
International Standard



3654

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

Cinématographie — Chargeur modèle I pour caméra 8 mm type S — Ajustement du chargeur dans la caméra et entraînement du noyau récepteur — Dimensions et spécifications

Second edition — 1983-12-15

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

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 3654 was developed by Technical Committee ISO/TC 36, *Cinematography*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 3654-1978), which had been approved by the member bodies of the following countries :

Austria	India	Switzerland
Belgium	Italy	Turkey
Canada	Japan	United Kingdom
Czechoslovakia	Mexico	USA
Denmark	Netherlands	USSR
France	Spain	
Germany, F. R.	Sweden	

No member body had expressed disapproval of the document.

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

1 Scope and field of application

This International Standard specifies the dimensions of 8 mm Type S motion-picture film camera cartridge, Model I, and gives cartridge-camera interface specifications.

This International Standard also specifies the dimensions of 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.

2 References

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications.*

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

3 Dimensions

3.1 Measurements made at the time of manufacture shall be taken at a temperature of $23 \pm 2^\circ\text{C}$ as stated in ISO 554. A manufacturer may indicate other nominal temperatures under which dimensions apply.

3.2 The dimensions shall be as shown in the figures and given in the tables. The dimensions apply to a cartridge with a film load at the time of manufacturing.

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 reference frame.

Datum plane A (figure 2) is coincident with the centre of a circle, located by basis 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 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 In figure 1, dimensions L , N , U , V , M , W and R_3 , measured from datum planes A and C respectively, 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 straight plane 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.

3.6 The thickness of the wall of the cartridge used for notching, dimension W , shall be sufficient to withstand a force 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 The camera locating pin shall have a maximum diameter of 3,56 mm (0.140 in).

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 (see figure 3).

3.11 Dimensions A_a , A_b , A_c and A_d in figure 3 are diameters.

4 Take-up core drive

4.1 The nominal axial position of the highest point on the outer surface of the core shall not protrude more than 0,38 mm (0.015 in) above datum plane B as shown in figure 3. The axial position of the top edge of the drive lugs established by dimensions A_b and A_c shall not be recessed more than 0,61 mm (0.024 in) below datum plane B.

4.2 The normal direction of drive for the core shall be "clockwise" (right-hand drive) when viewed from the core side of the cartridge.

4.3 A nominal torque of $6,0 \times 10^{-3}$ N·m with a permissible range of $3,5 \times 10^{-3}$ N·m to $10,6 \times 10^{-3}$ N·m (0.85 ozf·in with a permissible range of 0.5 to 1.5 ozf·in) from start of run is required to drive the core. (See annex, clause A.2.)

NOTES

1 Placement of film data, such as name, number and length of load, and the inclusion of any notches, should be in accordance with ISO 3067.

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

5 Bibliography

ISO 1780, *Cinematography — Motion-picture camera cartridge, 8 mm Type S Model I — Aperture, camera aperture profile, film position, pressure pad and pressure pad flatness — Dimensions and specifications.*¹⁾

ISO 3024, *Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Camera run length, perforation cut-out and end-of-run notch in film — Specifications.*²⁾

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1) At present at the stage of draft. (Revision of ISO 1780-1975.)

2) At present at the stage of draft. (Revision of ISO 3024-1975.)

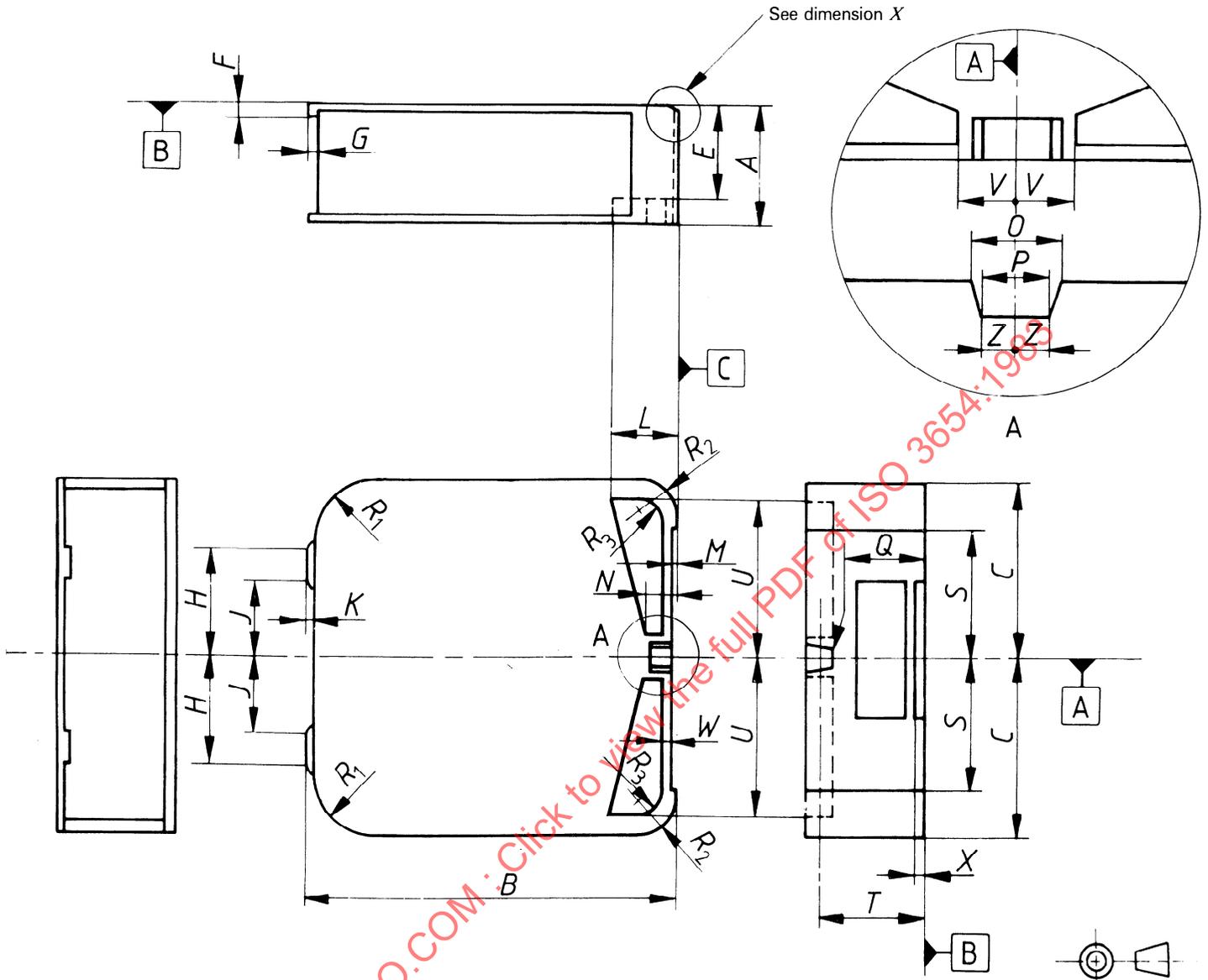


Figure 1 — External cartridge camera fit characteristics

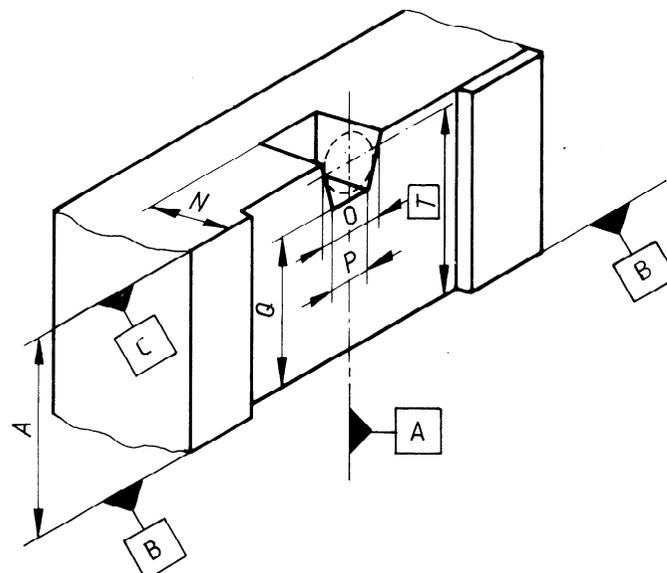


Figure 2 — Camera-locating slot

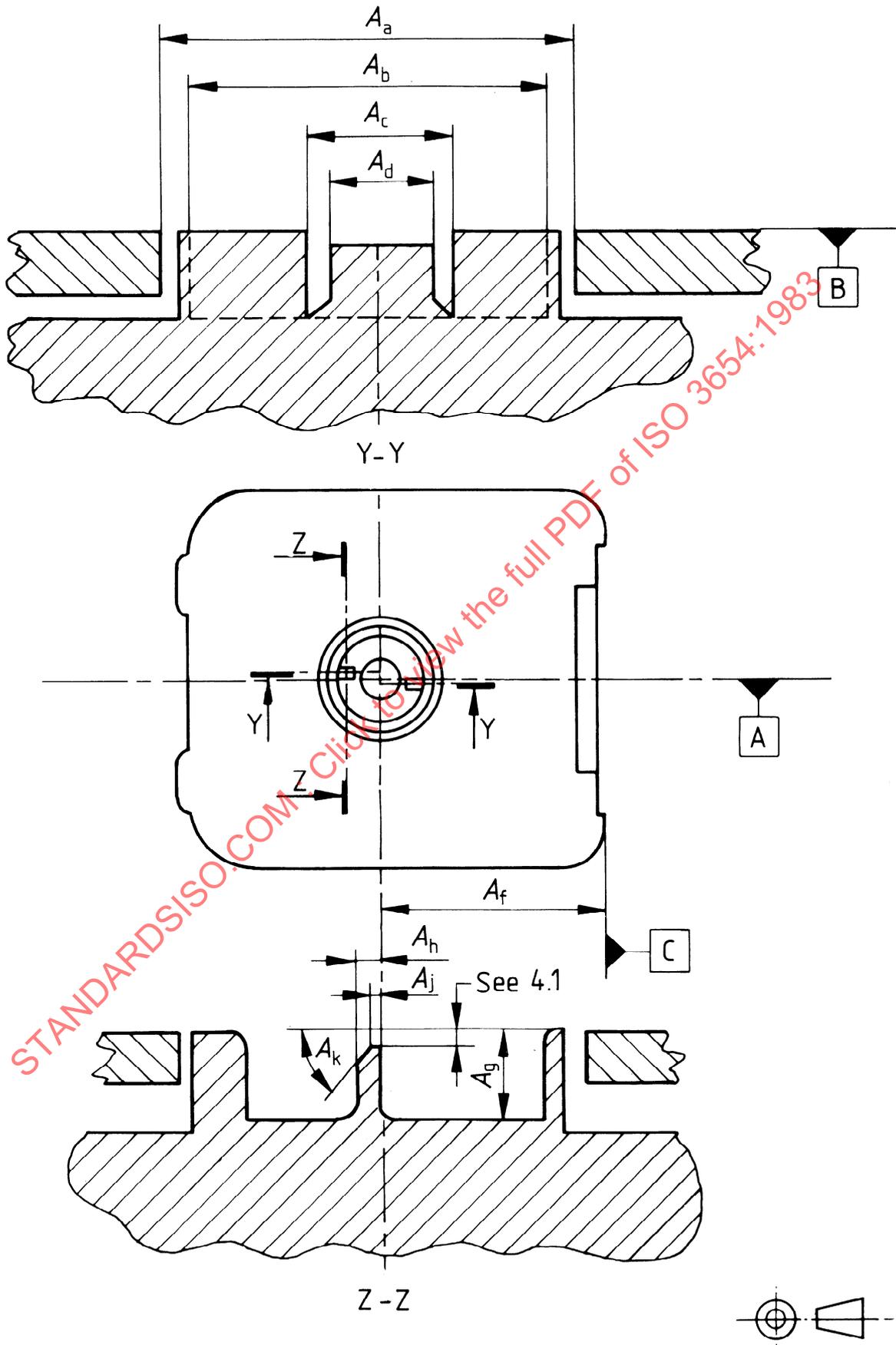


Figure 3 — Take-up core specifications