



SLOVENSKI STANDARD

SIST HD 574 S1:1999

01-julij-1999

Type B helical video recorders (IEC 60602:1980 + A1:1987)

Type B helical video recorders

Videobandgeräte mit Schrägspuraufzeichnung Typ B

Magnétoscopes à enregistrement hélicoïdal de type B

Ta slovenski standard je istoveten z: **HD 574 S1:1990**

[SIST HD 574 S1:1999](https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999)

<https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999>

ICS:

33.160.40 Video sistemi Video systems

SIST HD 574 S1:1999 **en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST HD 574 S1:1999](#)

<https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999>

CENELEC

Rue Bréderode 2, Bte 5 - 1000 BRUXELLES
 Tél.: [+32.2] 519 68 71 - Télex: 26257 Cenlec b
 Fax: [+32.2] 519 68 19 - Télécex: 206 2210097 CENEL

HD 574 S1

July 1990

ENGLISH VERSION

UDC: 621.397.452

Descriptors: Recording equipment, video recording, video tape recorder,
 magnetic tape, dimension, recording track, characteristic

TYPE B HELICAL VIDEO RECORDERS

Magnétoscopes à enregistrement
 hélicoïdal de type B

Videobandgeräte mit
 Schrägspuraufzeichnung Typ B

iTeh STANDARD PREVIEW
(standards.iteh.ai)

BODY OF THE HD

The Harmonization Document consists of:

- IEC 602 (1980) ed 1 + Amdt 1 (1987); IEC/SC 60B, not appended
- <https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999>

This Harmonization Document was approved by CENELEC on 1990-06-01.

The English and French versions of this Harmonization Document are provided by the text of the IEC publication and the German version is the official translation of the IEC text.

According to the CENELEC Internal Regulations the CENELEC member National Committees are bound:

to announce the existence of this Harmonization Document at national level by or before 1990-12-15

to publish their new harmonized national standard by or before 1991-06-15

to withdraw all conflicting national standards by or before 1991-06-15.

Harmonized national standards are listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC Central Secretariat.

The CENELEC National Committees are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST HD 574 S1:1999](#)

<https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999>

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

60602

Première édition
First edition
1980-01

Magnétoscopes à enregistrement hélicoïdal
de type B

IT Type B helical video recorders
STANDARD PREVIEW
(standards.iteh.ai)

SIST HD 574 S1:1999

<https://standards.iteh.ai/catalog/standards/sist/224790ac-bf77-43dc-b0d4-257645cac267/sist-hd-574-s1-1999>

© IEC 1980 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

3, rue de Varembe Geneva, Switzerland
IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

N

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

	Page
FOREWORD	5
PREFACE	5
Clause	
1. Scope	7
2. Object	7
3. Format description	7
4. Environment	7
5. Tape and spools	7
5.1 Dimensions of magnetic tape for television	7
5.2 Spools	9
5.3 Magnetic tape properties	11
6. Mechanical parameters	11
6.1 Scanning configuration	11
6.2 Speeds of the tape and of the video-head wheel	13
6.3 Position of the recorded tracks	15
7. Electrical parameters	21
7.1 Modulation system	21
7.2 Characteristic frequencies	21
7.3 Pre-emphasis and de-emphasis	21
7.4 Recording of the audio track	21
7.5 Specification of the recording of the field synchronizing and control signals	23
APPENDIX A — Transmission characteristics of the signal chain	27

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TYPE B HELICAL VIDEO RECORDERS

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This standard has been prepared by Sub-Committee 60B: Video Recording, of IEC Technical Committee No. 60: Recording. **(standards.iteh.ai)**

Drafts were discussed at the meeting held in Budapest in 1978. As a result of this meeting, a draft, Document 60B(Central Office)29, was submitted to the National Committees for approval under the Six Months' Rule in September 1978.

The National Committees of the following countries voted in favour of publication:

Australia	Japan
Austria	Korea (Democratic People's
Belgium	Republic of)
Canada	Netherlands
Czechoslovakia	Poland
Denmark	Romania
Egypt	South Africa (Republic of)
Finland	Spain
France	Switzerland
Germany	Turkey
Italy	United Kingdom
	United States of America

Other IEC publications quoted in this standard:

- Publications Nos. 94: Magnetic Tape Sound Recording and Reproducing Systems.
 461: Time and Control Code for Video Tape Recordings.
 503: Spools for 1 in (25.4 mm) Video Magnetic Tape.

TYPE B HELICAL VIDEO RECORDERS

1. Scope

This standard applies to magnetic video recording and/or reproduction using 25.4 mm (1 in) tape on type B helical-scan recorders suitable for broadcast applications.

2. Object

The object of this standard is to define the electrical and mechanical characteristics of equipment which will provide for interchangeability of recordings. The requirements given are related to 525 line-60 field and 625 line-50 field systems.

3. Format description

Two recording heads are used. In 525-60 systems each head records one-fifth of the field and in 625-50 systems each head records one-sixth of the field.

4. Environment

Tests and measurements made on the recorder to check the requirements of this standard shall be carried out under the following conditions:

Temperature:	$23 \pm 1^{\circ}\text{C}$
Relative humidity:	48% to 52%
Barometric pressure:	86 kPa to 106 kPa
Conditioning before testing:	24 h

5. Tape and spools

5.1 Dimensions of magnetic tape for television

The magnetic tape used for television recording shall conform to the following dimensions.

TABLE I

Dimensions of magnetic tape

	Millimetres	Inches
Width	$25.350^{+0.025}_{-0.025}$	$0.998^{+0.001}_{-0.001}$
Maximum overall thickness	0.032	0.0013
Maximum curvature	1.3 in 1 m	0.051 in 39.4

Note. — The curvature shall be measured by constraining the tape to lie in a plane under zero tension, and by positioning a straight edge of the specified length as shown in Figure 1, page 9.

5.2 Spools

5.2.1 Spools shall conform to the requirements of ISO Standard 1860. The preferred reel sizes are listed in IEC Publication 503: Spools for 1 in (25.4 mm) Video Magnetic Tape. If a friction ring is used, dimension C shall be:

$$115^{+2}_{-1} \text{ mm } (4.528^{+0.079}_{-0.039} \text{ in}).$$

If provided, the friction ring should not impair spool performance.

5.2.2 A minimum distance of 5 mm (0.2 in) from the tape stack to the spool periphery shall be allowed. Approximate spool capacities are given in Table IV.

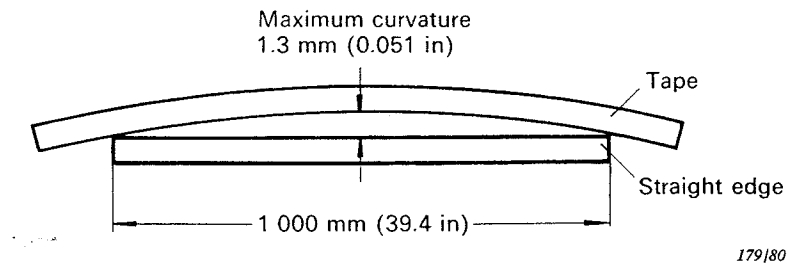


FIG. 1. — Measurement of the curvature of the magnetic tape.

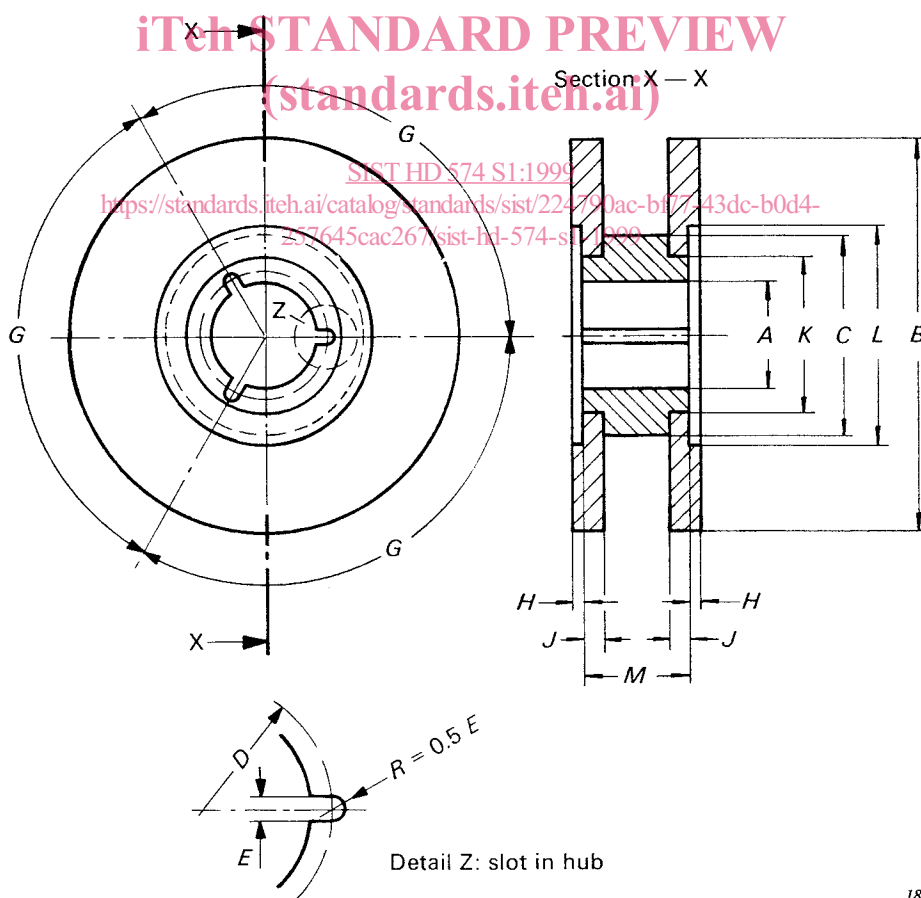


FIG. 2. — Spools for television tape.

TABLE II
Spool dimensions

Dimensions	Millimetres	Inches	Degrees
<i>A</i>	76.2 ^{+0.1} _{-0.0}	3.000 ^{+0.004} _{-0.000}	
<i>C</i>	114.0 ^{+0.5} _{-0.0}	4.500 ± 0.010	
<i>D</i>	82.5 ^{+0.1} _{-0.0}	3.250 ± 0.002	
<i>E</i>	5.60 ^{+0.15} _{-0.00}	0.219 ^{+0.006} _{-0.000}	
<i>G</i>			120.0 ± 0.1
<i>H</i>	0.65 max.	0.025 max.	
<i>J</i>	2.5 max.	0.098 max.	
<i>K</i>	91.5 min.	3.600 min.	
<i>L</i>	153 min.	6.000 min.	
<i>M</i>	30.8 ± 0.1	1.212 ± 0.003	

TABLE III
Dimension B

Millimetres	Inches
203.0 ^{+0.5} _{-0.0}	8.000 ± 0.010
229.0 ^{+0.5} _{-0.0}	9.000 ± 0.010
248.0 ^{+0.5} _{-0.0}	9.750 ± 0.010
267.0 ^{+0.5} _{-0.0}	10.500 ± 0.010

TABLE IV
Approximate spool capacities

Diameter of spool		Approximate capacity		Approximate maximum playing time
Millimetres	Inches	Metres	Feet	Minutes
203	8	650	2100	43
229	9	900	3000	62
248	9.75	1125	3700	77
267	10.5	1400	4600	95

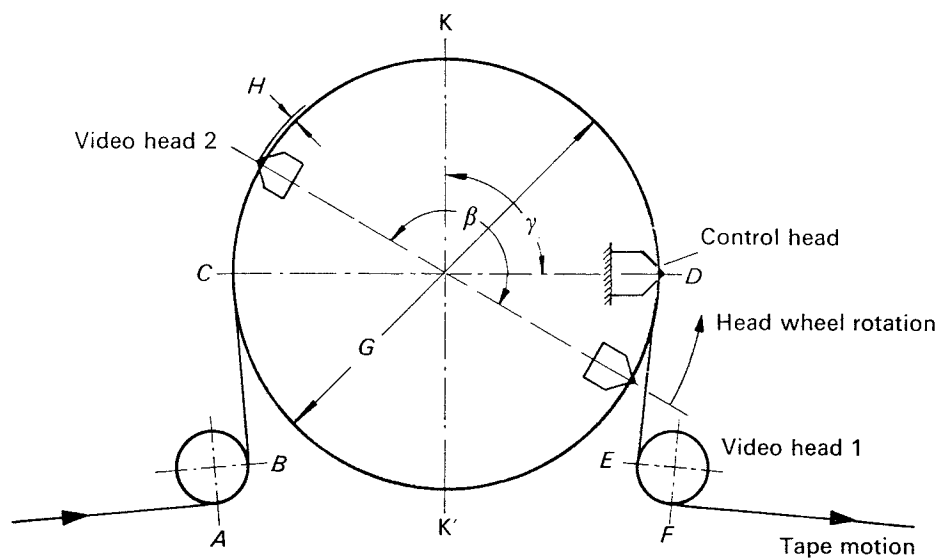
5.3 *Magnetic tape properties*

- 5.3.1 The magnetic coating shall be longitudinally oriented.
- 5.3.2 The coercivity shall be more than 30×10^3 A/m.

6. **Mechanical parameters**

6.1 *Scanning configuration*

- 6.1.1 The dimensions of the scanning configuration shall be as specified in Figure 3, page 13, and in Table V.



181/80

FIG. 3. — Scanning configuration.

TABLE V

		Millimetres	Inches
G	Drum diameter	50.33 ^{+0.000} _{-0.003}	1.9815 ^{+0.00000} _{-0.00012}
H	Tip penetration	0.060 (max.)	0.0024 (max.)
B	Video-head angle	180° ± 30° measured from gap to gap of video head 1 and 2	
γ	Control-head angle to centre line	90° ± 15° K-K' to control head gap	
T_{in}	Tape tension in	Measured between B and C : 2 N ± 10%	
T_{out}	Tape tension out	Measured between D and E : 2.3 N ± 10%	

6.2 Speeds of the tape and of the video-head wheel

6.2.1 The nominal linear speed of the tape shall conform with Table VI.

TABLE VI

	625 line-50 field system	525 line-60 field system
Nominal linear tape speed	24.3 cm/s 9.567 in/s	24.5 cm/s 9.646 in/s
Nominal rotational speed of head wheel	150 rev/s	150 rev/s