GRUNDIG

VIDEORECORDER GV 280 S VPT

Part 1

The Super-VHS system

Super-VHS (S-VHS) is the latest development in the world of VHS video.
Better brilliance and clarity for playing back video recordings in standard or long playing mode are two advantages of this recorder.

When the recorder is used in conjunction with a S-VHS television set you can achieve the optimum picture and sound quality.

The dialogue remote control handset...

... is the central control unit for this video recorder.

From the comfort of your armchair, you can remotely control nearly all of the recorder functions.

GRUNDIG on-screen dialogue — what is it?

Using the on-screen dialogue as an instruction guide makes seemingly complicated settings and data entries easy and understandable for everyone.

The correct diagrams, tables, and dialogue lines — from which you can determine the next possible operating steps — always appear on the TV screen.

To make programming even easier, you will also be shown the corresponding buttons on the remote control handset.

You will be guided systematically and step by step until you have achieved the desired result.

It is possible to use the on-screen dialogue in several languages.

GRUNDIG Toptext Programming, with VPT

Programming with the remote control handset, double checking on the TV set...

...i.e., calling up certain Teletext pages, then immediately selecting and confirming the desired data from the programme listings of the TV channels. These data are then displayed on the screen of the TV set.

The GRUNDIG Archive System ...

... an electronic notebook for your cassette collection.

With the basic version of this system you can store up to 700 titles (as well as a lot of other information). The storage capacity of the archive system can be expanded to 1400 titles.

The advantages of the GRUNDIG archive system are as follows:

You always have the list of your titles at your finger-tips because all the information is stored in the video recorder.

Titles and other additional information about broadcasts are "automatically" stored in the archive system while being recorded. It is necessary, however, that the TV stations from which you are recording the broadcasts transmit Teletext.

Any recordings made previously can be entered into the archive system.

You can inquire about titles, key-words and subject areas with one finger stroke.

A summary of the remaining playing times on all archived cassettes allows you to quickly find a cassette with sufficient space for a new recording.

Jog and shuttle — creative playback arranging in an instant

The jog and shuttle functions allow you to "flip through" your recordings at high speed, to search for specific scenes at half playback speed, to "freeze" a picture for closer examination and to move the images forward, picture by picture — all in a few instants.

Of course, you can also select the jog and shuttle functions with the remote control handset.

Recording and playing back in hifi quality

Your video recorder records the sound signal not only on the mono (longitudinal) track, but also on a hifi (helical) track.
This feature allows you to use the video cassette recorder as a hifi tape recorder for high quality recording and playback.

Integrated audiomixer

With this recorder it is possible to add a sound track to the mono and hifi tracks using sound signals from the microphone and audio inputs — either separately or mixed, depending on your preference.

The mix function allows you to reproduce the sound signals from the hifi helical track and the normal track at the same time.

Editing and optically altering films with television studio techniques.

This recorder features:

different blending screens, colour or picture to picture;

different digital picture effects such as mosaic, paint, strobe, zoom and much more;
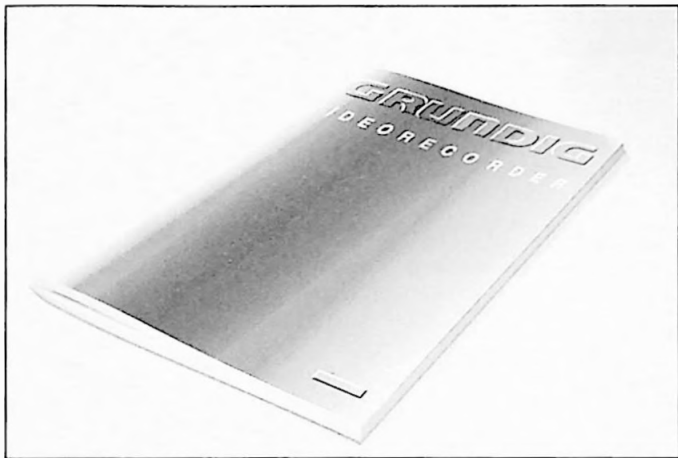
a superimposing function which can mix two video (picture) signals, alternately with each another or with coloured picture segments.

Creating your own title pages

You can create several different "title pages" with this recorder and the remote control handset.
You can edit your holiday movies (filmed with a camcorder) by adding in these title pages.

Dear Customer,

so that you can use the versatile comfort functions of this video recorder safely and without problems, these operating instructions have been organized into two parts and into clear and logical operating steps.

Throughout this manual, the headings in the table of contents and in the pages of the manual are highlighted with the same corresponding colour.

These colour markings will guide you through the necessary steps to complete your desired operation.

Here is how the system works:

The headings marked with blue direct you to the
Safety Precautions,
chapter, which absolutely must be read before using the video recorder, and
to the basic functions in the following chapters:
Connecting and Set Up
Playback
Immediate Recording
Recording Programming
The information in these chapters is sufficient for operating the basic functions.

The headings marked with grey direct you to the supplementary functions in the chapters
Connecting and Set Up
The Cassette
Playback
Fast tape Wind and Search Functions
Immediate Recording
Recording Programming
These chapters provide comprehensive and detailed information about all of the recorder's other functions.

The table of contents on the following pages provides an overview of all of the chapters.
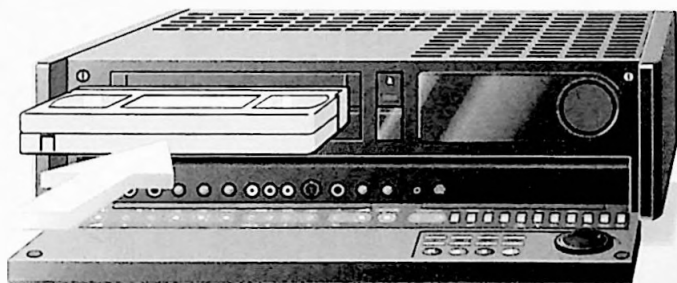
Contents   Page

Contents

1. Preparation and Safety Precautions

Do not expose the recorder to drastic temperature changes, e.g., when taking it from a warm to a cold place.
If this should happen, switch on the recorder and let it stand at the new place for at least two hours without a cassette loaded.
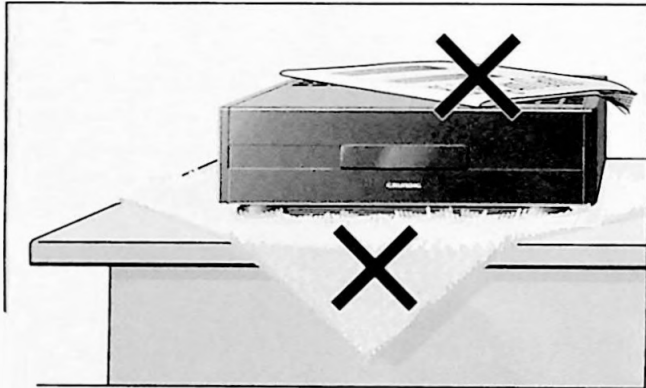
Place the recorder on a flat and hard surface.

Do not place the recorder on a mat or something similar and do not lay any objects (e.g., newspapers) onto the recorder, as this would obstruct the ventilation slots required for cooling.
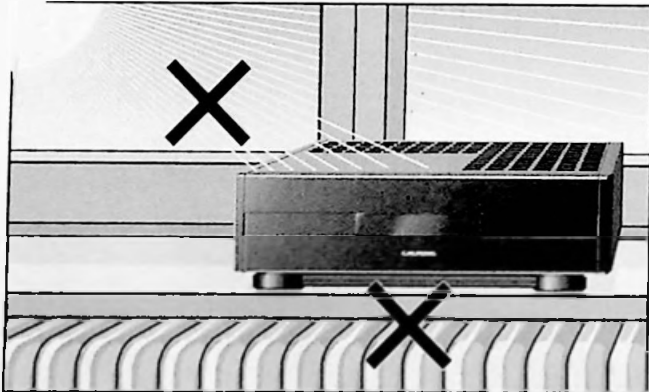
Do not place the recorder in the immediate vicinity of a heat source or in direct sunlight, as this would also prevent appropriate cooling.
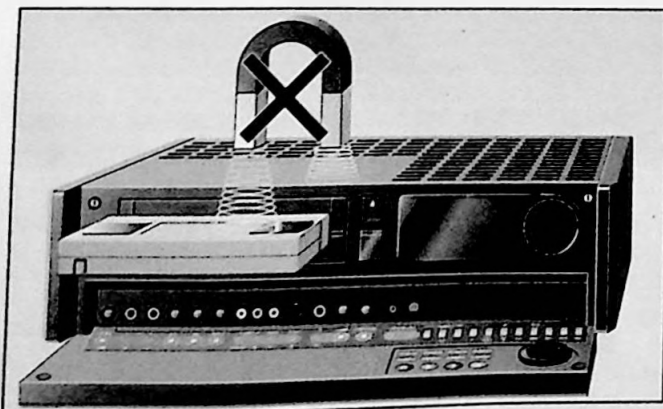
Keep the recorder away from magnetic fields (e.g., louspeakers).

Do not expose the recorder and the cassettes to any moisture. The recorder is intended for use in dry rooms.

If you wish to operate it in the open air nevertheless, make absolutely sure that it is protected against moisture (rain, splashes of water).

Do not place any vessels filled with water (vases or something like that) onto the recorder. The vessel might fall over and the liquid penetrating in this case into the unit might endanger its electric safety.
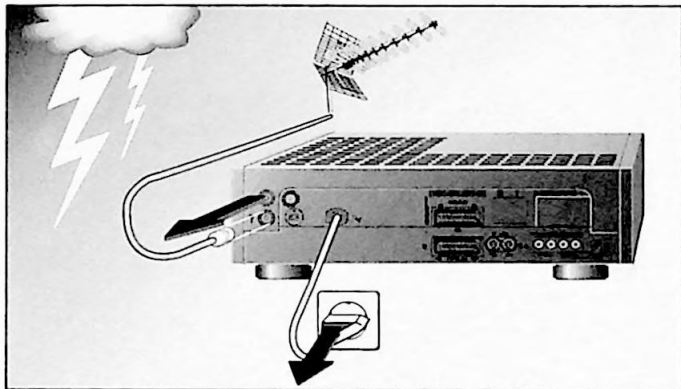
Thunderstorms are a danger for each electrical appliance. Even when switched off, the recorder might be damaged by a lightning striking the mains and/or aerial lead.

During a thunderstorm you should therefore always disconnect the mains and aerial plugs.
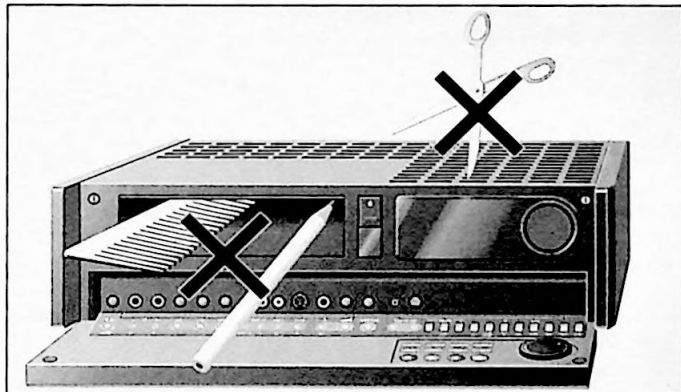
Never put foreign matters into the cassette compartment or the ventilation slots of the recorder, as this might damage high-value mechanical parts.
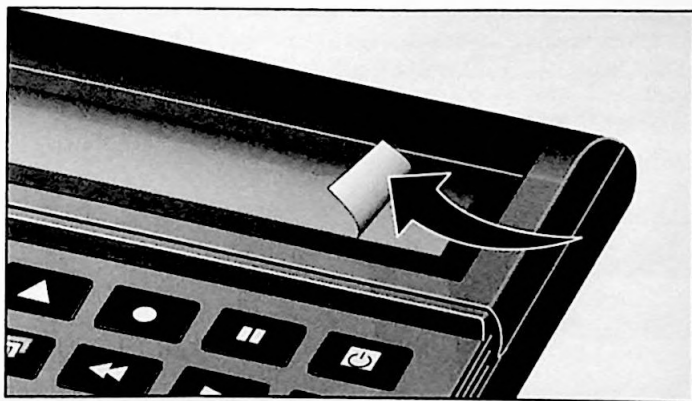
Several parts of the recorder and the remote control handset (e.g., the display) are covered with a protective foil. This foil can be removed.

Connecting the Video Recorder
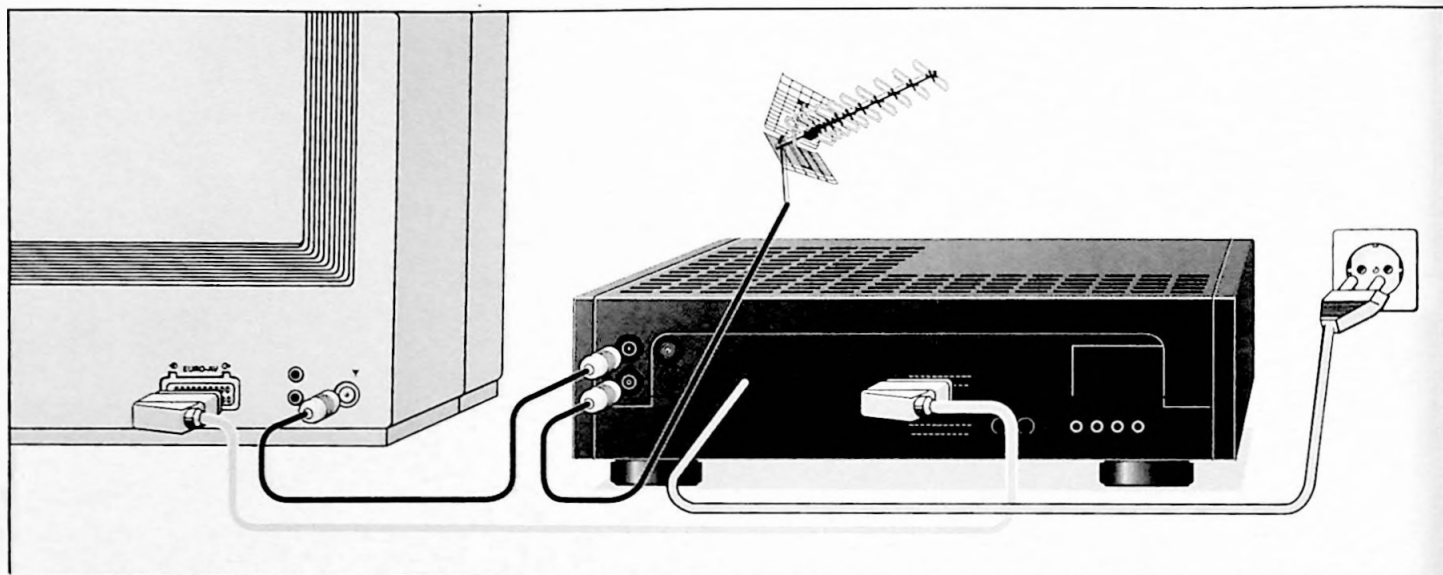
onnecting the recorder to the aerial

Remove the plug of the aerial cable from the aerial socket of your TV receiver and insert it into the aerial socket Y of the recorder.

Connecting the recorder and the TV receiver

Connect the socket ▭ of the recorder with the aerial socket of the TV receiver using the aerial cable supplied with the recorder.

If your TV receiver is provided with a EURO-AV socket, then connect in addition this socket via a Euro-AV connecting cable with the output socket ⊖ EURO-AV ⊕ of the recorder.
You can buy a Euro-AV cable in electronic specialty stores

The advantage of this connection is a still better picture and sound quality during playback.

> If you connect the recorder to a television set according to the 16:9 format, pay attention to the set up in part 2 of these operating instructions, on page 73.

Connecting the recorder to the mains

Insert the plug of the mains cable into the wall socket. The recorder is now on.

> The mains cable must only be replaced by an original part by a specialist according to the VDE/IEC guidelines.

> Only by pulling the mains plug the recorder will completely be isolated from the mains.

Your Recorder's Display
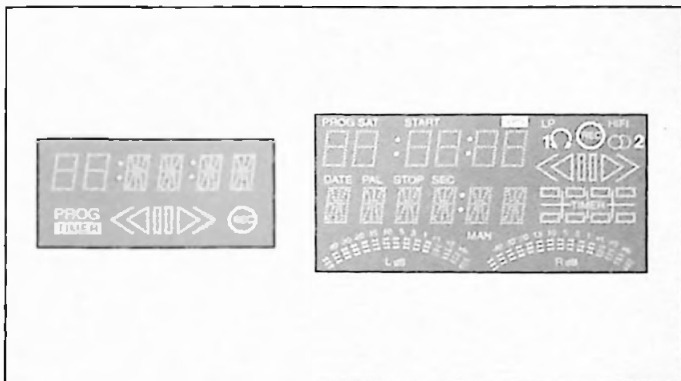
Your recorder has two displays:

A display on the front flap for basic functions such as the time and date, cassette playing time, operating functions, etc.

A display located behind the front flap. A description of this display can be found in the corresponding chapter in the operating instructions.

Opening the Front Flap of Your Recorder
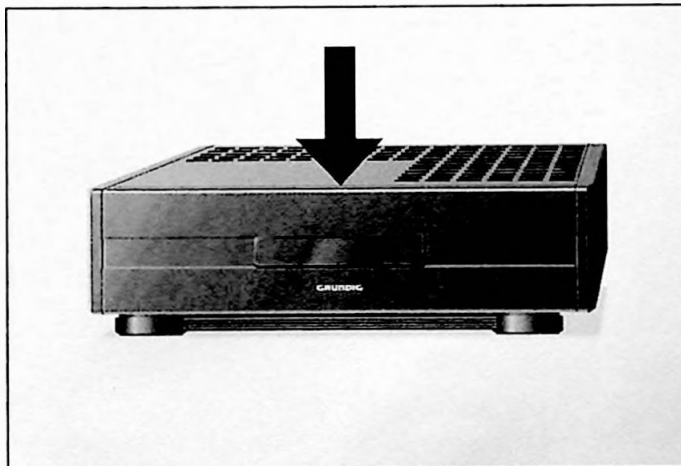
Open the front flap by swinging it down towards the ground. See illustration.

The connecting jacks, the buttons, the controls and the cassette compartment are located behind the front flap.

Descriptions of the functions of these components are found in the corresponding chapters in the operating instructions.
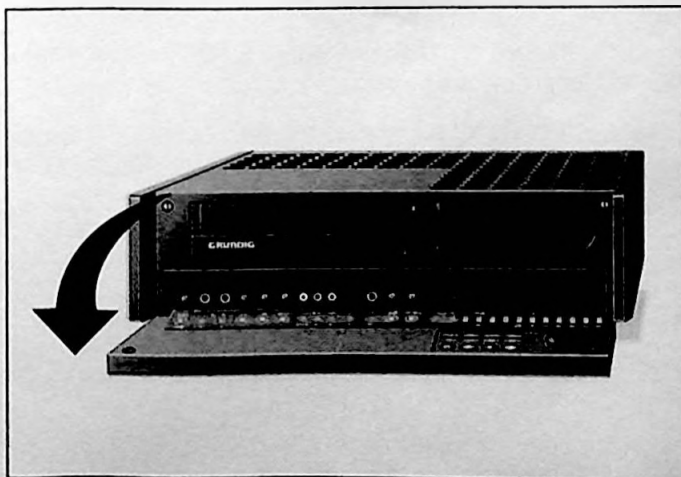
2. Connecting and Set Up

Inserting Batteries into the Remote Control Handset
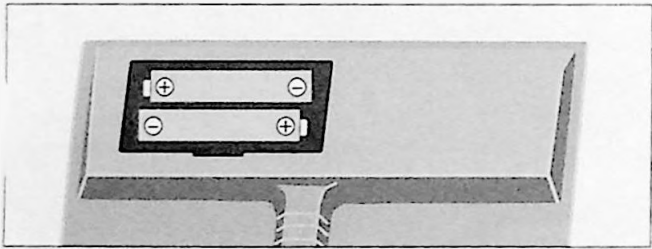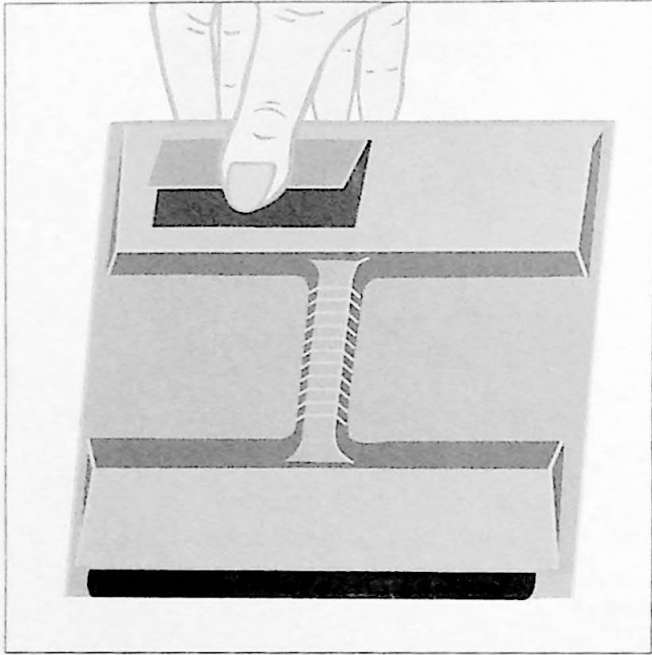
Press on the catch and remove the cover from the battery compartment.

Insert the batteries (2 x 1.5 V, type LR 6 (GB :HP 7) observing correct polarity (marked on the bottom of the compartment).

> If your recorder no longer correctly responds to the remote control commands, the batteries may be exhausted.
>
> Change exhausted batteries immediately.
> No responsibility will be taken for damage caused by leaking batteries.
>
> Exhausted batteries must be handed over to a special refuse collecting point (environmental protection).

Opening the Remote Control Handset
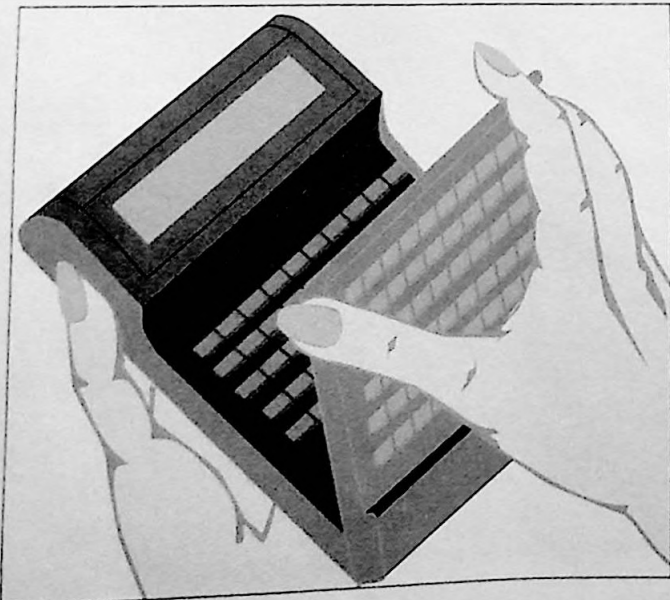
The buttons on the remote control handset are divided into three operational levels.

The first level operates the basic functions, the second and third levels are used to create "title pages" and text/graphics boxes, for the fade functions, as well as for archive system entries and for setting programmes.

To use the buttons for the second and third operational levels, you have to open the remote control handset (see illustration).

> The first operational level is turned off when the remote control handset is open.

> The VIDEO 1 TV VIDEO 2 switch must be in the VIDEO 1 position for this recorder to operate.

Setting Your TV Set to the Recorder
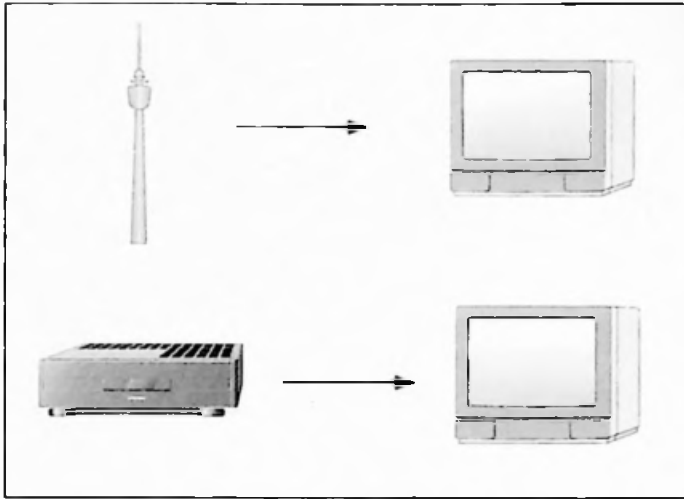
Your TV set receives programmes from different stations on certain channels.

Your recorder also transmits on such a channel (between channels 30 and 40 ± 2 channels, in UHF), and your TV set must be set on this channel.
To do this, there is a "transmitter", which transmits a colour test pattern, built in to the recorder.
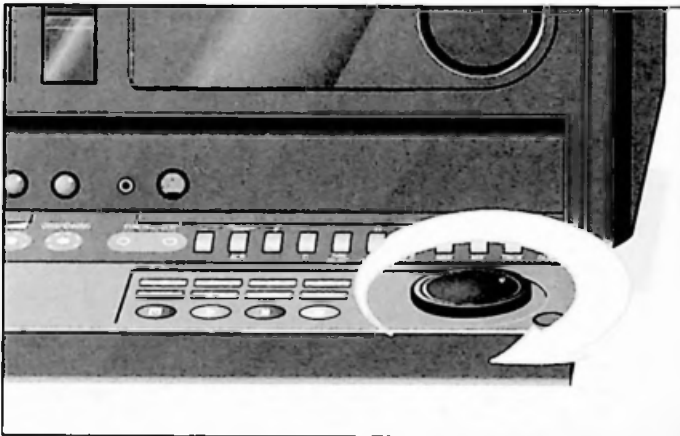
Preparation

Turn on the television set.

Select the AV programme position for the recorder on the television set.

Remove the aerial cable from the Y jack of the recorder.

Open the front flap of the recorder.

Turn on the colour test pattern by turning the "jog" wheel on the front of the recorder to the right (see illustration)
The recorder will "transmit" the colour test pattern after a short time. (Indication: NO MOD)

Locate and store the colour test pattern between channels 30 and 40 ± 2 channels
For further instructions, check your television set's instruction manual.

Re-plug the aerial cable into the aerial jack Y of the recorder.

If the picture quality is good,
press the button on the recorder to set the channel.

If the picture quality is poor, go to the next page.
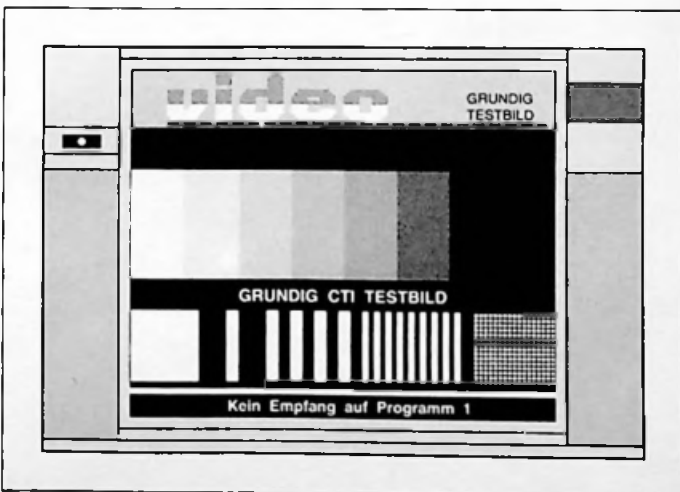
Improving the picture quality

If wavy lines appear on the screen, the channel you have set is already occupied by a TV station.

In this case, do the following:

Press the 🕑 button on the recorder.

On the television, locate a channel in the UHF band between channels 30 and 40 ± 2 channels — that is not occupied by a station (only noise, no picture on the screen).

Store the channel in the television set (for further instructions check your TV set's instruction manual).

Pull the aerial cable out of the Y jack on the recorder.
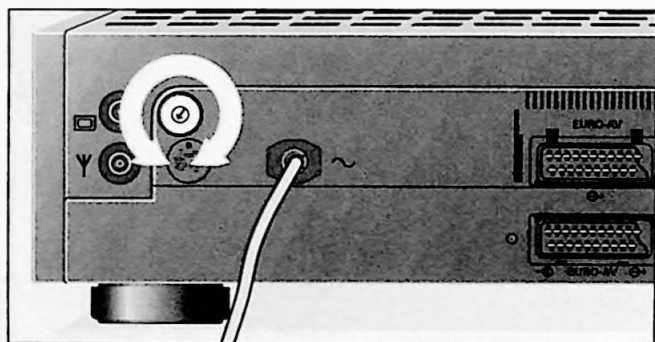
Switch on the colour test pattern by turning the jog wheel on the front of the recorder to the right.
The recorder will transmit the colour test pattern after a short time.

Turn the channel selector ⊘ on the back of the recorder (see illustration) slightly to the right or to the left with the selector tool (included with the recorder), until the colour test pattern appears on the screen.

Re-attach the aerial cable into the Y jack in the recorder and press the 🕑 button to end the channel setting.

Switching the Recorder's Transmitter On and Off

If your recorder receives a lot of TV channels between channels 30 and 40, the picture from the recorder could be affected. To avoid this, you can switch off the transmitter in the recorder.

In order for the recorder's picture and sound signals to transfer to your television, the TV and recorder have to be connected with a Euro-AV cable (see page 8).

Switching the recorder's transmitter off

Press the following number buttons consecutively:
8 5 1 8 and then press the OK button.
The recorder's transmitter is now turned off.

Switching the recorder's transmitter on

Press the following number buttons consecutively:
8 5 1 9 and then press the OK button.
The recorder's transmitter is now turned on.

GRUNDIG On-Screen Dialogue...

...enables a dialogue between you and your video recorder.

For many functions which you select with the remote control handset, the recorder provides info menus and dialogue lines on the TV screen.

Symbols for the keys on the remote control handset and the dialogue lines indicate the next possible operating steps.

You will be simply and clearly guided, step by step.

Every time you press a button on the remote control handset, the $\square$ symbol will confirm it in the display.

Preparation

Turn on the television set.

Select the AV programme position for the recorder on the television set.

Calling up the Info menu

Call up the "Info" menu with the [INFO] button.
The "Info" menu will appear on the TV screen and will show you which functions you can select.

```
            GRUNDIG
            TEXT-PROGRAMMING

    I n f o
    1  :    Aufnahme-Programmierung
    2  :    Videotext
    3  :    Sender-Tabelle
    4  :    Sonderfunktionen
    5  :    Archiv
```
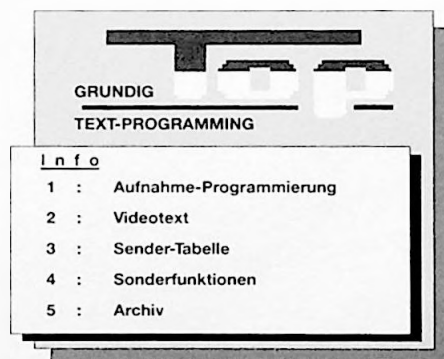
INFO will appear on your recorder's display.

You can select the different functions from the "Info" menu with the number buttons [1] to [5].
Further instructions can be found in the respective chapters of this instruction manual.

Enlarging the Info menu

Standard script size = basic setting.
Pressing the [⊞] button consecutively will change the script as follows:

double script size in the upper half of the menu;
double script size in the lower half of the menu;
standard script size on the entire menu.

To turn the Info menu off

Press the [INFO] button.

Selecting a Language

You can choose between several languages for the dialogue with the recorder.
It is preset in German.
To select another language proceed as follows:

Turn the TV set on.

Select the AV programme position for the recorder on the television set.

Call up the "Info" menu with the [INFO] button.

With the [4] number button select the line "Sonder funktionen" (Special Functions) from the "Info" menu.
The "Sonderfunktionen" menu will appear.
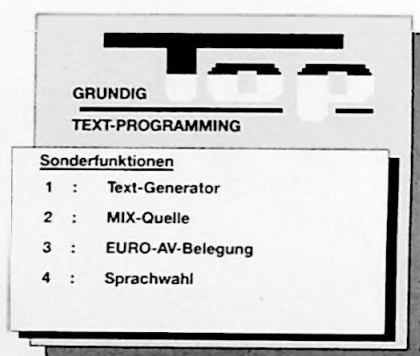
Select the line "Sprachwahl" (Selecting a Language) with the number button [4] from the "Sonderfunktionen" menu.
The "Sprachwahl" menu will appear.
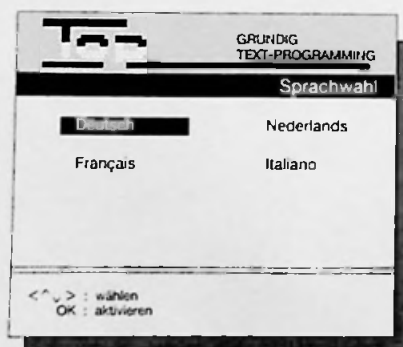
Select the desired language with the [▲], [▼], [◄] or [►] buttons.
The selected language will be marked with blue.

Activate the selected language with the [OK] button.
The recorder switches to the "Info" menu and from now on all menus and dialogue lines will be in the chosen language.

Press the [INFO] button to end the operation.

Setting the Television Channels

Television stations broadcast their programmes on different frequencies/channels.

Your recorder has a built-in receiver so that it can receive and record television programmes independent of the television.

To do this you must set the channels in your recorder. The channel identification is given in numbers.

There are 99 programme positions available.
You can set the channels, and the programmes, as you wish in the 99 positions.

There are two options:

1. Setting them with the ACP — Automatic Channel Programming;

2. Entering the channel number into the "Sender-Tabelle" (Station Table).
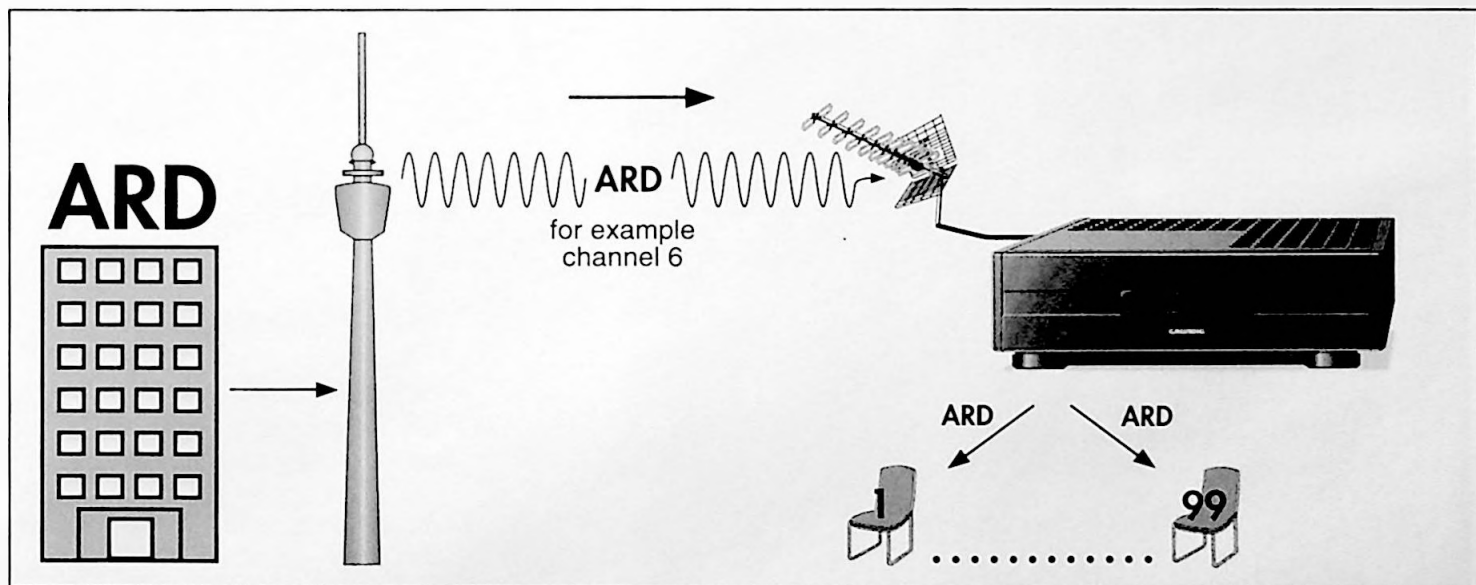
Setting the Television Channels with the Automatic Channel Programming (ACP) Variant 1

Preparation

Turn the TV set on.

Select the AV programme position for the recorder on the television set.
You can check the settings on the TV screen.

Open the front flap of the recorder.

What is ACP?

With this function, the recorder can store all of the channel numbers/special channel numbers of the TV programmes which are received in your area.
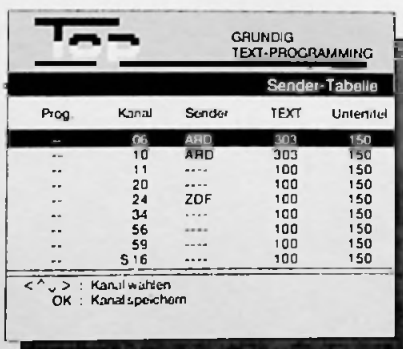
After the settings have been made, you can allocate the TV programmes to the programme position of your choice.

Press these buttons on the remote control unit

You will see this on your TV screen

Explanation
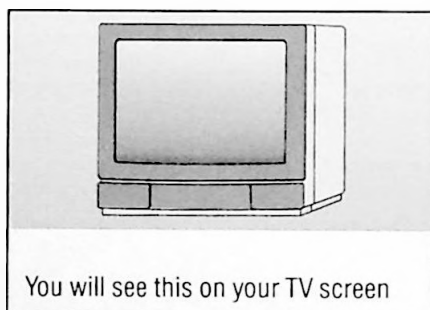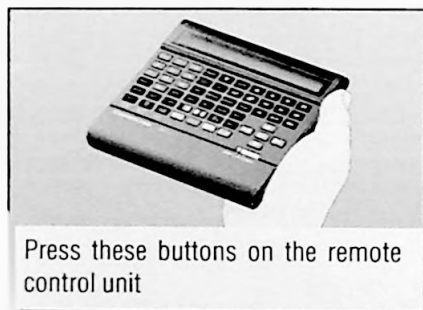
1. To select the ACP function

| ACP |

(hold down for a longer time on recorder)

"ACP" will appear in the recorder's display.

The recorder will now search for all channels according to television programme and will register all channels found.

All previously stored channels will be completely erased.

If the recorder has executed the ACP, after a short time the "Sender-Tabelle" (Station Table) will automatically appear on the screen. The first line will be highlighted in blue.

The channels will appear in numerical order, followed by the special channels (indicated by an S to the left of the channel number).

If a station abbreviation appears next to the channel number (e.g., ARD, ZDF, etc.), then a VPS-signal will be sent to this programme.

GRUNDIG
TEXT-PROGRAMMING

Sender-Tabelle

Prog.	Kanal	Sender	TEXT	Untertitel
--	06	ARD	303	150
--	10	ARD	303	150
--	11	----	100	150
--	20	----	100	150
--	24	ZDF	100	150
--	34	----	100	150
--	56	----	100	150
--	59	----	100	150
--	S 16	----	100	150

< ^ v > : Kanal wählen
OK : Kanal speichern

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

2. Selecting a channel/programme
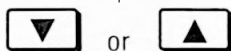
▼ or ▲

The selected channel will be highlighted in blue.

To go to other station table menus press the ▶ button.
You will see the consecutive station tables on the TV screen along with the channel numbers of the programmes.
To switch back to a previous menu, press the ◀ button.

Screen display:

```
                    GRUNDIG
                    TEXT-PROGRAMMING

                         Sender-Tabelle
  Prog.   Kanal   Sender    TEXT    Untertitel
  --       06      ARD       303      150
  --       10      ARD       303      150
  --       11      ----      100      150
  --       20      ----      100      150
  --       24      ZDF       100      150
  --       34      ----      100      150
  --       56      ----      100      150
  --       59      ----      100      150
           S 16    ----      100      150
  < ^ ∨ >  : Kanal wählen
    OK     : Kanal speichern
```

3. Allocating the channel numbers/programmes to the programmes position

OK

a) Select the programme position

▼ or ▲

Screen display:

```
  Prog.          Kanal   Sender
  --              06      ARD

  ^ ∨  :  Programm wählen
       :  Nächster Kanal
  < >  :  Feinabstimmung
  OK   :  Programm speichern
```

You will see the picture of the programme on the TV screen.
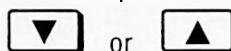
If you want the next channel/programme to be allocated press the ▭ button (blue).
The picture and the data on the next TV programme will appear on the TV screen.

If you see a TV programme that is transmitted with another colour norm (SECAM colour norm), "SEC" will also appear in the recorder's display.

b) Fine tuning the picture (if necessary)

▶ or ◀

It is only necessary to do this operation if the picture quality is poor or the **VPS** - display on the recorder flickers or goes out.

The picture contours will appear softer or harder.

▶▶

Press these buttons on the remote control unit	You will see this on your TV screen	Explanation

c) Storing the settings

[OK]

For stations that transmit a VPS signal, the station identification abbreviations (e.g., ARD) will automatically be stored in the recorder.

---

4. Station abbreviations...

a) confirm   or   b) new entry
(max. 4 places)

[A] ... [Z]

[1] ... [0]

[OK]   [OK]

Only capital letters can be entered.

The "Station Table" will list the letters/characters that can be used.

If you need to put in a space, press the [SPACE] button.

You can move the cursor to the left or to the right with the [◄] or [►] buttons.

---
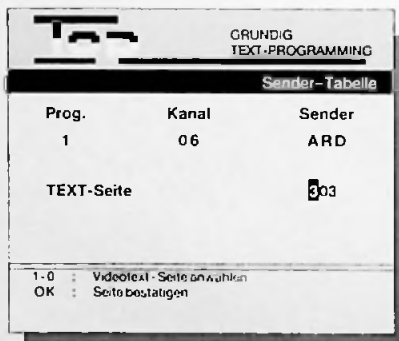
5. Teletext page number...

a) confirm   or   b) new entry
(3 places)

[1] ... [0]

[OK]   [OK]
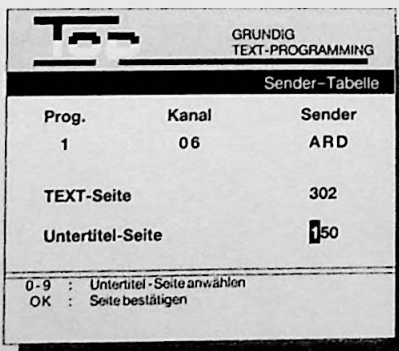
In our example, the buttons [3] [0] [2], page 302.

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

6. Subtitle page number...
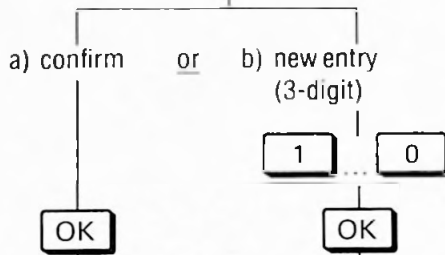
a) confirm   or   b) new entry
(3-digit)

[1] ... [0]

[OK]   [OK]

```
T□□        GRUNDIG
            TEXT-PROGRAMMING
                          Sender-Tabelle
Prog.   Kanal   Sender   TEXT   Untertitel
  1       06     ARD      302     150
 --       10     ARD      303     150
 --       11     ----     100     150
 --       20     ----     100     150
 --       24     ZDF      100     150
 --       34     ----     100     150
 --       56     ----     100     150
 --       59     ----     100     150
 --      S 16    ----     100     150

< ^ v >  Kanal wählen
   OK :  Kanal speichern
  ACP :  ACP  beenden
```

In the example, page 150 was confirmed.
After making this setting, you will end the setting procedure.
The "Sender-Tabelle" (Station Table) will reappear. To continue setting other TV programmes, start the instructions over, starting with point 2.

> Double check to see if all the desired channels are allocated to the programme positions.
> Channel numbers not allocated will be completely erased.

---

7. To exit the ACP function

[ACP]

(on the recorder)

```
T□□        GRUNDIG
            TEXT-PROGRAMMING
                          Sender-Tabelle
Prog.   Kanal   Sender   TEXT   Untertitel
  1       06     ARD      302     150
  2       10     ZDF      303     150
  3       11     BR 3     303     150
  4       34     RTL -    100     150
  5       59     SAT 1    303     150
  6       20     TELE     100     150
  7      S 16    SKY      100     150
  8       56     PLUS     303     150
  9       24     3 SAT    302     150

< ^ v >  Programm wählen
   OK :  Programmbelegung ändern
  VPT :  Videotext-Seite anwählen
  SAT :  Satelliten-Empfänger
```

---

8. Erasing programme position data when it is no longer needed

a) Selecting a programme position

[▼] or [▲]

b) Erasing data

[CL]

```
T□□        GRUNDIG
            TEXT-PROGRAMMING
                          Sender-Tabelle
Prog.   Kanal   Sender   TEXT   Untertitel
  1       06     ARD      302     150
  2       10     ZDF      303     150
  3       11     BR 3     303     150
  4       34     RTL +    100     150
  5       59     SAT 1    303     150
  6       20     TELE     100     150
  7      S 16    SKY      100     150
  8       56     PLUS     303     150
  9       24     3 SAT    302     150

< ^ v >  Programm wählen
   OK :  Programmbelegung ändern
  VPT :  Videotext-Seite anwählen
  SAT :  Satelliten-Empfänger
```

The programme position is empty and can be occupied.

---

9. Terminate setting mode

[⏻]

You will see the current TV programme.

**Setting the TV Programme
By Entering the Channel Number
Variant 2**

Preparation

Turn on the TV set.

Select the AV programme position for the recorder on the television set.

You can double check the setting on the TV screen.
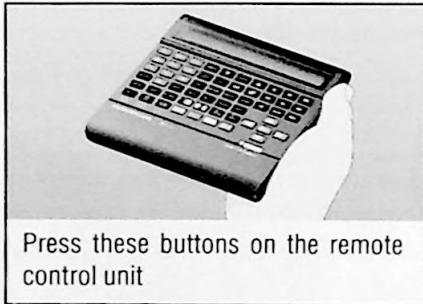
Press these buttons on the remote control unit
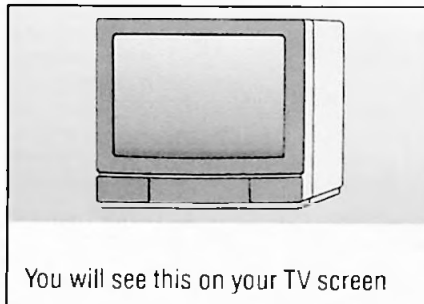
You will see this on your TV screen

Explanation

1. Calling up the Info menu

INFO

GRUNDIG

TEXT-PROGRAMMING

Info
1 : Aufnahme-Programmierung
2 : Videotext
3 : Sender-Tabelle
4 : Sonderfunktionen
5 : Archiv
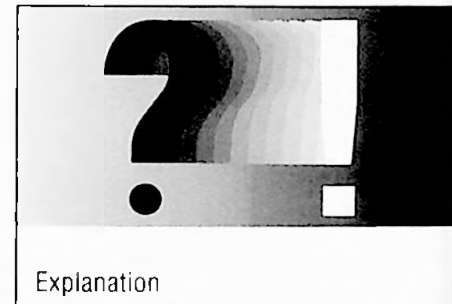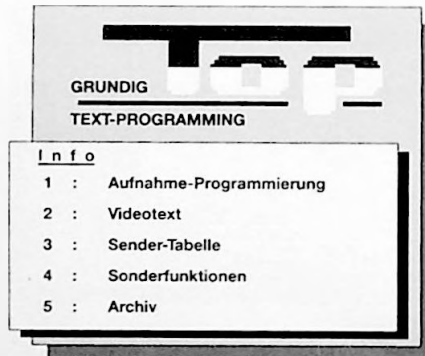
2. Select the station chart

3

GRUNDIG
TEXT-PROGRAMMING

Sender-Tabelle

Prog.	Kanal	Sender	TEXT	Untertitel
1	12	ARD	303	150
2	02	ZDF	303	150
3	21	----	100	150
4	68	----	100	150
5	08	----	100	150
6	60	----	100	150
7	04	----	100	150
8	05	----	100	150
9	S 01	----	100	150

< ^ v > : Programm wählen
OK : Programmbelegung ändern
VPT : Videotext-Seite anwählen
SAT : Satelliten-Empfänger
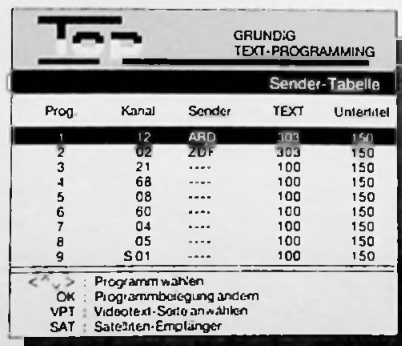
Programme position 1 is underlined in blue.

The first programme positions are occupied with channel numbers, station abbreviations and Teletext page numbers.

If you only want to change the Teletext page number or the subtitles page, press the VPT button and continue on with point 7.

If you want to enter satellite programmes, press the SAT button and the "Sender-Tabelle SAT" (Station Table SAT) will appear, (blue-coloured).

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

3. Selecting the programme position
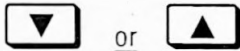
[▼] or [▲]

GRUNDIG
TEXT-PROGRAMMING

Sender-Tabelle

Prog.	Kanal	Sender	TEXT	Untertitel
1	12	ARD	303	150
2	02	ZDF	303	150
3	21	----	100	150
4	68	----	100	150
5	08	----	100	150
6	60	----	100	150
7	04	----	100	150
8	05	----	100	150
9	S 01	ZDF	100	150

< ^ ⌄ > : Programm wählen
VPT : Videotext-Seite anwählen
OK : Programmbelegung ändern
SAT : Satelliten-Empfänger

A blue line marks the selected programme position.

To go to other menus of the station tables press the [▶] button.
You will see the consecutive station tables for the programme positions 10-19, etc. up to 90-99 (for satellite programmes from 80-99).

---

4. Changing the programme allocation of a programme position

[OK]

| Prog. 6 | Kanal ▊0 | Sender ---- |

1-0 : Kanal zweistellig eingegen
: Sonderkanal ein/aus
: Kanal suchen
< > : Feinabstimmung
OK : Kanal speichern

The programme position data will appear on the screen. A cursor (▊) will mark the first place of the channel number.

If you watch a TV programme that is transmitted with another colour norm (SECAM colour norm), "SEC" will also appear in the recorder's display.

Channel numbers are not required for satellite programmes. Continue on with point 6.

---

5. Entering the channel number

or — — or —

a) for TV programmes   b) for cable TV programmes   c) Starting ACP

[ ] (green)   [ ] (blue)

[1] ... [0]   [1] ... [0]

[OK]   [OK]
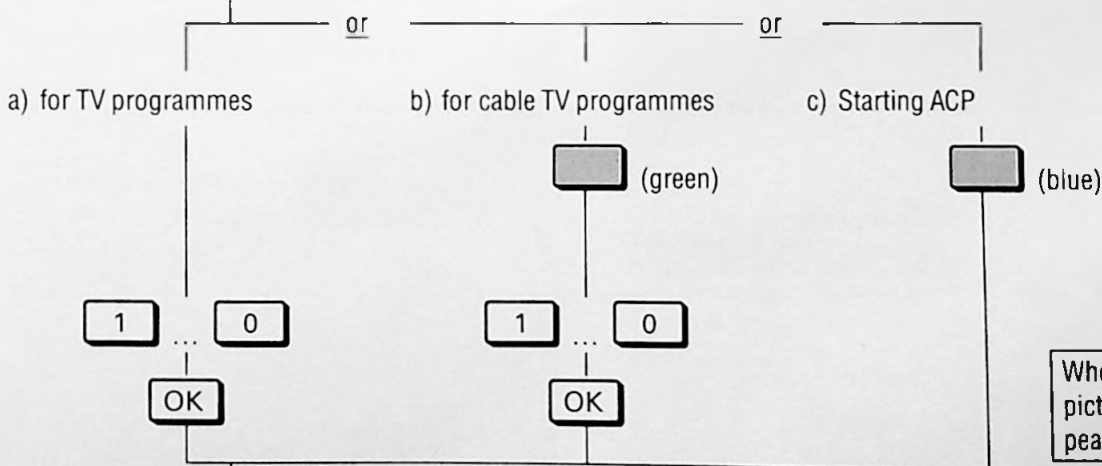
When a TV programme is found, the picture and the programme date appear on the screen.

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

6. Station abbreviations

a) confirm   or   b) new entry
(max. 4 places)

[A] ... [Z]

[1] ... [0]

[OK]   [OK]

GRUNDIG
TEXT-PROGRAMMING
Sender–Tabelle

Prog.	Kanal	Sender
6	06	ARD

ABCDEFGHI
JKLMNOPQRS
TUVWXYZ · /
0123456789

A..Z	Zeichen wählen
< >	Position wählen
CL	zurück
OK	Sender speichern

GRUNDIG
TEXT-PROGRAMMING
Sender–Tabelle

Prog.	Kanal	Sender
6	06	ARD

TEXT-Seite	303

1-0	:	Videotext-Seite anwählen
OK	:	Seite bestätigen
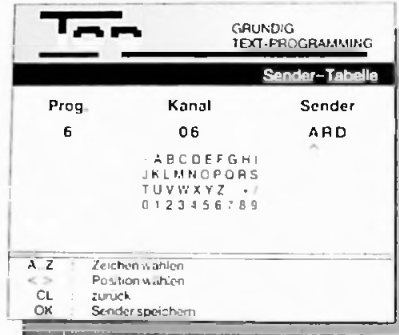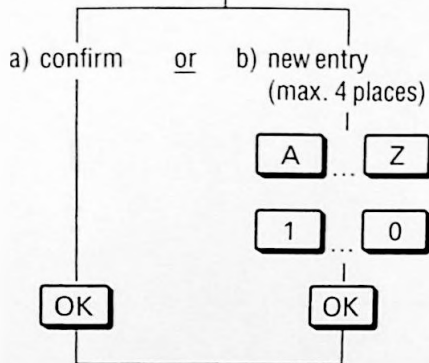
For satellite programmes, enter the station abbreviations at the same place where you set the satellite programmes in your satellite receiver.

Only captital letters can be entered.

The "Sender-Tabelle" (Station Table) will list the letters/characters that can be used.

If you need a space, press the [SPACE] button.

With the [◄] or [►] buttons you can move the cursor to the right or to the left.

With the [CL] button, you can switch back to entering channel numbers.
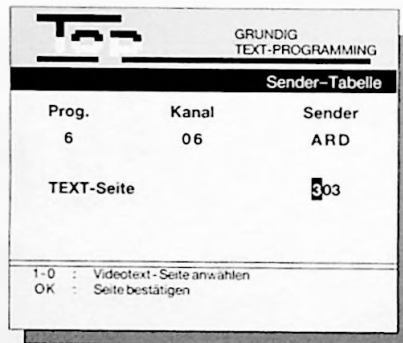
When setting satellite programmes, the "Sender-Tabelle" (Station Table) will reappear after the last place of the station abbreviation.
Continue on with point 3.

---

7. Teletext page number ...

a) confirm   or   b) new entry
(3 places)

[1] ... [0]

[OK]   [OK]

GRUNDIG
TEXT-PROGRAMMING
Sender–Tabelle

Prog.	Kanal	Sender
6	06	ARD

TEXT-Seite	302
Untertitel-Seite	150

0-9	:	Untertitel-Seite anwählen
OK	:	Seite bestätigen
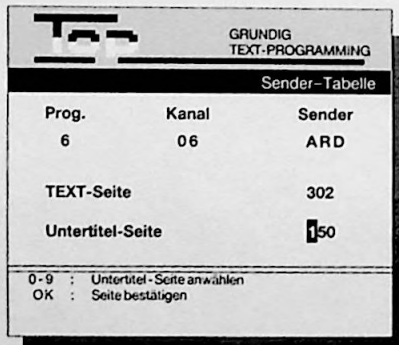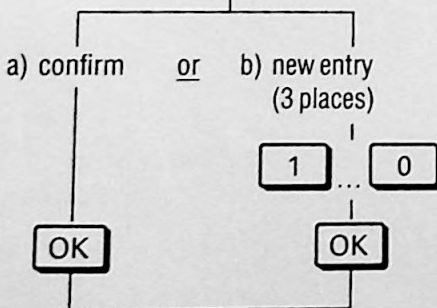
In the example, press the buttons
[3][0][2] page 302.

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

8. Subtitle page number...
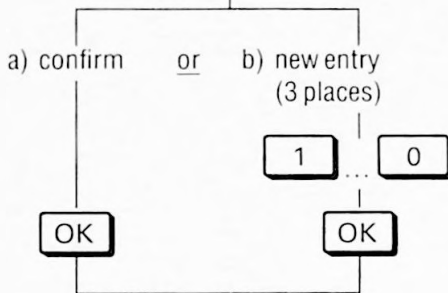
a) confirm   or   b) new entry
                              (3 places)

[1] ... [0]

[OK]   [OK]

GRUNDIG
TEXT-PROGRAMMING

Sender-Tabelle

Prog	Kanal	Sender	TEXT	Untertitel
1	12	ARD	303	150
2	02	ZDF	303	150
3	21	----	100	150
4	68	----	100	150
5	08	----	100	150
6	06	----	100	150
7	04	----	100	150
8	05	----	100	150
9	S 01	----	100	150

< ^ > : Programm wählen
OK : Programmbelegung andern
VPT : Videotext-Seite anwählen
SAT : Satelliten-Empfanger

In the example, the subtitle page 150 was confirmed.

After this setting, the entries for the programme positions are ended.

The station table will reappear. To continue with setting TV programmes, continue on with point 3.

If you wish to erase the data in one of the programme positions, continue on with point 9.

9. Erasing programme position data when it is no longer needed.

a) Select the programme position
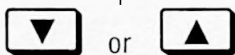
[▼] or [▲]

b) Erase Data

[CL]

GRUNDIG
TEXT-PROGRAMMING

Sender-Tabelle

Prog	Kanal	Sender	TEXT	Untertitel
1	12	ARD	303	150
2	02	ZDF	303	150
3	21	----	100	150
4	68	----	100	150
5	08	----	100	150
6	06	----	100	150
7	04	----	100	150
8	05	----	100	150
9	S 01	----	100	150

< ^ > : Programm wählen
OK : Programmbelegung andern
VPT : Videotext-Seite anwählen
SAT : Satelliten-Empfanger

The programme position is free and can be occupied.

10. Terminate positioning

[⏻]

You will see the current TV programme.

3. The Cassette

The S-VHS and the VHS Videocassette

Any VHS cassettes you already have can be used with this recorder.

S-VHS cassettes can be played using either the S-VHS format or the VHS format.

This recorder automatically determines the correct format when cassettes are played.

S-VHS recordings cannot be played on a VHS recorder.

Cassette Recognition

Open the front flap of the recorder.

Push the cassette (with the window facing up and the writing readable) into the cassette compartment until it is automatically pulled in.
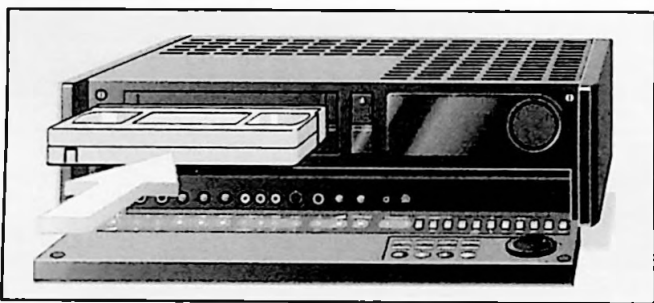
The recorder will determine the cassette format (VHS or S-VHS) and will automatically switch to the corresponding cassette format.
If a S-VHS cassette is being used, **S VHS** will appear in the recorder's display.

Cassette Playing Time

After the cassette has been inserted, the recorder measures the tape time (display indication ATTS) and displays the total playing time in hours if a standard hours cassette is being used (e. g. C3).

Display of total playing time

Cassette	Indication on the recorder
E 60 (60 Min.)	C 1
E 120 (120 Min.)	C 2
E 180 (180 Min.)	C 3
E 240 (240 Min.)	C 4

If a 5-hour E 300 cassette is used, it is necessary to enter the total playing time so that the correct total playing time and elapsed playing time are shown.

After starting a tape run function, the elapsed playing time will be shown in hours and minutes.
For example, the display indication: 0 01 appears on the recorder after 1 minute of playing time.
If non-standard cassettes are used, the recorder will automatically switch to the 5-digit tape length indicator.
The display indication: 0 00 10 will appear on the recorder.

Entering the total playing time

The total playing time (in minutes) can be entered for all cassettes.

Enter the total playing time with the buttons [1] ... [0] on the remote control handset and confirm the entry with the [o⊙] button.

E. g. [0] [3] [0] [o⊙] for a cassette with a playing time of 30 min.,

[1] [9] [5] [o⊙] for a cassette with a playing time of 195 min.

> This also applies to exceptions where the tape length indication and the indication of total playing time differ.

Switching over to 5-digit tape length display

Press the [o⊙] button.
A 5-digit number will appear in the recorder's display.

The tape length indication can be set to 0 00 00 by pressing the [0] button and then the [o⊙] button.

> If the tape is rewound further back than the 0 00 00 indication, a minus sign will appear in front of the first digit.
>
> If the tape length indicator stops during a tape run function, nothing has been recorded on that portion of the tape.
>
> When the cassette is inserted, the tape length indicator will automatically set to 0 00 00.

To switch back to the display of the total and elapsed playing time, press the [o⊙] button.

▶▶

Entering the Cassette Number

After a cassette has been inserted and measured, the following indications could appear:

a) Display indication for cassettes not listed in the archive or entered at a later date, e. g. :

C 3 --- = Total playing time
CASSN° = Prompt to enter the cassette number

In order to be able to use the archive system, you must enter three-digit cassette numbers with the buttons [1] ... [0] (for example [0] [3] [0] for cassette no. 30) and confirm it with the [⧉] button.
If the indication E --- appears after the cassette number has been entered, there isn't an entry in the archive yet and the total playing time of the cassette has to be entered (see the "Entering the total playing time" section on the preceeding page).

b) Display for archived cassettes, e. g. :

C 3 0:00 = Total playing time, elapsed playing time
N° 100 = Cassette number

A listing of the contents of the cassette can be seen on the TV screen.

To switch to the television picture press the [⧉] button.

When the recorder is in the stop position, you can call up the cassette number, the total playing time and the elapsed playing time of the inserted cassette with the [⧉] button.

Protecting Recordings from Unintentional Erasure

Every time a recording is made, anything already on the cassette is automatically erased. Therefore, recordings can be protected against unintentional erasure.
To do this, break off the tab on the side of the cassette.
If you want to record over the cassette at a later date, cover the opening with a piece of tape.
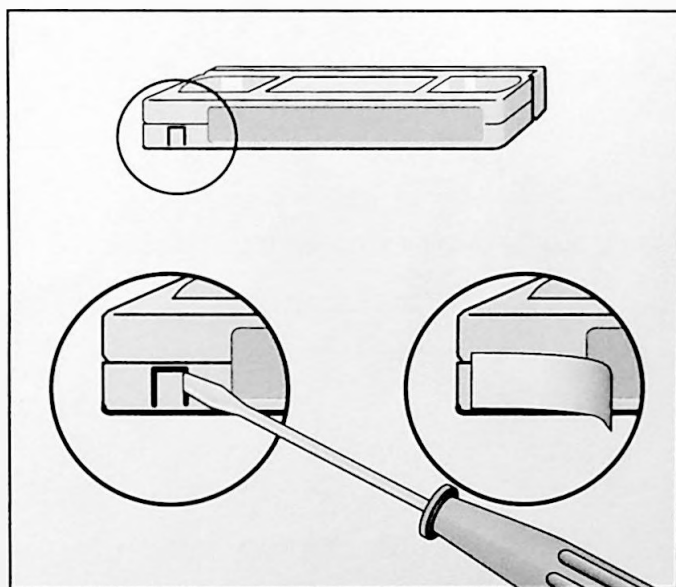
Playback at a Glance

Playback operation is possible with the buttons on the remote control handset or with the controls on the recorder.

Open the front flap of the recorder.

Insert the cassette you want to play in the cassette compartment. It will be pulled in automatically. The recorder will then determine the length of the cassette (display indication: ATTS) and the cassette format (S-VHS or VHS).

The recorder will then request a cassette number (display indication: CASS N°---). You only have to enter the cassette number if you want to use the archive system (see the explanation for using the archive system in the second part of the operating instructions on page 4).

Fast rewind

Press the ⊡ and ◄◄ buttons consecutively.

Fast forward wind

Press the ⊡ and ►► buttons consecutively.

Playback

Press ►.

Pause/freeze-frame

To stop playback, press ‖.

To resume playback, press ►.

STOP

Press ⊡, all functions are stopped.

Cassette removal

Press ▲ on the recorder.

Optimizing Picture/Sound Quality

Automatic

After the cassette has been inserted and playback started, the recorder adjusts automatically to the best picture quality (Auto Tracking).
During this process the "AUTO-T" display lights up on the recorder and picture and sound quality can change.

If there are several recordings made with different recorders on one cassette, it might be necessary to activate the auto tracking again. To do this, press the [AUTO] button at the beginning of the recording.

Manual

The tracking can also be adjusted with the [▼] PROGRAM/ TRACKING [▲] buttons.

If there is a recording on the hifi (helical) track, a tuning aid will appear in the recorder display under the playing time. The more vertical lines that are lit up, the better the playback quality.

Tuning Aid
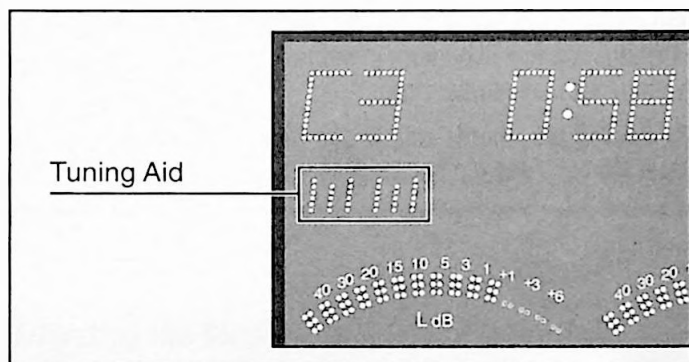
If the picture skips or scrolls on recordings taped with another recorder, press the [8] [5] [1] [1] buttons and then press the [OK] button.

Coloured Noise Suppressor

This "filter" tones down the picture colour surfaces.
It is recommended to turn off the coloured noise suppression function when recording from this recorder onto another recorder. To do this press the ☐ C button on the recorder or press the NR ([▣]) button on the remote control handset.
You will see this temporary display indication on the recorder: NR OFF.

Every time you change a cassette, this function is automatically turned on.
You can also activate the function manually by pressing the ☐ C button on the recorder or the NR ([▣]) button on the remote control handset again.
You will see this temporary display indication on the recorder: NR ON.

Optimizing Picture Sharpness (Crispening)

By pressing this knob, the CRISPENING adjuster will rest in the out position.
Set the picture sharpness according to your preference.

Playback of Longplay Recordings

When playing a longplay recording, the recorder automatically switches to longplay playback mode.
The indication: LP will appear on the recorder. When in slow motion, freeze-frame or picture search, there might be interference with the colour playback.

Selecting the Sound Track

When playing cassettes on which stereo or two-channel recordings have been made, you can select the desired sound track.

Stereo (hifi helical track) = basic setting

The indication: ထ will appear on the recorder.

Consecutively pressing the [⋎] button, selects:
Sound track 1 — indication 1 will appear on the recorder.

Sound track 2 — indication 2 will appear on the recorder.

Mono/longitudinal track — no indication.

Mix option (hifi helical track, mono longitudinal track) — the indication: MIX will appear on the recorder.

Basic setting — the indication: ထ will appear on the recorder.

The sound is independent of the ○ hifi and ○ LINE controls setting (on the recorder) when in mix mode.
The sound balance between the hifi helical track and the mono longitudinal track can be adjusted with these controls.
Press in the controls to set them in the out position.

You can complement playback with the mix option. To do this attach a microphone to the L ⟲ R IN jacks. You can change the volume with the control ○ ◢.

If the control is in the out position, right channel,
When in the out position and pulled even further out, left channel.

This recorder is equipped with numerous comfort functions for playback.

These comfort functions can be controlled easily with the buttons and the "jog" wheel (inner wheel) and the "shuttle" ring (outer ring) on the front panel of the recorder, and with some buttons on the remote control handset.

These comfort functions are optimized for use and very helpful if you wish to electronically edit your recordings (joining or inserting new pictures or passages to or into already existing recordings).

The following adjustment can be made:

Playback speeds — forward or reverse — with the shuttle ring.

Freeze-frame stepping — forward or reverse — with the jog wheel.

Step-by-step selection of the slow-motion speeds — forward or reverse — with the jog wheel.

Different Playback Speeds
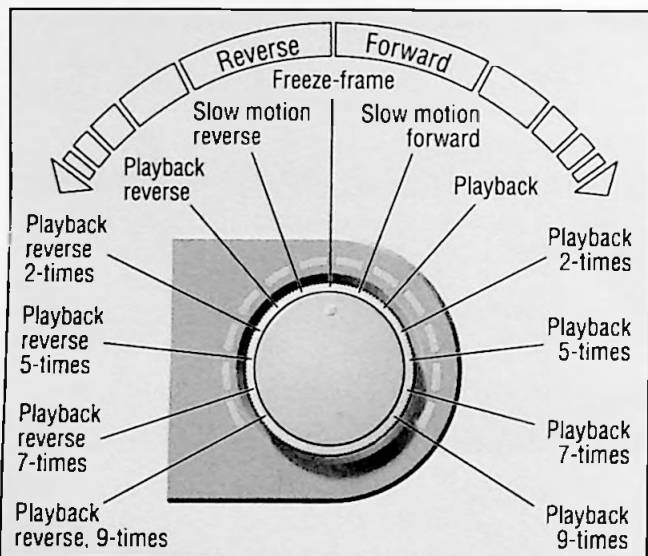
With the recorder shuttle ring

You can freeze the picture (playback-pause) by operating the shuttle ring during playback.

You can increase (or decrease) the speed of fast forwarding or rewinding up to a maximum of 9 times normal speed (see illustration) with the shuttle ring.

By turning the shuttle ring in the reverse direction, you can reset it on any desired playback speed.
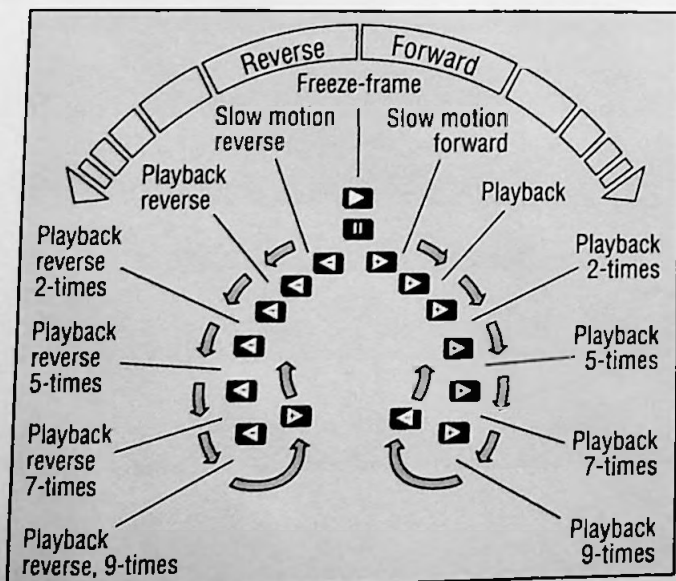
With the remote control handset

Switch the recorder to freeze-frame mode (playback-pause) by pressing the button ▶ and then the button ❙❙.

Adjust the desired direction and speed of playback with button ◀ or ▶ (see figure).

If the picture trembles or appears unsteady during the playback functions freeze-frame, slow motion forward, and playback 2-times forward, you can optimize the picture quality.

Press the numbered buttons 8 5 2 8 and then the button OK on the remote control handset.

A 7 appears in the display of the recorder.

Now adjust for subjectively best picture impression with button ▲ or ▼, and then press the button OK.

Forward or Reverse Freeze-Frame Stepping
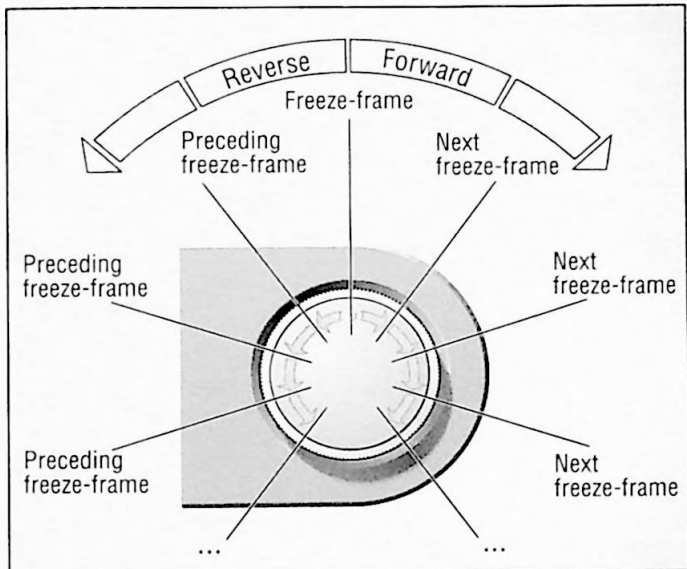
With the jog-shuttle of the recorder

During playback, switch the recorder with the shuttle ring to freeze-frame mode (playback-pause).

With the help of the jog wheel, you now can examine each individual preceding or following freeze-frame (see figure).

The indication JOG 00 appears on the recorder.

Depending on the direction of rotation, each indexed position switches to the preceding or following freeze-frame.

Here again, you can select any desired playback speed with the help of the shuttle ring.

With the remote control handset

Press the ⏸ button twice during playback.

The display indication JOG 00 will appear on the recorder.

Press the ▶ button to step to the next freeze-frame. Repeatedly pressing this button advances the frames one by one. Press the ◀ button to step back to the preceding freeze-frame. Repeatedly pressing this button rewinds the frames one by one.

Press the ▶ button to return to normal play.

Adjusting the Slow-Motion Speed in Forward, or Reverse Direction
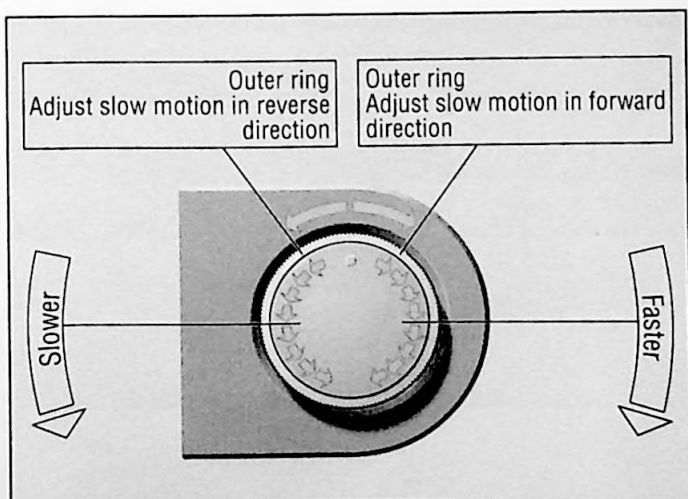
With the jog-shuttle of the recorder

During playback, switch the recorder with the shuttle ring to forward or reverse slow motion.

The slow motion speed can be increased or decreased during playback with the jog wheel (see illustration).

The following indication will appear in the display:
− SLOW + ◁00 or − SLOW + 00▷

Depending on the direction of rotation, each indexed position of the wheel will increase or decrease the speed by one step.

Here again, any desired playback speed can be adjusted with the shuttle ring.

Using the remote control handset

Forward slow motion

Press the ⟦II►⟧ button during playback to select this function.

The display indication: ☐☐▷ appears on the recorder.

Reverse slow motion*

Press the ⟦II⟧ button and then the ⟦◄⟧ button during playback to select this function.

The display indication: ◁☐☐ appears on the recorder.

Modifying the slow-motion speed

Press the ⟦II►⟧ button while in the slow-motion mode.

The slow motion speed will decrease.

The additional display indication: − SLOW ÷ appears on the recorder.

Repeatedly press the ⟦◄⟧ button to decrease the slow-motion speed little by little.

Repeatedly press the ⟦►⟧ button to increase the slow-motion speed little by little.

To return to normal slow-motion speed, press the ⟦II►⟧ button. o return to normal playing speed, press the ⟦►⟧ button.

Playback-Pause/Freeze-Frame

The freeze-frame (pause) status is limited to a certain length of time. After the time is up, the recorder switches to stop.

Press the ⟦II⟧ button during playback.

The display indication: ☐☐ appears on the recorder.

To return to play, press the ⟦►⟧ button.

Digital Freeze-Frame

Press the ⟦STOP⟧ button during playback.
A freeze-frame will appear on the TV screen, the playback continues to "run", but cannot be seen.

To continue playback, press the ⟦CL⟧ button.

Reverse Play*

Press the ⟦◄⟧ button during playback.

The display indication: ◁ appears on the recorder.

Press the ⟦►⟧ button to switch back to play.

Forward Picture Search*

(7-times normal playback speed)
Press the ⟦►►⟧ button during playback.

The display indication: ▷▷ appears on the recorder.

Press the ⟦►⟧ button to return to normal playback.

Reverse Picture Search*

(7-times normal playback speed)
Press the ⟦◄◄⟧ button during playback.

The display indication: ◁◁ appears on the recorder.

Press the ⟦►⟧ button to return to normal playback.

* with interference pattern.

Fast Tape Wind

There are two possible methods for fast winding the tape:

With the buttons of the remote control handset, or
with the shuttle ring on the recorder.

Fast tape wind with the remote control handset

Press the button ⌧.

Press button ⏩ for fast forward wind.

Press button ⏪ for fast rewind.

At the beginning or the end of the tape, the recorder switches to stop.

Press button ⌧ to stop the fast wind functions.

Fast tape wind with the shuttle ring on the recorder

Press the ⌧ button.

Fast rewind   Stop   Fast forward wind
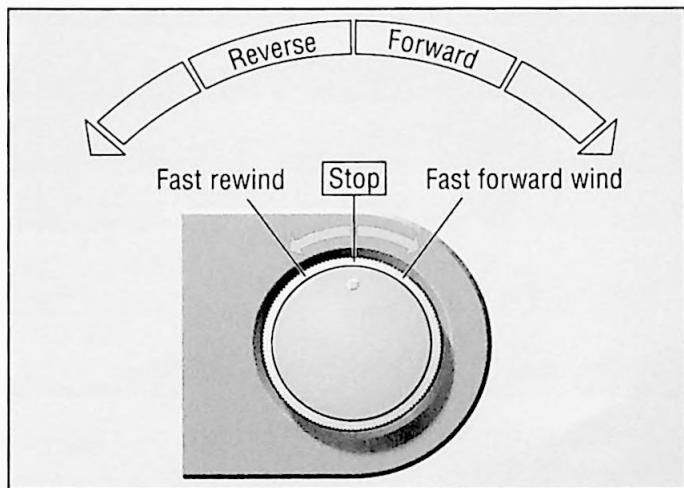
Edit Search Function

With this function, the recorder searches for the electronically marked places on the cassette (see the "Marking Specific Scenes in the Recording" chapter, page 35).

Press the ☐ E-S button on the recorder.

The recorder starts to rewind, searches for the next electronic marker and then switches to playback-pause.

The Go-To Function

With this function, you can automatically wind the tape to a certain position.

There are two ways to do this:

By entering the elapsed playing time, or
by entering the tape position.

Go-to by entering the elapsed playing time

If the display of the recorder is in the tape length indication mode, press button ⌧ to switch it to the playing time indication mode.

Enter the playing time (e. g., 48 minutes) as three figures with the numbered buttons ⌈1⌉...⌈0⌉ and then press the button ⌈↔⌉.

When the last entry is completed, the tape is wound to the respective tape position and playback is started.

> For selecting the elapsed playing time with non-standard hours cassettes, you must first enter the total playing time with the numbered buttons ⌈1⌉...⌈0⌉ and confirm the entry with the buttton ⌧.

Go-to by entering the desired tape position

If the display of the recorder shows the playing time, press the button ⌧ to switch to the tape length indication mode.

Enter the desired tape position with the numbered buttons ⌈1⌉...⌈0⌉ as three figures (the last two figures must be omitted).
Press the button ⌈↔⌉ to start the go-to function.

> If you wish to wind the tape to a negative tape position, then you must enter this by pressing the button ⌈◄⌉.

1st example: The tape is at position 1 : 30 : 24
Desired tape position = 0 : 50 : 25
Entry = ⌈0⌉⌈5⌉⌈0⌉⌈↔⌉

2nd example: The tape is at position − 1 : 05 : 34
Desired tape position = − 0 : 45 : 30
Entry = ⌈0⌉⌈4⌉⌈5⌉⌈◄⌉⌈↔⌉
When the last entry is completed, the tape is automatically wound to the desired position and playback is started there.

Automatic Programme Finder (APF System)

With this system. you can quickly and accurately find the beginning of any of your own recordings.

For this, electronic "marks" (VISS marks) are automatically set at the beginning of each of your own recordings.
These marks are always in relation to the beginnning of the tape.

Example:

The tape is wound to its beginning and you wish to see the 5th recording. Press the numbered button 5 for the 5th mark and then the button ▶▶.

The indication 5 APF ≫ appears on the recorder.
The tape is automatically wound to the beginning of the 5th recording and playback is started there. During the search run, the unpassed marks will be displayed.
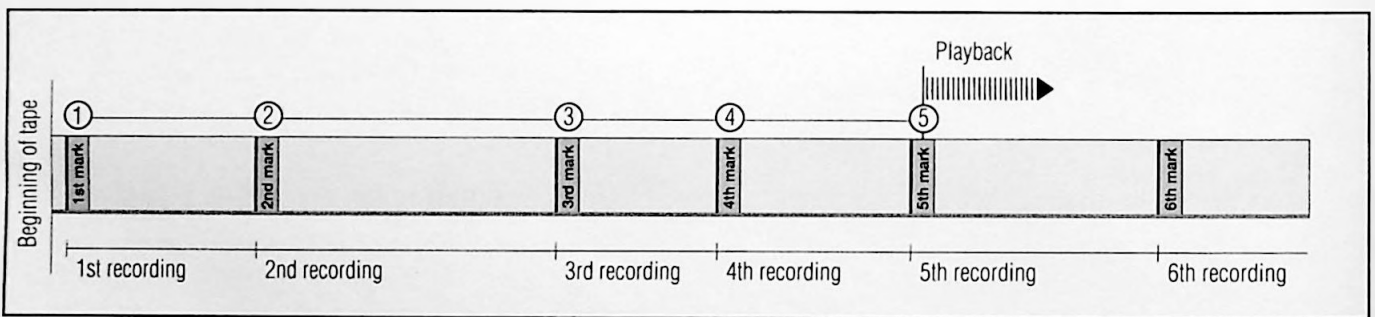
If you wish to see the 3rd recording – in relation to the beginning of the tape – after the 5th recording (= 6th mark), then you must go back three recordings (= 4 marks).
For this, press the numbered button 4 and then the button ◀◀.

The indication 4 APF ≪ appears in the display.
The tape is automatically rewound to the beginning of the 3rd recording and playback is started there. During the search run, the unpassed marks will be displayed.
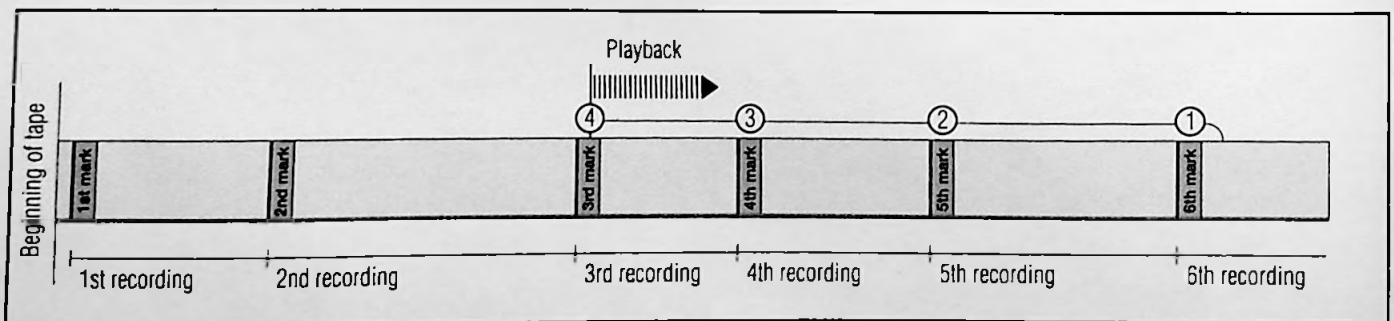
Recording at a Glance

You can make recordings either with the help of the remote control buttons or with the controls on the recorder.

Open the front flap of the recorder.

Insert a cassette with sufficient playing time in the cassette compartment. It will be pulled in automatically. The recorder will then determine the length of the cassette (display indication: ATTS) and the cassette format (S-VHS or VHS).
The recorder will then request a cassette number (display indication: CASS N°---). You only have to enter the cassette number if you want to use the archive-system (see the explanation for using the archive-system in the second part of the operating instructions on page 4).

Selecting a programme position, step by step

Press button ▼ PROGRAM ▲ on the remote control handset,

or

use the jog wheel on the recorder.

Starting recording

Press the button ● for a longer time.

"STOP" will flash several seconds in the recorder display.
If you wish to enter a stop time, refer to chapter "Entering a Stop Time", page 34.

Interrupting recording

Press button Ⅱ .

To continue recording

Press button ● .

Terminating recording

Press button ◙ .

Fast rewind

Press the ◙ and ◀◀ buttons consecutively.

Fast forward wind

Press the ◙ and ▶▶ buttons consecutively.

For a detailed description of the recording functions, refer to the pages 34 to 37.

Remove the cassette

Press ▲ on the recorder.

Preparation

Turn on the TV set.

Select the AV programme position for the recorder on the television set. This can be used as a control monitor.

Open the front flap of the recorder.

Insert a cassette with sufficient playing time that can be recorded on/over.

The recorder will automatically determine if S-VHS or VHS cassettes are being used.
If you want to record in VHS on an S-VHS cassette, press the S·VHS button (the indication S VHS will disappear).

Pay attention to the following points if you wish to use the archive system:
If the indication CASSN°--- appears in the display after a cassette has been inserted, you must enter the cassette number (see page 25).
If the cassette has already been archived, press the button to call up the cassette number, the total playing time and the elapsed playing time. After the recording starts, the recorder automatically stores the starting and stopping points of the tape, the date, "DIVERS" (MISC) for the category, the station abbreviation and the starting time under the title, in the archive. The title and category can both be changed after the recording is finished (see the second part of the instruction manual, chapter "Enquiring about the Cassette Contents…" starting page 15).

Selecting a Programme Position — Direct

Programme positions which are not occupied by a programme cannot be selected.

TV programme from the aerial/cable hook-up

Enter the desired TV programme (one- or two-digit) with the buttons 1 … 0, and then press the PROGRAM ▲ button,

or

TV Programme from the satellite receiver

Enter the desired TV programme (one- or two-digits) with the buttons 1 … 0, then press the SAT button and the PROGRAM ▲ button.

The selected programme can be seen on the TV screen.

Selecting the Longplay Mode

To double the playing time of the cassette, press the LP button.
The indication on the recorder will be: LP.

Starting Recording

Hold down the ● button longer. Recording begins and, for example, the following appears in the display:
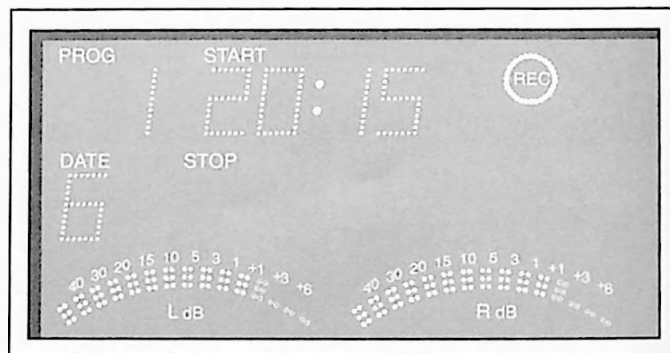
PROG 1	= Programme position 1 selected
START 20:15	= Current time
(REC)	= Record indicator
DATE 6	= Date, in the example, the 6th day of the month
STOP	= blinking, prompts the user to enter the stop time.

Entering the Stop Time

If a stop time is not entered, the indicator will switch over to the hour and minute indicator after a short time and the recording will continue until the tape runs out.
Then the recorder automatically rewinds the tape and then switches to stop.

There are two ways to enter the stop time:
Entry exactly to the minute
Entry in 30-minute segments

Entry exactly to the minute of the stop time

Enter the desired stop time (four places) with the buttons 1 … 0 and confirm with the ● button.

If the recording is stored in the archive, the cassette number will appear for a short time in the display.
The remaining playing time, the elapsed playing time, the programme position and the station acronym will be shown afterwards.

▶▶

Entering the stop time in 30-minute segments

Enter the desired stop time by repeatedly pressing the ⚫ button (max. 10 times = 300 minutes).

After a few seconds the elapsed playing time, the programme position and the station abbreviation will be displayed.

Changing the stop time

If you want to change the stop time while recording, press the ⚫ button, enter the stop time with the buttons ⚪ ... ⚪ and confirm this with the ⚫ button, or press the ⚫ button as many times as are necessary until the desired stop time has been reached.

Marking Specific Scenes in the Recording

During recording, you can mark certain scenes which can then be quickly found during playback.
To do this press the ☐ MARKE button on the recorder at the beginning of the scene.

Recording-Pause

Press the ⚫ button during recording.

Continue recording by pressing the ⚫ button or the ⚫ button.
The recording-pause function is limited to a certain time. After this time the recorder will switch to stop.

Terminating Immediate Recording

Press the ⚫ button to terminate recording.

Assembly Editing, Assembly Recordings with Clean Joins

During playback, locate the position where you wish to add the new recording, then press the ⚫ button.

Switch the recorder to recording-pause by pressing the ⚫ for a longer time, then select the desired programme with the ▲ PROGRAM ▼ button.
Start the "new" recording by pressing the ⚫ button.
When you play back the assembled recordings, you will see smooth joins without flaws.

Recording the Time and Date

The time and date can be recorded along with each recording. The following "entries" can only be done with the remote control handset.

Call up the "Info" menu with the INFO button.

Select the "Sonderfunktionen" (Special Functions) line from the "Info" menu with the ⚪ button.

Select the "Text Generator" (Title Generator) line from the "Info" menu with the ⚪ button.

Select the "Uhr/Datum-Einblendung" (Time/Date Insertion) line with the ▼ button and activate it with the OK button.
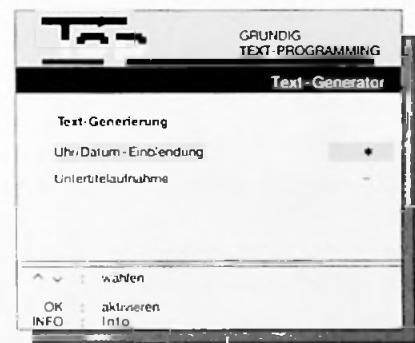
A * appears after the "Uhr/Datum-Einblendung" (Time/Data Insertion) line when the function has been activated.

To switch back to the TV picture press the INFO button twice. Now the time and date will be recorded only with the following immediate recordings or previously programmed recordings. The time/date will appear in the upper right hand corner of the screen.

Sound Recording Special Features

The different sound tracks

Your recorder has two different recording and playback systems for sound.

The first is the hifi or helical track for stereo and two-channel sound recordings.

The second is the mono or longitudinal track for audio playback on standard VHS recorders, for parallel dubbing and for adding sound at a later date.

> When you start to record the sound is recorded on both sound tracks.

Open the front flap of the recorder.

Two-channel TV broadcasts

Both sound channels will always be recorded on the helical sound track.
When recording onto the longitudinal track, either sound channel 1 or sound channel 2 can be recorded.

You can choose between sound channels 1 and 2 with the ☐ TONE SELECT button (on the recorder) or the ⌶⌶ button (on the remote control handset).
The display will indicate either 1 or 2.

You can hear the sound from the TV or with headphones (connect them to the ☺ OUT jack).

You can choose between channel 1 and channel 2 when using the headphones by pressing the ☐ ʹ\ʹ ◯ button (on the recorder).

Television broadcasts in stereo

Both sound channels are always recorded on the helical track.
Mono sound is always recorded on the longitudinal track.
When the recording-pause is activated, you can select the sound channel for monitoring.

Basic setting = stereo
The display indication: ∞ appears on the recorder.

Pressing the ☐ TONE SELECT button (on the recorder) or the ⌶⌶ button (on the remote control handset) consecutively chooses the:
left channel, the display indication: 1 appears on the recorder;
right channel, the display indication: 2 appears on the recorder;

basic setting, the display indication: ∞ appears on the recorder.

Monitoring sound with headphones

You can check the different sound tracks of a two-channel broadcast using stereo headphones (plugged into the ☺ OUT jack).

You can choose between sound track 1 and sound track 2 with the ☐ ◯ ʹ\ʹ button (only on the recorder).
You can change the headphone volume with the ◢ control (press the knob to set it in the out position).

Recording level, automatic/manual

After having selected the programme (loop-through mode), the recorder automatically sets the recording level.

If you wish to set the recording level manually, press the ☐ MAN AUTO button on the recorder.
The display indication: MAN will appear on the recorder.

Turn the MASTER knob (push the knob to set it in the out position) to the right until the first red indicator (+ 1 dB) is lit when the sound is at its loudest.

The last level indicators (+ 3, + 6) should not be lit up (sound level is too high).

Start recording by holding down the ☐●☐ button.

Parallel dubbing

While making a video recording, you can make an audio recording from an external source, e. g., a concert that is broadcast on television as well as on FM radio.
The radio broadcast will be recorded on the hifi (helical) track and the television sound will be recorded on the mono (longitudinal) track.

Connecting

You can connect an external sound source (e. g., a stereo unit) with a standard phono cable (cinch) to the AUDIO jack on the back of the recorder (refer to the connection diagram in the second part of the instruction manual, page 56).

Recording

Insert a cassette that can be recorded on/over.

Select the TV programme with the buttons ☐1☐ ... ☐0☐ then press the ☐Hi-Fi☐ button and the PROGRAM ☐▲☐ button.

Start recording by holding down the ☐●☐ button.

During playback, you can select the sound by pressing the ☐ TONE SELECT button (on the recorder) or the ⌶⌶ button (on the remote control handset) several times (display indicator ∞ = radio sound, no indicator = TV sound).

Teletext Pages

Open the front flap of the recorder.

Insert a cassette with sufficient playing time, making sure it can be recorded on/over.

Enter the desired TV programme with the buttons ☐1☐ ... ☐0☐ and then press the PROGRAM ☐▲☐ button.

Press the ☐INFO☐ button.
The "Info" menu will appear.

Select the "Videotext" (Teletext) line from the "Info" menu with the ☐2☐ button.

Select the desired Teletext page with the buttons ☐1☐ ... ☐0☐.
The Teletext page will appear on the screen after a short time.

Press the ☐●☐ button to start recording.
Other Teletext pages can be selected during recording with the buttons ☐1☐ ... ☐0☐. They will be recorded without any interruptions.

Press the ☐⏹☐ button to terminate recording.

Recording Subtitles

Some broadcasts have subtitles for the hearing impaired. You can find out the page numbers of these subtitles (in the example page 150) in announcements made before these broadcasts air and in the Teletext pages "CONTENTS", "INDEX", "OVERVIEW" from A-Z, under the letter U (Untertitel = subtitles).

You can also record subtitles broadcast by the television stations.

Open the front flap of the recorder.

Insert a cassette with sufficient playing time, making sure it can be recorded on/over.

Enter the desired TV programme with the buttons ☐1☐ ... ☐0☐, then press the ☐▲☐ button.

Press the ☐INFO☐ button.
The "Info" menu will appear.

Select the "Videotext" (Teletext) line from the "Info" menu with the ☐2☐ button.
The Teletext page 100 will appear.

Enter the number of the subtitle page with the buttons ☐1☐ ... ☐0☐.
You will see the subtitles for the desired TV programme on the screen.

Press the ☐●☐ button to start the recording.

Press the ☐⏹☐ button to terminate the recording.

Activating Subtitles for Immediate Recordings and for Pre-programmed Recordings

You can set your recorder so that subtitles broadcast by TV stations are recorded.

To do this, however, the subtitle page numbers have to have been entered in the station chart (see page 19 and page 23). These Teletext pages will be automatically called up when the programming is being set.

Call up the "Info" menu with the ☐INFO☐ button.

Select the "Sonderfunktionen" (Special Functions) line from the "Info" menu with the ☐4☐ button.

Select the "Text Generator" (Title Generator) line from the "Sonderfunktionen" (Special Functions) menu with the ☐1☐ button.

The "Text Generator" menu will appear.

Select the "Untertitelaufnahme" (Recording Subtitles) line with the ☐▼☐ button and activate it with the ☐OK☐ button.

```
                    GRUNDIG
                    TEXT-PROGRAMMING

                         Text - Generator

  Text-Generierung

  Uhr/Datum - Einblendung          –

  Untertitelaufnahme               *


  ∧ ∨ :  wählen
  OK   :  aktivieren
  INFO :  Info
```
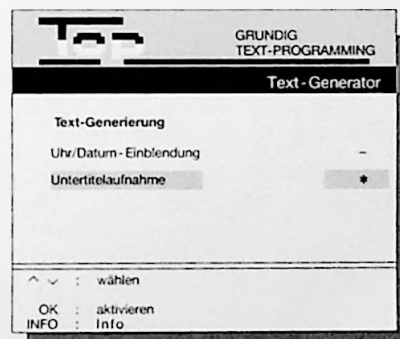
A ✳ will appear after the "Untertitelaufnahme" (Recording Subtitles) line when the function has been activated.

Press the ☐▣☐ button to record the subtitles in letters twice normal size.
The "Untertitelaufnahme" (Recording Subtitles) line will appear in the selected size.

Now subtitles will be recorded with every TV programme recorded.

To deactivate the subtitle recording, press the ☐OK☐ button again.

To return to the TV. picture, press the ☐INFO☐ twice.

The Recorder can be Programmed to Record at a Later Time.

You can pre-programme:

eight broadcasts over a period of twelve months,
daily or weekly broadcasts at the same time,
with or without archiving titles,
with or without VPS control,

in standard or longplay mode,
with or without parallel dubbing.

Instructions on how to record with the VPS signal can be found on the next page.

You can choose between three variants

The Variants	Used ...	Explanation
1 Using the remote control handset and its display, pages 40 to 44	...for all TV programmes that you receive, including stations without Teletext service.	The title has to be entered into the archive at a later time.
2 Quick programming with the [VPT] button and the TV station Teletext pages, on pages 45 to 49	... for TV programmes with Teletext service	Very quick, easy entry. All data are taken from programme overviews and stored in the recorder. The broadcast titles are stored in the archive by pushing a button. You cannot misprogramme. Cannot be used for TV stations without Teletext.
3 Programming with the remote control handset, the on-screen dialogue and the manual data entry, on pages 50 to 57	... for all TV programmes that you receive, also from TV stations without Teletext service.	Easy entry for TV broadcasts from stations without Teletext and for satellite programmes. You enter data and dialogue lines which will guide you step by step. The programme titles can be "written" into the recorder's archive.

VPS — The Video Programme System

When making timer recordings (record programming), control through the VPS system always ensures that the desired programme is recorded in its entirety.

Therefore, faulty recordings because of time shifts will no longer occur.

Hints for recording with the VPS system

Many TV stations transmit an additional signal (VPS signal) which marks the beginning and the duration of each television broadcast.

It is therefore very important that you enter the start and stop times exactly to the minute when programming your video recorder.

Example:

Beginning of the broadcast: 20.15 hours
End of the broadcast: 21.45 hours
Entries to be made on record programming: [2] [0] [1] [5]
and [2] [1] [4] [5].

If television broadcasts might possibly be changed or shifted, then separate VPS times are given in the programme guides, which then must be entered instead of the normal start times of these broadcasts.

Example:

Beginning of the broadcast: 20.15 hours (VPS 20.30 hours)
End of the broadcast: 21.45 hours
Entries to be made on record programming: [2] [0] [3] [0]
and [2] [1] [4] [5].

In this case, the recorder will recognize the time shift and switch on only at the actual beginning and switch off at the actual end of the broadcast.

Record programming for several broadcasts on the same day

If you wish to programme recording of several broadcasts on different programme positions on the same day, then you must decide which broadcast you wish to record completely if time shifts should occur.

Example:

You want to record a broadcast on the First Programme from 20.15 to 21.45 hours and a broadcast on the Second Programme from 21.50 to 22.30.
If it turns out that the broadcast on the First Programme lasts 15 minutes longer than expected, then VPS signal control wil' ensure that your recorder will record this broadcast unti 22.00 pm. Only then will the recorder switch to the Seconc Programme and you will miss the first 10 minutes of the second broadcast.

If you want to record the broadcast on the Second Programme from the beginning, then you have to erase the VPS signal when programming recording of the broadcast on the First Programme. The length of this recording will then be determined by the entered start and stop times.

Recording of the First Programme then will end at 21.45 and the Second Programme will be recorded starting at 21.45.

Record programming for all evening broadcasts of the same programme on the same day

If you want to record all evening broadcasts (e. g., on Saturday starting at 20.15, an entertainment show, the winning Lotto numbers, and a movie) from the same programme (e. g., ARD), then you have to use a separate TIMER position for each of these broadcasts if you want to use the VPS system. Otherwise the VPS signal control will stop recording at the end of the first broadcast.

If you want to record all evening broadcasts (e. g., from 20.15 to 00.15) using only one timer position, then you have to erase the VPS signal when programming.

For confirming or erasing the VPS signal, please refer to the individual programming examples.

> With TV stations that do not transmit the VPS signal, recording will be started and ended according to the entered start and stop times only.

> If you wish to programme satellite programmes from different satellites, you should select only one programme with VPS.
> Reason:
> If two satellite programmes from two satellites are programmed with VPS, the satellite aerial would permanently move between the two satellite positions. This could cause damage to the aerial motor.

Using the Remote Control Handset to Enter Recording Data, Variant 1

With this variant, you will become acquainted with the conventional way of programming.

You enter the data of the desired broadcast into the remote control handset and the remote control handset display will guide you step by step.

A flashing cursor will prompt you to enter the required data.

Preparation

Check the time and date on the recorder.

Open the front flap of the recorder.

Insert a cassette with sufficient playing time, making sure it can be recorded on/over.

If CASSN° ﹣ ﹣ ﹣ appears in the recorder display, enter the cassette number (three-digit) with the buttons ☐1 ... ☐0 and confirm it with the ☐ button. You only have to enter the cassette number if you want to use the archive system.

Press these buttons on the remote control unit
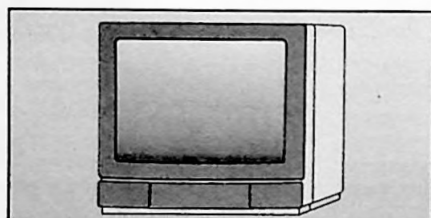
You will see this on your TV screen

Explanation

1. Starting programming

TIMER

The remote control is ready to receive data.

If there is any data still in the display, this must be cleared (see point 2).

If an "F" appears in the remote control handset display, the data was not acceptable (e.g. 32.09. = incorrect date).

2. Clearing the display
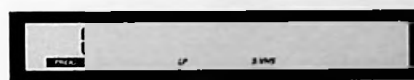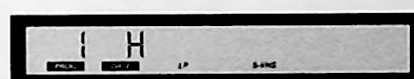
CL

TIMER

Now you can enter the "new" recording data.

Press these buttons on the remote control handset	This will appear in the remote control handset display	Explanation

3. VHS recording on S-VHS cassette

Press the button S-VHS on the recorder.

S [VHS] in the display of the recorder goes out.

The indicator S-VHS in the display of the remote control handset has no effect on the recording.

---

4. Longplay recording

a) yes   b) no

LP

The cassette's playing time is doubled in the longplay mode.

---

5. Entering a TV programme (1- or 2-digits)

or

1 ... 0

TIMER

The entries for other signal sources (satellite receiver, video-camera/-recorder, hifi unit) can be found on page 43, points 5b, c, d, e.

For example the 1st Programme.

"H" will appear for "today's" (Heute) date.

---

6. Entering the date

or

a) "Today" confirm

TIMER

Enter another date or select the function "daily" or "weekly", see page 43, points 6b, c, d.

Press these buttons on the remote control handset	This will appear in the remote control handset display	Explanation

7. Entering the start time (4-place)

[1] ... [0]

[TIMER]
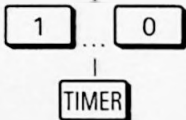
The start time is the time the broadcast starts, in our example 20:15 .

---

8. VPS Signal

— or —

a) confirm   b) clear

[TIMER]   [CL]
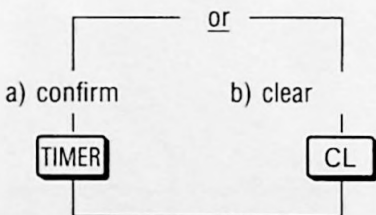
If the VPS signal is not required (e.g., if the TV station does not transmit this signal), it must be cleared.

---

9. Entering the start time (4-place)

[1] ... [0]

[TIMER]

The stop time is the time the broadcast ends, in our example 21:45 Uhr.

All data has now been stored in the remote control handset.

---

10. Transmitting the data to the recorder

[OK]

Point the remote control handset at the recorder during the transferral of data until the ⧠ symbol goes out in the remote control handset display.
After the data has been transmitted, the recorder is ready to record.

> If the ⧠ symbol appears in the recorder's display, re-transmit the data by pressing the [TIMER] button and then the [OK] button.

Using this example you can enter the recording data for other broadcasts.

Further operating instructions and options for these variants can be found on

▶▶

Other functions for variant 1

The options shown below were selected in place of the entries
on page 41, points 5 and 6.

5. Entering other signal sources

― or ― ― or ― ― or ―

b) TV programmes from a satellite receiver

A compatible GRUNDIG satellite receiver must be attached to the ⊙EURO-AV⊙ jack and to the universal jack (on the back of the recorder).

[1] ... [0]

[SAT]

[TIMER]

c) Recording from an external audio/video source (AV)

For example a second recorder which is attached to the ⊙EURO-AV⊙ jack.

[AV/CV]

[TIMER]

d) Recording from an external audio/video source (CV)

For example, a camcorder that is plugged into the VIDEO IN and AUDIO IN jacks on the front of the recorder.

[AV/CV]

[AV/CV]

[TIMER]

e) Recording from a hifi unit

Any hifi unit has to be connected to the AUDIO RL ⊙ – jacks on the back of the recorder.

[Hi-Fi]

[TIMER]

6. Entering another date

― or ― ― or ―

b) Enter the desired date (4-place)

To record at a later date.

[1] ... [0]

[TIMER]

c) Daily broadcasts at the same time

Instead of entering the date, press and confirm the [0] button.
The recorder will record at the same time every day until it reaches the end of the tape.

[0]

[TIMER]

d) Weelky broadcasts at the same time

Enter the day with the buttons [1] ... [0], for example [1] [5] for the fifteenth, then press the [0] button twice and confirm.
The recorder will record at the same time every day until the it reaches the end of the tape.

[1] ... [0]

[0]

[0]

[TIMER]

After the programming ...

... the recorder accepts the data from the remote control handset.

The recorder is now in the record standby mode and the drive mechanism buttons will be blocked from now on.

The remaining playing of the tape will briefly appear in the display of the recorder. (exception: daily or weekly recordings at the same time).

Then the display will show the programme position, the start time, the day and the station abbreviation for the TIMER position that will be recorded first.

Possible indications on the recorder

If the display of the recorder shows instead of the remaining playing time ...

...FULL a cassette with insufficient playing time was loaded.

If the sum of all recording times is greater than the total playing time of the loaded cassette, the recorder will record up to the end of the tape, switch there automatically to fast rewind, rewind the tape to the beginning, and switch to stop.

Or all TIMER positions of the recorder are occupied.

...-- : -- the total playing time of the cassette has not been recognized.

...CASS the cassette is erase-protected or no cassette is loaded.

...COLL the TIMER recording times overlap each other.

If CASSN°--- appears instead of the cassette number in the display of the recorder, then you must enter the cassette number if you wish that the recording be stored in the archive. For this, enter the cassette number as three digits with the numbered buttons ⬜1 ... ⬜0 and confirm with the button ⬜.

When recording is started, the recorder stores automatically "DIVERS" (MISC) as subject, and the station abbreviation and the start time as title into the archive.

When recording is finished, you can enter a title of your choice and allocate this title to a category — see the second part of the operating instructions, page 15 "Finding Out About the Cassette Contents".

Switching off the display of the remote control handset

Press the button ⬜.

The display goes out, but the TIMER data can be retrieved by pressing the button ⬜TIMER.

After approx. 1 minute, the display is automatically switched off.

Checking the occupied TIMER positions of the recorder

For this, the display of the remote control handset must be switched off.

Select the respective TIMER position by repeatedly pressing the button ⬜, until the display of the recorder shows the desired TIMER position and the corresponding TIMER indication flashes.

As long as the TIMER indication is flashing, you can call up further data items of this TIMER position by pressing the button ⬜OK:

The date, the cassette number, the remaining playing time (not with "daily" or "weekly" recordings at the same time).

Erasing an occupied TIMER position of the recorder

For this, the display of the remote control handset must be switched off.

Select the respective TIMER position by repeatedly pressing the button ⬜, until the data to be erased is shown in the display of the recorder.

Press the button ⬜CL to clear the data of the TIMER position.

Interrupting the record standby mode

If you have programmed TIMER positions but wish to use the recorder when it is in the record standby mode, then press the button ⬜▲ on the recorder. The cassette will automatically be ejected, or

press the ⬜ button on the remote control handset for a longer time.

The TIMER data in the display of the recorder disappears, the TIMER indication of the TIMER position for the first programmed recording flashes, and the data remains stored in memory.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

Reactivating recording status

Insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button ⬜ a longer time.

The cassette number will briefly appear in the display of the recorder.

If the indication CASSN°--- appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.

For this, enter the cassette number as three digits with the numbered buttons ⬜1 ...⬜0 and confirm the entry with the button ⬜.

The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

Quick Programming Using the Teletext Pages from TV Stations, Variant 2

Preparation

Turn on the TV set.

Select the AV programme position for the recorder on the television set (serves as a control monitor when entering data).

Open the front flap of the recorder.

Insert a cassette with sufficient playing time, making sure it can be recorded on/over.

The recorder will determine the length of the tape (display indication ᴴTTS) and the type of cassette.

If CᴀSSN°=== appears in the recorder display, enter the cassette number (three-digit) with the buttons ⬚1⬚ ... ⬚0⬚ and confirm it with the ⬚ button. You only have enter the cassette number if you want to use the archive system.

Programming example

Press these buttons on the remote control unit	You will see this on your TV screen	Explanation

1. Selecting a TV programme — (1- or 2-digit)

⬚1⬚ ... ⬚0⬚

You can select the programme positions 1 to 9 with one digit,

and the positions 10 to 99 with two digits.

2. Calling up a Teletext page

⬚VPT⬚

```
Stop          Textprogramming:
                                  Montag,
ARD                              11.März 1991
* = VT-Untertitel.. 150
19.58■        Heute Im Ersten
20.00         Tagesschau *  . . . . . . . . . 310
20.15         Peter Strohm: Amateure
              sterben schnell *  . . . . . . . 314
21.04         Tagesthemen-Telegramm
21.05         Juhnke & Co.
              Comedy-Serie  . . . . . . . . 316
21.30         Robot-Reich . . . . . . . . . 317
22.00         Mary . . . . . . . . . . . . 318
22.30         Tagesthemen . . . . . . . . 315
23.00         Leben hinter Masken
              Spielfilm
              Hongkong 1988 . . . . . . . 319
00.50         Tagesschau
00.55         Z.E.N.
              bis 01.00 Uhr
anschließend  "Videotext für alle"
              Dienstagvormittag    auf    321
   v : wählt      OK : bestätigt Sendung
```

A cursor (■) is located next to the starting time of the programme on the Teletext overview.

> If the cursor does not appear, press the ⬚OK⬚ button.

The Teletext page is dependent on the entry in the "Station Table" (see page 18 or page 22).

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

3. Selecting a broadcast

▼
⋮
▼


```
Stop        Textprogramming.
ARD                              Montag,
                              11.März 1991
* = VT–Untertitel.. 150
19.58      Houte im Ersten
20.00      Tagosschau *  . . . . . . . . . 310
20.15      Peter Strohm: Amateure
           sterben schnell  *  . . . . . . . 314
21.04      Tagesthemen–Telegramm
21.05      Juhnke & Co.
           Comedy–Serie  . . . . . . . . 316
21.30      Robot–Reich . . . . . . . . . 317
22.00      Mary . . . . . . . . . . . . . 318
22.30 ■    Tagesthemen . . . . . . . . . 315
23.00      Leben hinter Masken
           Spielfilm
           Hongkong 1988 . . . . . . . . 319
00.50      Tagosschau
00.55      Z.E.N.
           bis 01.00 Uhr
anschließend  "Videotext für alle"
           Dienstagvormittag    auf    321
  v : wählt  |  OK : bestätigt Sendung
```

Repeatedly press the button ▼, until the cursor (■) is located at the start time of the desired broadcast.

4. Confirming the broadcast

OK


```
              GRUND.G
              TEXT-PROGRAMMING

Timer  Prog.  Datum  Start  Stop
       01 ARD  11.0    22.30  23.00  V

22.30 ■      Tagesthemen  . . . . . . . . . . 315

              mit Titel archivieren
VPT    ARD  –  Videotext       S   303
OK     Sendung programmieren
<      Programmierung ändern
```

The data of the broadcast is adopted by the first memory position (TIMER).

If a "V" appears after the stop time, then the TV station transmits the VPS signal and it will control the recording.

> Now check, whether all data items (programme, date, start and stop times, VPS signal) are completely and correctly indicated.

If modifications are necessary, then refer to the chapter "Modifications and completions ..." on page 48.

If no modifications are required, then continue with point 5.
If you do not wish to store titles into the archive, then continue with point 8.

5. Storing titles into the archive

▭ (blue)


```
                    GRUNDIG
                    Archiv-System

Eingabe des Titels:
  Tagesthemen
              Sparte:

  DIVERS     - - - - - -    - - - - - -
  SPORT      - - - - - -    - - - - - -
  MUSIC      - - - - - -    - - - - - -
  FILM       - - - - - -    - - - - - -
  HOBBY      - - - - - -    - - - - - -

< ^ v > : Sparte wählen
        : Sparte editieren
  OK    : bestätigen
        : Titel editieren
```
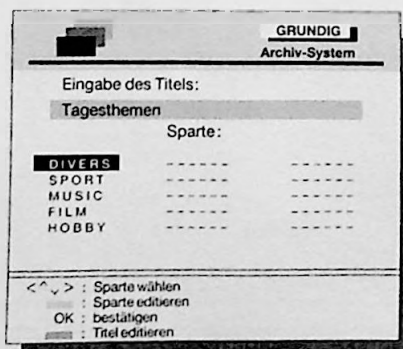
The title of the selected broadcast is automatically adopted by the Teletext programme summary.

> If you wish to modify the title, then continue with point 6. If no modifications are required, you can allocate the title to a category subject, (refer to point 7.)

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

---

6. Changing the title
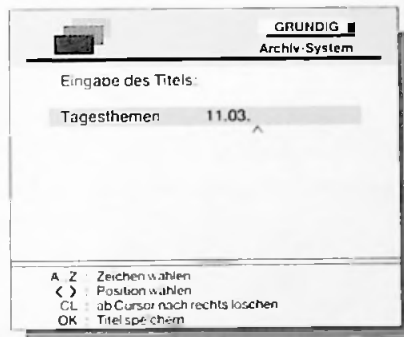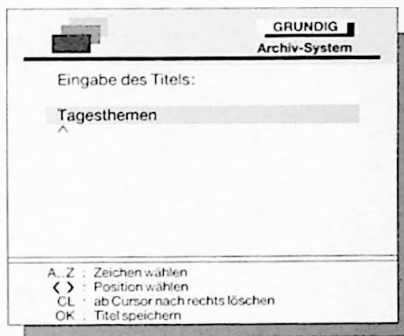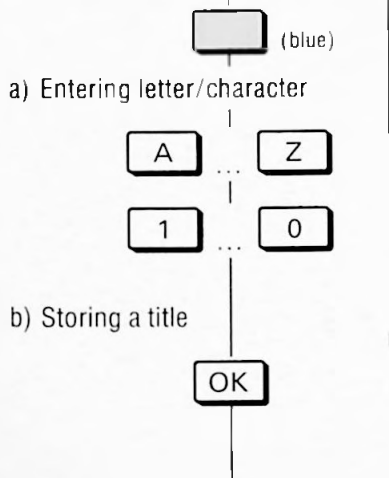
[ ] (blue)

a) Entering letter/character

[A] ... [Z]

[1] ... [0]

b) Storing a title

[OK]

Screen 1:

GRUNDIG
Archiv-System

Eingabe des Titels:

Tagesthemen
^

A..Z : Zeichen wählen
< > : Position wählen
CL : ab Cursor nach rechts löschen
OK : Titel speichern

Screen 2:

GRUNDIG
Archiv-System

Eingabe des Titels:

Tagesthemen   11.03.
^

A..Z : Zeichen wählen
< > : Position wählen
CL : ab Cursor nach rechts löschen
OK : Titel speichern

---

1 to 30 letters/characters can be entered for the title.

If you want to use capital letters, press the [SHIFT] button.
If you want to use special characters, switch over to the key pad on the remote control handset by pressing the [S TXT] button.

The letters/characters which can be used can be found on the enclosed insert.

If you need a space, press the [SPACE] button.

You can move the cursor to the right or the left with the [◄] button or the [►] button.

With the [CL] button you can clear the text to the right of the cursor.

---

7. Categorizing a title

[▲]

[◄]   [►]

[▼]

Screen:

GRUNDIG
Archiv-System

Eingabe der Sparte:
Tagesthemen   11.03.
            Sparte:

DIVERS   ------   ------
SPORT   ------   ------
MUSIC   ------   ------
FILM   ------   ------
HOBBY   ------   ------

<^ ∨ > : Sparte wählen
        : Sparte editieren
OK : bestätigen
        : Titel editieren
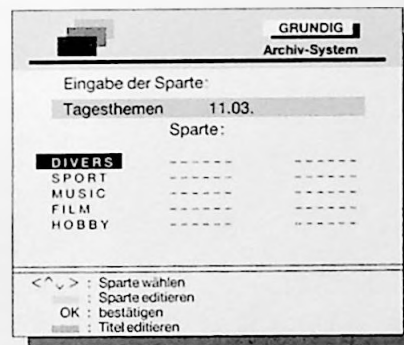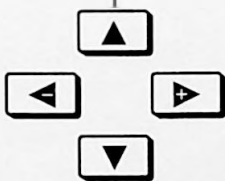
There are a few preset categories.

If you want to create a "new" category, you can name it yourself. You will find further instructions in the second part of the instruction manual in the "Creating New Cateories" chapter on pages 27 to 28.

---

8. Confirming Recording Data

[OK]

Screen:

GRUNDIG
TEXT-PROGRAMMING

Timer Titel

1   Tagesthemen   11.03.
2
3
4
5
6
7
8

Restspielzeit: 02:30

VPT : ARD-Videotext   S.303
  1 : ARD-Programm
  2 : ZDF-Programm
  ∨ : manuelle Eingabe

The menu will show all of the timer places, timer 1 is occupied.

"Restspielzeit" (Remaining Playing Time) indicates the amount of time left on the tape.

To programme other broadcasts, select the necessary Teletext pages with programme overview with the buttons [1] to [9] and repeat points 3 to 8.

If you want to programme broadcasts in places 10 to 99, press the [⊎] button and repeat points 1 to 8.

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

9. Terminating record programming
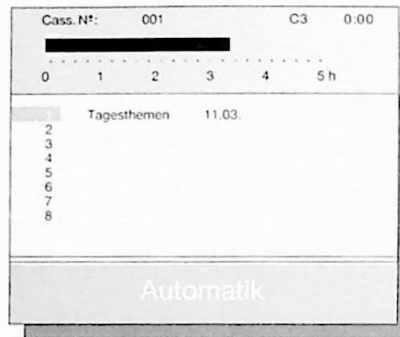
[INFO]

[INFO]

```
Cass. N°:     001              C3    0:00
████████████████
0    1    2    3    4    5 h

2        Tagesthemen    11.03.
3
4
5
6
7
8

        Automatik
```

The recorder is in record standby mode.

In the display of the recorder, the data of the TIMER position that will be recorded first is shown.

All recorder tape run functions will be blocked from now on.

The recording will be made at the programmed time.

If record programming is not terminated with the button [INFO], the recorder cannot start recording.

Modifications and completions of the recording data

(necessary for the point 4 of the programming example)

Correcting the data

Press once the button [◄], then repeatedly press the button [◄] until the cursor is at the first position of the data field to be corrected.
"Overwrite" this data with the numbered buttons [1] to [0] and confirm the remaining data fields with the button [OK].

Recording without VPS

Press button [◄] and then button [▼].
The cursor jumps to the first figure of the start time.
If the start time and the VPS time differ, enter the start time again with the numbered buttons [1]...[0] and confirm the remaining data fields with the button [OK].

Doubling the recording time of the cassette

Press the button [◄] and then the button [LP].
Additional indication: L.

Recordings with radio sound (parallel dubbing)

Press the button [◄] and then the button [Hi-Fi].
Additional indication: P.

Paging backwards to the same Teletext page

Press the button [VPT].

Possible messages in the dialogue line

If the "Restspielzeit" (Remaining Playing Time) is negative (−) and highlighted in red, then a cassette with insufficient playing time has been loaded, or the sum of all TIMER recording times is too large.

If the message "Aufnahmedauer" (Record period) and/or "Cass" appears instead of the "Restspielzeit" (Remaining Playing Time) indication, then ...
... no cassette has been loaded;
... the cassette is protected against new recording;
... a non-standard hours cassette has been loaded.

If a red line with the message "Kollision" (Record Timer Overlap) appears (the corresponding TIMER positions are red highlighted), then the recording times of the TIMER positions overlap each other. In this case, change the data of one TIMER position. For this, select the TIMER position with the button [▼], press once the button [►], then select the data to be modified with the button [►] or [◄], enter the new data, and confirm the data line step by step with the button [OK].

The message "Aufnahmebeginn in Kürze" (recording starts soon) will appear ten minutes before the recording starts, if you are still in the "record programming" mode.

If the message "Aufnahmebeginn erreicht" (recording start time reached) appears, you should immediately exit the record programming mode so that the recorder can start recording.
To do this press the [INFO] button twice.

▶▶

Modifying individual data items of a TIMER position

Select the "Info" page with the button [INFO].

Call up the "Aufnahmeprogrammierung" (Record Programming) page with the numbered button [1].

Select "Manuelle Eingabe" (Manual Input) with button [▼].

Select the respective TIMER position with the button [▼] or [▲], then press the button [▶].
Select the data item to be modifed with the button [▶] or [◀], enter the new data with the numbered buttons [1]...[0], and confirm the data line step by step with the button [OK].

Erasing occupied TIMER positions

Select the "Info" page with the button [INFO].

Call up the "Aufnahmeprogrammierung" (Record Programming) page with the numbered button [1].

Select "Manuelle Eingabe" (Manual Input) with button [▼].

Select the TIMER position to be erased with the button [▼] or [▲], and erase it by pressing the button [CL].
The TIMER position is cleared and can be programmed anew.

Terminating record programming

For this, press twice the button [INFO].
After a short time, you will see the data of the TIMER position for the first recording.
All tape run functions of the recorder are from now on "blocked".
At the programmed time, the recorder will automatically start recording.

If the "Record Programming" mode is not terminated with the button [INFO], the recorder cannot start the recording.

In the record standby mode and during recording, you can call up a summary of the programmed titles by pressing the button [TITEL CMD].

On the picture screen of the TV set appears a page showing the cassette number, the playing time, and all programmed titles. The recording which will be made next is marked blue.
From the record start time on, the programmed recording time is marked by a yellow line.
When this marking line appears in red and ends within the playing time indication, then a recording stored in the archive is partially erased.
When this marking line appears in red and surpasses the playing time indication, then the sum of all programmed recording times is too large.

Interrupting the record standby mode

If you wish to use the recorder (e. g., for playback) when it is in the record standby mode, then

press the button [▲] on the recorder. The cassette will automatically be ejected,
or

press a longer time the button [⏻] on the remote control handset.
The TIMER data in the display of the recorder disappears, the TIMER indication of the TIMER position for the first programmed recording flashes.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

Reactivating recording status

Insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button [⏻] a longer time.
The cassette number will briefly appear in the display of the recorder.
If the indication CASSN&--- appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons [1]...[0] and confirm the entry with the button [▤].
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

Programming with the Remote Control Handset Using the On-Screen Dialogue and Manual Data Entry, Variant 3

Preparation

Turn on the TV set.

Select the AV programme position for the recorder on the television set (serves as a control monitor).
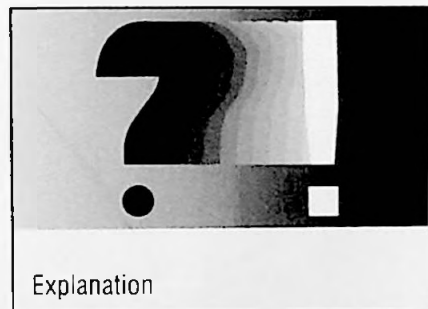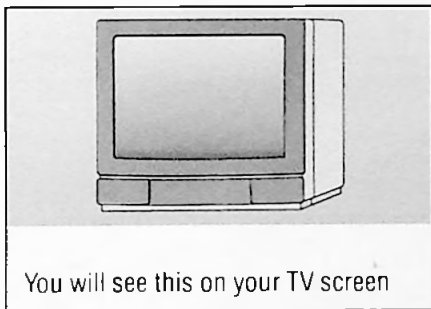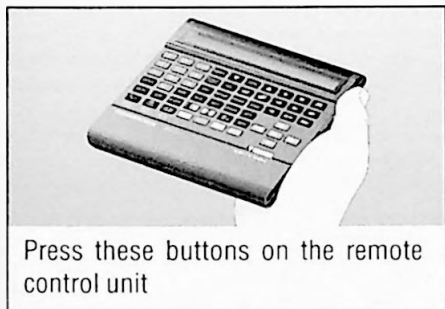
Open the front flap of the recorder.

Insert a cassette with sufficient playing time, making sure it can be recorded on/over.

The recorder will determine the tape length (display indicator HTTS) and the type of cassette.

If CASSNo---- appears in the recorder display, enter the cassette number (three digit) with the buttons [1] ... [0] and confirm it with the [▬] button. You only have to enter the cassette number if you want to use the archive system.

Programming example

| Press these buttons on the remote control unit | You will see this on your TV screen | Explanation |

1. Calling up the Info menu

[INFO]

GRUNDIG
TEXT-PROGRAMMING

Info
1 : Aufnahme-Programmierung
2 : Videotext
3 : Sender-Tabelle
4 : Sonderfunktionen
5 : Archiv

2. Activating recording programming

[1]

GRUNDIG
TEXT-PROGRAMMING

Timer Titel

1
2
3
4
5
6
7
8

Restspielzeit: 04:00

VPT : ARD-Videotext   S.303
    1 : ARD-Programm
    2 : ZDF-Programm
    ∨ : manuelle Eingabe

▶▶
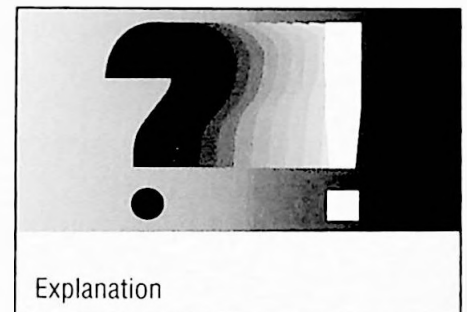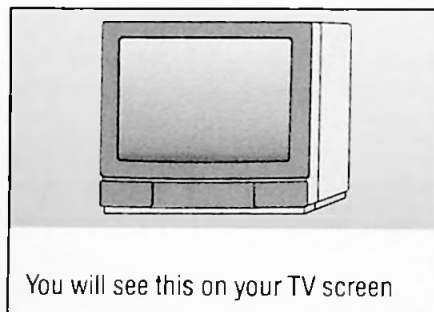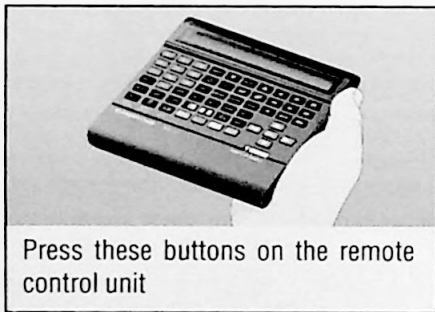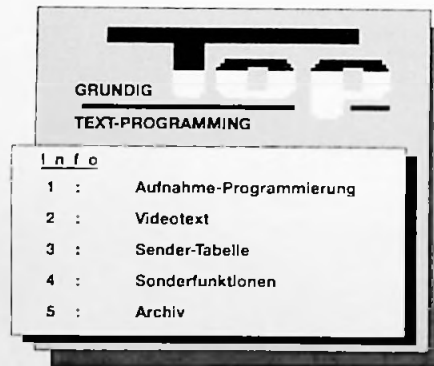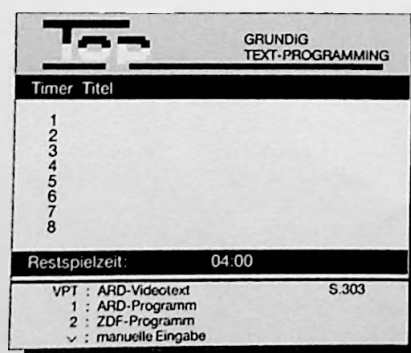
Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

3. Selecting manual entry

▼

GRUNDIG
TEXT-PROGRAMMING

Timer   Titel

1
2
3
4
5
6
7
8

Restspielzeit: 04:00

∨∧ : Timer wählen
> : Timer programmieren
CL : Programmierung löschen
: Zusatzinformation

The TIMER place 1 is marked by a blue cursor (▮)

If the first TIMER place is occupied, you can select the next one with the buttons ▼ or ▲.

---

4. Activating the TIMER place

▷

GRUNDIG
TEXT-PROGRAMMING

Timer   Prog.   Datum   Start   Stop

1   ▮-   --.--.   --:--   --:--
2
3
4
5
6
7
8

Restspielzeit: 04:00

: Titel editieren
1-0 : Prog. zweistellig eingeben
CL : Programmierung löschen
SAT : Signalquelle Sat.-Empfänger

Horizontal lines will appear in the selected TIMER place and a black cursor will appear on the first place of the Prog. (programme) (▮).

The recorder will not accept incorrect entries (e.g., 32.05. = incorrect date). The cursor will skip to the first place of the data to be entered. Repeat the entry.

If corrections have to be made for any of the entries for points 7 to 11, you can move the cursor to the desired position with the ◀ button or the ▶ button and enter the new data.

---

5. Entering the title of the broadcast

▭ (blue)
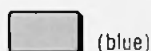
a) Selecting a letter/character

A ... Z

1 ... 0

GRUNDIG
Archiv-System

Eingabe des Titels:

＾

A..Z : Zeichen wählen
⟨ ⟩ : Position wählen
CL : ab Cursor nach rechts löschen
OK : Titel speichern

b) Storing a title

OK

GRUNDIG
Archiv-System

Eingabe des Titels:

Gottschalk
＾

A..Z : Zeichen wählen
⟨ ⟩ : Position wählen
CL : ab Cursor nach rechts löschen
OK : Titel speichern
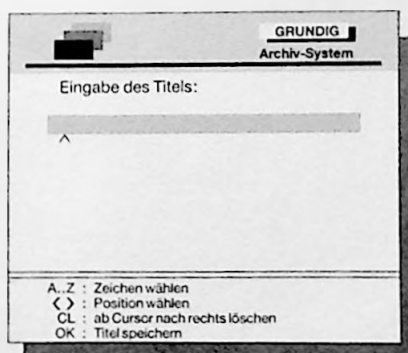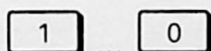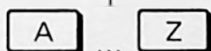
If you do not want to archive the title continue on with the instructions from point 7.

1 to 30 letters/characters can be entered for the title.

If you want to use capital letters, press the SHIFT button.
If you want to use special characters, switch over to the remote control handset keypad with the S-TYP button.

The letters/characters which can be used are found on the enclosed insert.

If you need a space, press the SPACE button.
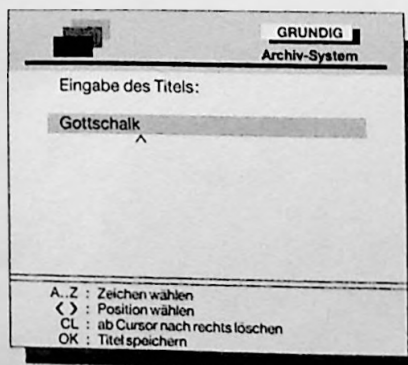
You can move the cursor to the right or left with the ◀ button or the ▶ button.

You can clear the text to the right of the cursor with this CL button.

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

6. Categorizing a title

▲

◄ ▶

▼

OK

```
                              GRUNDIG ▮
                              Archiv-System

  Eingabe der Sparte:
  Gottschalk
                    Sparte:
  DIVERS        - - - - - -      - - - - - -
  SPORT         - - - - - -      - - - - - -
  MUSIC         - - - - - -      - - - - - -
  FILM          - - - - - -      · - - - - -
  HOBBY         - - - - - -      - - - - - -

  < ^ ˅ >  : Sparte wählen
           : Sparte editieren
  OK  : bestätigen
```
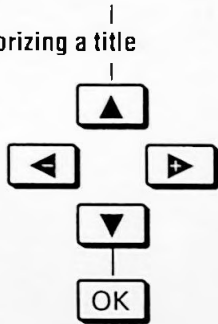
Several categories have been preset.

If you need to create a "new" category, you can name it yourself. To do this read the second part of the instruction manual, the "Creating New Categories" chapter on pages 27 to 28.

7. Selecting a programme

or — or — or —

a) Television programme

1 ... 0

b) TV programme from a satellite receiver

A compatible satellite receiver must be connected to the ⊖EURO-AV⊖ jack and to the universal jack (on the back of the recorder).

SAT

1 ... 0

c) Recording from an external audio/visual source (AV)

For example, a second recorder that is attached to the ⊖EURO-AV⊖ jack.

AV/CV

d) Recording from an external audio/visual source (CV)

For example a camcorder that is attached to the VIDEO IN and AUDIO IN jacks on the front of the recorder.

AV/CV

AV/CV

Timer	Prog.	Datum	
1 2	05 RTL⁺	▮3.03.	–

Timer	Prog.	Datum	
1 2	20 Tele	13.03.	–

Timer	Prog.	Datum	
1 2	AV	▮3.03.	–

Timer	Prog.	Datum	
1 2	CV	▮3.03.	–

The data line for satellite programmes is underlined in blue. "SAT" will appear in the Info line.
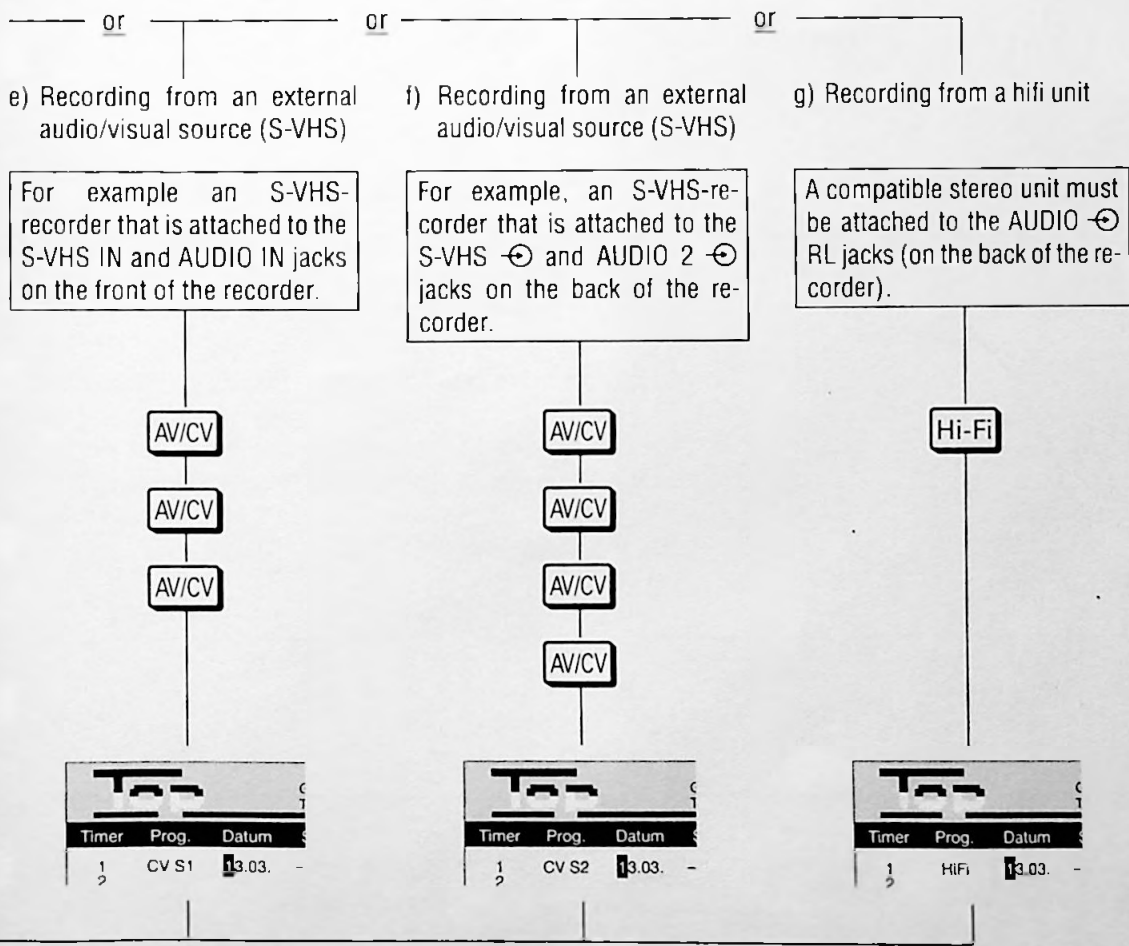
——— or ——————— or ——————————— or ———————

e) Recording from an external audio/visual source (S-VHS)

f) Recording from an external audio/visual source (S-VHS)

g) Recording from a hifi unit

For example an S-VHS-recorder that is attached to the S-VHS IN and AUDIO IN jacks on the front of the recorder.

For example, an S-VHS-recorder that is attached to the S-VHS ⊖ and AUDIO 2 ⊖ jacks on the back of the recorder.

A compatible stereo unit must be attached to the AUDIO ⊖ RL jacks (on the back of the recorder).

AV/CV

AV/CV

Hi-Fi

AV/CV

AV/CV

AV/CV

AV/CV

AV/CV

Timer	Prog.	Datum	
1	CV S1	13.03.	–
2			

Timer	Prog.	Datum	
1	CV S2	13.03.	–
2			

Timer	Prog.	Datum	
1	HiFi	13.03.	–
2			

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

8. Confirming or entering date

or ———— or ———— or ————

a) For recordings
   on the same day
   confirm today's
   date

b) For recordings
   on another day
   enter the desired date
   (4-place)

c) For daily recordings
   at the same time
   select the every day function

   Enter the day.

d) For weekly recordings
   at the same time
   select the every week
   function

   Enter the day.

| OK | | 1 ... 0 | | 1 ... 0 | | 1 ... 0 |

(green)

(yellow)

Timer	Prog.	Datum	Start
1	05RTL+	13.03.	■-:--
2			

Timer	Prog.	Datum	Start
1	05RTL+	15.03.	■-:--
2			

Timer	Prog.	Datum	Start
1	05RTL+	22.ta.	■-:--
2			

Timer	Prog.	Datum	Start
1	05RTL+	25.wö.	■-:--
2			

Display indication: day and "ta" (= daily).
The broadcast will be recorded daily starting with the selected day.
This will continue until the tape runs out.

Display indication: day and "wö" (weekly).
The broadcast will be recorded weekly starting with the selected day until the tape runs out.

9. Entering the starting time (4-place)

| 1 ... 0 |

Timer	Prog.	Datum	Start	Stop
1	05RTL+	13.03.	20:15	■-:--
2				
3				
4				
5				
6				
7				
8				

GRUNDIG TEXT-PROGRAMMING

Restspielzeit: 04:00

1-0 : Stop vierstellig eingeben

Starting time = when the broadcast starts, in our example 20:15 .

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

10. Entering the stop time (4-place)

[1] ... [0]

GRUNDIG
TEXT-PROGRAMMING

Timer	Prog.	Datum	Start	Stop	
1	05 RTL⁺	13.03.	20.15	21:15	V
2					
3					
4					
5					
6					
7					
8					

Restspielzeit: 03:00

OK : Sendung programmieren
⌄ : V = VPS-Aufnahme
LP : L = LP-Aufnahme
HiFi : P = Parallelvertonung

Stop time (= end of the broadcast), in our example 21 : 15 .

---

11. Other Functions

You can select these additional functions. If they are not needed, continue on with the instructions from point 12.

————— and/or ————— and/or —————

a) Clear VPS

if broadcasts without VPS control are to be programmed.

[▼]

GRUNDIG
TEXT-PROGRAMMING

Start   Stop

20:15   21:15 ■

No function for hifi programming.

b) Select parallel dubbing

If radio sound is to going to be added to the TV picture.

[Hi-Fi]

GRUNDIG
TEXT-PROGRAMMING

Start   Stop

20:15   21:15 ■ P

No function for hifi or AV programming.

c) Select longplay mode

if you wish to double the recording time of the cassette.

[LP]

GRUNDIG
TEXT-PROGRAMMING

Start   Stop

20:15   21:15 ■   L

---

12. Confirming recording data

[OK]

GRUNDIG
TEXT-PROGRAMMING

Timer	Titel	
1	Gottschalk	
2		
3		
4		
5		
6		
7		
8		

Restspielzeit: 03:00

VPT : ARD-Videotext   S.100
1 : ARD-Programm
2 : ZDF-Programm
⌄ : manuelle Eingabe

The menu shows all the TIMER places, Timer 1 is occupied.

"Restspielzeit" (Remaining Playing Time) indicates the remaining playing time on the tape.
Exception: not for "daily" and "weekly" recordings at the same time.

You can programme the other TIMER places following this example.

If changes are necessary, read the chapter on page 57,
if they are not necessary terminate the recording programming following point 13.

▶▶

Press these buttons on the remote control handset	You will see this on your TV screen	Explanation

13. Terminating record programming
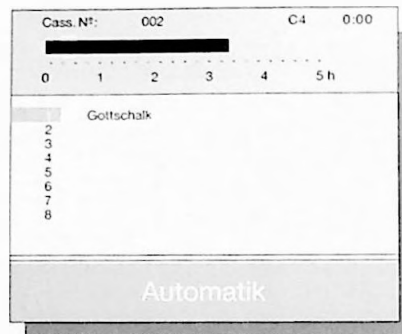
INFO

INFO

Cass. N°:   002   C4   0:00

0   1   2   3   4   5 h

Gottschalk
2
3
4
5
6
7
8

Automatik

The recorder is in record standby mode. In the display of the recorder, the data of the TIMER position that will be recorded first is shown.

All recorder tape run functions will be blocked from now on.

The recording will be made at the programmed time.

> If record programming is not terminated with the button INFO, the recorder cannot start recording.

Possible message in the dialogue line

If the "Restspielzeit" (Remaining Playing Time) is negative ($-$) and highlighted on red background, then a cassette with insufficient playing time has been loaded, or the sum of all TIMER recording times is too large.

If the message "Aufnahmedauer" (Record period) and/or "Cass" appears instead of the "Restspielzeit" (Remaining Playing Time) display indication, then...
... no cassette has been loaded;
... the cassette is protected against new recording;
... a non-standard hours cassette is loaded.

If a red line with message "Kollision" (Record Timer Overlap) appears (the corresponding TIMER positions are red highlighted), then the recording time of the TIMER positions overlap each other.
In this case, change the data of one TIMER position. To do this, select the TIMER position with the ▼ button, press the ▶ button once, then select the data te be modified with the ▶ or ◀ button, enter the new data, and confirm the data line step by step with the OK button.

The message "Aufnahmebeginn in Kürze" (recording starts soon) will appear ten minutes before the recording starts, if you are still in the "Record Programming" mode.

If the message "Aufnahmebeginn erreicht" (recording start time reached), you should immediately exit the record programming mode so that the recorder can start recording.
To do this press the INFO button twice.

▶▶

Modifying individual data items of a TIMER position

Select the "Info" page with the button [INFO].

Call up the "Aufnahmeprogrammierung" (Record Programming) page with the numbered button [1].

Select "Manuelle Eingabe" (Manual Input) with button [▼].

Select the respective TIMER position with the button [▼] or [▲], then press the button [►].
Select the data item to be modifed with the button [►] or [◄], enter the new data with the numbered buttons [1]...[0], and confirm the data line step by step with the button [OK].

Erasing occupied TIMER positions

Select the "Info" page with the button [INFO].

Call up the "Aufnahmeprogrammierung" (Record Programming) page with the numbered button [1].

Select "Manuelle Eingabe" (Manual Input) with button [▼].

Select the TIMER position to be erased with the button [▼] or [▲], and erase it by pressing the button [CL].
The TIMER position is cleared and can be programmed anew.

Terminating record programming

To do this, press the [INFO] button twice.
After a short time, you will see the data of the TIMER position for the first recording.
All tape run functions of the recorder are from now on "blocked".
At the programmed time, the recorder will automatically start recording.

> If the "Aufnahmeprogrammierung" (Record Programming) mode is not terminated with the button [INFO], the recorder cannot start the recording.

In the record standby mode and during recording, you can call up a summary of the programmed titles by pressing the button [TIMER].

On the picture screen of the TV set appears a page showing the cassette number, the playing time, and all programmed titles.
The recording which will be made next is marked blue.
From the record start time on, the programmed recording time is marked by a yellow line.
When this marking line appears in red and ends within the playing time indication, then a recording stored in the archive is partially erased.
When this marking line appears in red and extends past the playing time indication, then the sum of all programmed recording times is too large.

Interrupting the record standby mode

If you wish to use the recorder (e. g., for playback) when it is in the record standby mode, then

press the button [▲] on the recorder. The cassette will automatically be ejected,
or

press a longer time the button [⏻] on the remote control handset.
The TIMER data in the display of the recorder disappears, and the TIMER indication of the TIMER position for the first programmed recording flashes.

> The record standby mode of the recorder is now interrupted.

Now select the desired function.

Reactivating recording status

Insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button [⏻] a longer time.
The cassette number will briefly appear in the display of the recorder.
If the indication CASSN=== appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons [1]...[0] and confirm the entry with the button [⏎].
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

The Remote Control Handset at a Glance

Short descriptions of the buttons on the remote control handset can be found on this page and the next few pages. To operate these buttons consult the corresponding chapter in these operating instructions.

Level 1

This level is used for all recording and playback functions, text programming, picture-in-a-picture functions and for the Teletext mode.

[1] ... [0] — Number buttons for different entries.

[A/CV] _____ Selects the AV and CV programme positions for recording or recording programming;

[Hi-Fi] _____ Selects the sound signal on the AUDIO jacks for recording or recording programming.

[SAT] _____ Selects a satellite receiver's picture/sound signal on the ⊙ EURO-AV ⊖ jack for recording or recording programming.

[LP] _____ Switches between longplay mode and normal play.

[S-VHS] _____ Switches between S—VHS mode and standard VHS mode.

[ᐱ]
[⊞] _____ For selecting the sound track when recording and playing back; Enlarges the character size in Teletext mode.

[🔲]
[⊡] _____ Confirms time and date; Calls up time and date; Shows concealed information in the Teletext mode, for example for chess games or puzzles.

[⊞]
NR _____ Selects page 100 (overview) im Teletext mode. Turns the coloured noise suppressor off and on.

[TIMER] _____ Accesses the TIMER programming in the remote control handset's display and confirms entries.

[▼]
PROGRAM ___ For selecting programme positions (in stop mode); For setting the tracking (during playback).

[AUTO] _____ Activates the auto tracking

[▲]
PROGRAM ___ For selecting programme positions (in stop mode); For setting the tracking (during playback).

[TIMER CHECK] _____ Calls up the TIMER positions (for checking and for erasing data).

[CL] _____ Erases data; switches picture memory off.

[◎] _____ Switches between the playing time and tape length displays.

[⊡] _____ Confirms the entry of the cassette numbers; calls up the contents of the inserted cassette.

[PIP] _____ Fades the micro-picture into the macro-picture.

[MEMO] _____ Stores a single image.

[DEMO] _____ Retrieves the stored image, it will appear on the screen.

[STOP] _____ Digital freeze-frame in playback mode and in the "loop through" mode; stops multi-pages in the Teletext mode.

[M-S] _____ Selects the "multi-scene" function.

[M-C] _____ Selects the "multi-channel" function.

[ZOOM] _____ Selects the "zoom" function.

▶▶

VPT _____ For recording programming with text program-
ming;
fades the pages stored in "Sender-Tabelle"
(Station Table) onto the screen.

[icon] _____ Selects the "invers" function

[icon] _____ Selects the "superimpose" function

[icon] _____ Selects the "superimpose" function

INFO _____ Switches between the Info menu and the televi-
sion picture.

[red] _____ Turns back on Teletext page;
flips through the archive;
colour selecting button.

[green] _____ Turns to the next Teletext page;
flips through the archive;
for entering new categories (in the archive sys-
tem);
colour selection button.

[yellow] _____ For interrupting in Teletext mode;
preselection to modify titles (archive system);
colour selection button.

[blue] _____ For selecting topics in the Teletext mode;
releases additional information when using the
archive system;
stores and confirms entries into the archive
system;
colour selection button.

[●] _____ Starts recording.

[II] _____ Pauses recording,
Freeze-frame in playback.

[⊍] _____ Ends all functions (stop/standby), turns off the
remote control handset's display.

[◄◄] _____ Reverse picture search during playback.
Rewind when in stop mode.

[►] _____ Starts playback.

[►►] _____ Forward picture search.
Fast forward when in stop mode.

[◄] _____ Starts reverse play.

[↔] _____ Starts the directed search after tape position
has been entered;

[II►] _____ Switches to slow motion.

[▲]
[◄] [►] __ Cursor buttons, for moving the cursor and for
[▼] selecting different functions.
For finetuning programmes.

OK _____ Confirms data;
transmits all TIMER data to the recorder.

VIDEO 1 TV VIDEO 2 _ Switches the remote control handset over
to control the television set or a second
VCR.

Level 2

<u>(When the remote control handset is open, level 1 is turned off.)</u>

This level is used for composing title pages and text/graphics boxes, for selecting screen colours and for recording and playback functions.

[1] ... [0] __ Number buttons for different entries;
. + you can enter the punctuation marks that are located below the buttons by first pressing the [SHIFT] button.

[AV/CV] _____ Selects the programme positions AV, CV, CV S 1 oder CV S 2 for recording or recording programming.

[⊞] _____ Increases the character size in Teletext mode.

[⊟] _____ Selects page 100 (overview) in Teletext mode.

[⊡] _____ Colours a line or the page in preselected colour.

[⊡] _____ Ends the "SEPAR GRAPH" function.

[⊡] _____ Reduces the graphics symbols to point graphics.

[TIP] _____ Reads in already stored title pages and text/graphics Boxes from the memory to the editing page or the recording.

[BOX] _____ Opens the "composing text/graphics boxes" function.

[⊡] _____ Stores the "HOLD GRAPH" function.

[⊡] _____ Repeats the graphics character last entered.

[FLASH] _____ FLASH function : Texts/characters flash

[STEADY] _____ Ends the FLASH function.

[HEIGHT] _____ Doubles the text, character, or line size.

[VPT] _____ For recording programming with text programming;
fades the Teletext pages stored in the station table into the TV screen.

[ ] (white, black, ll. blue, magenta, red, green, yellow, blue) __ Colour selection buttons for the text colour, for the line colour and for the page background (in the "composing title pages and text/graphics boxes" function);

[INFO] _____ Switches between the Info menu and the television picture.

[⊡] _____ Confirms cassette number entry;
calls up the contents of the inserted cassette.

[●][||]
[⊙][↔] __ Operating functions buttons (see level 1).
[◄◄][►]
[►►]

[▲]
[◄] [►] __ Cursor buttons, for moving the cursor and for
[▼] selecting different functions.
For fine tuning programmes.

[OK] _____ Confirms data;
transmits all TIMER data to the recorder.

Level 3

(When the remote control handset is open, level 1 is turned off.)

This level is used for fade and digital functions, to compose title pages and text/graphics boxes and for "Station Table" entries.
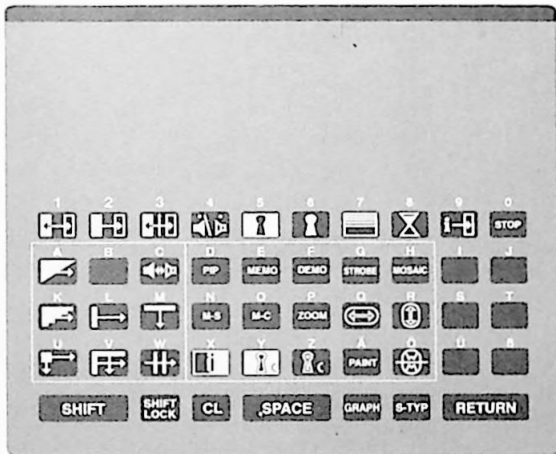
Description of the symbols on the buttons

Symbol	Description
⊞	Starts the fade functions.
⊞	Starts the "last screen" fade function.
⊞	Halts the screen during fade-in or -out.
◁▷	Turns the sound off during fade-out.
⊞	Activates the genlockimposing function.
⊞	Activates the genlockimposing function.
⊟	Activates the frame converter.
Y	Confirms the fade time.
⊞	Switches to the "MIX SOURCE" menu.
STOP	Digital freeze-frame in playback mode and in the "loop through" mode; Halts multi-pages in the Teletext mode.

⊞
⊞
⊞
⊟ } ___ For selecting the different blending screens.
⊞
⊤
⊞

Symbol	Description
◀▶	Preselection of the sound fade-out for the fade functions.
PIP	Fades a micro-image into a macro-image.
MEMO	Stores a single image.
DEMO	Retrieves the stored image — it will appear on the screen.
STROBE	Selects the strobe effect.
MOSAIC	Selects the mosaic effect.
M-S	Selects the "multi-scene" function.
M-S	Selects the "multi-channel" function.
ZOOM	Selects the "zoom" function.

⊞
⊞ } ___ Distorts the picture.

Symbol	Description
⊞	Selects the "inverse" function.

⊞
⊞ } ___ Selects the "superimpose" function.

Symbol	Description
PAINT	Selects the "paint" effect.
⊞	Selects the "mirror" effect.
SHIFT	Capitalizes the next letter.
SHIFT LOCK	Capitalizes all following letters.
CL	Erases letters, numbers and characters.
SPACE	Creates a blank space.
GRAPH	Switches from the keypad to the graphics entry.
S-TYP	Switches only the next entry over the special characters.
RETURN	Moves the cursor to the next line.

Description of the symbols above the buttons

1 - 0 ___ Numbers and letters located above the buttons
A - ß for archive system, title page, text/graphics boxes and "Station Table" entries.

Not every picture and fault must have its origin in a defect of your recorder.

For example. the cause of the fault might also be an accident- ally pulled out connecting cable, a failure of the transmitter, or a failure in your TV aerial system.

Fault	Cause	Remedy
No clock time indication on the recorder/ the cassette is not pulled in.	Pulled out mains plug or bad contact.	Insert mains plug or use another wall socket.
The recorder cannot be operated ; mains voltage supply is O.K.	The electronic combination lock is activated (indication LOCKED)	Deactivate the lock.
Recording of TV programmes not possible (only snow on the picture screen).	Aerial cable not connected.	Connect aerial cable.
	Programme to be recorded not tuned to on the recorder.	Tune to programme.
	Failure of TV transmitter or of your aerial system.	Check by selecting the programme to be re- corded on the TV set or ask your neighbour whether he can receive this programme.
Recording not possible	Cassette protected against new recording.	Cover the hole in the cassette with sticky tape.
A programmed Timer recording has not been executed.	Timer badly programmed.	
	Wrong entry of VPS time on VPS controlled recordings.	
	Table "Record Programming" still activated.	
	Failure to press a longer time the button ⬚ after having interrupted the record standby mode (Timer position flashes).	
Bad quality of the reproduced picture.	TV set not correctly tuned to the trans- mitting channel of the recorder.	Tune the TV set correctly to the trans- mitting channel of the recorder.
	The video heads are soiled.	Let the video heads be cleaned by a specialist.
	The video heads are worn.	Let the head drum be replaced by a specialist.
Operation with the remote control handset not possible.	The batteries of the remote control handset are exhausted.	Fit new batteries.
	The remote control handset is not pointed at the recorder.	Point the remote control handset at the recorder.
	Wrong function level adjusted on the remote control handset.	Switch the function level of the remote control handset to VIDEO 1.

Fault	Cause	Remedy
Despite programming with archiving, the recording is not accepted by the archive.	No cassette number has been entered.	Enter the cassette number.
	The recorder does not know the total playing time of the cassette.	Enter the total playing time of the cassette.
Despite correct entries, the title is not accepted by the archive.	The memory of the archive is full.	expand the memory (consult your dealer).
The name of a subject cannot be changed.	There is already at least one title allocated to the subject.	

When Repair of the Recorder is Necessary

If the above suggestions for clearing the faults stated in the table bring no result, or if the video recorder shows a different fault, then take it to an authorized GRUNDIG dealer.

To ensure that the entries you made into the archive system remain conserved in such a case, please enter your name and address instead of record titles into the last archive positions (see the second part of the Operating Instructions, 1. Archive System, "Manual Post-archiving" chapter, page 11, point 3 to page 14, point 12).

Technical Data

This video recorder complies with the VDE 0860 safety regulations and consequently also with the international safety specifications IEC 65 and CEE 1.

Under no circumstances should you open the video recorder yourself.

The manufacturer accepts no responsibility for damage which occurs under such cirumstances.

TV norm:	CCIR, PAL B/G/H, 625 lines
	CCIR, SECAM B/G, 625 lines *
System:	S-VHS and VHS
Mains voltage:	180...240 V~, ± 10 %, 50 Hz
Weight:	approx. 5.7 kg
Power consumption	
– on recording:	approx. 29 W
– in EE mode:	25 W
– modulator off:	13 W
Operation position:	horizontal
Ambient temperature:	+ 5 °C to + 40 °C
Relative humidity:	up to 80 %
Fast wind time	
forward/reverse:	max. 5 minutes with E 180 cassette
Audio tapewidth:	a) 20 Hz - 20 kHz to DIN 45 500 with
	hifi sound recordings.
	b) 40 Hz - 10 kHz to DIN 45 511 with
	mono sound recordings.
Dynamic range:	approx. 90 dB (with hifi sound)
Wow and flutter:	≤ 0.015 % (typ. DIN, with hifi sound)
	≤ 0.005 % (typ. WRMS, with hifi sound)
Distortion factor:	< 0.3 % (with hifi sound)
S-VHS sockets:	
⊖ and ⊖	4-pole
Audio sockets:	
R ⊖ L	2 Cinch
R ⊖ L	2 Cinch
Universal socket:	9-pole
(non-standard)	
Euro-AV socket:	21-pole
(DIN/EN 50 049)	
Aerial input	
socket:	coaxial B, input 75 Ω
(DIN 45 325)	
Aerial output	
socket:	coaxial S, output 75 Ω
(DIN 45 325)	
Headphone socket:	3.5 mm ⌀ Jack
Headphone impedance:	8 Ω - 2 kΩ
Microphone socket:	3.5 mm ⌀
Microphone level:	≥ 2 mV
RC socket:	3.5 mm ⌀
Video socket:	Cinch
VIDEO IN	
Audio sockets:	Cinch
Audio IN	

The complete accessories programme available for your video recorder is shown in the GRUNDIG catalogue which you can obtain from your specialized dealer.

E. and O.E.
Subject to alteration

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0231/65570

W- 4000 Marbacherstr. 114
Düsseldorf 13
0211/71101-0

W- 5000 Horbellerstr. 19
Köln 40 (Marsdorf)
02234/104-0

W- 6800 Dudenstr. 45-53
Mannheim 1
0621/33007-0

W- 7800 Mitscherlichstr. 8
Freiburg i. Breisgau
0761/508036

W- 2000 Kolumbusstr. 14
Hamburg 74
040/733311

W- 1000 Wittestr. 30 c
Berlin 27
030/43803-0

W- 3500 Falberbaumstr. 29
Kassel-Waldau
0561/583068

O- 7152 Leipzigerstr. 198
Böhlitz-Ehrenberg
003741/4511121

W- 6236 Frankfurterstr. 100-110
Eschborn/Ts.
06196/400-0

W- 8500 Beuthenerstr. 65
Nürnberg 50
0911/479-0

W- 8000 Werinherstr. 71
München 90
089/6228-0

W- 7016 Dieselstr. 19-21
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