are measured from datum plane A.

3.10 The take-up core axis shall be located within 0,25 mm (0.010 in) of the true centre formed by datum plane A and basic dimension A_{f} .

3.11 Dimensions A_a , A_b , A_c , and A_d are diameters.

3.12 Dimensions B_t , B_u , and B_v define an optional guide provided to facilitate film loading at the time of cartridge manufacture.

4 Take-up core drive

4.1 The normal direction of drive for the core shall be "clockwise" (right-hand drive) when viewed from the core side of the cartridge. (See the annex, clause A.5.)

4.2 After disengagement of any core anti-backup device, the core shall be driven with a nominal torque of 6.0×10^{-3} N·m with a permissible range of 3.5×10^{-3} N·m to (10.6 × 10⁻³ N·m (0.85 ozf·in with a permissible range of 0.5 to 1.5 ozf·in). (See the annex, clause A.2.)

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Annex

A.1 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.

A.2 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.

A.3 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 car-tridge.

A.4 The camera locating pin should be capable of withstanding a maximum force of 18 N (4 lbf) to actuate the film locking slide.

A.5 If a take-up core anti-backup mechanism is used, the mechanism should be capable of disengagement when the cartridge is placed in the camera permitting the core to turn silently.

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