
International Standard



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Information processing — Self-loading cartridges for 12,7 mm (0.5 in) wide magnetic tape

Traitement de l'information — Cartouches à chargement automatique pour bande magnétique de 12,7 mm (0,5 in) de large

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6098 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

ISO 6098 was first published in 1982. This second edition cancels and replaces the first edition; sub-clause 5.1 of the previous edition having been technically revised.

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Information processing — Self-loading cartridges for 12,7 mm (0.5 in) wide magnetic tape

1 Scope and field of application

This International Standard specifies mechanical and functional interchangeability requirements for self-loading cartridges, to be used with reels of 12,7 mm (0.5 in) wide magnetic tape specified in ISO 1864.

Minimum dimensional and functional requirements of the cartridge are given, in order to ensure interchangeability of cartridges between tape drives designed for self-loading operation. Some dimensions and features, other than those strictly required for interchangeability, are also given but have to be considered as recommended or optional.

NOTE — The numeric values in the SI and Imperial measurement systems in this International Standard may have been rounded and, therefore, are consistent with, but not exactly equal to, each other. Either system may be used but the two should be neither intermixed nor reconverted. The original design was completed using the Imperial measurement system.

2 Reference

ISO 1864, *Information processing — Unrecorded 12,7 mm (0.5 in) wide magnetic tape for information interchange — 32 ftpmm (800 ftpi) NRZ1, 126 ftpmm (3 200 ftpi) phase encoded and 356 ftpmm (9 042 ftpi), NRZ1.*

3 Environment

3.1 Testing environment

Tests and measurements made to check the requirements of this International Standard shall be carried out under following conditions :

temperature : 23 ± 2 °C (73 $\pm$ 5 °F)

relative humidity : 40 to 60 %

conditioning time before testing : 24 h

3.2 Operating environment

temperature : 16 to 32 °C (60 to 90 °F)

relative humidity : 20 to 80 %

wet bulb temperature : not greater than 25 °C (78 °F)

3.3 Storage environment

3.3.1 Cartridges loaded with unrecorded tape

temperature : 5 to 48 °C (40 to 120 °F)

relative humidity : 20 to 80 %

wet bulb temperature : not greater than 26 °C (80 °F)

3.3.2 Cartridges loaded with recorded tape

temperature : 5 to 32 °C (40 to 90 °F)

relative humidity : 20 to 80 %

wet bulb temperature : not greater than 25 °C (78 °F)

3.3.3 Cartridges without tape

Temperature and relative humidity of storage environment for cartridges without tape should be according to the recommendations of the manufacturers of the cartridge.

4 Description and operation

4.1 General

The self-loading cartridge is a collar which can be attached to the rim of a reel of magnetic tape and protect the tape against dust and contamination during storage and handling.

The collar is provided with an opening mechanism which permits it to be opened by mechanical means, and is furthermore provided with a system of air distribution channels which will allow the tape to be driven out of the opening pneumatically for the purpose of automatic loading on a suitably designed tape transport.

4.1.1 Material

The cartridge shall be made from materials that, if ignited from a match flame, do not continue to burn in a still carbon dioxide atmosphere.

4.2 Types

There are two types of self-loading cartridges, type A and type B, having no functional differences.

However, they differ in some dimensional characteristics, in particular in their widths.

A tape drive should have provisions for accepting both types, but because of the dimensional differences existing between the two types, there might be tape drives which accept only type A or only type B.

4.3 Use of latch

The self-loading cartridge shall have a latch device for opening and closing. When opening the latch, the collar shall expand to such extent as to provide manual insertion and extraction of the reel. When the latch is closed, the inside surface of the collar moves radially and shall come into firm contact with the rims of the flanges of the reel.

4.4 Operation

4.4.1 Mounting

The cartridge, in the closed position, with reel and tape, shall be mounted on the tape drive.

Proper positioning of the cartridge shall be determined, in the direction of the axis of the reel, by the interface between the reel and the drive's hub, and, in the angular direction, by a tangential restraint key and a corresponding restraint of the drive.

4.4.2 Opening

By a circular movement of a pin from the tape drive engaging a slotted hole in the latch, the cartridge shall reach its open position.

In the open position, the cartridge shall be expanded so that the reel shall be free to rotate inside the collar, without touching it.

4.4.3 Restraint keys

In the open position, the cartridge shall be held in place by tangential and axial restraint keys and corresponding restraints of the drive.

4.4.4 Air intake and air exit

On the outside surface of the collar, there shall be an air intake area.

In the open position, this area shall come into contact with an air supply nozzle of the tape drive.

4.4.5 Tape exit

The collar shall be provided with a tape exit opening. In the closed position of the cartridge, this opening shall be shut. In the open position of the cartridge, this opening shall be open.

4.4.6 Tape loading

When the cartridge is in the open position, air applied to the air intake area shall be capable of detaching the free end of the tape from the tape pack, and, in combination with the rotating action of the reel, of leading the tape end through the tape exit.

4.4.7 Closing

After rewinding the tape completely back on to the reel, the cartridge is brought back from the open position to the closed position by a circular movement of the pin engaging the slotted hole in the latch.

The circular movement is exactly the reverse of the movement necessary for opening.

4.5 Figures

For ease of understanding the dimensional requirements, a typical construction is shown in the figures.

Figure 1 — Closed position (rear view) — shows the rear side of the cartridge in the closed position with partial view A.

Figure 2 — Open position (front view) — shows the front side of the cartridge in the open position.

Figure 3 — Closed position (rear view) — is an enlarged view of figure 1 with partial views A to G and sections K-K for types A and B.

Figure 4 — Open position (front view) — is an enlarged view of figure 2 with partial view A.

Figure 5 — Hook — is a view of the cartridge hook.

Figure 6 — Reference orifice — shows a reference orifice in cross-section.

5 Dimensions

The dimensions given for the cartridge in the closed position are referred to two perpendicular axes X and Y. The relative angular position of the cartridge with regard to these axes is defined by an angle

$$\alpha_0 = 24^\circ \text{ nominal}$$