

[N: producing carriers of sound records for needle playback B29C39/00]; recording measured values in a way that does not require playback through a transducer G01D; photosensitive materials or processes for photographic purposes G03C; electrography, electrophotography, magnetography G03G; recording or playback apparatus using mechanically marked tape, e.g. punched paper tape, or using unit records, e.g. punched or magnetically marked cards, G06K; transferring data from one type of record carrier to another G06K1/18; printing of data from record carriers G06K3/00; arrangements for producing a permanent visual presentation of the output data G06K15/00; arrangements or circuits for control of indicating devices using static means to present variable information G09G; coding, decoding or code conversion, in general H03M; circuits for coupling output of reproducer to radio receiver H04B1/20; circuits [N: or arrangements] specially adapted for [N: pictorial or] television signal recording [N: H04N1/21], H04N5/76, H04N9/79; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor H04R)

[N: WARNING

[C0804]

This subclass was introduced on March 29, 1979 together with the closing of the old classification scheme (IdT) 42G and 42M

Patent documents are continuously being reclassified from the closed IdT scheme into the IPC scheme

General concordancy IPC to IdT groups is as follows :

G9B/3 :
42G4, 42G6, 42G7C, 42G7D, 42G7E, 42G21
G9B/3.008 : 42G4, 42G4H
G9B/3.009 : 42G4C2, 42G4G
G9B/3.01 : 42G4
G9B/3.011 : 42G5, 42G21A
G9B/3.051-G9B/3.075 : 42G4B, 42G5
G9B/3.076 : 42G4D
G9B/3.078, G9B/3.079 : 42G4C, 42G4D
G9B/3.08 : 42G4E
G9B/3.081 : 42G4C, 42G4D
G9B/3.082 : 42G28A

G9B/3.083 : 42G4
G9B/3.084 : 42G26, 42G26E
G9B/3.097 : 42G16B, 42G22F
G9B/3.098 : 42G22F
G9B/3.099 : 42G14, 42G16F
G9B/3.103 : 42G15
G9B/3.107-G9B/3.112 : 42G14
G9B/5-G11B5/27B : 42G10
G9B/5.031 : 42G10C
G9B/5.032 : 42M37G2D1F, 42G10
G9B/5.033 :
42M37G2D, 42M37G2D1, 42M37G2D3
G9B/5.034-G9B/5.108 : 42G10A2-42G10A5
G9B/5.143-G9B/5.144 : 42G10
G9B/5.145, G9B/5.146 :
42M37G2D1F3, 42G10, 42G10C2
G9B/5.147-G9B/5.181 :
42G10A2, 42G10A6, 42G18D3
G9B/5.182 : 42G10A2, 42G10D
G9B/5.201, G9B/5.202 : 42G10A2
G9B/5.229 : 42G10A2
G9B/5.289, G9B/5.29 : 42G10A5
G9B/5.291-G9B/5.293 : 42G10B
G9B/5.308, G9B/5.309 : 42G13
G9B/7 :
42G9, 42G8B, 42G8C, 42M37G2
G9B/7.041-G9B/7.096 : 42G9, 42G18B
G9B/7.097-G9B/7.138 : 42G9, 42G9A-42G9F
G9B/7.139-G9B/7.194 : 42G12, 42G13B
G9B/7.2 :
42G8F, 42G13, 42G13A, 42G13B
G9B/9-G9B/9.024 : 42G11, 42M37G2
G9B/11-G9B/11.061 : 42G11A
G9B/13-G9B/13.004 : 42G7, 42G23
G9B/15-G9B/15.021 : 42G18
G9B/15.003 : 42G8D
G9B/15.033 : 42G18C
G9B/15.034 : 42G18C5
G9B/15.035 : 42G18C5
G9B/15.036-G9B/15.042 : 42G18C, 42G18C4
G9B/15.046, G9B/15.047 : 42G17, 42G18
G9B/15.076 : 42G18
G9B/15.08 : 42G18D3
G9B/15.082, G9B/15.083 : 42G18
G9B/15.092 : 42G18D1AS

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

G9B/17 : 42G20
 G9B/17.002-G9B/17.013 : 42G20
 G9B/17.041-G9B/17.05 : 42G20C-42G20C5
 G9B/17.051-G9B/17.06 : 42G20D-42G20D1
 G9B/17.061 : 42G10
 G9B/17.062 : 42G10
 G9B/19 : 42G17,42G21,42G22
 G9B/19.001-G9B/19.038 :
 42G21,42G21D,42G21E,42G22A-42G22E
 G9B/19.038-G9B/19.046 : 42G17A-
 42G17i,42G21C-42G21D,42G22A-42G22E
 G9B/19.039-G9B/19.041 : 42G21F
 G9B/20.003 : 42G8H,42G8H1
 G9B/20.007-G9B/20.008 : 42G10
 G9B/20.01 :
 42M37G2D1F,42M37G2D1F2
 G9B/20.015 : 42M37G2D1F4
 G9B/20.06 : 42M37G2D1F3
 G9B/20.061-G9B/20.063 : 42G8,42G8A
 G9B/21-G9B/21.029 : 42G
 G9B/23.014-G9B/23.025 : 42G28
 G9B/23.059-G9B/23.06 : 42G18C7E
 G9B/23.079 : 42G18D1B
 G9B/23.083-G9B/23.095 :
 42G9,42G10,42G13,42G14
 G9B/23.096 : 42G26E
 G9B/25 :
 42G8D,42G20A,42G20B,42G9,42G10,42G11
 G9B/25.001 : 42G2,42G2A,42G9-
 42G11
 G9B/25.002 : 42G3-42G3B,42G9-
 42G11
 G9B/25.005,G9B/25.008 : 42G18,42G10G
 G9B/27-G9B/27.052 :
 42G8,42G8C,42G8G,42G13,42G13C,42G19,42G18
 D
 G9B/31 :
 42G7A,42G8D,42G23,42G24,42G24A,42G24B
 G9B/31.001 : 42G24B
 G9B/31.003 : 42G7A,42G24A
 G9B/33,G9B/33.002 : 42G26A-42G26D,42G28
 G9B/33.023 : 42G25A

The following groups are no longer used for the classification of new documents from August 1st, 1991. The backlog of these groups is being continuously reclassified in G9B/7.062 and subgroups

G9B/7.06
 G9B/7.077
 G9B/7.078
 G9B/7.087
 G9B/7.09

The following IPC groups are not used in the internal ECLA classification scheme. Subject matter covered by these groups is classified in the following ECLA groups [C0802] :

G11B5/65	covered by	G9B/5.236 to
G9B/5.24		
G11B5/667	"	G9B/5.241
G11B5/673	"	G9B/5.241
G11B7/16	"	G9B/7.112
G11B7/18	"	G9B/7.112
G11B7/30	"	G9B/7
G11B9/12-G11B9/14	"	G9B/9
G11B11/24-G11B11/26	"	G9B/11
G11B13/08	"	G11B

From the date indicated below, the following groups have been deleted from the classification scheme. The documents of these groups have been transferred to the new groups as follow:

G9B/19.027B transferred to G9B/
 19.027 (Apr.08)]

Notes

This subclass covers :

- recording or playback of information by relative movement between a record track and a transducer, the transducer directly producing, or being directly actuated by, modulation in the track being recorded or played-back, and the extent of modulation corresponding to the signal being recorded or played-back;
- apparatus and machines for recording or playback, and parts thereof such as heads;
- record carriers for use with such apparatus and machines;
- associated working of other apparatus with such apparatus and machines;
- [N: relative positioning or movement of transducers and record carriers before, during or after transducing operation, e.g. for accessing record carriers or parts thereof, or for track change, selection or acquisition or for track following or for accessing parts of tracks;]

- [N: driving or moving of heads or record carriers or both heads and record carriers for increasing, maintaining or decreasing the relative speed before, during or after transducing operation]

In this subclass, the following terms or expressions are used with the meanings indicated :

- "head" includes any means for converting sinusoidal or non-sinusoidal electric wave-forms into variations of the physical condition of at least the adjacent surface of the record carrier, or vice versa;

- "record carrier" means a body, such as a cylinder, disc, card, tape, or wire, capable of permanently holding information, which can be read-off by a sensing element movable relatively to the record carrier.

[N: Notes

Documents concerning relative positioning or movement of transducers and record carriers are classified in groups G9B/3 to G9B/7 and G9B/21 when only the transducer is controlled and in groups G9B/15, G9B/17 and G9B/19 when only the record carrier is controlled. When both record carrier and head are controlled, the documents are classified in G9B/15.022, G9B/15.023, G9B/19 and G9B/27.001. When a plurality of record carriers are controlled, the documents are classified in G9B/15.135, G9B/17.041, G9B/17.051 and G9B/27.001. By "access" is meant an operation including a relative movement for positioning between record carrier and head before, during or after transducing; this operation including "seek", "select", "change", "acquire" and "follow" functions for at least a part of a track on at least one record carrier. By "programmed access" is meant a sequence of access operations the result of the sequence being to acquire a wanted sequence of parts of tracks or a wanted sequence of tracks. Relative movement between head and record carrier also covers the movement of a coupling beam such as a light beam between the head and a stationary record carrier. "Movement of the head" also covers any virtual movement or any physical movement such as obtained by switching between successive transducing parts of the head or by moving the transducing zone of the head, i.e. by "scanning". If different transducing parts of the head are switchable, the number of transducing parts should be much smaller

than the number of individual storage areas of the record carrier. Attention is drawn to the notes of subclass G11C.]

CROSS-REFERENCE ART COLLECTIONS

- 3 **Recording by mechanical cutting, deforming or pressing, e.g. of grooves or pits; Reproducing by mechanical sensing; Record carriers therefor G9B/11 [N: and G9B/13] take precedence; recording by cutting or deforming using laser beam G9B/7, using electron beam G9B/9.025) {G11B 3/00}**
- 3.001 .[N: with vibrating mechanical coupling means between pick-up element and sound producing element] {G11B 3/00A}
- 3.002 ..[N: element with stationary record carriers] {G11B 3/00A1}
- 3.003 .[N: Devices for transmitting, directing, amplifying sound (in general G10K11/18)] {G11B 3/00B}
- 3.004 ..[N: through hollow arms] {G11B 3/00B1}
- 3.005 ..[N: using horns] {G11B 3/00B2}
- 3.006 .[N: Devices for controlling sound e.g. using acoustical impedances, using valves] {G11B 3/00C}
- 3.007 .[N: for digital information] {G11B 3/00D}
- 3.008 .Arrangements of heads (styli G9B/3.076) {G11B 3/02}
- 3.009 ..Multiple, convertible, or alternative transducing arrangements [N: contains no documents see G9B/3.075] {G11B 3/04}
- 3.01 ..Determining or indicating positions of head {G11B 3/06}
- 3.011 ..Raising, lowering, traversing otherwise than for transducing, arresting, or holding-up heads against record carriers [N: for transducing G9B/3.052, G9B/3.071] {G11B 3/08}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

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|--|--|
| <p>3.012 ...[N: using automatic means (G9B/3.044 takes precedence; [N: if particularly adapted for record-changers see G9B/17.045 and subgroups]) {G11B 3/085}</p> <p>3.013[N: Control of drive of the head] {G11B 3/085A}</p> <p>3.014[N: for pivoting pick-up arms] {G11B 3/085A1}</p> <p>3.015[N: using mechanical detecting means] {G11B 3/085A1A}</p> <p>3.016[N: using optical detecting means] {G11B 3/085A1B}</p> <p>3.017[N: using magnetic detecting means] {G11B 3/085A1C}</p> <p>3.018[N: for pick-up arms moving parallel to itself] {G11B 3/085A2}</p> <p>3.019[N: using mechanical detecting means] {G11B 3/085A2A}</p> <p>3.02[N: using optical detecting means] {G11B 3/085A2B}</p> <p>3.021[N: using magnetic or electric detecting means] {G11B 3/085A2C}</p> <p>3.022[N: for fixed arms carrying a movable head] {G11B 3/085A3}</p> <p>3.023[N: Driving the head] {G11B 3/085B}</p> <p>3.024[N: the head being driven by the same means as the record can] {G11B 3/085B1}</p> <p>3.025[N: for pivoting pick-up arms] {G11B 3/085B1A}</p> <p>3.026[N: driven by cams] {G11B 3/085B1A1}</p> <p>3.027[N: using friction coupling] {G11B 3/085B1A1C}</p> <p>3.028[N: for the horizontal movement only] {G11B 3/085B1A1C1}</p> <p>3.029[N: for pick-up arms moving parallel to itself] {G11B 3/085B1B}</p> <p>3.03[N: driven by belt or analogous element] {G11B 3/085B1B1}</p> <p>3.031[N: driven by non-skip driving means, e.g. lead screw] {G11B 3/085B1B2}</p> | <p>3.032[N: the head being driven by means independent of the record carrier driving means] {G11B 3/085B2}</p> <p>3.033[N: for pivoting pick-up arms] {G11B 3/085B2A}</p> <p>3.034[N: driven by means which support the pick-up arm] {G11B 3/085B2A1}</p> <p>3.035[N: the supporting element being different from the rotation-axes] {G11B 3/085B2A1C}</p> <p>3.036[N: for the vertical movement only] {G11B 3/085B2A1C1}</p> <p>3.037[N: using mechanical means] {G11B 3/085B2A1C1A}</p> <p>3.038[N: using electrical/magnetic means] {G11B 3/085B2A1C1B}</p> <p>3.039[N: for pick-up arm moving parallel to itself] {G11B 3/085B2B}</p> <p>3.04[N: driven by belt or analogous element] {G11B 3/085B2B1}</p> <p>3.041[N: driven by non-skip driving means, e.g. lead screw] {G11B 3/085B2B2}</p> <p>3.042[N: for fixed arms carrying a movable head] {G11B 3/085B2C}</p> <p>3.043 ...using manual means only (G9B/3.044 takes precedence) {G11B 3/09}</p> <p>3.044 ...for repeating a part of the record; for beginning or stopping at a desired point of the record {G11B 3/095}</p> <p>3.045 ...[N: using automatic means] {G11B 3/095A}</p> <p>3.046[N: using mechanical means for detecting the end of the recording] {G11B 3/095A1}</p> <p>3.047[N: using optical means for detecting the end of the recording or the desired point thereof] {G11B 3/095A2}</p> <p>3.048 ...[N: using magnetic means (G9B/3.05 takes precedence)] {G11B 3/09A}</p> <p>3.049 ...[N: using mechanical means (G9B/3.05 takes precedence)] {G11B 3/09B}</p> |
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- 3.05[N: Means coupled to the cover] {G11B 3/09C}
- 3.051 ..Arranging, supporting, or driving of heads or of transducers relatively to record carriers [N: guiding record carriers G9B/17, driving record carriers G9B/19] {G11B 3/10}
- 3.052 ...Supporting in balanced, counterbalanced or loaded operative position [N: during transducing], e.g. loading in direction of traverse] {G11B 3/12}
- 3.053[N: By using mechanical means not provided for in G9B/3.059, G9B/3.063, e.g. using cams] {G11B 3/12A}
- 3.054[N: Providing horizontal force; e.g. anti-skating (G9B/3.055 takes precedence)] {G11B 3/12A1}
- 3.055[N: Damping means therefor] {G11B 3/12A2}
- 3.056[N: by using electric or magnetic means] {G11B 3/12B}
- 3.057[N: Providing horizontal force, e.g. anti-skating force (G9B/3.058 takes precedence)] {G11B 3/12B1}
- 3.058[N: Damping means therefor] {G11B 3/12B2}
- 3.059by using effects of gravity or inertia, e.g. counterweight G9B/3.067 takes precedence) {G11B 3/14}
- 3.06[N: Providing horizontal force; e.g. anti-skating force (G9B/3.062 takes precedence)] {G11B 3/14A}
- 3.061adjustable {G11B 3/16}
- 3.062Damping by using viscosity effect {G11B 3/18}
- 3.063by elastic means, e.g. spring (G9B/3.067 takes precedence) {G11B 3/20}
- 3.064adjustable {G11B 3/22}
- 3.065acting to decrease pressure on record {G11B 3/24}
- 3.066acting to increase pressure on record {G11B 3/26}
- 3.067providing transverse bias parallel to record [N: see provisionally also G9B/3.059, G9B/3.063)] {G11B 3/28}
- 3.068 ...Supporting in an inoperative position {G11B 3/30}
- 3.069Construction of arms [N: for transmitting, directing or amplifying sound G9B/3.003] {G11B 3/31}
- 3.07 ...Construction or arrangement of support pillars {G11B 3/32}
- 3.071 ...Driving or guiding during transducing operation {G11B 3/34}
- 3.072Automatic-feed mechanisms producing progressive transducing traverse across record carriers otherwise than by grooves, e.g. by lead-screw {G11B 3/36}
- 3.073Guiding, e.g. constructions or arrangements providing linear or other special tracking characteristics {G11B 3/38}
- 3.074 ...Driving of heads relatively to stationary record carriers for transducing {G11B 3/40}
- 3.075 ...with provision for adaptation or interchange of heads {G11B 3/42}
- 3.076 .Styli, e.g. sapphire, diamond {G11B 3/44}
- 3.077 ..[N: Styli particularly adapted for sensing video discs] {G11B 3/44A}
- 3.078 ..Constructions or forms [N: Disposition or mounting], e.g. attachment of point to shank [N: attachment of stylus directly to transducer H04R1/16] {G11B 3/46}
- 3.079 ...Needles [N: contains no documents] {G11B 3/48}
- 3.08 ..Anvils or other supports opposing stylus forces {G11B 3/50}
- 3.081 ..Arrangements permitting styli to yield under excessive pressure {G11B 3/52}
- 3.082 ..Storing; manipulating, e.g. feeding styli to and from heads (needle boxes, receptacles for needles B65D85/24) {G11B 3/54}
- 3.083 ..Sharpening (grinding B24B3/00, B24B19/00) {G11B 3/56}

- 3.084 .Cleaning record carriers or styli, e.g. removing shavings or dust [N: or electrostatic charges] (brushes A46B; cleaning in general B08B) [N: carrying-off electrostatic charges in general H05F3/00] {G11B 3/58}
- 3.085 ..[N: during transducing operation] {G11B 3/58A}
- 3.086 ...[N: for record carriers] {G11B 3/58A1}
- 3.087[N: using means contacting the record carrier] {G11B 3/58A1A}
- 3.088[N: means connected to the pick-up arm or head] {G11B 3/58A1A1}
- 3.089[N: means connected to a separate arm] {G11B 3/58A1A2}
- 3.09[N: using means not contacting the record carrier] {G11B 3/58A1B}
- 3.091[N: connected to the pick-up arm or head] {G11B 3/58A1B1}
- 3.092[N: connected to a separate arm] {G11B 3/58A1B2}
- 3.093 ...[N: for styli or needles only] {G11B 3/58A2}
- 3.094 ..[N: before or after transducing operation] {G11B 3/58B}
- 3.095 .Turntables for record carriers (forming rotor of dynamo-electric motor H02K) [N: contains no documents, see G9B/19.028] {G11B 3/60}
- 3.096 ..Damping of vibrations of record carriers on turntables [N: see provisionally also G9B/3.095, G9B/3.094 and G9B/17.002; contains no documents, see G9B/19.029] {G11B 3/61}
- 3.097 .Re-recording, i.e. transcribing information from one grooved record carrier on to one or more similar or dissimilar record carriers [N: (by varying the order of the information G9B/27.009, G9B/27.013)] {G11B 3/64}
- 3.098 .Erasing information, e.g. for reuse of record carrier {G11B 3/66}
- 3.099 .Record carriers {G11B 3/68}
- 3.1 ..[N: comprising protective coatings e.g. anti static, anti-friction] {G11B 3/68A}
- 3.101 ..[N: Intermediate mediums] {G11B 3/68B}
- 3.102 ..[N: Testing thereof (investigating chemical or physical properties of materials G01N)] {G11B 3/68C}
- 3.103 ..characterised by the selection of material or structure; Processes or apparatus specially adapted for manufacturing record carriers (processes involving a single technical art and for which provision exists elsewhere, see the relevant places, e.g. B29D17/00) {G11B 3/70}
- 3.104 ...[N: for video discs with grooves (G9B/3.105 takes precedence)] {G11B 3/70A}
- 3.105 ...[N: characterised by the selection of the material only] {G11B 3/70B}
- 3.106[N: for video discs with grooves] {G11B 3/70B1}
- 3.107 ..Groove formations, e.g. run-in groove, run-out groove {G11B 3/72}
- 3.108 ...Multiple output tracks, e.g. binaural stereophonic {G11B 3/74}
- 3.109 ...forming part of cinematograph films {G11B 3/76}
- 3.11 ..Multiple-track arrangements {G11B 3/78}
- 3.111 ..incorporating subsidiary guide means for heads, other than modulated grooves; Part-formed unmodulated grooves for conversion into transducing grooves {G11B 3/80}
- 3.112 ..with means indicating prior or unauthorised use {G11B 3/90}
- 5 **Recording by magnetisation or demagnetisation of a record carrier; Reproducing by magnetic means; Record carriers therefor (G9B/11 [N: and G9B/13] take precedence) {G11B 5/00}**
- [N: Note
[C0201]

- In this group, the expression "+IDT" is used to indicate:
 - that the documents classified here were classified in IDT-groups concerning:
 "Methods or devices for magnetising carriers or for reproducing by magnetic means; Electric circuit arrangements therefor"
 - that they were reclassified administratively from said IDT-groups to this group
- Note
 Subgroups G9B/5.026 to G9B/5.308 take precedence over subgroups G9B/5.001 to G9B/5.025
- 5.001 .Recording on, or reproducing or erasing from, magnetic drums (G9B/19 takes precedence) {G11B 5/004}
 - 5.002 .Recording on, or reproducing or erasing from, magnetic tapes, [N: sheets, e.g. cards,] or wires (G9B/15 [N: G9B/19] take precedence; [N: bulk transferring of information magnetisation for re-recording G9B/5.309; marking record carriers in digital fashion G06K]) {G11B 5/008}
 - 5.003 ..[N: magnetic sheets (rotating sheets G9B/5.024)] {G11B 5/008S}
 - 5.004 ...[N: magnetic cards] {G11B 5/008S2}
 - 5.005 ..[N: magnetic tapes] {G11B 5/008T}
 - 5.006 ...[N: on longitudinal tracks only, e.g. for serpentine format recording] {G11B 5/008T2}
 - 5.007[N: using stationary heads] {G11B 5/008T2F}
 - 5.008[N: comprising a plurality of single poles or gaps or groups thereof operative at the same time] {G11B 5/008T2F2}
 - 5.009[N: for parallel information processing, e.g. PCM recording] {G11B 5/008T2F2P}
 - 5.01[N: using virtual scanning heads] {G11B 5/008T2F4}
 - 5.011 ...[N: using cyclically driven heads providing segmented tracks] {G11B 5/008T2R}
 - 5.012 ...[N: on transverse tracks (G9B/5.019 takes precedence)] {G11B 5/008T4}
 - 5.013[N: using stationary heads] {G11B 5/008T4F}
 - 5.014[N: comprising a plurality of single poles or gaps or groups thereof operative in time sequence] {G11B 5/008T4F2}
 - 5.015 ...[N: using cyclically driven heads providing segmented tracks] {G11B 5/008T4R}
 - 5.016[N: for transducing on more than one segment simultaneously] {G11B 5/008T4R2}
 - 5.017[N: the segments being disposed in different lateral zones of the tape] {G11B 5/008T4R2L}
 - 5.018[N: the segments being disposed in different longitudinal zones of the tape] {G11B 5/008T4R2S}
 - 5.019 ...[N: transducing different track configurations or formats on the same tape] {G11B 5/008T6}
 - 5.02 ...[N: configurations only, e.g. longitudinal and transverse] {G11B 5/008T6C}
 - 5.021[N: simultaneously] {G11B 5/008T6C2}
 - 5.022 ...[N: formats only, e.g. analog and digital] {G11B 5/008T6F}
 - 5.023[N: simultaneously] {G11B 5/008T6F2}
 - 5.024 .Recording on, or reproducing or erasing from, magnetic discs (G9B/17, G9B/19 take precedence) {G11B 5/012}
 - 5.025 ..using magnetic foils {G11B 5/016}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

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| 5.026 | ..Recording, reproducing, or erasing methods; Read, write or erase circuits therefor (timing or synchronising arrangements G9B/27.017) {G11B 5/02} | 5.045 | ..with cores composed of particles, e.g. with dust core, with ferrite core [N: with cores composed of isolated magnetic particles (in thin films G9B/5.077)] {G11B 5/133} |
| 5.027 | ..Erasing {G11B 5/024} | 5.046 | ...[N: Assembling or shaping of elements] {G11B 5/133A} |
| 5.028 | ...[N: Bulk erasing] {G11B 5/024B} | 5.047 | ..with cores being composed of metal sheets, i.e. laminated cores [N: with cores composed of isolated magnetic layers, e.g. sheets (in thin films G9B/5.077)] {G11B 5/147} |
| 5.029 | ..Analogue recording {G11B 5/027} | 5.048 | ...[N: Assembling or shaping of elements (G9B/5.049 takes precedence)] {G11B 5/147A} |
| 5.03 | ...[N: Boundary displacement recording] {G11B 5/027B} | 5.049 | ...with tape-wound cores {G11B 5/153} |
| 5.031 | ...Biasing {G11B 5/03} | 5.05 | ..Construction or disposition of windings {G11B 5/17} |
| 5.032 | ...Equalising {G11B 5/035} | 5.051 | ..Structure or manufacture of the surface of the head in physical contact with, or immediately adjacent to the recording medium; Pole pieces; Gap features (G9B/5.068, [N: G9B/5.075], G9B/5.077 take precedence) {G11B 5/187} |
| 5.033 | ..Digital recording {G11B 5/09} | 5.052 | ...[N: Shaping or contouring of the transducing or guiding surface] {G11B 5/187A} |
| 5.034 | .Structure or manufacture of housings or shields for heads {G11B 5/10} | 5.053 | ...[N: for improving the form of the electrical signal transduced, e.g. compensation of "contour effect"] {G11B 5/187A2} |
| 5.035 | ..Mounting of head within housing [N: or assembling of head and housing (G9B/5.078 takes precedence)] {G11B 5/105} | 5.054 |[N: specially adapted for composite pole pieces, e.g. for avoiding "pseudo-gap"] {G11B 5/187A2C} |
| 5.036 | ..[N: Manufacture of housing] [C9704] {G11B 5/10A} | 5.055 | ...[N: "Composite" pole pieces, i.e. poles composed in some parts of magnetic particles and in some other parts of magnetic metal layers] {G11B 5/187C} |
| 5.037 | ..Shielding of head against electric or magnetic fields {G11B 5/11} | 5.056 | ...[N: including at least one magnetic thin film] {G11B 5/187C2} |
| 5.038 | ...Shielding devices arranged between heads or windings ([N: G9B/5.068], G9B/5.075 take precedence) {G11B 5/115} | 5.057 |[N: disposed immediately adjacent to the transducing gap, e.g. "Metal-In-Gap" structure] {G11B 5/187C2M} |
| 5.039 | ...[N: Manufacture of shielding device] {G11B 5/11A} | | |
| 5.04 | .Structure or manufacture of heads, e.g. inductive {G11B 5/127} | | |
| 5.041 | ..[N: Assembling or shaping of elements (G9B/5.044 takes precedence)] {G11B 5/127A} | | |
| 5.042 | ..[N: with "composite" cores, i.e. cores composed in some parts of magnetic particles and in some other parts of magnetic metal layers] {G11B 5/127C} | | |
| 5.043 | ...[N: including at least one magnetic thin film] {G11B 5/127C2} | | |
| 5.044 | ..[N: specially adapted for magnetisations perpendicular to the surface of the record carrier] {G11B 5/127P} | | |

- 5.058 ...the pole pieces being ferrite [N: or other magnetic particles (G9B/5.052 takes precedence; in thin film G9B/5.077)] {G11B 5/193}
- 5.059 ...the pole pieces being of ferrous sheet metal [N: or other magnetic layers (G9B/5.052 takes precedence; in thin film G9B/5.077)] {G11B 5/21}
- 5.06 ...Gap features [N: (G9B/5.052, G9B/5.055, G9B/5.068, G9B/5.075, G9B/5.156 and subgroups, G9B/5.16 and subgroups, G9B/5.168 and subgroups take precedence)] {G11B 5/23}
- 5.061Selection of material for gap filler [N: G9B/5.062 takes precedence] {G11B 5/235}
- 5.062[N: Manufacture of gap] {G11B 5/23A}
- 5.063 ...comprising means for controlling the reluctance of the magnetic circuit [N: in a head with single gap, for co-operation with one track; (G9B/5.067 takes precedence; for plural gaps or plural tracks G9B/5.04, G9B/5.068, G9B/5.075, G9B/5.159 and subgroups)] {G11B 5/245}
- 5.064[N: where the dimensions of the effective gap are controlled] {G11B 5/245C}
- 5.065[N: the magnetic circuit including at least one magnetic thin film of controllable properties (for scanning G9B/5.164)] {G11B 5/245C2}
- 5.066[N: disposed immediately adjacent to the gap ("composite" pole pieces G9B/5.056)] {G11B 5/245C2G}
- 5.067 ...comprising means for protection against wear [N: in thin film structures G9B/5.079] {G11B 5/255}
- 5.068 ..Structure or manufacture of a head with more than one gap for erasing, recording or reproducing on the same track (G9B/5.104 takes precedence [N: in thin film structures G9B/5.077]) {G11B 5/265}
- 5.069 ...[N: Manufacture] {G11B 5/265A}
- 5.07 ...[N: with more than one gap simultaneously operative (with controlled single gap G9B/5.063)] {G11B 5/265S}
- 5.071[N: for recording or erasing] {G11B 5/265S2}
- 5.072[N: with all the gaps disposed within the track or "guard band" between tracks, e.g. with erase gaps operative on track edges, with wide erase gap followed by narrow write gap] {G11B 5/265S2M}
- 5.073[N: all the gaps having the same dimension in the direction transverse to the track direction] {G11B 5/265S2M2}
- 5.074[N: for recording with premagnetization or biasing of record carrier or head] {G11B 5/265S2M2B}
- 5.075 ..Structure or manufacture of unitary devices formed of plural heads for more than one track [N: G9B/5.104, G9B/5.159 and subgroups take precedence; in thin film structure G9B/5.077] {G11B 5/29}
- 5.076 ...[N: Manufacture] {G11B 5/29A}
- 5.077 ..using thin films [N: (G9B/5.042, G9B/5.044, G9B/5.054, G9B/5.055, G9B/5.104, G9B/5.159 take precedence; magnetic thin film structures H01F10/00)] {G11B 5/31}
- 5.078 ...[N: Structure or manufacture of integrated heads or heads mechanically assembled and electrically connected to a support or housing] {G11B 5/31B}

- 5.079[N: where the integrated or assembled structure comprises means for conditioning against physical detrimental influence, e.g. wear, contamination (G9B/5.087 takes precedence)] {G11B 5/31B1}
- 5.08 ...[N: Details (G9B/5.078 takes precedence)] {G11B 5/31D}
- 5.081[N: for improving the magnetic domain structure or avoiding the formation or displacement of undesirable magnetic domains] {G11B 5/31D2}
- 5.082[N: Shaping of layers, poles or gaps for improving the form of the electrical signal transduced, e.g. for shielding, contour effect, equalizing, side flux fringing, cross talk reduction between heads or between heads and information tracks (G9B/5.081, G9B/5.063 take precedence)] {G11B 5/31D4}
- 5.083[N: for reducing flux leakage between the electrical coil layers and the magnetic cores or poles or between the magnetic cores or poles] {G11B 5/31D6}
- 5.084[N: by using special coil configurations or conductors] {G11B 5/31D6C}
- 5.085[N: using superconductors] {G11B 5/31D6C2}
- 5.086 ...[N: Disposition of layers] {G11B 5/31D8}
- 5.087[N: including layers not usually being a part of the electromagnetic transducer structure and providing additional features, e.g. for improving heat radiation, reduction of power dissipation, adaptations for measurement or indication of gap depth or other properties of the structure (G9B/5.079 takes precedence)] {G11B 5/31D8A}
- 5.088[N: where the layers are extra layers normally not provided in the transducing structure, e.g. optical layers (G9B/5.102 takes precedence)] {G11B 5/31D8A2}
- 5.089[N: including additional layers for improving the electromagnetic transducing properties of the basic structure, e.g. for flux coupling, guiding or shielding (G9B/5.082, G9B/5.083 take precedence)] {G11B 5/31D8T}
- 5.09[N: magnetic layers] {G11B 5/31D8T3}
- 5.091[N: including at least one magnetic thin film coupled by interfacing to the basic magnetic thin film structure] {G11B 5/31D8T3C}
- 5.092[N: providing interaction by induced or exchange coupling] {G11B 5/31D8T3C2}
- 5.093[N: supraconductive layers] {G11B 5/31D8T4}
- 5.094 ...[N: Fabrication methods or processes specially adapted for a particular head structure, e.g. using base layers for electroplating, using functional layers for masking, using energy or particle beams for shaping the structure or modifying the properties of the basic layers] {G11B 5/31M}
- 5.095 ...[N: Testing or indicating in relation thereto, e.g. before the fabrication is completed] {G11B 5/31M2}
- 5.096 ...[N: Structure of heads comprising at least in the transducing gap regions two magnetic thin films disposed respectively at both sides of the gaps (G9B/5.065, G9B/5.068 take precedence; composite magnetic head structures, e.g. "Metal-In-Gap" heads are classified in G9B/5.04 or G9B/5.051 and subgroups)] {G11B 5/31P}
- 5.097 ...[N: the films being mainly disposed in parallel planes] {G11B 5/31P2}

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| 5.098 |[N: intersecting the gap plane, e.g. "horizontal head structure"] {G11B 5/31P2H} | 5.113 | ...using magneto-resistive devices [N: or effects] {G11B 5/39} |
| 5.099 |[N: parallel to the gap plane, e.g. "vertical head structure"] {G11B 5/31P2V} | 5.114 |[N: using magnetic layers or their effects] {G11B 5/39C} |
| 5.1 | ...[N: Testing] {G11B 5/31T} | 5.115 |[N: layers of thin film] {G11B 5/39C2} |
| 5.101 |[N: of films or layers, e.g. continuity test] {G11B 5/31T2} | 5.116 |[N: the films being part of integrated structures] {G11B 5/39C2C} |
| 5.102 |[N: of thin magnetic films, e.g. functional testing of the transducing properties (G9B/5.145 takes precedence)] {G11B 5/31T2F} | 5.117 |[N: Details] {G11B 5/39C2C4} |
| 5.103 | ..Erasing heads using permanent magnets (general details therefor G9B/5.045 to G9B/5.067) {G11B 5/325} | 5.118 |[N: where the active read-out elements are transducing in association with active magnetic shields, e.g. magnetically coupled shields (G9B/5.119 takes precedence)] {G11B 5/39C2C4E} |
| 5.104 | ..Structure or manufacture of flux-sensitive heads, [N: i.e. for reproduction only; Combination of such heads with means for recording or erasing only] ([N: Single head using magnetic domains for scanning G9B/5.165; multiple head for scanning G9B/5.16 and subgroups]; general details therefor G9B/5.045 to G9B/5.067) {G11B 5/33} | 5.119 |[N: where the active read-out elements are coupled to the magnetic flux of the track by at least one magnetic thin film flux guide] {G11B 5/39C2C4G} |
| 5.105 | ...with saturated jig, e.g. for detecting second harmonic; balanced flux head {G11B 5/335} | 5.12 |[N: the guide being interposed in the flux path] {G11B 5/39C2C4G2} |
| 5.106 | ...[N: using thin films (G9B/5.109, G9B/5.115 take precedence)] {G11B 5/33B} | 5.121 |[N: the read-out elements being disposed in magnetic shunt relative to at least two parts of the flux guide structure] {G11B 5/39C2C4G2S} |
| 5.107 | ...having vibrating elements {G11B 5/35} | 5.122 |[N: the two parts being thin films] {G11B 5/39C2C4G2S4} |
| 5.108 | ...using galvano-magnetic devices, e.g. Hall-effect devices (G9B/5.113 takes precedence) [N: using Hall or Hall-related effect, e.g. planar-Hall effect or pseudo-Hall effect] {G11B 5/37} | 5.123 |[N: disposition of magnetic thin films not used for directly coupling magnetic flux from the track to the MR film or for shielding] {G11B 5/39C2C4H} |
| 5.109 |[N: in magnetic thin films] {G11B 5/37B} | 5.124 |[N: magnetic biasing films] {G11B 5/39C2C4H2} |
| 5.11 |[N: Integrated structures] {G11B 5/37B2} | 5.125 |[N: flux closure films not being part of the track flux guides] {G11B 5/39C2C4H4} |
| 5.111 |[N: in semi-conductors (G9B/5.109 takes precedence)] {G11B 5/37D} | 5.126 |[N: for absorbing or reducing demagnetising or saturating fields] {G11B 5/39C2C4H4A} |
| 5.112 |[N: Integrated structures] {G11B 5/37D2} | 5.127 |[N: providing a closed magnetic circuit to the MR film] {G11B 5/39C2C4H4C} |

- 5.128[N: Heads comprising more than one sensitive element] {G11B 5/39C2C4M}
- 5.129[N: including more than one active read-out element] {G11B 5/39C2C4M2}
- 5.13[N: where the active elements are arranged in more than one parallel planes] {G11B 5/39C2C4M2M}
- 5.131[N: for transducing on a single track] {G11B 5/39C2C4M2M2}
- 5.132[N: arranged in a single plane, e.g. "matrix" disposition] {G11B 5/39C2C4M2P}
- 5.133[N: disposed at an angle to the direction of the track or relative movement] {G11B 5/39C2C4M2P2}
- 5.134[N: for transducing on a single track] {G11B 5/39C2C4M2P2T}
- 5.135[N: composite structural arrangements of transducers, e.g. inductive write and magnetoresistive read (G9B/5.117 takes precedence)] {G11B 5/39C2C6}
- 5.136[N: with a plurality of independent magnetoresistive active read-out elements for respectively transducing from selected components] {G11B 5/39C2C6M}
- 5.137[N: from the same information track, e.g. frequency bands] {G11B 5/39C2C6M2}
- 5.138[N: from different information tracks] {G11B 5/39C2C6M4}
- 5.139[N: specially shaped] {G11B 5/39C2D}
- 5.14[N: with provision for closing the magnetic flux during operation] {G11B 5/39C2D2}
- 5.141[N: with intrinsic biasing, e.g. provided by equipotential strips] {G11B 5/39C2E}
- 5.142[N: in semi-conductors (G9B/5.114 takes precedence)] {G11B 5/39D}
- 5.143 .Protective measures on heads, e.g. against excessive temperature (G9B/5.077 takes precedence; protection against wear G9B/5.067) [N: protective structure of the head: see under structures, e.g. G9B/5.079] {G11B 5/40}
- 5.144 .Cleaning of heads [N: of record carriers G9B/23.096] {G11B 5/41}
- 5.145 .Arrangements for functional testing of heads [N: (testing of the manufacturing process G9B/5.04)]; Measuring arrangements for heads (measuring electric or magnetic properties G01R; [N: measuring properties for shaping or assembling elements G9B/5.04]) [C9511] {G11B 5/455}
- 5.146 .Arrangements for demagnetisation of heads (demagnetisation in general H01F13/00) [C9511] {G11B 5/465}
- 5.147 .Disposition or mounting of heads [N: or head supports] relative to record carriers [N: mounting of head within housing G9B/5.035; arrangements of heads, e.g. for scanning the record carrier to increase the relative speed (driving of both record carriers and head G9B/15.021; guiding record carriers G9B/15.076; head selecting circuits G9B/15.016)] {G11B 5/48}
- 5.148 ..[N: specially adapted for disk drive assemblies, e.g. assembly prior to operation, hard or flexible disk drives (G9B/5.156 to G9B/5.181 take precedence)] [N9605] {G11B 5/48A}
- 5.149 ...[N: Mounting or aligning of arm assemblies, e.g. actuator arm supported by bearings, multiple arm assemblies, arm stacks or multiple heads on single arm (G9B/5.155 takes precedence)] [N9605] {G11B 5/48A1}

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| <p>5.15[N: Constructional details of the electrical connection between arm and support] [N9605] {G11B 5/48A1E}</p> <p>5.151 ...[N: Mounting, aligning or attachment of the transducer head relative to the arm assembly, e.g. slider holding members, gimbals, adhesive (G9B/5.155 takes precedence; details of head housings or structures G9B/5.034, G9B/5.04; adjustment relative to the record carrier G9B/5.201)] [N9605] {G11B 5/48A2}</p> <p>5.152[N: Constructional details of the electrical connection between head and arm] [N9605] {G11B 5/48A2E}</p> <p>5.153 ...[N: Structure of the arm assembly, e.g. load beams, flexures, parts of the arm adapted for controlling vertical force on the head (G9B/5.155 takes precedence)] [N9605] {G11B 5/48A3}</p> <p>5.154[N: with provision for mounting or arranging electrical conducting means or circuits on or along the arm assembly] [N9605] [C9809] {G11B 5/48A3E}</p> <p>5.155 ...[N: Integrated arm assemblies, e.g. formed by material deposition or by etching from single piece of metal or by lamination of materials forming a single arm/suspension/head unit] [N9605] {G11B 5/48A4}</p> <p>5.156 ..[N: Disposition of heads (G9B/5.159, G9B/5.173 take precedence)] {G11B 5/48D}</p> <p>5.157 ...[N: relative to rotating disc] {G11B 5/48D1}</p> <p>5.158 ...[N: relative to moving tape] {G11B 5/48D2}</p> <p>5.159 ..Fixed mounting [N: or arrangements, e.g. one head per track] {G11B 5/49}</p> <p>5.16 ...[N: Details for scanning (G9B/5.168 takes precedence)] {G11B 5/49S}</p> <p>5.161[N: Structure of specially adapted heads (G9B/5.117 takes precedence)] {G11B 5/49S2}</p> | <p>5.162[N: in which zones of the transducing part are being physically controllable] {G11B 5/49S2C}</p> <p>5.163[N: Control of magnetic properties, e.g. saturation, anisotropy] {G11B 5/49S2C2}</p> <p>5.164[N: of thin magnetic films] {G11B 5/49S2C2F}</p> <p>5.165[N: for formation or displacement of magnetic domains, e.g. walls, bubbles] {G11B 5/49S2C2F4}</p> <p>5.166[N: part of the structure being mechanically or magnetically coupled to or decoupled from, the transducing part] {G11B 5/49S2M}</p> <p>5.167[N: Circuits] {G11B 5/49S6}</p> <p>5.168 ...[N: Details for track selection or addressing] {G11B 5/49T}</p> <p>5.169 ...[N: Disposition of heads, e.g. matrix arrangement] {G11B 5/49T2}</p> <p>5.17[N: Structure of specially adapted switching heads (G9B/5.132 takes precedence)] {G11B 5/49T4}</p> <p>5.171[N: Circuits] {G11B 5/49T6}</p> <p>5.172 ..Interchangeable mountings, e.g. for replacement of head without readjustment {G11B 5/50}</p> <p>5.173 ..with simultaneous movement of head and record carrier, e.g. rotation of head (G9B/5.204 takes precedence) {G11B 5/52}</p> <p>5.174 ...Disposition or mounting of heads on rotating support {G11B 5/53}</p> <p>5.175[N: Disposition of more than one recording or reproducing head on support rotating cyclically around an axis] {G11B 5/53D}</p> <p>5.176[N: Parallel to the direction of movement of the tape, e.g. for transversal scanning] {G11B 5/53D2}</p> <p>5.177[N: inclined relative to the direction of movement of the tape, e.g. for helicoidal scanning] {G11B 5/53D3}</p> |
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- 5.178[N: perpendicular to the direction of movement of the tape, e.g. for longitudinal scanning] {G11B 5/53D4}
- 5.179[N: with all the heads disposed in a plane substantially parallel to the plane of the tape, e.g. for circular scanning] {G11B 5/53D4E}
- 5.18 ...[N: Disposition or mounting of pole pieces on rotating support (magnetic switching of fixed head arrangements G9B/5.159)] {G11B 5/53E}
- 5.181 ..with provision for moving the head into or out of its operative position or across tracks (G9B/5.202 takes precedence) {G11B 5/54}
- 5.182 ...Track change, selection or acquisition by displacement of the head {G11B 5/55}
- 5.183[N: across tape tracks] {G11B 5/55B}
- 5.184[N: Control circuits therefor (G9B/5.185 takes precedence)] {G11B 5/55B1}
- 5.185[N: Specially adapted for transducing in both travelling directions of tape] {G11B 5/55C}
- 5.186[N: Controlled by automatic tape drive reversing arrangement (reversing tape drive arrangements G9B/15.051)] {G11B 5/55C1}
- 5.187[N: across disc tracks (spiral track following G9B/5.216)] {G11B 5/55D}
- [N: Note
For groups G9B/5.188 to G9B/5.198, see provisionally G9B/5.187 and G9B/5.216]
- 5.188[N: Control therefor; circuits, track configurations or relative disposition of servo-information transducers and servo-information tracks for control thereof (G9B/5.195 takes precedence)] {G11B 5/55D1}
- 5.189[N: Details] {G11B 5/55D1D}
- 5.19[N: Initialisation, calibration, e.g. cylinder "set-up"] {G11B 5/55D1D1}
- 5.191[N: servo-format therefor] {G11B 5/55D1D1F}
- 5.192[N: "Seek" control and circuits therefor (G9B/5.194 takes precedence)] {G11B 5/55D1D2}
- 5.193[N: using fine positioning means for track acquisition separate from the coarse (e.g. track changing) positioning means] {G11B 5/55D2}
- 5.194[N: with track following after a "seek"] {G11B 5/55D2F}
- 5.195[N: control circuits therefor] {G11B 5/55D2F2}
- 5.196[N: system adaptation for compensation of variations of physical parameters, e.g. temperature] {G11B 5/55D4}
- 5.197[N: details of specially adapted mobile parts, e.g. electromechanical control devices (motors in general H02K)] {G11B 5/55D5}
- 5.198[N: system adaptation for working during or after external perturbation, e.g. in the presence of a mechanical oscillation caused by a shock] {G11B 5/55D6}
- 5.199[N: across drum tracks] {G11B 5/55T}
- 5.2[N: Control circuits therefor] {G11B 5/55T1}
- 5.201 ..with provision for moving the head [N: support] for the purpose of adjusting the position of the head relative to the record carrier, e.g. manual adjustment for azimuth correction or track centering (G9B/5.173, G9B/5.181, G9B/5.202 take precedence) {G11B 5/56}

- 5.202 ..with provision for moving the head for the purpose of maintaining alignment of the head relative to the record carrier during transducing operation, e.g. to compensate for surface irregularities of the latter or for track following [N: spacing means incorporated in the head structure G9B/5.051, G9B/5.067, G9B/5.079] {G11B 5/58}
- 5.203 ...for track following on tapes {G11B 5/584}
- 5.204by controlling the position of the rotating heads (by controlling the speed of the record carrier G9B/5.055; by controlling speed of the heads G9B/5.064; [N: by moving the transducing part of the head relative to the headwheel, in the direction of the scanning movement G9B/5.026]) {G11B 5/588}
- 5.205 ...[N: maintaining desired contact or spacing by direct interaction of forces generated between heads or supports thereof and record carriers or supports thereof, e.g. attraction-repulsion interactions] {G11B 5/58A}
- 5.206[N: interactions in a magnetic field] {G11B 5/58A2}
- 5.207[N: using repulsion generated by superconductors in a magnetic field, e.g. by "Meissner effect"] {G11B 5/58A2R}
- 5.208using bimorph elements supporting the heads [N: see provisional also G9B/5.204] {G11B 5/592}
- 5.209[N: using auxiliary signals, e.g. pilot signals] {G11B 5/592A}
- 5.21[N: superimposed on the main signal] {G11B 5/592A1}
- 5.211[N: recorded in horizontal suppression internal of video frame] {G11B 5/592A2}
- 5.212[N: recorded in vertical suppression internal of video frame] {G11B 5/592A3}
- 5.213[N: recorded in separate tracks, e.g. servo tracks] {G11B 5/592A4}
- 5.214[N: Helicoidal tracks] {G11B 5/592A4H}
- 5.215[N: Longitudinal tracks] {G11B 5/592A4L}
- 5.216 ...for track following on disks [N: (G9B/5.188, G9B/5.193, G9B/5.196, G9B/5.198 take precedence)] {G11B 5/596}
- [N: Note
 For groups G9B/5.217 to G9B/5.222, see provisionally G9B/5.187 and G9B/5.216]
- 5.217[N: Circuits (G9B/5.221 to G9B/5.228 take precedence)] [C9704] {G11B 5/596C}
- 5.218[N: Detection or processing of peak/envelop signals] [N9704] {G11B 5/596C1}
- 5.219[N: Synchronisation; Clocking (G9B/5.22 takes precedence)] [N9704] {G11B 5/596C3}
- 5.22[N: Gain control; Filters] [N9704] {G11B 5/596C5}
- 5.221 ...[N: Aligning for runout, eccentricity or offset compensation (G9B/5.19, G9B/5.226, G9B/5.228 take precedence)] [N9704] {G11B 5/596E}
- 5.222[N: Servo formatting (G9B/5.221, G9B/5.226, G9B/5.227, G9B/5.228 take precedence)] [C9704] {G11B 5/596F}
- 5.223[N: Acquisition or selection of servo format from a system reference (after track seek G9B/5.194)] {G11B 5/596F2}
- 5.224[N: Embedded servo format (G9B/5.225 takes precedence)] [N9704] {G11B 5/596F4}
- 5.225[N: Sector, sample or burst servo format] [N9704] {G11B 5/596F5}
- 5.226[N: with optical servo tracking] [N9704] {G11B 5/596L}
- 5.227[N: for magnetoresistive heads] [N9704] {G11B 5/596M}

- 5.228[N: Servo signal format patterns or signal processing thereof, e.g. dual, tri, quad, burst signal patterns] [N9704] {G11B 5/596P}
- 5.229 ...Fluid-dynamic spacing of heads form record-carriers {G11B 5/60}
- 5.23[N: Spacing by a fluid cushion formed by movement of the record-carrier] {G11B 5/60D}
- 5.231[N: Specially adapted for spacing from rotating disc] {G11B 5/60D1}
- 5.232[N: where the spacing is maintained by using interaction of forces, e.g. attraction-repulsion (interaction in a magnetic field, see G9B/5.206)] {G11B 5/60D1A}
- 5.233 .Record carriers characterised by the selection of the material (selection of magnetic materials in general H01F1/00; thin magnetic films H01F10/00) {G11B 5/62}
- Note
This group does not cover compositions, materials or processes, per se, which are covered by the relevant subclasses of section B or C.
- 5.234 ..of leaders for magnetic tapes e.g. non-magnetic strips on the tapes or for connection (constructional features G9B/23.086) {G11B 5/627}
- 5.235 ..of cinematographic films or slides with integral magnetic track {G11B 5/633}
- 5.236 ..Comprising only the magnetisable material without bonding agent {G11B 5/64}
- 5.237 ...[N: self supporting magnetisable material, e.g. magnetisable wires] {G11B 5/64C}
- 5.238 ...[N: characterised by the film material] {G11B 5/64D}
- 5.239[N: containing Fe or Ni (G9B/5.24 takes precedence)] {G11B 5/64D2}
- 5.24[N: containing CO] {G11B 5/64D3}
- 5.241 ...consisting of several layers {G11B 5/66}
- 5.242 ..comprising one or more layers of magnetisable material homogeneously mixed with a bonding agent {G11B 5/68}
- 5.243 ...on a base layer {G11B 5/70}
- 5.244characterised by the bonding agent {G11B 5/702}
- 5.245[N: containing a polyurethane or a polyisocyanate] {G11B 5/702B}
- 5.246[N: containing mixtures of polyurethanes or polyisocyanates with other polymers] {G11B 5/702B2}
- 5.247[N: containing polyesters, polyethers, silicones, polyvinyl resins, polyacrylresins or epoxy resins (G9B/5.246 takes precedence)] {G11B 5/702C}
- 5.248[N: containing cellulosic derivates (G9B/5.246 takes precedence)] {G11B 5/702D}
- 5.249[N: Radiation curable polymers] {G11B 5/702E}
- 5.25[N: Graft polymers] {G11B 5/702F}
- 5.251[N: Additives, e.g. crosslinking agents] {G11B 5/702G}
- 5.252characterised by the composition of the magnetic material {G11B 5/706}
- 5.253[N: metals or alloys] {G11B 5/706B}
- 5.254[N: with a non-magnetic core] {G11B 5/706B2}
- 5.255[N: containing Fe metal or alloys (G9B/5.256 takes precedence)] {G11B 5/706B4}
- 5.256[N: containing Co metal or alloys] {G11B 5/706B6}
- 5.257[N: containing non-metallic substances] {G11B 5/706C}
- 5.258[N: with a non-magnetic core] {G11B 5/706C2}
- 5.259[N: CrO₂] {G11B 5/706C4}

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|-------|--|-------|--|
| 5.26 |[N: iron oxides] {G11B 5/
706C6} | 5.281 | ...containing a lubricant [N0503]
{G11B 5/725} |
| 5.261 |[N: with a skin (G9B/5.263
takes precedence)] {G11B 5/
706C6B} | 5.282 | ...[N: containing an
anticorrosive material] {G11B
5/72C} |
| 5.262 |[N: gamma - Fe ₂ O ₃] {G11B
5/706C6C} | 5.283 | ..Base layers [N0503] {G11B 5/73} |
| 5.263 |[N: with a skin] {G11B 5/
706C6C1} | 5.284 | ...characterised by the addition
of non-magnetic particles
[N0503] {G11B 5/733} |
| 5.264 |[N: Preparation processes
specially adapted therefor,
e.g. using stabilising agents
(G9B/5.265 and G9B/5.266 take
precedence)] {G11B 5/706C6C2} | 5.285 | ...characterised by the back
layer [N0503] {G11B 5/735} |
| 5.265 |[N: containing a dopant]
{G11B 5/706C6C3} | 5.286 | ...characterised by the
intermediate layer [N0503]
{G11B 5/738} |
| 5.266 |[N: containing Co] {G11B
5/706C6C3B} | 5.287 | ...[N: with bonding agent in the
material] [N0505] {G11B 5/73B} |
| 5.267 |[N: Ferrites] {G11B 5/
706C6D} | 5.288 | ...[N: without bonding agent in
the material] [N0505] {G11B 5/
73N} |
| 5.268 |[N: Ferro-ferrioxides]
{G11B 5/706C6D2} | 5.289 | ..Record carriers characterised by
the form, e.g. sheet shaped to
wrap around a drum {G11B 5/74} |
| 5.269 |[N: Magnetite] {G11B 5/
706C6D2B} | 5.29 | ..Drum carriers {G11B 5/76} |
| 5.27 |[N: Non-stoichiometric
ferro-ferrioxides, e.g.
berthollide] {G11B 5/706C6D2C} | 5.291 | ..Tape carriers {G11B 5/78} |
| 5.271 | ...characterised by addition of
non-magnetic particles to the
layer {G11B 5/708} | 5.292 | ..Card carriers {G11B 5/80} |
| 5.272 |[N: non-magnetic abrasive
particles] {G11B 5/708B} | 5.293 | ..Disc carriers {G11B 5/82} |
| 5.273 |[N: comprising a magnetic
layer on both sides covered
with non-magnetic material]
{G11B 5/70L} | 5.294 | ...[N: flexible discs] {G11B 5/
82D} |
| 5.274 |[N: characterised by the
dispersing agent] {G11B 5/70M} | 5.295 | ..Processes or apparatus specially
adapted for manufacturing
record carriers (processes
involving a single technical
art, in general, and for which
provision exists elsewhere,
see the relevant places, e.g.
B29, C23, C25D; apparatus or
processes for applying
homogeneous magnetic films to
substrates in general H01F41/
14) {G11B 5/84} |
| 5.275 | ...characterised by the
lubricant {G11B 5/71} | 5.296 | ..Coating a support with a liquid
magnetic dispersion {G11B 5/
842} |
| 5.276 | ...characterised by the surface
treatment or coating of
magnetic particles {G11B 5/
712} | 5.297 | ...in a magnetic field {G11B 5/
845} |
| 5.277 | ...characterised by the
dimension of the magnetic
particles {G11B 5/714} | 5.298 | ..Coating a support with a
magnetic layer by extrusion
{G11B 5/848} |
| 5.278 | ...characterised by two or more
magnetic layers {G11B 5/716} | 5.299 | ..[N: manufacturing base layers]
{G11B 5/84B} |
| 5.279 |at least one on each side of
the base layer {G11B 5/718} | 5.3 | ..[N: protecting the magnetic
layer] {G11B 5/84C} |
| 5.28 | ..Protective coatings, e.g.
antistatic, antifriction {G11B
5/72} | 5.301 | ..[N: treatment by ultrasonics]
{G11B 5/84E} |

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
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- 5.302 ..[N: coating a support with a magnetic layer by precipitation] {G11B 5/84H}
- 5.303 ..Coating a support with a magnetic layer by vapour deposition {G11B 5/85}
- 5.304 ..Coating a support with a magnetic layer by sputtering [N0503] {G11B 5/851}
- 5.305 ..Orientation in a magnetic field (G9B/5.297 takes precedence) {G11B 5/852}
- 5.306 ..Coating only part of a support with a magnetic layer {G11B 5/855}
- 5.307 ..Producing a magnetic layer by electro-plating or electroless plating {G11B 5/858}
- 5.308 ..Re-recording, i.e. transcribing information from one magnetisable record carrier on to one or more similar or dissimilar record carriers [N: (by varying the order of the information G9B/27.009, G9B/27.013)] {G11B 5/86}
- 5.309 ..[N: by contact "printing"] {G11B 5/86B}
- 7 **Recording or reproducing by optical means, e.g. recording using a thermal beam of optical radiation [N: by modifying optical properties or the physical structure], reproducing using an optical beam at lower power [N: by sensing optical properties]; Record carriers therefor; (G9B/11, G9B/13 take precedence) [C0406] {G11B 7/00}**
- 7.001 ..Recording, reproducing or erasing systems characterised by the shape [N: or form] of the carrier [N0406] {G11B 7/002}
- 7.002 ..with cylinders or cylinder-like carriers [N: or cylindrical sections or flat carriers loaded onto a cylindrical surface], e.g. truncated cones [N0406] {G11B 7/0025}
- 7.003 ..with webs [N: , filaments or wires], e.g. belts, spooled tapes or films of quasi-infinite extent [N0406] {G11B 7/003}
- 7.004 ..with cards [N: or other card-like flat carriers, e.g. flat sheets of optical film] [N0406] {G11B 7/0033}
- 7.005 ..with discs [N0406] {G11B 7/0037}
- 7.006 ...[N: arrangements for detection of physical defects, e.g. of recording layer] [N0406] {G11B 7/0037D}
- 7.007 ...[N: using a rotating head, e.g. helicoidal recording] [N0406] {G11B 7/003R}
- 7.008 ...[N: for moving-picture soundtracks, i.e. cinema (cameras or projectors with sound recording or reproducing means G03B31/02)] [N0406] {G11B 7/003S}
- 7.009 .Recording, reproducing or erasing methods; Read, write or erase circuits therefor [N: (magneto-optical systems G9B/11.009)] [N0406] {G11B 7/004}
- 7.01 ..Recording (G9B/7.026. G9B/7.027 take precedence) [N0406] {G11B 7/0045}
- 7.011 ...[N: involving ablation of the recording layer] [N0406] {G11B 7/0045A}
- 7.012 ...[N: involving bubble or bump forming] [N0406] {G11B 7/0045H}
- 7.013 ...[N: involving spectral or photochemical hole burning] [N0406] {G11B 7/0045M}
- 7.014 ...[N: involving phase-change effects] [N0406] {G11B 7/0045P}
- 7.015 ...[N: involving reflectivity, absorption or colour changes] [N0406] {G11B 7/0045R}
- 7.016 ...[N: Recording strategies, e.g. pulse sequences (G9B/7.028 takes precedence)] [N0408] {G11B 7/0045S}
- [N: WARNING
[N0408]
Not complete, see also G9B/7.01, G9B/7.026 and G9B/7.103]

- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.01, G9B/7.026 and G9B/7.103]
- 7.017 ...[N: Verification, i.e. checking data during or after recording] [N0408] {G11B 7/0045V}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.01 and G9B/7.018]
- 7.018 ..Reproducing (G9B/7.027 takes precedence) [N0406] {G11B 7/005}
- 7.019 ..Erasing (G9B/7.026, G9B/7.027 take precedence) [N0406] {G11B 7/0055}
- 7.02 ...[N: involving colour change media] [N0406] {G11B 7/0055C}
- 7.021 ...[N: involving liquid crystal media] [N0406] {G11B 7/0055L}
- 7.022 ...[N: involving phase-change media] [N0406] {G11B 7/0055P}
- 7.023 ...[N: involving phase depth effects] [N0406] {G11B 7/005P}
- 7.024 ...[N: involving reflectivity, absorption or colour changes] [N0406] {G11B 7/005R}
- 7.025 ...[N: Reproducing non-user data, e.g. wobbled address, prepits, BCA] [N0408] {G11B 7/005W}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.018]
- 7.026 ..Overwriting (G9B/7.027 takes precedence) [N0406] {G11B 7/006}
- 7.027 ..Recording, reproducing or erasing by using optical interference patterns, e.g. holograms [N0406] {G11B 7/0065}
- 7.028 ...[N: Overwriting strategies, e.g. recording pulse sequences with erasing level used for phase-change media] [N0408] {G11B 7/006S}
- 7.029 .Arrangement of the information on the record carrier, e.g. form of tracks [N: actual track shape, (e.g. wobbled) or cross-section, (e.g. v-shaped); sequential information structures, (e.g. sectoring or header formats within a track] {G11B 7/007}
- 7.03 ..[N: Dimensions of grooves or tracks, e.g. groove depth, track pitch] [N0408] {G11B 7/007D}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.029]
- 7.031 ..[N: Groove and land recording, i.e. user data recorded both in the grooves and on the lands] [N0408] {G11B 7/007G}
- 7.032 ..[N: where the information is modified to form a visible pattern, e.g. forming a label by modifying the width of pits or grooves] [N0408] {G11B 7/007L}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.029 and G9B/7.139]
- 7.033 ..[N: Auxiliary data, e.g. lead-in, lead-out, Power Calibration Area (PCA), Burst Cutting Area (BCA), control information (sector headers or addresses in prepits G9B/7.034; address data in track wobble G9B/7.035)] [N0408] {G11B 7/007R}
- [N: WARNING
 [N0408]

- Not complete, see also G9B/
7.029 and G9B/7.034]
- 7.034 ..[N: Sectoring or header formats within a track (formats in general G9B/20.015)] {G11B 7/007S}
- 7.035 ..[N: Track shape, e.g. address or synchronisation information in wobbled track or sidewall (addressing or synchronisation in general G9B/27)] [N0408] {G11B 7/007T}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.029]
- 7.036 ..[N: Track cross-section, e.g. V-shaped, trapezoidal] [N0408] {G11B 7/007V}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.029]
- 7.037 ..[N: Zoned data area, e.g. having different data structures or formats for the user data within data layer, Zone Constant Linear Velocity (ZCLV), Zone Constant Angular Velocity (ZCAV), carriers with RAM and ROM areas] [N0408] {G11B 7/007Z}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.029]
- 7.038 ..for discrete information, i.e. where each information unit is stored at a distinct discrete location [N: e.g. digital information formats within a data block or sector] {G11B 7/013}
- 7.039 ...[N: Details of discrete information structures, e.g. shape or dimensions of pits, prepits] {G11B 7/013D}
- 7.04 ...[N: where each location can have more than two values (`multivalued`), for data or prepits] [N0408] {G11B 7/013M}
- 7.041 .Disposition or mounting of heads or light sources relatively to record carriers {G11B 7/08}
- 7.042 ..with provision for moving the light beam into, or out of, its operative position [N: or across tracks, otherwise than during the transducing operation, e.g. for adjustment or preliminary positioning or track change or selection] (modulating by information signals G9B/7.097; controlling the position or direction of light beams, i.e. deflection, G02F1/29) {G11B 7/085}
- 7.043 ...[N: Methods for track change, selection or preliminary positioning by moving the head] {G11B 7/085A}
- 7.044 ...[N: with focus pull-in only] {G11B 7/085A1}
- 7.045 ...[N: with tracking pull-in only] {G11B 7/085A2}
- 7.046 ...[N: with both tracking and focusing pull-in] {G11B 7/085A3}
- 7.047 ...[N: Methods and circuits to control the velocity of the head as it traverses the tracks] {G11B 7/085A4}
- 7.048[N: to maintain constant velocity during the traverse] {G11B 7/085A4C}
- 7.049 ...[N: involving track counting to determine position] {G11B 7/085A6}
- 7.05 ...[N: Arrangements for positioning the light beam only without moving the head, e.g. using static electro-optical elements] {G11B 7/085B}
- 7.051 ...[N: using electro-optical elements] {G11B 7/085B1}
- 7.052 ...[N: using acousto-optical elements] {G11B 7/085B2}

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| <p>7.053[N: using galvanomirrors] {G11B 7/085B3}</p> <p>7.054 ...[N: Arrangements for mechanically moving the whole head] {G11B 7/085H}</p> <p>7.055[N: Swinging-arm positioners] {G11B 7/085H2}</p> <p>7.056[N: Sled-type positioners] {G11B 7/085H4}</p> <p>7.057[N: with position sensing by means of an auxiliary system using an external scale] {G11B 7/085H4B}</p> <p>7.058[N: to access both sides of the disc with the same head assembly] {G11B 7/085H6}</p> <p>7.059 ..[N: for time base error correction by moving the light beam] {G11B 7/08A}</p> <p>7.06 ..[N: Details of mobile parts, e.g. electromechanical control devices (see WARNING 4 after subclass title)] {G11B 7/08D}</p> <p>7.061 ..[N: Aligning the head or the light source relative to the record carrier otherwise than during transducing, e.g. adjusting tilt set screw during assembly of head] [N0408] {G11B 7/08T}</p> <p>[N: WARNING
 [N0408]
 Not complete, see also G9B/7.138]</p> <p>7.062 ..with provision for moving the light beam or focus plane for the purpose of maintaining alignment of the light beam relative to the record carrier during transducing operation, e.g. to compensate for surface irregularities of the latter or for track following [N: see {G11B 7/09}]</p> <p>7.063 ...specially adapted for discs, e.g. for compensation of eccentricity or wobble {G11B 7/095}</p> <p>7.064[N: to compensate for eccentricity of the disc or disc tracks] {G11B 7/095E}</p> | <p>7.065[N: to compensate for tilt, skew, warp or inclination of the disc, i.e. maintain the optical axis at right angles to the disc] {G11B 7/095T}</p> <p>7.066 ...[N: for track following only (G9B/7.079, G9B/7.089, G9B/7.091, G9B/7.092, G9B/7.093, G9B/7.094, G9B/7.095 take precedence)] {G11B 7/09A}</p> <p>7.067[N: Multi-beam tracking systems] {G11B 7/09A2}</p> <p>7.068[N: Dithered tracking systems] {G11B 7/09A4}</p> <p>7.069[N: Differential phase difference systems] [N0408] {G11B 7/09A6}</p> <p>7.07 ...[N: for focusing only (G9B/7.079, G9B/7.089, G9B/7.091, G9B/7.092, G9B/7.093, G9B/7.094, G9B/7.095 take precedence)] {G11B 7/09B}</p> <p>7.071 ...[N: by astigmatic methods] {G11B 7/09B2}</p> <p>7.072 ...[N: by far-field method] {G11B 7/09B3}</p> <p>7.073 ...[N: by push-pull method] {G11B 7/09B4}</p> <p>7.074 ...[N: by non-optical methods, e.g. capacitive] {G11B 7/09B5}</p> <p>7.075 ...[N: Foucault or knife-edge methods] [N0408] {G11B 7/09B6}</p> <p>7.076 ...[N: Focus-error methods other than those covered by G9B/7.071 to G9B/7.075] [N0408] {G11B 7/09B8}</p> <p>7.077 ...[N: Servo circuits using a special characteristic or response (see {G11B 7/09C})]</p> <p>7.078[N: related to the disposition of the servo detectors] {G11B 7/09C2}</p> <p>7.079 ...[N: Electromechanical actuators for lens positioning (G9B/7.054 takes precedence)] {G11B 7/09D}</p> <p>7.08[N: for focusing only (G9B/7.086 takes precedence)] {G11B 7/09D1}</p> <p>7.081 ...[N: for tracking only (G9B/7.086 takes precedence)] {G11B 7/09D2}</p> <p>7.082 ...[N: for focusing and tracking (G9B/7.083 to G9B/7.086 take precedence)] [C0408] {G11B 7/09D3}</p> |
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CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

- 7.083[N: Details of sprung supports] {G11B 7/09D4}
- 7.084[N: Details of stationary parts] {G11B 7/09D5}
- 7.085[N: Details of the moving parts] {G11B 7/09D6}
- 7.086[N: Piezo-electric actuators] {G11B 7/09D7}
- 7.087 ...[N: optical elements specially used for improving or allowing a desired servo operation (G9B/7.09 takes precedence; see WARNING 4 after subclass title) {G11B 7/09E}
- 7.088 ...[N: servo format, e.g. guide tracks, pilot signals] {G11B 7/09F}
- 7.089 ...[N: Methods and circuits for servo offset compensation] {G11B 7/09G}
- 7.09 ...[N: Disposition of servo head, e.g. servo beam, servo detector (see {G11B 7/09H}
- 7.091 ...[N: Methods and circuits for servo gain or phase compensation during operation (for initialising servos G9B/7.093)] {G11B 7/09K}
- 7.092 ...[N: Methods and circuits for performing mathematical operations on individual detector segment outputs] {G11B 7/09L}
- 7.093 ...[N: Methods for initialising servos, start-up sequences] {G11B 7/09M}
- 7.094 ...[N: specially adapted for operation during external perturbations not related to the carrier or servo beam, e.g. vibration] {G11B 7/09P}
- 7.095 ...[N: specially adapted for detection and avoidance or compensation of imperfections on the carrier, e.g. dust, scratches, dropouts (G9B/7.063 takes precedence)] {G11B 7/09Q}
- 7.096 ..Interchangeable mountings, e.g. for replacement of head without readjustment [N: including interchangeable electrical adjuster boards] {G11B 7/10}
- 7.097 .Heads, [N: e.g. forming of spot, modulation therefor (modulating lasers H01S3/10; controlling the intensity, colour, phase, polarisation or direction of light beams arriving from an independent light source, e.g. switching gating or modulating G02F1/00; disposition or mounting of head elements within housing or with provision for moving of light source, optical beam or detector, irrelevant to the transducing method G9B/7.041)] {G11B 7/12}
- 7.098 ..Optical beam sources therefor (light-emitting diodes H01L33/00; semiconductor lasers H01S5/00); Modulators, e.g. means for controlling the size or intensity of the optical spot or of the optical trace (electro-, magneto-, or acousto-optical modulators G02F1/00; optical diaphragm G03B9/02), [N: e.g. laser control circuitry specially adapted for optical storage devices] {G11B 7/125}
- [N: WARNING
For all subgroups of G9B/7.098, see also provisional G9B/7.098]
- 7.099 ...[N: Laser control and stabilisation circuits, methods and arrangements] {G11B 7/125C}
- 7.1 ...[N: Power control during transducing, e.g. by monitoring] [N0408] {G11B 7/125C1}
- [N: WARNING
[N0408]
Not complete, see also G9B/7.099]
- 7.101[N: Power calibration] [N0408] {G11B 7/125C2}
- [N: WARNING

- N0408] For all subgroups of G9B/
 Not complete, see also G9B/
 7.099] 7.111, see provisional also
 G9B/7.111]
- 7.102 ...[N: Collimation, shaping or
 circularisation of the source
 beam, e.g. use of slits or
 filters to modify the source
 beam] {G11B 7/125D}
- 7.103 ...[N: Lasers and multiple laser
 arrays (lasers per se H01S)]
 {G11B 7/125L}
- 7.104[N: two or more lasers
 having different wavelengths]
 [N0408] {G11B 7/125L2}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.103]
- 7.105 ...[N: Modulators (G9B/7.11 takes
 precedence)] {G11B 7/125M}
- 7.106 ..[N: Protecting the head, e.g.
 against dust or impact with
 the record carrier] [N9706]
 [C0408] {G11B 7/12C}
- 7.107 ..[N: Flying-type heads, e.g.
 analogous to Winchester type
 in magnetic recording] {G11B
 7/12F}
- 7.108 ..[N: Integrated head
 arrangements, e.g. source and
 detectors mounted on the same
 substrate] {G11B 7/12H}
- 7.109 ...[N: where the integrated
 structure includes a
 waveguide] {G11B 7/12H1}
- 7.11[N: where the waveguide
 includes means for electro- or
 acousto-optical deflection
 (electro- or acousto-optical
 deflection in general G02F1/
 29, G02F1/33)] {G11B 7/12H1D}
- 7.111 ..Optical detectors therefor
 (optical detectors per se
 G01J; demodulating light,
 transferring the modulation of
 modulated light, frequency
 changing of light G02F2/00)
 [N: Disposition of
 photodetectors] {G11B 7/13}
- [N: WARNING
- 7.112 ..Means for guiding the beam from
 the source to the record
 carrier or from record carrier
 to the detector [C0408] {G11B
 7/135}
- [N: WARNING
 For all subgroups of G9B/
 7.112, see provisional also
 G9B/7.112]
- 7.113 ...[N: using diffraction optics,
 e.g. holograms or gratings
 (diffraction gratings per se
 G02B5/18; holograms per se
 G02B5/32; grating systems
 G01B27/44)] [C0408] {G11B 7/
 135A}
- 7.114 ...[N: where the characterising
 optical element is a double or
 multiple prism beam splitter,
 i.e. having at least 2 prisms
 in cooperation] {G11B 7/135B}
- 7.115 ...[N: where the characterising
 optical element is a single
 prism element] {G11B 7/135C}
- 7.116 ...[N: where the characterising
 optical element is a mirror
 (galvanomirrors G9B/7.053)]
 {G11B 7/135D}
- 7.117 ...[N: where the characterising
 optical element is a
 refractive plate, e.g. wave
 plate] [C0408] {G11B 7/135E}
- 7.118[N: Stepped phase plates]
 [N0408] {G11B 7/135E1}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/
 7.117]
- 7.119[N: Active plates, e.g.
 liquid crystal panel,
 electrostrictive element]
 [N0408] {G11B 7/135E2}
- [N: WARNING

- [N0408] [N: WARNING
Not complete, see also G9B/
7.117] [N0408]
Not complete, see also G9B/
7.107]
- 7.12 ...[N: where the characterising
optical element is a lens]
{G11B 7/135F}
- 7.121[N: Objective lenses
(optical objectives per se
G02B9/00)] [N0408] {G11B 7/
135F1}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.12]
- 7.122[N: Collimator lenses
(collimators per se G02B27/
30)] [N0408] {G11B 7/135F2}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.12]
- 7.123[N: Other lenses, e.g.
separate aberration correction
lens, cylindrical lens to
generate astigmatism, beam
expanders] [N0408] {G11B 7/
135F3}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.12]
- 7.124 ...[N: Non-lens elements for
altering the properties of the
beam as it falls on the
detector, e.g. knife edges,
slits, filters, stops] {G11B
7/135G}
- 7.125 ...[N: using fibre optics] {G11B
7/135L}
- 7.126 ...[N: using the near-field
effect (near-field optical
probes per se G12B21/06)]
[N0408] {G11B 7/135M}
- 7.127 ...[N: Numerical aperture
control means] [N0408] {G11B
7/135N}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.102]
- 7.128 ...[N: Means for controlling the
beam wavefront, e.g.
aberration correction (optical
systems for aberration
correction per se G02B27/00)]
[N0408] {G11B 7/135P}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.102]
- 7.129[N: passive] [N0408] {G11B
7/135P2}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.102]
- 7.13[N: active, e.g. controlled
by electrical or mechanical
means] [N0408] {G11B 7/135P4}
- [N: WARNING
[N0408]
Not complete, see also G9B/
7.102]

- 7.131[N: during transducing, e.g. to correct for variation of the spherical aberration due to disc tilt or irregularities in the cover layer thickness] [N0408] {G11B 7/135P4T}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.102]
- 7.132 ...[N: where the characterising optical element is a beam splitter or combiner (G9B/7.113, G9B/7.114 take precedence; beam splitting or combining per se G02B27/10)] [N0408] {G11B 7/135S}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.115 to G9B/7.124]
- 7.133 ...[N: Means for changing the cross-sectional shape, e.g. circular or elliptical, of the beam] [N0408] {G11B 7/135T}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.102]
- 7.134 ...[N: characterised by the arrangement of detectors in a multiple array] {G11B 7/13A}
- 7.135 ...[N: characterised by the shape of individual detector elements] {G11B 7/13B}
- 7.136 ..adapted to record on, or to reproduce from, more than one track simultaneously (G9B/7.137 takes precedence) {G11B 7/14}
- 7.137 ..Dual-recording arrangements, i.e. in which the information is recorded in two different forms simultaneously on the same or related tracks, e.g. recording instantaneous and mean values (sound recording combined with cinematography G03C) {G11B 7/20}
- 7.138 ..Apparatus or processes specially adapted for the manufacture of heads, e.g. assembly {G11B 7/22}
- 7.139 .Record carriers characterised by the selection of the material or by the structure or form (characterised by the arrangement of information on the carrier G9B/7.029 [N: G9B/7.039]; photosensitive materials per se G03C) {G11B 7/24}
- 7.14 ..characterised by the selection of the material [N0505] {G11B 7/241}
- 7.141 ...of recording layers [N0505] {G11B 7/242}
- 7.142 ...comprising inorganic material only, e.g. ablative layers [N0505] {G11B 7/243}
- 7.143[N: Metals or metalloids] [N0804] {G11B 7/243B}
- 7.144[N: Non-metallic elements] [N0804] {G11B 7/243D}
- 7.145 ...comprising organic material only [N0505] {G11B 7/244}
- 7.146containing an azulene compound [N0505] {G11B 7/244B}
- 7.147containing a polymeric component [N0505] {G11B 7/245}
- 7.148containing dyes [N0505] {G11B 7/246}
- 7.149[N: Azo-dyes] [N0804] {G11B 7/246A}
- 7.15Methine or polymethine dyes [N0505] {G11B 7/247}
- 7.151[N: Cyanine] [N0804] {G11B 7/247B}
- 7.152[N: Merocyanine] [N0804] {G11B 7/247D}
- 7.153[N: Oxonol] [N0804] {G11B 7/247F}
- 7.154Porphines; Azaporphines, e.g. phthalocyanines [N0505] {G11B 7/248}

- 7.155containing organo-metallic compounds (G9B/7.148 takes precedence) [N0505] {G11B 7/249}
- 7.156[N: neutral] [N0804] {G11B 7/249B}
- 7.157[N: as anion] [N0804] {G11B 7/249D}
- 7.158[N: as cation] [N0804] {G11B 7/249F}
- 7.159 ..[N: Conditioning of record carrier e.g. mechanised protection or means for reducing influence of physical parameters e.g. temperature large, moisture (for record carriers not specific to the method of recording or reproducing G9B/23; by using layers integrated with the recording layer G9B/7.181)] {G11B 7/24C}
- 7.16 ..[N: characterised by the form of the carrier] [N0408] {G11B 7/24F}
- [N: WARNING
[N0408]
G9B/7.16 and sub-groups are not complete, see also G9B/7.139]
- 7.161 ...[N: Cards] [N0408] {G11B 7/24F2}
- 7.162[N: intended for rotation] [N0408] {G11B 7/24F2R}
- 7.163 ...[N: Tapes] [N0408] {G11B 7/24F4}
- 7.164 ...[N: Cylinders] [N0408] {G11B 7/24F8}
- 7.165 ..[N: Structures specially adapted for reproducing (G9B/7.159 takes precedence)] {G11B 7/24R}
- 7.166 ..[N: characterised by the structure, e.g. involving layers] [N0408] {G11B 7/24S}
- [N: WARNING
[N0408]
G9B/7.166 and sub-groups are not complete, see also G9B/7.139]
- 7.167 ...[N: Two-sided carriers, in which the layers are read from opposite sides] [N0408] {G11B 7/24S2}
- 7.168 ...[N: Multiple data layers, in which the layers are read from the same side] [N0408] {G11B 7/24S4}
- 7.169containing liquid crystals [N0505] {G11B 7/25}
- 7.17comprising inorganic material dispersed in an organic matrix [N0505] {G11B 7/251}
- 7.171 ...of layers other than recording layers [N0505] {G11B 7/252}
- [N: Note
In group G9B/7.171, multi-aspect classification is applied, so that if subject matter is characterised by aspects covered by more than one of its subgroups, the subject matter should be classified in each of those subgroups.]
- 7.172Base layers [N0505] {G11B 7/253}
- 7.173[N: comprising glass] [N0804] {G11B 7/253B}
- 7.174[N: comprising metals] [N0804] {G11B 7/253D}
- 7.175[N: comprising resins] [N0804] {G11B 7/253F}
- 7.176[N: Polycarbonate (PC)] [N0804] {G11B 7/253F2}
- 7.177[N: Polyester, e.g. PET, PETG, PEN] [N0804] {G11B 7/253F3}
- 7.178[N: Polystyrene (PS)] [N0804] {G11B 7/253F4}
- 7.179[N: Polycycloolefines (COCs)] [N0804] {G11B 7/253F5}
- 7.18[N: Biodegradable polymers, cellulose included] [N0804] {G11B 7/253F6}
- 7.181Protective topcoat layers [N0505] {G11B 7/254}
- 7.182[N: consisting essentially of organic resins] [N0804] {G11B 7/254B}

- 7.183[N: comprising inorganic filler, e.g. particles, fibres] [N0804] {G11B 7/254B2}
- 7.184[N: consisting essentially of inorganic materials] [N0804] {G11B 7/254D}
- 7.185Layers improving adhesion between layers [N0505] {G11B 7/256}
- 7.186Layers having properties involved in recording or reproduction, e.g. optical interference layers or sensitising layers [N: or dielectric layers, protecting the recording layers] [N0505] {G11B 7/257}
- 7.187[N: consisting essentially of organic materials] [N0804] {G11B 7/257B}
- 7.188[N: Resins] [N0804] {G11B 7/257B2}
- 7.189[N: consisting essentially of inorganic materials] [N0804] {G11B 7/257D}
- 7.19Reflective layers [N0505] {G11B 7/258}
- 7.191[N: based on aluminium] [N0804] {G11B 7/258B}
- 7.192[N: based on silver] [N0804] {G11B 7/258D}
- 7.193[N: based on gold] [N0804] {G11B 7/258F}
- 7.194 ..Apparatus or processes specially adapted for the manufacture of record carriers (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. B29, G03) [N: manufacture of intermediate mediums, e.g. matrixes for processing G9B/23.008] {G11B 7/26}
- 7.195 ...[N: Preparing a master, e.g. exposing photoresist, electroforming] [C0408] {G11B 7/26M}
- 7.196 ...[N: Preparing and using a stamper, e.g. pressing or injection molding substrates (production of optical record carriers, e.g. optical discs B29D17/00C)] [C0408] {G11B 7/26P}
- 7.197 ...[N: Apparatus for the mass production of optical record carriers, e.g. complete production stations, transport systems] [N0408] {G11B 7/26R}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.194]
- 7.198 ...[N: Sputtering or spin-coating layers (sputtering in general C23C14/24; spin-coating in general B05D1/00C2)] [N0408] {G11B 7/26S}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.194]
- 7.199 ...[N: Post-production operations, e.g. initialising phase-change recording layers, checking for defects (investigating the presence of flaws or contamination in optical discs G01N21/95B)] [N0408] {G11B 7/26V}
- [N: WARNING
 [N0408]
 Not complete, see also G9B/7.194]
- 7.2 .Re-recording, i.e. transcribing information from one optical record carrier on to one or more similar or dissimilar record carriers {G11B 7/28}
- 9 **Recording or reproducing using a method not covered by one of the main groups G9B/3 to G9B/7; Record carriers therefor (G9B/11 takes precedence) [N: driving or moving of heads G9B/21.003] {G11B 9/00}**
- [N: Note
 [C0201]

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

- In this group, the expression "+IDT" is used to indicate:
- that the documents classified here were classified in IDT-groups concerning: "Recording or reproducing methods or devices not covered by one of the main groups G9B/3 to G9B/7, e.g. using variable resistance or capacitance carriers"
 - that they were reclassified administratively from said IDT-groups to this group]
- 9.001 .[N: Recording by means directly associated with the tip of a microscopic electrical probe as used in Scanning Tunneling (STM) or Atomic Force Microscopy (AFM) for inducing physical or electrical perturbations in a recording medium, the permanent effect of which being the writing of at least one information unit of a sequence disposed along a track; Reproducing such memorised information by such association of tip and means; Record carriers or media specially adapted for such transducing of information (marking using electrical current B41M5/20; investigating materials by using tunnel effect G01N27/00F; measuring irregularity of surfaces by using scanning force microscopes G01B7/34A)] {G11B 9/00A}
- [N: Note
Classification in these groups is done according to the means required for the conditioning, disposition, mounting and positioning of the heads and record carriers, with regard to the microscopic size of the transducing zones]
- 9.002 ..[N: Heads] {G11B 9/00A2}
- 9.003 ..[N: Disposition or mounting of heads or record carriers (G9B/17 and G9B/19 take precedence)] {G11B 9/00A3}
- 9.004 ...[N: with provision for moving the heads or record carriers relatively to each other or for access to indexed parts without effectively imparting a relative movement] {G11B 9/00A3A}
- 9.005[N: with provision for moving the heads or record carriers relatively to each other] {G11B 9/00A3A2}
- 9.006[N: switching at least one head in operating function; controlling the relative spacing to keep the head operative, e.g. for allowing a tunnel current flow] {G11B 9/00A3A2C}
- 9.007[N: positioning the head or record carrier into or out of operative position or across information tracks; alignment of the head relative to the surface of the record carrier (G9B/9.006 takes precedence)] {G11B 9/00A3A2P}
- 9.008 ..[N: Record carriers] {G11B 9/00A4}
- 9.009 ...[N: characterised by the form] {G11B 9/00A4F}
- 9.01[N: auxiliary features, e.g. reference or indexing surfaces] {G11B 9/00A4F2}
- 9.011 ...[N: characterised by the memorising material or structure] {G11B 9/00A4M}
- 9.012 .using ferroelectric record carriers; Record carriers therefor {G11B 9/02}
- 9.013 .using record carriers having variable electric resistance; Record carriers therefor {G11B 9/04}
- 9.014 .using record carriers having variable electrical capacitance; Record carriers therefor (G9B/9.012 takes precedence) {G11B 9/06}

<p>9.015 ..[N: Record carriers characterised by their structure or form or by the selection of the material; Apparatus or processes specially adapted for the manufacture of record carriers (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. B05D, F16N, C08L)] {G11B 9/06R}</p> <p>9.016 ...[N: characterised by the form, e.g. comprising mechanical protection elements] {G11B 9/06R2}</p> <p>9.017 ...[N: characterised by the selection of the material] {G11B 9/06R4}</p> <p>9.018[N: Additional layers for lubrication, wear protection or elimination of electrostatic charges of the interface between record carrier and head (G9B/9.019, G9B/9.02 and G11BR4R take precedence)] {G11B 9/06R4A}</p> <p>9.019[N: Electrically conductive layers (G9B/9.021 takes precedence)] {G11B 9/06R4E}</p> <p>9.02[N: Dielectric layers; Processes for providing electrical conductivity to them (G9B/9.021 takes precedence)] {G11B 9/06R4I}</p> <p>9.021[N: Moulding resin compositions] {G11B 9/06R4R}</p> <p>9.022 ..Heads for reproducing capacitive information {G11B 9/07}</p> <p>9.023 ...[N: using mechanical contact with record carrier, e.g. by stylus] {G11B 9/07B}</p> <p>9.024 .using electrostatic charge injection; Record carriers therefor {G11B 9/08}</p> <p>9.025 .using electron beam; Record carriers therefor (G9B/9.024 takes precedence) [N: see provisional also G9B/11.004] {G11B 9/10}</p>	<p>11</p> <p>11.001</p> <p>11.002</p>	<p>Recording on or reproducing from the same record carrier wherein for these two operations the methods are covered by different main groups of groups G9B/3 to G9B/7 or by different subgroups of group G9B/9; Record carriers therefor [N: driving or moving of heads G9B/3.008, G9B/5.147, G9B/7.041, G9B/21.003] {G11B 11/00}</p> <p>[N: Notes [C0201] In this group, the expression "+IDT" is used to indicate: - that the documents classified here were classified in IDT-groups concerning: "Methods or devices wherein the recording and the reproducing operations are carried out according to different methods" - that they were reclassified administratively from said IDT-groups to this group Groups G9B/11 to G9B/11.058 mainly cover: - combined systems or apparatus comprising both recording and reproducing using different methods; - record carriers therefor. Reading only or recording only using mechanical, magnetic, optical or other methods is covered by groups G9B/3 to G9B/9.024]]</p> <p>[N: using recording by perturbation of the physical or electrical structure] {G11B 11/00A}</p> <p>..[N: with reproducing by using non-optical beam of radiation or particles, e.g. electrons, directly interacting with the memorised information (G9B/11.003 takes precedence)] {G11B 11/00A2}</p>
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- 11.003 ..[N: with reproducing by means directly associated with the tip of a microscopic electrical probe as defined in G9B/9.001 (details of heads or their disposition or mounting G9B/9.002 and G9B/9.003)] {G11B 11/00A4}
- 11.004 .using recording by deforming with non-mechanical means, e.g. laser, beam of particles [N: (G9B/11.001 takes precedence; see proviosional also G9B/3.099 to G9B/3.107)] {G11B 11/03}
- 11.005 ..with reproducing by capacitive means [N: G9B/9.022 takes precedence] {G11B 11/05}
- 11.006 ..with reproducing by mechanical sensing {G11B 11/06}
- 11.007 .using recording by electric charge or by variation of electric resistance or capacitance [N: (G9B/11.001, G9B/11.008 take precedence)] {G11B 11/08}
- 11.008 .using recording by magnetic means [N: or other means for magnetisation or demagnetisation of a record carrier, e.g. light induced spin magnetisation; Demagnetisation by thermal or stress means in the presence or not of an orienting magnetic field] {G11B 11/10}
- 11.009 ..using a beam of light or a magnetic field for recording [N: by change of magnetisation] and a beam of light for reproducing, e.g. light-induced thermo-magnetic recording, Kerr effect reproducing [N: spin magnetisation recording] [N0002] {G11B 11/105}
- 11.01 ...[N: characterised by the transducing operation to be executed] [N0002] {G11B 11/105B}
- 11.011[N: Recording (for shaping of magnetic domains G9B/11.022, for compensation of shift G9B/11.023)] [N0002] {G11B 11/105B1}
- 11.012[N: by modulating only the light beam of the transducer] [N0002] {G11B 11/105B1L}
- 11.013[N: by modulating only the magnetic field at the transducer] [N0002] {G11B 11/105B1M}
- 11.014[N: by modulating both the magnetic field and the light beam at the transducers] [N0002] {G11B 11/105B1T}
- 11.015[N: one of the light beam or the magnetic field being modulated by data and the other by a clock or frequency generator] [N0002] {G11B 11/105B1T1}
- 11.016 ...[N: Reproducing (compensating pit shift G9B/11.023)] [N0002] {G11B 11/105B2}
- 11.017 ...[N: Overwriting or erasing (G9B/11.021 takes precedence)] [N0002] {G11B 11/105B3}
- 11.018[N: Direct overwriting, i.e. performing erasing and recording using the same transducing means] [N0002] {G11B 11/105B3B}
- 11.019[N: using a single light spot] [N0002] {G11B 11/105B3B1}
- 11.02 ...[N: Initialising] [N0002] {G11B 11/105B4}
- 11.021 ...[N: Bulk initialisation or erasing, e.g. at least one whole information track with a single action] [N0002] {G11B 11/105B5}
- 11.022 ...[N: Shaping of magnetic domains, e.g. form, dimensions] [N0002] {G11B 11/105B6}
- 11.023 ...[N: to compensate for the magnetic domain drift of time shift] [N0002] {G11B 11/105B7}
- 11.024 ...[N: Heads] [N0002] {G11B 11/105D}
- 11.025 ...[N: for recording by magnetising, demagnetising or transfer of magnetisation, by radiation, e.g. for thermomagnetic recording] [N0002] {G11B 11/105D1}
- 11.026[N: using thermic beams, e.g. lasers] [N0002] {G11B 11/105D1B}

- 11.027[N: using electromagnetic beams, e.g. polarised light] [N0002] {G11B 11/105D1D}
- 11.028[N: for reproducing] [N0002] {G11B 11/105D2}
- 11.029[N: using optical beam of radiation] [N0002] {G11B 11/105D2B}
- 11.03[N: interacting directly with the magnetisation on the record carrier] [N0002] {G11B 11/105D2B2}
- 11.031[N: interacting with the magnetisation of an intermediate transfer element, e.g. magnetic film, included in the head] {G11B 11/105D2B4}
- 11.032 ...[N: Disposition or mounting of transducers relative to record carriers] [N0002] {G11B 11/105G}
- 11.033[N: Arrangements of transducers relative to each other, e.g. coupled heads, optical and magnetic head on the same base (for relative movement of transducers G9B/11.043)] [N0002] {G11B 11/105G1}
- 11.034[N: the transducers being disposed on the same side of the carrier (flying heads G9B/11.046)] [N0002] {G11B 11/105G1B}
- 11.035[N: with provision for moving or switching or masking the transducers in or out of their operative position] [N0002] {G11B 11/105G2}
- 11.036[N: in view of the loading or unloading of the carrier] [N0002] {G11B 11/105G2B}
- 11.037[N: Switching or mechanically reversing the magnetic field generator] [N0002] {G11B 11/105G2D}
- 11.038[N: Access of indexed parts] [N0002] {G11B 11/105G2G}
- 11.039[N: Marks for track change, e.g. prepits, gray codes] [N0002] {G11B 11/105G2G2}
- 11.04[N: Mechanically moving the transducers] [N0002] {G11B 11/105G2H}
- 11.041[N: Swing arm positioners] [N0002] {G11B 11/105G2H1}
- 11.042[N: Sled type positioners] [N0002] {G11B 11/105G2H2}
- 11.043[N: Control of relative positioning of the magnetic and optical transducers, e.g. to move simultaneously] [N0002] {G11B 11/105G2K}
- 11.044 ...[N: with provision for moving the transducers for maintaining alignment or spacing relative to the carrier] [N0002] {G11B 11/105G3}
- 11.045[N: Servo format, e.g. prepits, guide tracks, pilot signals] [N0002] {G11B 11/105G3B}
- 11.046 ...[N: Flying heads] [N0002] {G11B 11/105G4}
- 11.047 ...[N: Record carriers characterised by the selection of the material or by the structure or form] [N0002] {G11B 11/105M}
- 11.048 ...[N: characterised by the form, e.g. comprising mechanical protection elements] [N0002] {G11B 11/105M1}
- 11.049 ...[N: characterised by the selection of the material] [N0002] {G11B 11/105M2}
- 11.05[N: Details] [N0002] {G11B 11/105M2D}
- 11.051[N: for improving write-in properties, e.g. Curie-point temperature] [N0002] {G11B 11/105M2D2}
- 11.052[N: for improving read-out properties, e.g. polarisation of light] [N0002] {G11B 11/105M2D4}
- 11.053 ...[N: Control of operating function] [N0002] {G11B 11/105P}
- 11.054 ...[N: Adaptations for transducing various formats on the same or different carriers] [N0002] {G11B 11/105P1}
- 11.055 ..using a beam, [N: e.g. of electrons or X-rays] other than a beam of light [N: or a magnetic field] for recording [N0002] {G11B 11/11}

- 11.056 ..[N: using a beam, [N: e.g. of electrons or X-rays] other than a beam of light for reproducing [N0002] {G11B 11/115}
- 11.057 .using recording by optical means (G9B/11.004 takes precedence) [N: G9B/11.008 takes precedence] {G11B 11/12}
- 11.058 ..with reproducing by magnetic means {G11B 11/14}
- 11.059 .using recording by mechanical cutting, deforming or pressing [N: (G9B/11.001 takes precedence)] {G11B 11/16}
- 11.06 ..with reproducing by optical means {G11B 11/18}
- 11.061 ..with reproducing by magnetic means {G11B 11/20}
- 11.062 ..with reproducing by capacitive means [N: see provisionally G9B/9.014, G9B/9.022; G9B/11.005] {G11B 11/22}
- 13 **Recording simultaneously [N: or selectively] by methods covered by different main groups [N: among G9B/3, G9B/5, G9B/7 and G9B/9]; Record carriers therefor [N: not otherwise provided for]; Reproducing therefrom [N: not otherwise provided for (G9B/9.001 and G9B/11.001 take precedence; driving or moving of heads G9B/3.008, G9B/5.147, G9B/7.041 and G9B/21.003)] {G11B 13/00}**
- [N: Note
This group is limited to the combination of recording and reproducing on the same record carrier by more than one of the different method covered by groups G9B/3, G9B/5, G9B/7 and G9B/9]
- 13.001 .magnetically and by styli {G11B 13/02}
- 13.002 .magnetically [N: or by magnetisation] and optically [N: or by radiation, for changing or sensing optical properties] {G11B 13/04}
- 13.003 ..[N: combined recording by magnetic and optic means] {G11B 13/04C}
- 13.004 .optically and by styli {G11B 13/06}
- 15 **Driving, starting or stopping record carriers of filamentary or web form; Driving both such record carriers and heads; Guiding such record carriers or containers therefor; Control thereof; Control of operating function (driving or guiding heads G9B/3 to G9B/7, G9B/21) {G11B 15/00}**
- 15.001 .[N: Programmed access in sequence to indexed parts of tracks of operating tapes, by driving or guiding the tape (access by driving of both record carrier and head G9B/15.023; see prov. also G9B/15.077)] {G11B 15/00A}
- 15.002 .Control of operating function, e.g. switching from recording to reproducing {G11B 15/02}
- 15.003 ..[N: remotely controlled] {G11B 15/02C}
- 15.004 ..[N: by using processor, e.g. microcomputer; see provisional also G9B/15.001] {G11B 15/02P}
- 15.005 ..by using counters [N: see prov. also G9B/15, G9B/27] {G11B 15/03}
- 15.006 ..Preventing, inhibiting, or warning against accidental erasing or double recording (G9B/15.007 takes precedence) {G11B 15/04}
- 15.007 ..by sensing features present on or derived from record carrier or container (G9B/15.019 takes precedence) [N: see provisional also G9B/15.002] {G11B 15/05}
- 15.008 ..by sensing auxiliary features on record carriers or containers, e.g. to stop machine near the end of a tape {G11B 15/06}
- 15.009 ...on containers [N: see provisional also G9B/15.008] {G11B 15/07}
- 15.01 ...by photoelectric sensing (G9B/15.009 takes precedence) {G11B 15/08}

- 15.011 ...by sensing recorded signals
 [N: see provisional also G9B/
 15.008, G9B/15.002, G9B/27]
 {G11B 15/087}
- 15.012 ...by sensing driving condition
 of record carrier, e.g.
 travel, tape tension [N: see
 provisional also G9B/15.019,
 G9B/15.034, G9B/15.054] {G11B
 15/093}
- 15.013 ..Manually-operated control;
 Solenoid-operated control [N:
 G9B/15.049 takes precedence]
 {G11B 15/10}
- 15.014 ...[N: electrically operated]
 {G11B 15/10E}
- 15.015 ...[N: mechanically operated]
 {G11B 15/10M}
- 15.016 ..Masking of heads; [N: circuits
 for] Selecting or switching of
 heads between operative and
 inoperative functions [N: or
 between different operative
 functions or for selection
 between operative heads];
 Masking of beams, e.g. of
 light beams [N: track
 selection by moving the
 magnetic head G9B/5.181] {G11B
 15/12}
- 15.017 ...[N: conditioned by the
 operating function of the
 apparatus] {G11B 15/12A}
- 15.018 ...Masking or switching
 periodically, e.g. of rotating
 heads {G11B 15/14}
- 15.019 ..by sensing presence, absence or
 position of record carrier or
 container {G11B 15/16}
- 15.02 ...of container [N: see prov.
 also G9B/15.019] {G11B 15/17}
- 15.021 ..Driving; Starting; Stopping;
 Arrangements for control or
 regulation thereof [N: G9B/
 15.074 takes precedence;
 handling tapes or filamentary
 material in general B65H23/00]
 {G11B 15/18}
- 15.022 ..[N: Driving of both record
 carrier and head (G9B/15.055
 takes precedence; mounting of
 head G9B/5.173)] {G11B 15/18B}
- 15.023 ...[N: Programmed access in
 sequence to indexed parts of
 operating tapes cooperating
 with rotating heads (see
 provisional also G9B/15.001)]
 {G11B 15/18B1}
- 15.024 ...[N: driving or moving the head
 in a direction which cuts
 across the direction of travel
 of the tape, e.g. for
 helicoidal scanning] {G11B 15/
 18B2}
- 15.025 ...[N: with head driven in a
 plane, cyclically around an
 axis, e.g. on headwheel
 (construction of headwheel
 G9B/5.174, G9B/21.023;
 disposition of heads on
 headwheel G9B/5.175, G9B/
 21.003)] {G11B 15/18B2R}
- 15.026[N: with provision for
 information tracking by moving
 the transducing part of the
 head relative to the
 headwheel, in the direction of
 the scanning movement, e.g.
 for skew or time base
 correction (in the direction
 which cuts across tracks, i.e.
 for track following G9B/3.073,
 G9B/5.204, G9B/7.042, G9B/
 21.012, G9B/21.018; by
 controlling headwheel rotation
 G9B/15.066, by guiding the
 tape G9B/15.077)] {G11B 15/
 18B2R2}
- 15.027[N: using signals recorded
 in tracks disposed in parallel
 with the scanning direction]
 {G11B 15/18B2R2S}
- 15.028[N: using auxiliary
 signals, i.e. pilot signals]
 {G11B 15/18B2R2S2}
- 15.029[N: superimposed on the
 main signal track] {G11B 15/
 18B2R2S2M}
- 15.03 ...[N: adaptations for special
 effects or editing (signal
 processing or indexing
 therefor G9B/27)] {G11B 15/
 18B3}
- 15.031 ..[N: for record carriers inside
 containers] {G11B 15/18C}
- 15.032 ...[N: the record carrier being
 endless] {G11B 15/18C1}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

- 15.033 ..Moving record carrier backwards or forwards by finite amounts, i.e. backspacing, forward spacing {G11B 15/20}
- 15.034 ..Stopping means (slowing-down preparatory to stopping or speed-changing G9B/15.07; speed-controlling by mechanical linkage G9B/15.071; brake constructions in general F16D) [N: G9B/15.008 takes precedence; inside container G9B/23.049] {G11B 15/22}
- 15.035 ..Drive disengaging means {G11B 15/24}
- 15.036 ..Driving record carriers by members acting directly or indirectly thereon [N: G9B/15.049 takes precedence; Driving features inside container, see G9B/23.049 and subgroups] {G11B 15/26}
- 15.037 ...through rollers driving by frictional contact with the record carrier, e.g. capstan; Multiple arrangements of capstans or drums coupled to means for controlling the speed of the drive; Multiple capstan systems alternately engageable with record carrier to provide reversal {G11B 15/28}
- 15.038[N: through pneumatic means] {G11B 15/28P}
- 15.039through pinch-rollers [N: or tape rolls] (G9B/15.04 takes precedence) {G11B 15/29}
- 15.04with single capstan or drum simultaneously driving the record carrier at two separate points of an isolated part thereof, e.g. the capstan acting directly on the tape rollers {G11B 15/295}
- 15.041 ...through the means for supporting the record carrier, e.g. mandrel, turntable {G11B 15/30}
- 15.042 ...through the reels or cores on to which the record carrier is wound {G11B 15/32}
- 15.043 ...through non-skip drive means, e.g. sprocket {G11B 15/34}
- 15.044 ..Driving record carriers by pneumatic means [N: pneumatic control for capstans driving the record carrier by frictional contact G9B/15.038] {G11B 15/38}
- 15.045 ...[N: directly, e.g. by rotating drum (guiding record carrier on rotating drum G9B/15.08)] {G11B 15/38D}
- 15.046 ..Driving record carriers otherwise than by electric motor {G11B 15/40}
- 15.047 ..manually {G11B 15/42}
- 15.048 ..Control or regulation of mechanical tension of record carrier, e.g. tape tension (controlling tension in filamentary material in general B65H59/00) [N: by speed regulation G9B/15.054; by using reserve loops G9B/15.074] {G11B 15/43}
- 15.049 ..Speed-changing arrangements; Reversing arrangements; Drive transfer means therefor {G11B 15/44}
- 15.05 ...[N: Control thereof] {G11B 15/44C}
- 15.051 ...[N: reversing arrangements (G9B/15.05 takes precedence)] {G11B 15/44R}
- 15.052[N: by driving the reels only] {G11B 15/44R1}
- 15.053[N: automatic reverse drive transfer therefor] {G11B 15/44R1A}
- 15.054 ..Controlling, regulating, or indicating speed [N: dependent on position of tape in reserve, loop G9B/15.074, G9B/15.075] {G11B 15/46}
- 15.055 ...in arrangements for recording or reproducing wherein both record carriers and heads are driven [N: see provisional also G9B/15.022] {G11B 15/467}
- 15.056[N: by controlling simultaneously the speed of the tape and the speed of the rotating head] {G11B 15/467S}
- 15.057[N: with provision for information tracking] {G11B 15/467S2}

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| <p>15.058[N: by controlling the speed of the tape while the head is rotating] {G11B 15/467T}</p> <p>15.059[N: with provision for information tracking] {G11B 15/467T2}</p> <p>15.06[N: using signals recorded in tracks disposed in parallel with the scanning direction] {G11B 15/467T2S}</p> <p>15.061[N: using auxiliary signals, i.e. pilot signals] {G11B 15/467T2S2}</p> <p>15.062[N: superimposed on the main signal track] {G11B 15/467T2S2M}</p> <p>15.063 ...[N: by using pilot tracking tones embedded in binary coded signals, e.g. using DSV/CDS values of coded signals] {G11B 15/46E}</p> <p>15.064by controlling the speed of the heads [N: see prov. also G9B/5.204] {G11B 15/473}</p> <p>15.065[N: control of headwheel rotation (disposition or construction of headwheel motor G9B/5.174, G9B/21.003)] {G11B 15/473R}</p> <p>15.066[N: with provision for information tracking, e.g. for time base correction] {G11B 15/473R2}</p> <p>15.067[N: using signals recorded in tracks disposed parallel with the scanning direction] {G11B 15/473R2S}</p> <p>15.068[N: using auxiliary signals, i.e. pilot signals] {G11B 15/473R2S2}</p> <p>15.069[N: superimposed on the main signal track] {G11B 15/473R2S2M}</p> <p>15.07 ...Starting; Accelerating; Decelerating; Arrangements preventing malfunction during drive change {G11B 15/48}</p> <p>15.071 ...by mechanical linkage, e.g. clutch {G11B 15/50}</p> <p>15.072 ...by using signals recorded on, or derived from, record carrier {G11B 15/52}</p> <p>15.073 ...by stroboscope; by tachometer (speedometers or tachometers G01P) {G11B 15/54}</p> | <p>15.074 .the record carrier having reserve loop, e.g. to minimise inertia during acceleration [N: measuring or control in connection therewith] {G11B 15/56}</p> <p>15.075 ..with vacuum column {G11B 15/58}</p> <p>15.076 .Guiding record carrier (guiding devices structurally associated with magazines or cassettes G9B/23.049) {G11B 15/60}</p> <p>15.077 ..[N: for track selection, acquisition or following] {G11B 15/60F}</p> <p>15.078 ..[N: without displacing the guiding means] {G11B 15/60G}</p> <p>15.079 ...[N: Pneumatic guiding] {G11B 15/60G1}</p> <p>15.08 ..on drum, e.g. drum containing rotating heads [N: G9B/15.084 takes precedence] {G11B 15/61}</p> <p>15.081 ...[N: inside container] {G11B 15/61C}</p> <p>15.082 ..Maintaining desired spacing between record carrier and head {G11B 15/62}</p> <p>15.083 ...by fluid-dynamic spacing {G11B 15/64}</p> <p>15.084 ..Threading; Loading; Automatic self-loading {G11B 15/66}</p> <p>15.085 ...by extracting loop of record carrier from container {G11B 15/665}</p> <p>15.086[N: to pull the record carrier against non rotating heads] {G11B 15/665B}</p> <p>15.087[N: to pull the record carrier against drum] {G11B 15/665D}</p> <p>15.088[N: using one loading ring, i.e. "C-type" (G9B/15.09 takes precedence)] {G11B 15/665D1}</p> <p>15.089[N: using two-sided extraction, i.e. "M-type"] {G11B 15/665D2}</p> <p>15.09[N: with two loading rings rotating in opposite directions] {G11B 15/665D2A}</p> <p>15.091 ...[N: Positioning or locking of spool or reel] {G11B 15/66P}</p> <p>15.092 ...by extracting end of record carrier from container or spool {G11B 15/67}</p> |
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- 15.093 .Guiding containers [N: e.g. loading, ejecting cassettes] {G11B 15/675}
- 15.094 ..[N: Details] {G11B 15/675A}
- 15.095 ...[N: Servo control] {G11B 15/675A1}
- 15.096 ...[N: Ejection damping means] {G11B 15/675A2}
- 15.097 ..[N: with movement of the cassette parallel to its main side, i.e. front loading (G9B/15.11 takes precedence)] {G11B 15/675B}
- 15.098 ...[N: and movement of driving elements perpendicular thereto] {G11B 15/675B1}
- 15.099[N: with servo control] {G11B 15/675B1A}
- 15.1[N: with ejection damping means] {G11B 15/675B1B}
- 15.101 ...[N: of cassette with internal belt drive] {G11B 15/675B2}
- 15.102[N: with servo control] {G11B 15/675B2A}
- 15.103[N: with ejection damping means] {G11B 15/675B2B}
- 15.104 ...[N: of endless tape cassette] {G11B 15/675B3}
- 15.105[N: with servo control] {G11B 15/675B3A}
- 15.106[N: with ejection damping means] {G11B 15/675B3B}
- 15.107 ...[N: of cassette inside drawer] {G11B 15/675B4}
- 15.108[N: with servo control] {G11B 15/675B4A}
- 15.109[N: with ejection damping means] {G11B 15/675B4B}
- 15.11 ..[N: with movement of the cassette parallel to its main side and subsequent movement perpendicular thereto, i.e. front loading] {G11B 15/675C}
- 15.111 ...[N: the two movements being made by the cassette holder] {G11B 15/675C1}
- 15.112[N: with servo control] {G11B 15/675C1A}
- 15.113[N: with ejection damping means] {G11B 15/675C1B}
- 15.114 ...[N: the second movement only being made by the cassette holder] {G11B 15/675C2}
- 15.115[N: with servo control] {G11B 15/675C2A}
- 15.116[N: with ejection damping means] {G11B 15/675C2B}
- 15.117 ..[N: with movement of the cassette perpendicular to its main side, i.e. top loading] {G11B 15/675D}
- 15.118 ...[N: of the cassette with holder] {G11B 15/675D1}
- 15.119[N: with servo control] {G11B 15/675D1A}
- 15.12[N: with ejection damping means] {G11B 15/675D1B}
- 15.121 ...[N: of the cassette without holder] {G11B 15/675D2}
- 15.122[N: with servo control] {G11B 15/675D2A}
- 15.123[N: with ejection damping means] {G11B 15/675D2B}
- 15.124 ..[N: with pivoting movement of the cassette holder] {G11B 15/675E}
- 15.125 ...[N: outside the apparatus] {G11B 15/675E1}
- 15.126[N: with servo control] {G11B 15/675E1A}
- 15.127[N: with ejection damping means] {G11B 15/675E1B}
- 15.128 ...[N: inside the apparatus] {G11B 15/675E2}
- 15.129[N: with servo control] {G11B 15/675E2A}
- 15.13[N: with ejection damping means] {G11B 15/675E2B}
- 15.131[N: using pneumatic means] {G11B 15/67B}
- 15.132[N: Extracting end of record carrier from container or single reel (G9B/15.131 takes precedence)] {G11B 15/67C}
- 15.133[N: Threading end of record carrier externally to single reel (G9B/15.131 takes precedence)] {G11B 15/67D}
- 15.134[N: Threading or attaching end of record carrier on or to single reel (G9B/15.131 takes precedence)] {G11B 15/67E}
- 15.135 ..Automatic cassette changing arrangements; [N: automatic tape changing arrangements] {G11B 15/68}
- 15.136 ...[N: with linearly moving rectangular box shaped magazines] [N0101] {G11B 15/68B}

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| <p>15.137[N: in vertical direction]
 [N0101] {G11B 15/68B1}</p> <p>15.138[N: in horizontal direction]
 [N0101] {G11B 15/68B2}</p> <p>15.139 ...[N: with fixed magazines
 having fixed cassette storage
 cells, e.g. in racks] [N0101]
 {G11B 15/68C}</p> <p>15.14[N: Details of magazines,
 e.g. removable, adapted for
 cassettes of different sizes]
 [N0101] {G11B 15/68C1}</p> <p>15.141[N: wherein the recorder or
 player is moved according to
 the location of a selected
 cassette (G9B/15.143 takes
 precedence)] [N0101] {G11B 15/
 68C2}</p> <p>15.142[N: the cassettes being
 transferred to a fixed
 recorder or player using a
 moving carriage] [N0101] {G11B
 15/68C3}</p> <p>15.143[N: the cassettes having a
 storage position inside the
 magazine and a slightly
 shifted active position, e.g.
 by solenoid] [N0101] {G11B 15/
 68C4}</p> <p>15.144 ...[N: with rotatable magazine]
 [N0101] {G11B 15/68D}</p> <p>15.145[N: the cassettes being
 arranged in a single level]
 [N0101] {G11B 15/68D1}</p> <p>15.146[N: wherein the recorder or
 player is moved towards a
 selected cassette in the
 magazine] [N0101] {G11B 15/
 68D1B}</p> <p>15.147[N: with a fixed recorder or
 player in the centre or at the
 periphery of the magazine]
 [N0101] {G11B 15/68D1C}</p> <p>15.148[N: with a fixed recorder or
 player under the magazine]
 [N0101] {G11B 15/68D1D}</p> <p>15.149[N: the cassettes being
 arranged in multiple levels]
 [N0101] {G11B 15/68D2}</p> <p>15.15[N: wherein the recorder or
 player is moved towards a
 selected cassette in the
 magazine] [N0101] {G11B 15/
 68D2B}</p> | <p>15.151[N: the cassettes being
 transferred to a fixed
 recorder or player using a
 moving carriage] [N0101] {G11B
 15/68D2C}</p> <p>15.152 ...[N: the cassettes being
 conveyed within a cassette
 storage location, e.g. within
 a storage bin or conveying by
 belt] [N0101] {G11B 15/68E}</p> <p>15.153 ...[N: Control of the cassette
 changing arrangement] [N0101]
 {G11B 15/68F}</p> <p>15.154 ...[N: Automatic tape changing
 arrangements] [N0101] {G11B
 15/68G}</p> <p>15.155 .The record carrier being an
 endless loop record carrier
 [N: inside container G9B/
 15.032] {G11B 15/70}</p> <p>17 Guiding record carriers not
 specifically of filamentary or
 web form, or of supports
 therefor (guiding cards or
 sheets G06K13/00) {G11B 17/00}</p> <p>17.001 .[N: Programmed access to indexed
 parts of tracks of operating
 discs, by guiding the disc]
 {G11B 17/00A}</p> <p>17.002 .Details {G11B 17/02}</p> <p>17.003 ..Positioning or locking of
 single discs {G11B 17/022}</p> <p>17.004 ...of discs which are stationary
 during transducing operation
 {G11B 17/025}</p> <p>17.005[N: flexible discs] {G11B 17/
 025B}</p> <p>17.006 ...of discs rotating during
 transducing operation {G11B
 17/028}</p> <p>17.007 ...[N: Adapter for enabling
 centre-pin to receive carriers
 with large centre hole] {G11B
 17/028B}</p> <p>17.008 ..[N: Selecting or spacing of
 record carriers for
 introducing the heads] {G11B
 17/02D}</p> <p>17.009 ...in containers or trays [N:
 (G9B/17.01, G9B/17.011 take
 precedence)] [C9410] {G11B 17/
 03}</p> <p>17.01Positioning by moving the
 door or the cover [N: (G9B/
 17.011 takes precedence)]
 [C9410] {G11B 17/032}</p> |
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- 17.011Positioning by moving the loading station {G11B 17/035}
- 17.012 ..Centering or locking of a plurality of discs in a single cartridge {G11B 17/038}
- 17.013 ..Feeding or guiding single record carrier to or from transducer unit [N: (guiding during transducing operation G9B/17.062)] [C9410] {G11B 17/04}
- 17.014 ...[N: Details] [N9410] {G11B 17/04A}
- 17.015[N: Servo control] [N9410] {G11B 17/04A1}
- 17.016[N: with parallel drive rollers] [N9410] {G11B 17/04A1B}
- 17.017[N: Closing mechanism, e.g. door] [N9410] {G11B 17/04A2}
- 17.018[N: controlling the loading of the record carrier] [N9410] {G11B 17/04A2B}
- 17.019 ...[N: of disc inside cartridge only (G9B/17.039 takes precedence)] [N9410] {G11B 17/04C}
- 17.02[N: Direct insertion, i.e. without external loading means] [N9410] {G11B 17/04C1}
- 17.021[N: adapted for discs of different sizes] [N9410] {G11B 17/04C1B}
- 17.022[N: with mechanism for subsequent vertical movement of the disc (G9B/17.024 takes precedence)] [N9410] {G11B 17/04C1C}
- 17.023[N: with opening mechanism of the cartridge shutter (G9B/17.024 takes precedence)] [N9410] {G11B 17/04C1D}
- 17.024[N: with mechanism for subsequent vertical movement of the disc and opening mechanism of the cartridge shutter] [N9410] {G11B 17/04C1E}
- 17.025[N: with external pivotable loading means] [N9410] {G11B 17/04C2}
- 17.026[N: adapted for discs of different sizes] [N9410] {G11B 17/04C2B}
- 17.027[N: with opening mechanism of the cartridge shutter] [N9410] {G11B 17/04C2D}
- 17.028[N: with external loading means moving parallel to the main side of the disc, e.g. drawer or tray] [N9410] {G11B 17/04C3}
- 17.029[N: adapted for discs of different sizes] [N9410] {G11B 17/04C3B}
- 17.03[N: with opening mechanism of the cartridge shutter] [N9410] {G11B 17/04C3D}
- 17.031 ...[N: of disc without cartridge only] [N9410] {G11B 17/04D}
- 17.032 ...[N: Direct insertion, i.e. without external loading means] [N9410] {G11B 17/04D1}
- 17.033[N: adapted for discs of different sizes] [N9410] {G11B 17/04D1B}
- 17.034 ...[N: with external pivotable loading means] [N9410] {G11B 17/04D2}
- 17.035[N: adapted for discs of different sizes] [N9410] {G11B 17/04D2B}
- 17.036 ...[N: with external loading means moving parallel to the main side of the disc, e.g. drawer or tray] [N9410] {G11B 17/04D3}
- 17.037[N: adapted for discs of different sizes] [N9410] {G11B 17/04D3B}
- 17.038 ...[N: of either disc inside cartridge or disc without cartridge] [N9410] {G11B 17/04E}
- 17.039 ...[N: of disc having to be extracted from cartridge for recording or reproducing, e.g. co-operating with an extractable tray] [N9410] {G11B 17/04F}
- 17.04 ...[N: of non-disc record carrier, e.g. card] [N9410] {G11B 17/04G}
- 17.041 .from consecutive-access magazine of disc records {G11B 17/08}
- 17.042 ..with horizontal transfer to the turntable from a stack arranged with a vertical axis {G11B 17/10}

- 17.043 ..with axial transfer to the turntable from a stack with a vertical axis {G11B 17/12}
 - 17.044 ...by mechanism in rotating centre post, e.g. permitting the playing of both sides of a record {G11B 17/14}
 - 17.045 ..by mechanism in stationary centre post, e.g. with stepped post, using fingers on post {G11B 17/16}
 - 17.046 ...[N: with means for detecting the diameter of the record] [C9410] {G11B 17/16B}
 - 17.047[N: with mechanical detecting means] {G11B 17/16B2}
 - 17.048[N: with optical detecting means] {G11B 17/16B3}
 - 17.049 ..by mechanism operating on the edge of the disc record {G11B 17/18}
 - 17.05 ..with transfer away from stack on turntable after playing {G11B 17/20}
 - 17.051 .from random access magazine of disc records {G11B 17/22}
 - 17.052 ..[N: with movable magazine (G9B/17.057 to G9B/17.059 take precedence)] [N9706] {G11B 17/22B}
 - 17.053 ...[N: in a vertical direction] [N9706] {G11B 17/22B1}
 - 17.054 ..[N: wherein the disks are transferred from a fixed magazine to a fixed playing unit using a moving carriage] [N9706] {G11B 17/22C}
 - 17.055 ..[N: the magazine consisting of a single rotatable tray carrying the disks] [N9706] {G11B 17/22D}
 - 17.056 ..[N: Control systems for magazines (G9B/17.054 takes precedence)] [N9706] {G11B 17/22E}
- Note
 Group G9B/17.06 takes precedence over groups G9B/17.057 to G9B/17.059.
- 17.057 ..the magazine having a toroidal or part-toroidal shape {G11B 17/24}
 - 17.058 ..the magazine having a cylindrical shape with vertical axis {G11B 17/26}
 - 17.059 ..the magazine having a cylindrical shape with horizontal axis {G11B 17/28}
 - 17.06 ..wherein the playing unit is moved according to the location of the selected record {G11B 17/30}
 - 17.061 .Maintaining desired spacing between record carrier and head, e.g. by fluid-dynamic spacing [N: damping of vibrations of record carriers on turntables by fluid-dynamic means G9B/19.029] {G11B 17/32}
 - 17.062 .Guiding record carriers during transducing operation, e.g. for track following (G9B/17.061 takes precedence) {G11B 17/34}
- 19 **Driving, starting, stopping record carriers not specifically of filamentary or web form, or of supports therefor; Control thereof; Control of operating function (guiding such record carriers G9B/17) [N: Driving both disc and head] {G11B 19/00}**
- 19.001 .Control of operating function, e.g. switching from recording to reproducing {G11B 19/02}
 - 19.002 ..[N: Control panels] {G11B 19/02A}
 - 19.003 ...[N: 'Virtual' control panels, e.g. Graphical User Interface (GUI)] [N0210] {G11B 19/02A2}
 - 19.004 ..[N: Remotely controlled (remote control systems in general G08C)] [N0209] [C0210] {G11B 19/02R}
 - 19.005 ..Arrangements for preventing, inhibiting, or warning against double recording on the same blank or against other recording or reproducing malfunctions {G11B 19/04}
 - 19.006 ...[N: Detection or prevention of read or write errors] [N0804] {G11B 19/04B}
 - 19.007[N: due to external shock or vibration] [N0804] {G11B 19/04B2}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

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| 19.008 |[N: by detecting a free-fall condition] [N0804] {G11B 19/04B4} | 19.022 | ...[N: involving the detection of track pitch or recording density] [N0209] {G11B 19/12P} |
| 19.009 |[N: by using a data buffer] [N0804] {G11B 19/04B6} | 19.023 | ..by sensing movement or position of head, e.g. means moving in correspondence with head movements {G11B 19/14} |
| 19.01 |[N: by detecting mistracking] [N0804] {G11B 19/04B8} | 19.024 | ..Manual control {G11B 19/16} |
| 19.011 | ...[N: Detection or prevention or problems due to temperature] [N0804] {G11B 19/04D} | 19.025 | ...[N: by closing the cover] {G11B 19/16A} |
| 19.012 | ...[N: Recovery from power failure] [N0804] {G11B 19/04F} | 19.026 | ...Manual action on one element producing control effect indirectly by consequent action of driving mechanism {G11B 19/18} |
| 19.013 | ...[N: Testing of disk drives, e.g to detect defects or prevent sudden failure] [N0804] {G11B 19/04H} | 19.027 | .Driving; Starting; Stopping; Control thereof {G11B 19/20} |
| 19.014 | ..by counting or timing of machine operations {G11B 19/06} | 19.028 | ..[N: Turntables, hubs and motors for disk drives; Mounting of motors in the drive (means for clamping of disk to turntable G9B/17.003 and subgroups)] [C0804] {G11B 19/20A} |
| 19.015 | ..by using devices external to the driving mechanisms, e.g. coin-freed switch (coin actuated mechanisms G07F5/00) {G11B 19/08} | 19.029 | ...[N: Incorporating means for passive damping of vibration, either in the turntable, motor or mounting] [C0804] {G11B 19/20A1} |
| 19.016 | ..by sensing presence or absence of record in accessible stored position or on turntable {G11B 19/10} | 19.03 | ...[N: Turntables or rotors incorporating balancing means; Means for detecting imbalance] [N0804] {G11B 19/20A3} |
| 19.017 | ..by sensing distinguishing features of [N: or on] records, e.g. diameter [N: end mark] {G11B 19/12} | 19.031 | ...[N: Motors characterized by fluid-dynamic bearings] [N0804] {G11B 19/20A5} |
| 19.018 | ...[N: involving the detection of an identification or authentication mark (record carriers indicating unauthorised or prior use G9B/23.087)] [N0209] [C0210] {G11B 19/12C} | 19.032 | ...[N: Hubs] [N0804] {G11B 19/20A7} |
| 19.019 | ...[N: involving the detection of diameter of disks (feeding or guiding of a single record carrier G9B/17.013 and subgroups)] [N0209] [C0210] {G11B 19/12D} | 19.033 | ..[N: Spindle motor power-up sequences] [N0804] {G11B 19/20C} |
| 19.02 | ...[N: involving the detection of carrier data format] [N0209] {G11B 19/12F} | 19.034 | ..[N: Spindle motor power-down sequences] [N0804] {G11B 19/20D} |
| 19.021 | ...[N: involving detection of the number of sides, e.g. single or double, or layers, e.g. for multiple recording or reproducing layers] [N0209] [C0210] {G11B 19/12L} | 19.035 | ...[N: for the reduction of power consumption during idle time] [N0804] {G11B 19/20D2} |
| | | 19.036 | ...[N: emergency power-down] [N0804] {G11B 19/20D4} |
| | | 19.037 | ..[N: in multiple disk arrays, e.g. spindle synchronisation in RAID systems] [N0804] {G11B 19/20E} |

- 19.038 ..Brakes other than speed-regulating brakes (brake constructions in general F16D) {G11B 19/22}
- 19.039 ..Arrangements for providing constant relative speed between record carrier and head {G11B 19/24}
- 19.04 ...using electrical means {G11B 19/247}
- 19.041 ...using mechanical means {G11B 19/253}
- 19.042 ..Speed-changing arrangements; Reversing arrangements; Drive-transfer means therefor {G11B 19/26}
- 19.043 ...Friction wheel drive {G11B 19/265}
- 19.044 ...Belt drive {G11B 19/27}
- 19.045 ...Gear wheel drive {G11B 19/275}
- 19.046 ..Speed controlling, regulating, or indicating (G9B/19.039 takes precedence; speedometers or tachometers G01P) {G11B 19/28}
- 20 **Signal processing not specific to the method of recording or reproducing; Circuits therefor {G11B 20/00}**
- 20.001 ..[N: Time compression or expansion] {G11B 20/00C}
- 20.002 ..[N: Circuits for prevention of unauthorised reproduction or copying, e.g. piracy (indicating unauthorised use of record carriers in general G9B/23.087, television signal processing H04N5/913)] {G11B 20/00P}
- 20.003 ..[N: Circuits for stereophonic or quadraphonic recording or reproducing] {G11B 20/00S}
- 20.004 ..Analogue recording or reproducing {G11B 20/02}
- 20.005 ..[N: Error detection or correction] {G11B 20/02A}
- 20.006 ..Direct recording or reproducing {G11B 20/04}
- 20.007 ..Angle-modulation recording (angle modulation H03C; demodulation of angle modulated oscillations H03D) {G11B 20/06}
- 20.008 ..Pulse-modulation recording or reproducing (pulse-code-modulation recording G9B/20.009; pulse modulation or pulse demodulation H03K) {G11B 20/08}
- 20.009 ..Digital recording or reproducing (digital computers in which at least part of the computation is effected electrically, arrangements for handling digital data G06F; transmission of digital information H04L) {G11B 20/10}
- 20.01 ..[N: Improvement or modification of read or write signals] {G11B 20/10A}
- 20.011 ...[N: using predistortion during writing] {G11B 20/10A1}
- 20.012 ...[N: Baseline correction] {G11B 20/10A2}
- 20.013 ...[N: using means to compensate for data shift, e.g. pulse crowding effect] {G11B 20/10A3}
- 20.014 ..[N: Pulse code modulation (PCM) recording or reproducing of audio signals (G9B/20.015 to G9B/20.046 take precedence)] [C9607] {G11B 20/10C}
- 20.015 ..Formatting, e.g. arrangement of data block or words on the record carriers [N: (within interface between computers and data recorders G06F3/06)] [C9607] {G11B 20/12}
- 20.016 ...[N: on tapes] [N9607] {G11B 20/12B}
- 20.017 ...[N: with longitudinal tracks only] [N9607] {G11B 20/12B2}
- 20.018[N: for continuous data, e.g. digitised analog information signals, pulse code modulated (PCM) data] [N9607] {G11B 20/12B2C}
- 20.019[N: for discontinuous data, e.g. digital information signals, computer programme data] [N9607] {G11B 20/12B2D}
- 20.02 ...[N: with transverse tracks only] [N9607] {G11B 20/12B4}
- 20.021[N: for continuous data, e.g. digitised analog information signals, pulse code modulated (PCM) data] [N9607] {G11B 20/12B4C}

- 20.022[N: for discontinuous data, e.g. digital information signals, computer programme data] [N9607] {G11B 20/12B4D}
- 20.023 ...[N: with different data track configurations (longitudinal control tracks with transverse user data tracks G9B/20.02)] [N9607] {G11B 20/12B6}
- 20.024[N: for continuous data, e.g. digitised analog information signals, pulse code modulated (PCM) data] [N9607] {G11B 20/12B6C}
- 20.025[N: for discontinuous data, e.g. digital information signals, computer programme data] [N9607] {G11B 20/12B6D}
- 20.026 ...[N: on cards (optical aspect of optical cards G9B/7.004)] [N9607] [C0406] {G11B 20/12C}
- 20.027 ...[N: on discs] [N9607] {G11B 20/12D}
- 20.028 ...[N: where blocks are arranged within multiple radial zones, e.g. Zone Bit Recording or Constant Density Recording discs, MCAV discs, MCLV discs] [N9607] {G11B 20/12D23}
- 20.029 ...[N: for continuous data, e.g. digitised analog information signals, pulse code modulated (PCM) data] [N9607] {G11B 20/12D4}
- 20.03[N: for discontinuous data, e.g. digital information signals, computer programme data] [N9607] {G11B 20/12D6}
- 20.031 ...[N: for mixed data, i.e. continuous and discontinuous data] [N9607] {G11B 20/12D8}
- 20.032 ...[N: on films, e.g. for optical moving-picture soundtracks (optical aspect G9B/7.008)] [N9607] [C0406] {G11B 20/12F}
- 20.033 ...[N: with more than one format/standard, e.g. conversion from CD-audio format to R-DAT format] [N9607] {G11B 20/12M}
- 20.034 ..using self-clocking codes {G11B 20/14}
- 20.035 ...[N: characterised by the use of two levels] {G11B 20/14A}
- 20.036 ...[N: code representation depending on a single bit, i.e. where a one is always represented by a first code symbol while a zero is always represented by a second code symbol] {G11B 20/14A1}
- 20.037[N: conversion to or from pulse width coding] {G11B 20/14A1B}
- 20.038[N: conversion to or from pulse frequency coding] {G11B 20/14A1C}
- 20.039[N: to or from biphasic level coding, i.e. to or from codes where a one is coded as a transition from a high to a low level during the middle of a bit cell and a zero is encoded as a transition from a low to a high level during the middle of a bit cell or vice versa, e.g. split phase code, Manchester code conversion to or from biphasic space or mark coding, i.e. to or from codes where there is a transition at the beginning of every bit cell and a one has no second transition and a zero has a second transition one half of a bit period later or vice versa, e.g. double frequency code, FM code] {G11B 20/14A1D}
- 20.04 ...[N: Code representation depending on subsequent bits, e.g. delay modulation, double density code, Miller code] {G11B 20/14A2}
- 20.041[N: conversion to or from block codes or representations thereof] {G11B 20/14A2B}
- 20.042 ...[N: characterised by the use of three levels] {G11B 20/14B}
- 20.043 ...[N: two levels are symmetric, in respect of the sign to the third level which is "zero"] {G11B 20/14B1}
- 20.044 ...[N: characterised by the use of more than three levels] {G11B 20/14C}

- 20.045 ..using non self-clocking codes, i.e. the clock signals are either recorded in a separate clocking track or in a combination of several information tracks {G11B 20/16}
- 20.046 ..Error detection or correction; Testing, [N: e.g. of drop-outs] {G11B 20/18}
- 20.047 ...[N: by redundancy in data representation] {G11B 20/18A}
- 20.048 ...[N: Pulse code modulation systems for audio signals (G9B/20.047 takes precedence)] {G11B 20/18B}
- 20.049[N: by interleaving] {G11B 20/18B1}
- 20.05[N: by adding special bits or symbols to the coded information (G9B/20.049 takes precedence)] {G11B 20/18B2}
- 20.051 ...[N: Testing] {G11B 20/18C}
- 20.052[N: using test patterns] {G11B 20/18C1}
- 20.053 ...[N: by adding special lists or symbols to the coded information (G9B/20.048, G9B/20.054 take precedence)] {G11B 20/18D}
- 20.054 ...[N: by interleaving (G9B/20.049 takes precedence)] {G11B 20/18E}
- 20.055 ...[N: Interpolating methods] {G11B 20/18P}
- 20.056 ...[N: Direct read-after-write methods] {G11B 20/18R}
- 20.057 ...[N: Methods for assignment of alternate areas for defective areas] {G11B 20/18S}
- 20.058[N: with tapes] {G11B 20/18S1}
- 20.059[N: with discs] {G11B 20/18S2}
- 20.06 .for correction of skew for multitrack recording {G11B 20/20}
- 20.061 .for reducing distortions {G11B 20/22}
- [N: WARNING
 [N9607]
 Not complete, see also G9B/23.001]
- 20.062 ..[N: for reducing wow or flutter (by controlling the speed of the record carrier G9B/15.054, G9B/19.046)] {G11B 20/22A}
- 20.063 .for reducing noise [N: (control of amplification in general, e.g. dependent upon noise level H03G)] {G11B 20/24}
- [N: WARNING
 [N9607]
 Not complete, see also G9B/23.001]
- 21 **Head arrangements not specific to the method of recording or reproducing {G11B 21/00}**
- 21.001 .[N: Disposition of fixed heads, e.g. for scanning, selecting or following of tracks] {G11B 21/00D}
- 21.002 ..[N: for track following] {G11B 21/00D2}
- 21.003 .Driving or moving of heads {G11B 21/02}
- 21.004 ..[N: Programmed access in sequence to indexed parts of operating record carriers] {G11B 21/02A}
- 21.005 ...[N: of rotating discs] {G11B 21/02A1}
- 21.006 ...[N: of tapes] {G11B 21/02A2}
- 21.007 ..for correcting time base error [N: during transducing operation, by driving or moving the head in a direction more or less parallel to the direction of travel of the recording medium, e.g. tangential direction on a rotating disc (by driving or moving the head in a direction which cuts across the direction of travel of the recording medium G9B/15.022, G9B/15.055, G9B/19.027B2)] {G11B 21/03}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

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| <p>21.008 ..Automatic feed mechanism producing a [N: progressive] transducing traverse of the head in a direction which cuts across the direction of travel of the recording medium, e.g. helical scan, [N: e.g. by lead-screw (G9B/19.027B, G9B/21.012 and G9B/21.018 take precedence)] {G11B 21/04}</p> <p>21.009 ...[N: for stationary discs] {G11B 21/04B}</p> <p>21.01 ...[N: details of the feed mechanism] {G11B 21/04D}</p> <p>21.011 ..the record carrier having [N: mechanical] means to ensure traverse movement of the head, [N: e.g. grooves] {G11B 21/06}</p> <p>21.012 ..Track changing or selecting (G9B/21.021 takes precedence) [N: during transducing operation] {G11B 21/08}</p> <p>21.013 ...[N: Access to indexed tracks or parts of continuous track] {G11B 21/08A}</p> <p>21.014[N: on discs] {G11B 21/08A1}</p> <p>21.015[N: with track following of accessed part] {G11B 21/08A1F}</p> <p>21.016[N: on tapes] {G11B 21/08A2}</p> <p>21.017[N: with track following of accessed part] {G11B 21/08A2F}</p> <p>21.018 ..Track finding or aligning by moving the head [N: Provisions for maintaining alignment of the head relative to the track during transducing operation, i.e. track following (characterised by the track access method G9B/21.012)] {G11B 21/10}</p> <p>21.019 ...[N: on tapes] [N9704] {G11B 21/10B}</p> <p>21.02 ...[N: on disks] [N9708] {G11B 21/10D}</p> <p>21.021 ..Raising and lowering; Back-spacing or forward-spacing along track; Returning to starting position [N: otherwise than during transducing operation] {G11B 21/12}</p> <p>21.022 ...manually {G11B 21/14}</p> <p>21.023 ..Supporting the heads; Supporting the sockets for plug-in heads {G11B 21/16}</p> | <p>21.024 ..while the head is moving {G11B 21/18}</p> <p>21.025 ..while the head is in operative position but stationary or permitting minor movements to follow irregularities in surface of record carrier {G11B 21/20}</p> <p>21.026 ...with provision for maintaining desired spacing of head from record carrier, e.g. fluid-dynamic spacing, slider {G11B 21/21}</p> <p>21.027 ..while the head is out of operative position {G11B 21/22}</p> <p>21.028 ..Head support adjustments {G11B 21/24}</p> <p>21.029 ..Means for interchange or replacement of head or head element {G11B 21/26}</p> <p>23 Record carriers not specific to the method of recording or reproducing; Accessories, e.g. containers, specially adapted for co-operation with the recording or reproducing apparatus [N: Intermediate mediums; Apparatus or processes specially adapted for their manufacture (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. B29, B41M, B05D, C08L, F16N)] {G11B 23/00}</p> <p>Note</p> <p>In group G9B/23, recording or reproducing apparatus does not include the record carriers.</p> <p>23.001 .[N: Circuits or methods for reducing noise, for correction of distortion, or for changing density of recorded information, volume compression or expansion circuits per se H03G7/00] {G11B 23/00B}</p> <p>[N: Note</p> |
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- This group is closed down and will in due course be transferred to G9B/20.061 and G9B/20.063 and subgroups]
- 23.002 .[N: record carriers not specifically of filamentary or web form (G9B/23.008 takes precedence)] {G11B 23/00D}
 - 23.003 ..[N: discs] {G11B 23/00D1}
 - 23.004 ...[N: Details] {G11B 23/00D1A}
 - 23.005[N: means incorporated in the disc, e.g. hub, to enable its guiding, loading or driving (means for driving the head G9B/21.011; guiding the disc for centering or locking G9B/17.003; turntables or spindles for driving G9B/19.028)] {G11B 23/00D1A2}
 - 23.006[N: with provision for auxiliary features (sensing such features G9B/17, G9B/19.001)] {G11B 23/00D1A2A}
 - 23.007 ...[N: flexible discs (G9B/23.005 takes precedence)] {G11B 23/00D1F}
 - 23.008 .[N: Intermediate mediums, i.e. mediums provided with an information structure not specific to the method of reproducing or duplication such as matrixes for mechanical pressing of an information structure (for record carriers with directly readable mechanical information G9B/3.101); record carriers having a relief information structure provided with or included in layers not specific for a single reproducing method; apparatus or processes specially adapted for their manufacture] {G11B 23/00M}
 - 23.009 ..[N: mediums or carriers characterised by the selection of the material] {G11B 23/00M2}
 - 23.01 ...[N: additional layers for lubrication or wear protection (lubricating means not integrated in the record carrier structure G9B/23.096)] {G11B 23/00M2A}
 - 23.011 ...[N: information structure layers using metallic or dielectric coatings] {G11B 23/00M2C}
 - 23.012 ...[N: intermediate mediums using a photosensitive material, e.g. photo-resist] {G11B 23/00M2P}
 - 23.013 ...[N: molding resin compositions] {G11B 23/00M2R}
 - 23.014 .Containers; Storing means [N: both adapted to cooperate with the recording or reproducing means] (cabinets, cases, stands, modified to store record carriers G9B/33.006; storing webs, tapes, or filamentary material in general B65H75/00) {G11B 23/02}
 - 23.015 ..Containers for magazines or cassettes {G11B 23/023}
 - 23.016 ...[N: Containers for a single cassette] {G11B 23/023B}
 - 23.017 ...[N: Containers for several cassettes] {G11B 23/023C}
 - 23.018 ..Containers for single reels or spools {G11B 23/027}
 - 23.019 ..[N: comprising means for reducing influence of physical parameters, e.g. temperature change, moisture (combined with means for reconditioning or cleaning G9B/23.099)] {G11B 23/02A}
 - 23.02 ..Containers for flat record carriers {G11B 23/03}
 - 23.021 ...for flexible discs {G11B 23/033}
 - 23.022[N: for single discs, e.g. envelopes] {G11B 23/033B}
 - 23.023[N: for disc packs] {G11B 23/033P}
 - 23.024[N: comprising latching or movable handling devices (G9B/23.045 and G9B/17.012 take precedence)] {G11B 23/033P2}
 - 23.025 ..Single reels or spools {G11B 23/037}

CLASS G9B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT
BETWEEN RECORD CARRIER AND TRANSDUCER

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| 23.026 | ...[N: Details] [N9701] {G11B 23/03A} | 23.046 | ...[N: Assembling of containers] [N9701] {G11B 23/03C} |
| 23.027 |[N: Auxiliary features] [N9701] {G11B 23/03A1} | 23.047 | ...[N: for special applications not otherwise provided for] [N9701] {G11B 23/03D} |
| 23.028 |[N: Containers with incorporated transducing heads] [N9701] {G11B 23/03A10} | 23.048 | ...[N: the disc having to be extracted from the cartridge for recording reproducing, e.g. cooperating with an extractable tray] {G11B 23/03F} |
| 23.029 |[N: Write protect features with a sliding part] [N9701] {G11B 23/03A1B} | 23.049 | ..Magazines; Cassettes [N: for webs or filaments] (G9B/23.079 takes precedence; [N: cassettes with sealing or locking means G9B/23.087; dummy cassettes for locking in the drive G9B/33.001]) {G11B 23/04} |
| 23.03 |[N: Semiconductor memories] [N9701] {G11B 23/03A1C} | 23.05 | ...[N: Details] {G11B 23/04A} |
| 23.031 |[N: Means for locking the record carriers] [N9701] {G11B 23/03A2} | 23.051 |[N: Auxiliary features (sensing such features G9B/15.008)] {G11B 23/04A1} |
| 23.032 |[N: Positioning or centering features] [N9701] {G11B 23/03A3} | 23.052 | ...[N: Brakes for tapes or tape reels] {G11B 23/04A2} |
| 23.033 |[N: Shutters (G9B/23.04 takes precedence)] [N9701] {G11B 23/03A4} | 23.053 |[N: Reels or cores; positioning of the reels in the cassette] {G11B 23/04A3} |
| 23.034 |[N: Indicating means, e.g. sticker, bar code] [N9701] {G11B 23/03A5} | 23.054 |[N: Covers] {G11B 23/04A4} |
| 23.035 |[N: Wrong insertion preventing means] [N9701] {G11B 23/03A6} | 23.055 |[N: Indicating means, e.g. quantity of tape] [C9701] {G11B 23/04A5} |
| 23.036 |[N: Driving features] [N9701] {G11B 23/03A7} | 23.056 | ...[N: Guiding means] {G11B 23/04A6} |
| 23.037 |[N: Container cases] [N9701] {G11B 23/03A8} | 23.057 | ...[N: Driving features] {G11B 23/04A7} |
| 23.038 |[N: Materials] [N9701] {G11B 23/03A8B} | 23.058 | ...[N: Cassettes for special applications not otherwise provided for] {G11B 23/04D} |
| 23.039 |[N: Constructional details, e.g. shape] [N9701] {G11B 23/03A8C} | 23.059 | ...for housing endless webs or filaments {G11B 23/06} |
| 23.04 |[N: Containers with interchangeable record carriers] [N9701] {G11B 23/03A9} | 23.06 | ...using a single reel or core {G11B 23/07} |
| 23.041 | ...[N: for rigid discs] {G11B 23/03B} | 23.061 | ...for housing webs or filaments having two distinct ends {G11B 23/08} |
| 23.042 |[N: rigid cartridges for single discs] {G11B 23/03B2} | 23.062 | ...using two different reels or cores {G11B 23/087} |
| 23.043 |[N: comprising latching or movable handling devices (G9B/17.01 takes precedence)] {G11B 23/03B2B} | 23.063 |[N: Details] {G11B 23/087A} |
| 23.044 |[N: for disc-packs] {G11B 23/03B4} | 23.064 |[N: Auxiliary features (sensing such features G9B/15.008)] {G11B 23/087A1} |
| 23.045 |[N: comprising latching or movable handling devices (G9B/17.012 takes precedence)] {G11B 23/03B4B} | 23.065 |[N: Brakes for tapes or tape reels (G9B/23.063 takes precedence)] {G11B 23/087A2} |

- 23.066[N: Reels or cores; positioning of the reels in the cassette] {G11B 23/087A3}
- 23.067[N: Covers] {G11B 23/087A4}
- 23.068[N: in combination with brake means] {G11B 23/087A4B}
- 23.069[N: Indicating means, e.g. quantity of tape] [C9701] {G11B 23/087A5}
- 23.07[N: Guiding means] {G11B 23/087A6}
- 23.071[N: Liner sheets] {G11B 23/087A6B}
- 23.072[N: Pressure pads] {G11B 23/087A6C}
- 23.073[N: Driving features, e.g. belt] {G11B 23/087A7}
- 23.074[N: Envelopes] {G11B 23/087A8}
- 23.075[N: Shielding devices] {G11B 23/087A9}
- 23.076the reels or cores being coaxial {G11B 23/093}
- 23.077 ...using one reel or core, one end of the record carrier coming out of the magazine or cassette {G11B 23/107}
- 23.078 ..Apparatus or processes specially adapted for the manufacture of magazines or cassettes [N: e.g. initial loading into container (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. B21, B29, B65) {G11B 23/113}
- 23.079 ..Bins for random storage of webs or filaments {G11B 23/12}
- 23.08 ..providing ability to repeat location, e.g. using sprocket holes {G11B 23/14}
- 23.081 .Record carriers with single-track for recording at spaced intervals along the track thereof, e.g. for speech or language training [N: contains no documents] {G11B 23/16}
- 23.082 .Record carriers with multiple tracks, e.g. with complementary and partial tracks such as paired "stereo" tracks [N: contains no documents] {G11B 23/18}
- 23.083 .with provision for splicing to provide permanent or temporary connections {G11B 23/20}
- 23.084 ..of endless belts; of tapes forming Moebius loops {G11B 23/22}
- 23.085 ..of tapes having multiple tracks parallel to edge of record carrier by offset splicing to form endless loop with one or more helical tracks {G11B 23/24}
- 23.086 ..of leaders for loading or threading, e.g. to form a temporary connection {G11B 23/26}
- 23.087 .Indicating [N: or preventing] prior or unauthorized use, [N: e.g. cassettes with sealing or locking means, write-protect devices for discs (write-protect devices for tapes G9B/23.051, G9B/23.064; dummy cassettes for locking in the drive G9B/33.001)] {G11B 23/28}
- 23.088 .with provision for auxiliary signals (sensing such signals G9B/15.008) {G11B 23/30}
- 23.089 ..Electrical or mechanical contacting means; Tape stop foils {G11B 23/32}
- 23.09 ..Signal means additional to the main recording track, e.g. photo-electric sensing of sprocket holes for timing {G11B 23/34}
- 23.091 ..Signals on record carriers or on containers and recorded by the same method as the main recording {G11B 23/36}
- 23.092 .Visual features other than those contained in record tracks or represented by sprocket holes [N: the visual signals being auxiliary signals] {G11B 23/38}
- 23.093 ..Identifying or analogous means applied to or incorporated in the record carrier and not intended for visual display simultaneously with the playing-back of the record carrier, e.g. label, leader, photograph {G11B 23/40}

- 23.094 ..Marks for indexing, speed-controlling, synchronising, or timing {G11B 23/42}
- 23.095 ..Information for display simultaneously with playback of the record, e.g. photographic matter (associated working of cameras or projectors with sound recording or reproducing means G03B31/00) {G11B 23/44}
- 23.096 .Reconditioning of record carriers; Cleaning of record carriers; [N: carrying-off electrostatic charges] (G9B/3.084 takes precedence; [N: carrying off electrostatic charges in general H05F3/00]) {G11B 23/50}
- 23.097 ..[N: of tape carriers] {G11B 23/50B}
- 23.098 ..[N: of disc carriers] {G11B 23/50D}
- 23.099 ...[N: combined with means for reducing influence of physical parameters, e.g. temperature change, moisture] {G11B 23/50D2}
- 25 **Apparatus characterised by the shape of record carrier employed but not specific to the method of recording or reproducing (individual parts of apparatus G9B/3 to G9B/23, G9B/33), [N: e.g. dictating apparatus; Combinations of such apparatus] {G11B 25/00}**
- 25.001 .using cylindrical record carriers {G11B 25/02}
- 25.002 .using flat record carriers, e.g. disc, card {G11B 25/04}
- 25.003 ..[N: using rotating discs] {G11B 25/04R}
- 25.004 ..[N: using stationary discs, or cards provided with a circular recording area (automatic feed mechanism producing a transducing t traverse of the head across stationary disc tracks G9B/21.009; driving heads relatively to stationary record carriers for mechanical transducing G9B/3.074)] {G11B 25/04S}
- 25.005 .using web-form record carriers, e.g. tape {G11B 25/06}
- 25.006 ..[N: using tape inside container] {G11B 25/06C}
- 25.007 ..[N: adapted for use with containers of different sizes or configurations; adaptor devices therefor] {G11B 25/06M}
- 25.008 .using filamentary record carriers, e.g. wire {G11B 25/08}
- 25.009 .Apparatus capable of using record carriers defined in more than one of the sub-groups G9B/25.001 to G9B/25.008; [N: Adaptor devices therefor] {G11B 25/10}
- 27 **Editing; Indexing; Addressing; Timing or synchronising; Monitoring; Measuring tape travel {G11B 27/00}**
- 27.001 .[N: Programmed access in sequence to a plurality of record carriers or indexed parts, e.g. tracks, thereof; e.g. for editing; (transfer of record carriers from magazine G9B/15.135, G9B/17.042; G9B/17.051)] {G11B 27/00A}
- 27.002 .[N: Reproducing at a different information rate from the information rate of recording (for television signals H04N5/783)] {G11B 27/00V}
- 27.003 ..[N: reproducing continuously a part of the information, i.e. repeating] {G11B 27/00V1}
- 27.004 .Editing, e.g. varying the order of information signals recorded on, or reproduced from, record carriers (arrangements for sorting or merging computer data on continuous record carriers G06F7/22; mixing of video signals H04N5/265) {G11B 27/02}
- [N: WARNING
For groups G9B/27.005 to G9B/27.014, see provisionally also G9B/27.004, G9B/27.009, G9B/27.013 and 97DP25B2D]

- 27.005 ..Electronic editing of analogue information signals, e.g. audio or video signals {G11B 27/022}
- 27.006 ...on tapes (G9B/27.008, G9B/27.009 take precedence) {G11B 27/024}
- 27.007 ...on discs (G9B/27.008, G9B/27.009 take precedence) {G11B 27/026}
- 27.008 ...with computer assistance {G11B 27/028}
- 27.009 ...Insert-editing {G11B 27/029}
- 27.01 ..Electronic editing of digitised analogue information signals, e.g. audio or video signals {G11B 27/031}
- 27.011 ...on tapes (G9B/27.013, G9B/27.014 take precedence) {G11B 27/032}
- 27.012 ...on discs (G9B/27.013, G9B/27.014 take precedence) {G11B 27/034}
- 27.013 ...Insert-editing {G11B 27/036}
- 27.014 ...Cross-faders therefor {G11B 27/038}
- 27.015 ..using differential drive of record carrier and head [N: transferred to G9B/15.03] {G11B 27/04}
- 27.016 ..Cutting and rejoining; Notching, or perforating record carriers otherwise than by recording styli (record carriers with provision for splicing G9B/23.083) {G11B 27/06}
- 27.017 ..Indexing; Addressing; Timing or synchronising; Measuring tape travel {G11B 27/10}
- 27.018 ..[N: Programmed access in sequence to addressed parts of tracks of operating record carriers (access by moving the head G9B/3.011, G9B/5.181, G9B/7.042, G9B/21.004; by moving the record carrier G9B/15.001, G9B/17.001, by driving of both record carrier and head G9B/15.023] {G11B 27/10A}
- 27.019 ...[N: of operating discs] {G11B 27/10A1}
- 27.02 ...[N: of operating tapes] {G11B 27/10A2}
- 27.021 ..by using information not detectable on the record carrier {G11B 27/11}
- 27.022 ...the information being derived from movement of the record carrier, e.g. using tachometer {G11B 27/13}
- 27.023 ...using mechanical sensing means [N: see provisionally also G9B/27.022] {G11B 27/15}
- 27.024 ...using electrical sensing means [N: see provisionally also G9B/27.022] {G11B 27/17}
- 27.025 ..by using information detectable on the record carrier {G11B 27/19}
- 27.026 ...Means responsive to presence or absence of recorded information signals {G11B 27/22}
- 27.027 ...by sensing features on the record carrier other than the transducing track (for controlling purposes G9B/15, G9B/17); [N: sensing signals or marks recorded by another method than the main recording] {G11B 27/24}
- 27.028 ...by photoelectric detection, e.g. of sprocket holes {G11B 27/26}
- 27.029 ...by using information signals recorded by the same method as the main recording [N: G9B/27.026 takes precedence] {G11B 27/28}
- 27.03 ...on the same track as the main recording {G11B 27/30}
- 27.031[N: used signal is a pilot signal inside the frequency band of the recorded main information signal] {G11B 27/30A}
- 27.032[N: used signal is a pilot signal outside the frequency band of the recorded main information signal] {G11B 27/30B}
- 27.033[N: used signal is digitally coded] {G11B 27/30C}
- 27.034[N: Time code signal] {G11B 27/30C1}
- 27.035[N: superimposed on the recorded main signal, e.g. burn-in-time code] {G11B 27/30C1A}

27.036	.....[N: Vertical Interval Time code (VITC)] {G11B 27/30C1B}	31		
27.037	.....[N: Subcodes] {G11B 27/30C2}			
27.038	.....[N: Coded signal uses a correlation function for detection] {G11B 27/30C3}			
27.039	.....[N: used signal is a video-frame or a video-field (P.I.P)] {G11B 27/30D}			
27.04	.....[N: Table of contents] {G11B 27/30E}			
27.041	....on separate auxiliary tracks of the same or an auxiliary record carrier {G11B 27/32}			
27.042	.....[N: used signal consists of two 180-degr. phase shifted signals of the same frequency] {G11B 27/32A}			
27.043	.....[N: used signal is digitally coded] {G11B 27/32B}			
27.044	.....[N: Time code signal, e.g. on a cue track as SMPTE- or EBU-time code] {G11B 27/32B1}			
27.045	.....[N: Duty cycle modulation of control pulses, e.g. VHS-CTL-coding systems, RAPID-time code, VASS- or VISS-cue signals] {G11B 27/32B2}	31.001	.[N: with radio receiver] {G11B 31/00B}	
27.046	.....[N: Subcodes] {G11B 27/32B3}	31.002	.[N: with video camera or receiver] {G11B 31/00C}	
27.047	.....[N: used signal is a video-frame or a video-field (P.I.P.)] {G11B 27/32C}	31.003	.with automatic musical instruments {G11B 31/02}	
27.048	.....[N: Table of contents] {G11B 27/32D}	33		Constructional parts, details or accessories not provided for in the preceding groups (containers, packaging elements or packages specially adapted for record carriers B65D85/00) {G11B 33/00}
27.049	.....[N: on a tape (TTOC)] {G11B 27/32D1}			
27.05	.....[N: on a disc (VTOC)] {G11B 27/32D2}	33.001	.[N: Means for locking the disc or cassette receiving slot, e.g. dummy cassettes locked in the slot] {G11B 33/00L}	
27.051	..Indicating arrangements (indicating measured values in general G01D) [N: indicating means incorporated in magazine or cassette G9B/23.055 and G9B/23.069] {G11B 27/34}			
27.052	..Monitoring, i.e. supervising the progress of recording or reproducing [N: for digital recording G9B/20 and s.gr.; for monitoring, testing or measuring of TV recorders of the type covered by H04N5/76 and subgroups, see H04N17/06] {G11B 27/36}			

- 33.002 .Cabinets; Cases; Stands;
 Disposition of apparatus
 therein or thereon (furniture
 aspects A47B, e.g. A47B81/06;
 [N: showing stands, hangers or
 shelves adapted for particular
 articles A47F7/00; albums for
 record carriers, e.g. discs
 B42F5/00B; suspended filing
 appliances for record
 carriers, e.g. discs B42F15/
 00B; fastening devices for
 wings, e.g. covers E05C; for
 holding wings in one or more
 opened positions E05C17/00;
 hinges E05D; closers or
 openers of wings, e.g. with
 braking or counter-balancing
 devices E05F]) {G11B 33/02}
- 33.003 ..[N: Cases] {G11B 33/02A}
- 33.004 ...[N: Portable cases] {G11B 33/
 02A1}
- 33.005 ..[N: Covers (G9B/33.003 takes
 precedence; with means for
 guiding the record carrier
 G9B/17.062)] {G11B 33/02B}
- 33.006 ..modified to store record
 carriers [N: (containers,
 storing means adapted for
 cooperation with the recording
 or reproducing apparatus G9B/
 23.014)] {G11B 33/04}
- 33.007 ...[N: for storing discs (anti-
 theft cases with locking means
 E05B73/00B2)] {G11B 33/04D}
- 33.008[N: Single disc boxes (G9B/
 33.017 takes precedence)]
 [N9902] {G11B 33/04D1}
- 33.009[N: for disc cartridges]
 [N9902] {G11B 33/04D1A}
- 33.01[N: for discs without
 cartridge] [N9902] {G11B 33/
 04D1B}
- 33.011[N: comprising centre hole
 locking means] [N9902] {G11B
 33/04D1B1}
- 33.012[N: Multiple disc containers
 (G9B/33.017 takes precedence)]
 [N9902] {G11B 33/04D2}
- 33.013[N: for disc cartridges]
 [N9902] {G11B 33/04D2A}
- 33.014[N: for discs without
 cartridge] [N9902] {G11B 33/
 04D2B}
- 33.015[N: comprising centre hole
 locking means] [N9902] {G11B
 33/04D2B1}
- 33.016[N: for single disc boxes]
 [N9902] {G11B 33/04D2C}
- 33.017[N: Disc storage racks]
 [N9902] {G11B 33/04D3}
- 33.018[N: for disc cartridges]
 [N9902] {G11B 33/04D3A}
- 33.019[N: for discs without
 cartridge] [N9902] {G11B 33/
 04D3B}
- 33.02[N: comprising centre hole
 locking means] [N9902] {G11B
 33/04D3B1}
- 33.021[N: for single disc boxes]
 [N9902] {G11B 33/04D3C}
- 33.022[N: in boxes or containers
 comprising additional sound
 reproducing or activating
 means] [N9902] {G11B 33/04D4}
- 33.023 ..combined with other apparatus
 having a different main
 function {G11B 33/06}
- 33.024 ..Insulation or absorption of
 undesired vibrations or sounds
 {G11B 33/08}
- 33.025 .Indicating arrangements; Warning
 arrangements [N: (G9B/15.006,
 G9B/19.005, G9B/27.051, G9B/
 27.052 take precedence)] {G11B
 33/10}
- 33.026 .Disposition of constructional
 parts in the apparatus, e.g.
 of power supply, of modules
 {G11B 33/12}
- 33.027 ..[N: the apparatus comprising a
 single recording/reproducing
 device] [N0706] {G11B 33/12B}
- 33.028 ...[N: Arrangements for providing
 electrical connections, e.g.
 connectors, cables, switches]
 [N0706] {G11B 33/12B1}
- 33.029 ...[N: Mounting arrangements of
 constructional parts onto a
 chassis] [N0706] {G11B 33/
 12B2}
- 33.03[N: of the single recording/
 reproducing device, e.g. disk
 drive, onto a chassis] [N0706]
 {G11B 33/12B2A}

- 33.031 ..[N: the apparatus comprising a plurality of recording/reproducing devices, e.g. modular arrangements, arrays of disc drives] [N0706] {G11B 33/12C}
- 33.032 ...[N: Arrangements for providing electrical connections, e.g. connectors, cables, switches] [N0706] {G11B 33/12C1}
- 33.033 ...[N: Mounting arrangements of constructinal parts onto a chassis] [N0706] {G11B 33/12C2}
- 33.034[N: of the plurality of recording/reproducing devices, e.g. disk drives, onto a chassis] [N0706] {G11B 33/12C2A}
- 33.035 .Reducing influence of physical parameters, e.g. temperature change, moisture, dust {G11B 33/14}
- 33.036 ..[N: Reducing the influence of the temperature] [N0211] {G11B 33/14B}
- 33.037 ...[N: by fluid cooling] [N0211] {G11B 33/14B2}
- 33.038[N: by air cooling] [N0211] {G11B 33/14B2B}
- 33.039 ...[N: by cooling plates, e.g. fins] [N0211] {G11B 33/14B4}
- 33.04 ...[N: by reducing the effects of the thermal expansion] [N0211] {G11B 33/14B6}
- 33.041 ...[N: by detection, control, regulation of the temperature] [N0211] {G11B 33/14B8}
- 33.042 ..[N: Reducing contamination, e.g. by dust, debris] [N0211] {G11B 33/14C}
- 33.043 ...[N: by moisture] [N0211] {G11B 33/14C2}
- 33.044 ...[N: constructional details of filters] [N0211] {G11B 33/14C4}
- 33.045 ...[N: sealing gaskets, (gasket in general F16J)] [N0211] {G11B 33/14C6}
- 33.046 ...[N: of/from bearings] [N0211] {G11B 33/14C8}
- 33.047 ..[N: Reducing friction, adhesion, drag] [N0211] {G11B 33/14D}
- 33.048 ..[N: Control/regulation of the pressure, e.g. the pressure inside the housing of a drive] [N0211] {G11B 33/14E}
- 33.049 ..[N: Electro-Magnetic Interference (EMI) or Radio Frequency Interference (RFI) shielding; grounding of static charges] [N0211] {G11B 33/14F}