ANSI/SMPTE 22M-1997
Revision of
ANSI/SMPTE 22M-1986

SMPTE STANDARD

for Video Recording — 3/4-in Type E Helical Scan — Cassette

1 Scope

This standard specifies the dimensions of a video cassette for use with a 3/4-in type E helical-scan video tape recording cassette system, operating at a tape speed of 95.3 mm/s (3.752 in/s).

2 Datum planes

2.1 Datum plane A is the plane determined by points A, B, and C in figure 5.

2.2 Datum plane B is the plane that includes the center of datum holes (a) and (b) and is orthogonal to both datum planes A and C.

2.3 Datum plane C includes datum hole (a) and is orthogonal to both datum planes A and B.

3 Dimensions

3.1 The dimensions necessary for the interface of equipment shall be as specified in the figures and table.

3.2 The metric dimensions are primary.

4 Measurement environment

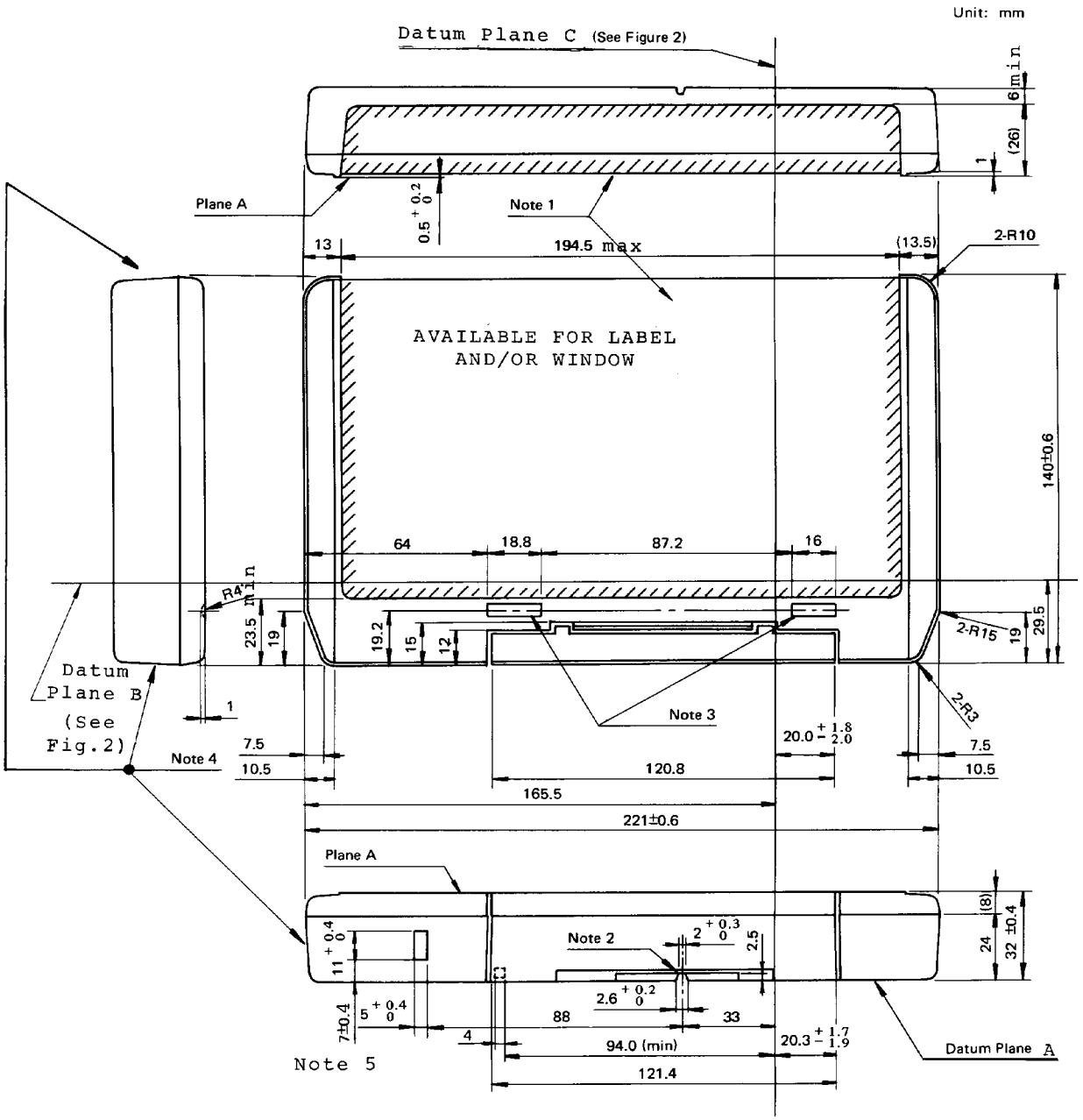
The temperature shall be 23°C ± 1°C (73°F ± 2°F) with a relative humidity of (50 ± 2)%.

Table 1 – Dimensional tolerances not otherwise specified

Millimeters			Inches		
Over	To	Tolerances	Over	To	Tolerances
0.0	4.0	± 0.2	0.000	0.157	± 0.008
4.0	16.0	± 0.3	0.157	0.630	± 0.012
16.0	63.0	± 0.4	0.630	2.480	± 0.016
63.0	250.0	± 0.5	2.480	9.843	± 0.020

American National Standard

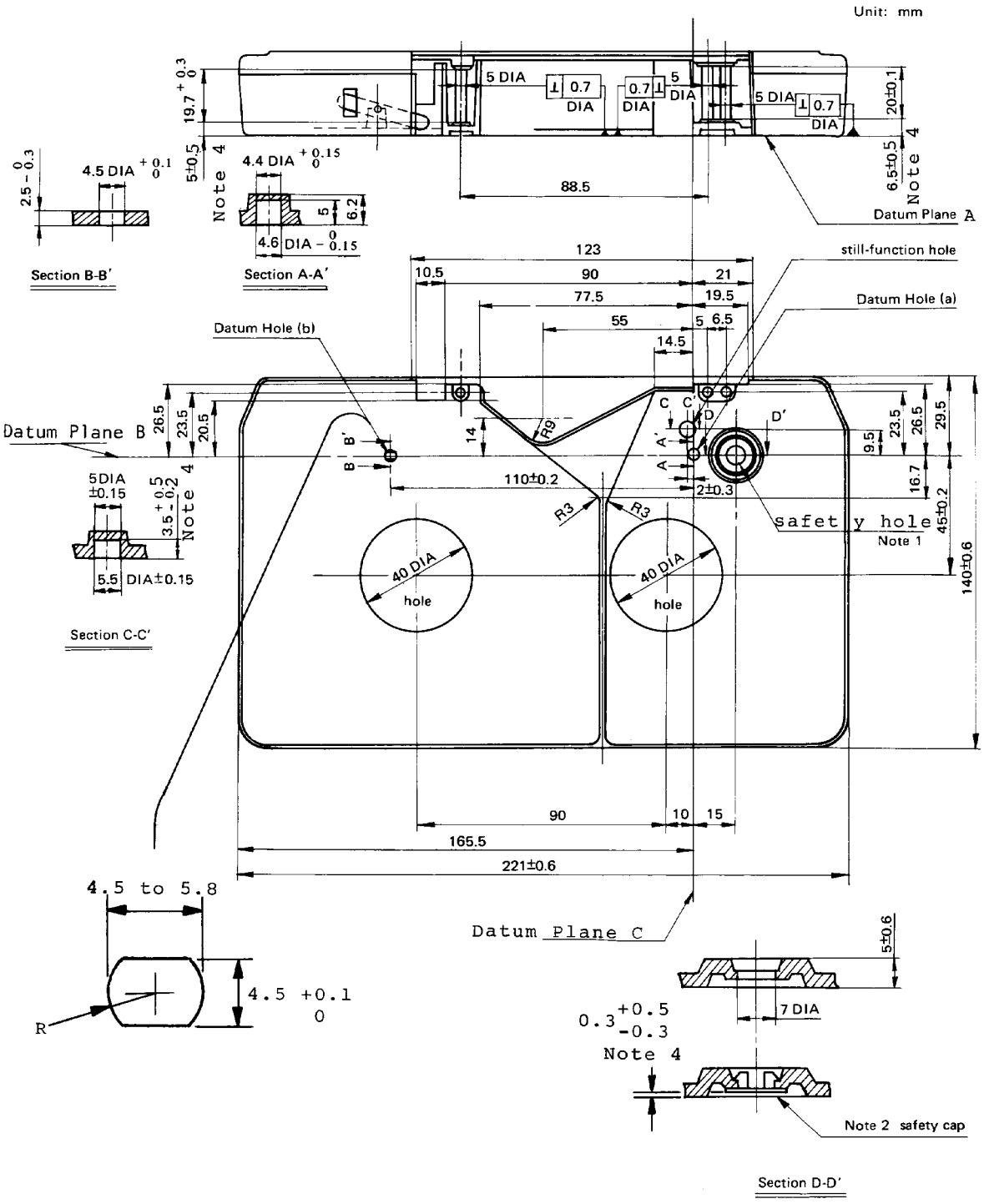
Approved
October 2, 1997



NOTES

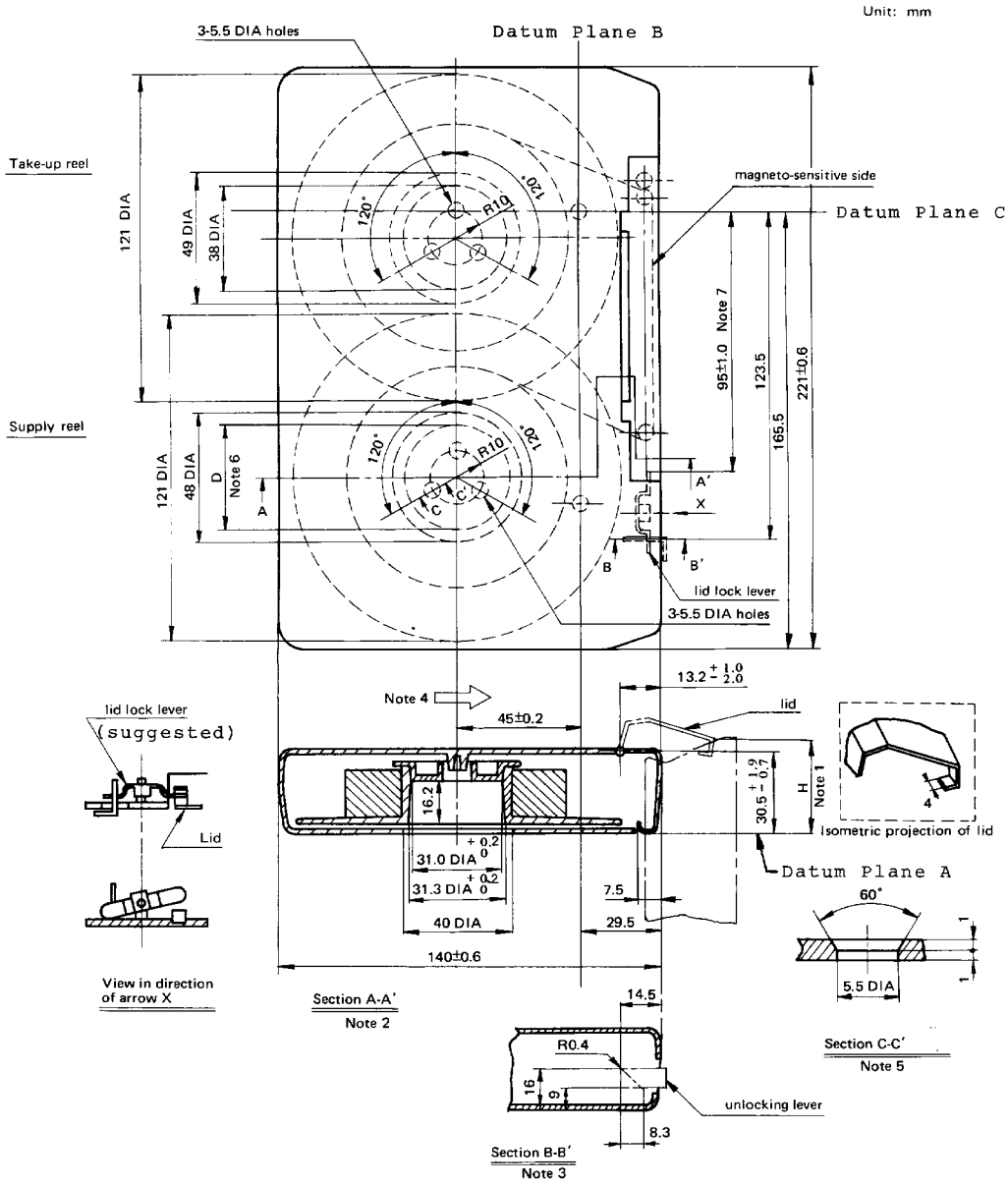
1 Hatched area shows the label area and/or window area. The surface of the glued label should be indented from plane A.
2 Guide groove.
3 Holding groove.
4 The outer edge should be slanted, but not more than 4° from vertical.
5 This dimension is measured from datum plane A.

Figure 1 – Top view of video cassette



NOTES
1 Recording is possible when the safety hole is covered.
2 The cap must not protrude but should be indented from datum plane A.
3 Datum hole (a) is primary.
4 These dimensions are measured from datum plane A.

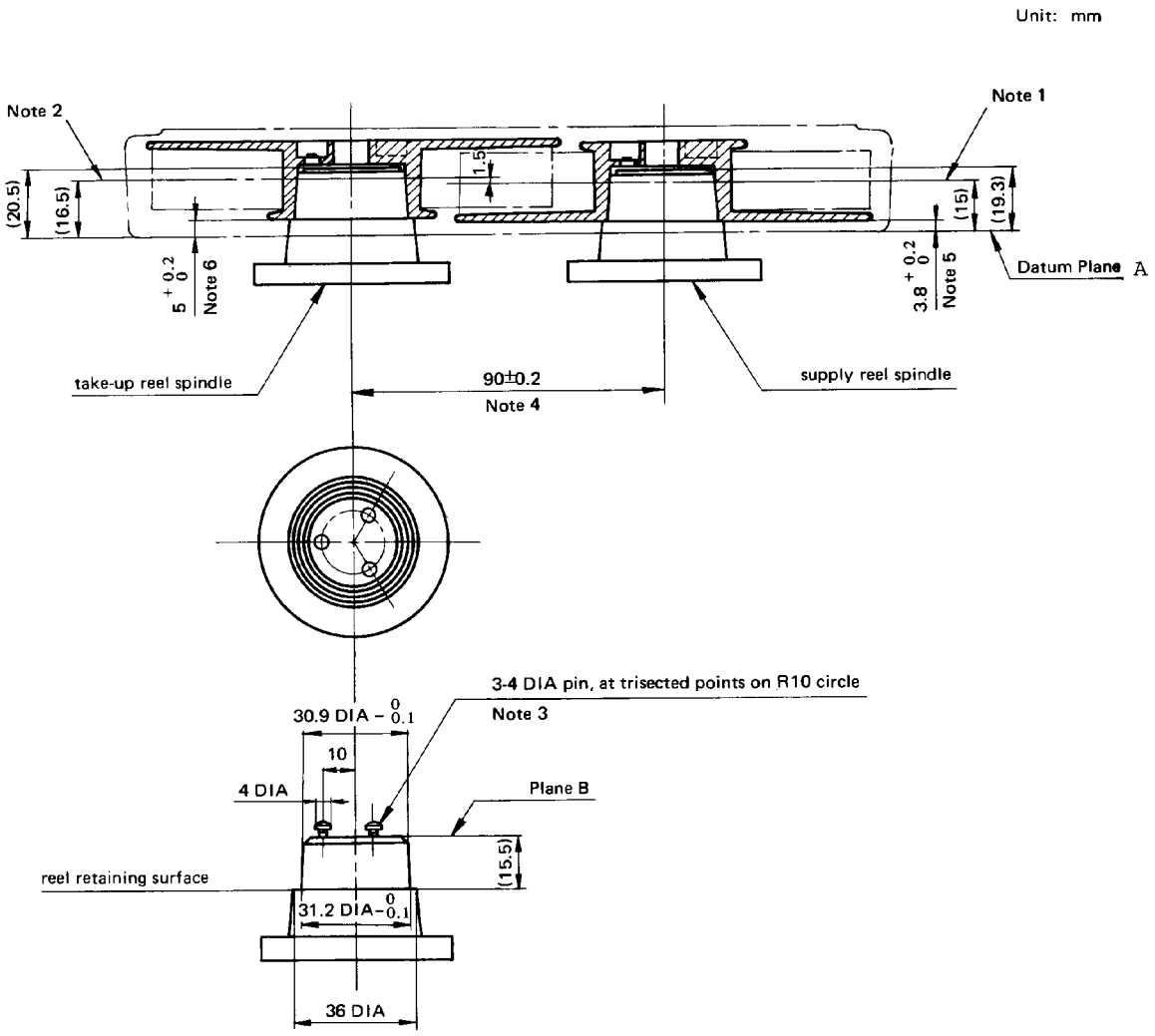
Figure 2 – Bottom view of video cassette



NOTES

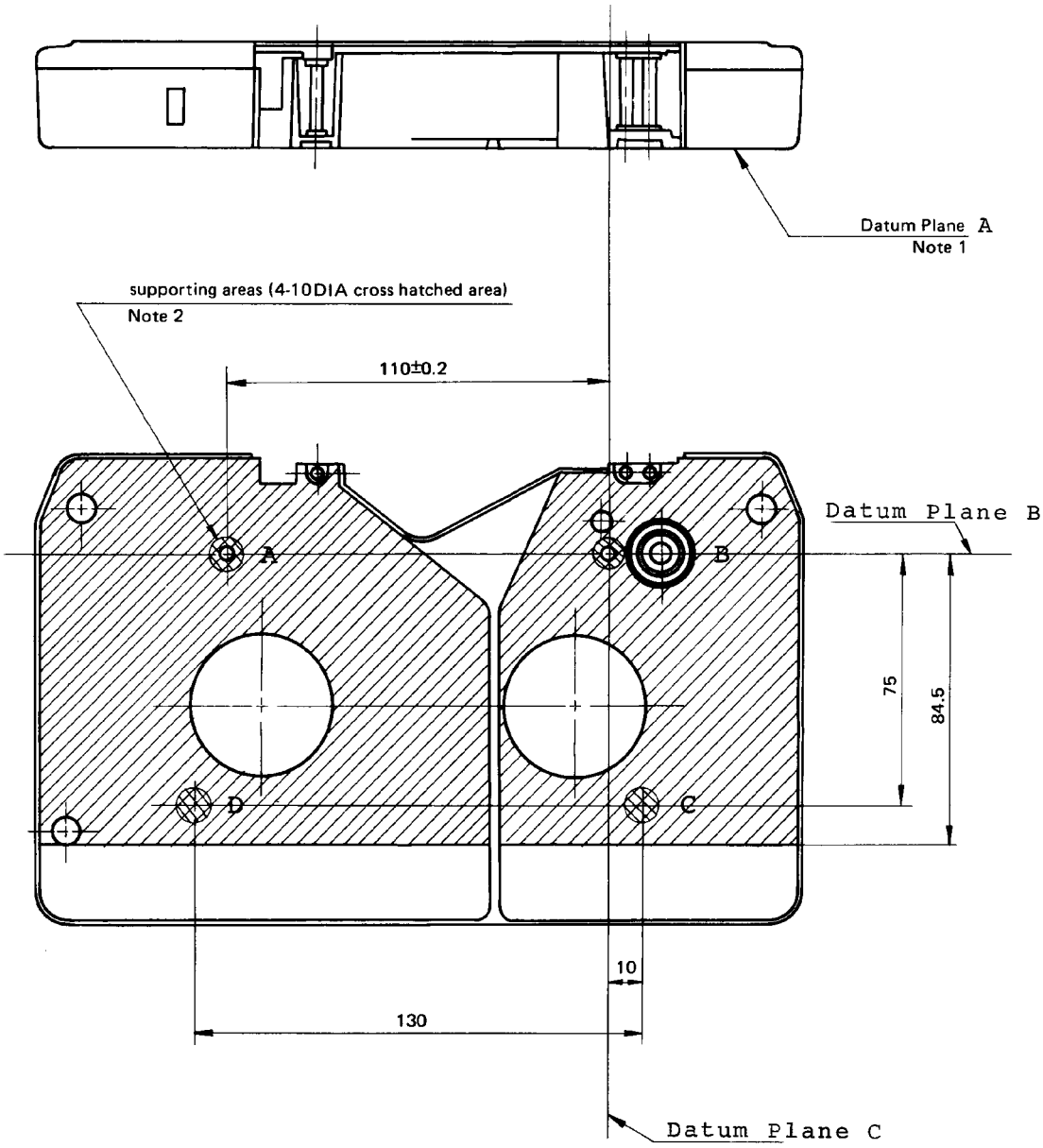
1 a) The protecting lid of the cassette shall open (height H) more than 35 mm (1.38 in). Height H is measured from datum plane A.
   b) Recorder/player unit shall be designed to open the protecting lid (height H) between 30 mm and 35 mm (1.18 in and 1.38 in) during operation.
2 The protecting lid opens as shown in section A-A′ when the cassette is inserted into the recorder/player. Maximum force to open the lid shall be 0.981 N (100 gf).
3 Section B-B′ shows the relationship between the cassette and the unlocking lever of the recorder/player.
4 The arrow shows the direction of cassette insertion.
5 Hole for drive pin.
6 The supply reel is of two types as follows: Hub diameter (D) of supply reel type I is 38 mm (1.50 in); hub diameter (D) of supply reel type II is 80 mm (3.15 in). A minimum distance of 1.5 mm (0.059 in) is required between the outer edge of a full reel pack and the edge of the reel flange.
7 Distance when the lock level is parallel to datum plane C.

Figure 3 – Location of reels and protecting lid



NOTES
1 Center of tape on supply reel when cassette is inserted in recorder/player.
2 Center of tape on take-up reel when cassette is inserted in recorder/player.
3 Pins of the reel spindle drive the reel and can be pressed down to the level of plane B.
4 Distance between centers of two reel spindles.
5 Distance between contact plane to supply reel and datum plane A of the cassette.
6 Distance between contact plane to take-up reel and datum plane A of the cassette.

Figure 4 – Relationship between reels and reel spindles



NOTES
1 Datum plane A is determined by datum points A, B, and C.
2 Flatness of the four crosshatched areas shall be coplanar within 0.2 mm (0.008 in).
3 Flatness of the hatched area shall be coplanar within + 0.5 mm – 0.6 mm (+ 0.020 in – 0.024 in) of datum plane A. The positive deviation is measured upward from the bottom plane.

Figure 5 – Cassette datum plane

Annex A (informative)
Bibliography

ANSI/SMPTE 21M-1997, Video Recording — 3/4-in Type E
Helical Scan — Records