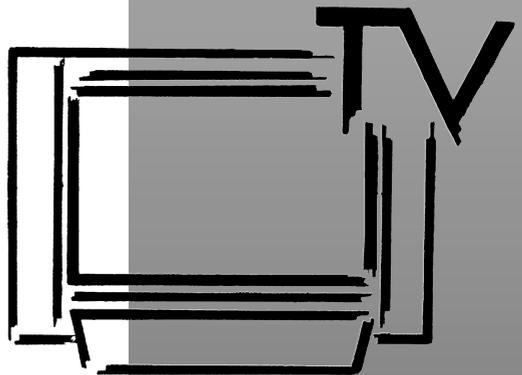




Operating instruction

Spectral-72	MF	72TK80
Astral-72	MF	72TK81
Corum-72	MF	72TK86
Spectral-82	MF	82TK96
Astral-82	MF	82TK97
Spectral-84	MF	84TK89



Foreword

Dear customer,

thank you for purchasing this Metz product.

We have equipped this TV set with a menu system which uses "file cards" and believe that this will provide you with a user interface that is easy to understand.

If you have any problems, you can press the "INFO" key to display a help function that will assist you in setting up your TV set.

However, you should read at least sections 1 to 7 of the Operating Instructions before putting your new TV set into service.

Your METZ-WERKE

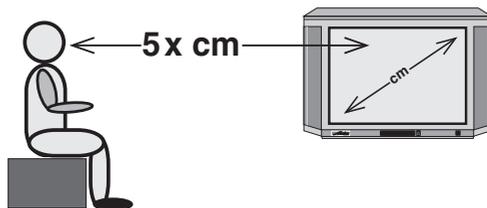
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1. Installation

- Take care that no bright artificial light or sunshine falls directly on the screen. This could cause reflections which have a negative effect on the brilliance of the picture.

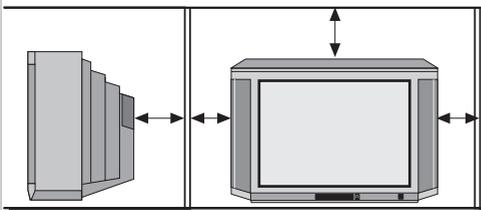
- The optimum viewing distance is about five times the screen diagonal dimension. For TV sets with a 70 cm screen, it is thus about 3.5 metres.



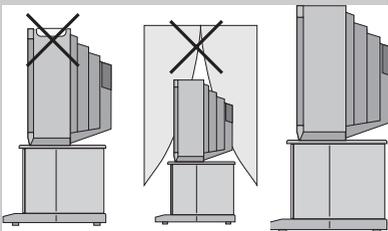
- The antenna cable and any other components (such as a video recorder) connected between the antenna socket in the wall and the TV set must comply with the European standard EN 60966-2-4.
- There may be no magnetic fields in the immediate vicinity of the TV set. Keep loudspeaker boxes well away from the set.
- The antenna cable used for connecting the TV set must have a screening attenuation of at least 75 dB.
- The use of non-approved cables will invalidate the operating permission for the TV set.
- For details of how to connect peripheral devices such as video recorders, DVD players, etc. press the „INFO“ key to call the help function, select „Connecting AV devices“ with the cursor and press „OK“ to display the information.

2. Safety notes

- Always place the monitor on a solid, stable surface.
- If a cold TV set is moved to a warm room, always allow any condensation on the screen to evaporate before switching it on.
- The TV set is intended for use in a dry room. If, in exceptional circumstances, you use it outdoors, take care that it is protected against moisture (rain, splashed water, dew).
- TV sets need adequate ventilation. Never cover the openings on the rear of the set with curtains, doilies, newspapers, etc. Also take care that the slits in the bottom of the case are freely accessible so that the intake of the cooling air is not hindered.



- If you place the TV set in a wall unit, leave sufficient space on all sides for the circulation of cooling air.



- Do not place the TV set close to a radiator, since this would effect adequate cooling.

 Do not place burning candles or vessels containing liquids (vases, etc.) on top of the TV set, since any hot wax or water dripping into the set could cause serious damage to the electronic components and could also jeopardize the electrical safety of the set.

- Lightning can damage electrical equipment. A lightning flash entering the power cable or the aerial cable can damage the TV set even if it is

2. Safety notes

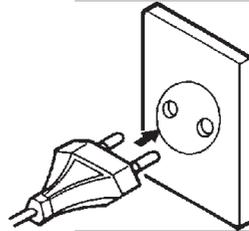
switched off. You should therefore disconnect the power cable and aerial cable from their outlets or from the TV set in the case of a thunderstorm.

- The monitor may be opened and repaired only by a qualified person.

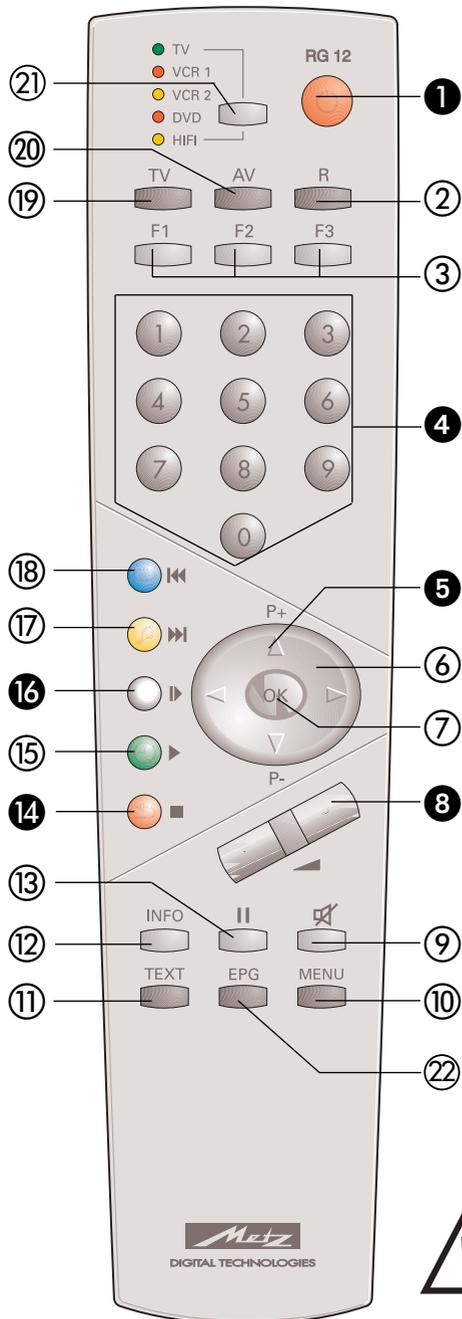
CAUTION! HIGH VOLTAGES CAN KILL!

If repairs should be necessary, consult your local dealer.

- Always switch off the TV set before cleaning it.
- Do not hold the remote control directly in front of your eyes and press a button. The remote control emits infrared radiation!
- Do not place rechargeable batteries in the battery compartment of the remote control. Use only two 1.5 V dry batteries of the type LR03/AM4/AAA (Micro).
- The TV set is intended only for the reception and reproduction of picture and sound signals.
- The TV set may be operated only from a mains voltage of 230 VAC, 50/60 Hz.
240 VAC in Australia only
- Lay the power cable so that nothing stands on it and no-one can trip over it.



3. Remote control unit



The Metz remote control unit RG 12 can be used to remotely control all Metz TV sets with the type designation "TH" (see the Operating Instructions of the TV set or look at the label on the back of the set) or later models (such as TK, TL, ...) as well as video recorders VCR1 and VCR 2, DVD players and HiFi equipment (such as radios, cassette players, CD players, amplifiers, etc.) made by Metz or various other manufacturers.

The remote control unit transmits commands to the TV set with the aid of infrared light. You should always point the remote control unit directly at the TV set. The remote control unit may possibly interfere with other infrared devices (such as infrared headphones) within its range.

☞ Sunlight falling directly on the TV set may interfere with the operation of the remote control unit, because the TV set cannot detect the infrared signals from it. The TV set must first be switched on with the main switch before the remote control unit can be used.

The remote control unit is programmed as follows before it leaves the factory:

- **TV** Metz TV sets with the type designation "TH"
- **VCR1** Metz video recorders with remote control unit RH51
- **VCR2** Metz video recorders with remote control unit RF52
- **DVD** Metz DVD players with remote control unit RG/RH374
- **HiFi** Metz HiFi CD receiver HE 11 with remote control unit F11



Never load rechargeable batteries into the battery compartment of the remote control unit!

Only use two 1.5V LR03/AM4 batteries, size AAA.

3. Remote control unit

The most important keys in normal use

- ① ON:
the last station watched before the set was switched off is selected.
OFF (standby)
- ④ Numeric keys (direct station selection)
- ⑤ P+ / P-: next/previous programme position
- ⑧ Volume control
Also used to change settings in the menu
- ⑭ Return to previously selected programme position
- ⑯ Display the station table

Overview of key functions

- ② Switch to satellite radio mode
Switch on from standby mode to satellite radio mode ¹⁾
(¹⁾ only if a SAT upgrade module is fitted)
- ③ Function keys F1 ... F3
- ⑥ Cursor control key in the "Information" and in the menus
- ⑦ OK - confirmation key
- ⑧ Change settings in the TV menu
- ⑨ Sound mute
- ⑩ Call the TV menu
In the menu: return to the previous main menu item
- ⑪ Call Teletext
- ⑫ Call the „Information“

In the „Information“: return to the contents

- ⑬ Frame freeze
Delete key in the menus
- ⑭ Return to previously selected programme position
In the TV menu: call „Configuration“
- ⑮ Display date and time
In the TV menu: call „Timer“
- ⑯ In the TV menu: call the „Station table“ or display station attributes
- ⑰ Call the sound settings
In the TV menu: call „AV devices“
- ⑱ Call the picture settings
In the TV menu: call „Picture and sound“
- ⑲ Return to the TV picture
Switch from satellite radio mode¹⁾ to TV mode
Switch on from standby mode to TV mode (¹⁾ only if a SAT upgrade module is fitted)
- ⑳ Call the AV menu for playback and recording
Switch on from standby mode to AV mode
- ㉑ Select key - used for switching the operating level to AV devices
- ㉒ EPG (Electronic Program Guide)
= open NexTVView

3. Remote control unit

1. Programming the remote control unit for control of your equipment

In order to remotely control your consumer electronics equipment, you must programme each of the various levels of the remote control unit with a 3-digit code.

- TV (TV-Gerät)

The TV level is already programmed for Metz TV sets with the type designation "TH". This programming cannot be changed.

- VCR 1 (Video recorder 1)

VCR 2 (Video recorder 2)

DVD-Player

HiFi (e.g. amplifier, tuner, tape, etc.)

The remote control unit must be programmed with a code from the code list for each level you want to use.

 **Note the factory settings (Page 6) and the list of available codes at the end of these Operating Instructions.**

1.1 Programming the codes for VCR and DVD

 *When you select the steps a)...c) ,you have about 15 seconds to continue with the next step. If you do not do so within this time, the unit automatically returns to the TV level*

- a) Use the Select key to select the desired level. The coloured LED for the currently selected level lights.
- b) Press the keys  and **F1** together and hold them until the LED blinks twice.
- c) Enter the desired code (see the code list) with the numeric keys. If this code is accepted, the LED again blinks twi-

ce. If the code does not exist in the table, the LED lights for about two seconds.

1.2 Programming the codes for CD Player, Tuner and Tape

 *When you select the steps a)...c) ,you have about 15 seconds to continue with the next step. If you do not do so within this time, the unit automatically returns to the TV level.*

- a) Use the Select key to select the HiFi level. The coloured LED HiFi lights.
- b) Press the key  , release it and then press the key: ...
...**F1** for CD player
...**F2** for Tuner (radio)
...**F3** for Tape (cassette recorders)
der Fernbedienung drücken, bis die until the LED blinks once.
- c) Enter the desired code (see the code list) with the numeric keys. If this code is accepted, the LED again blinks twice. If the code does not exist in the table, the LED lights for about two seconds.

1.3 Programming the code for HiFi amplifier

 *When you select the steps a)...d) ,you have about 15 seconds to continue with the next step. If you do not do so within this time, the unit automatically returns to the TV level.*

- a) Use the Select key to select the HiFi level. The coloured LED HiFi lights.
- b) Press the key  , release it and then press and hold the **F3** key until the LED blinks twice.

3. Remote control unit

- c) Press the **F1** key: the LED blinks once.
- d) Enter the desired code (see the code list) with the numeric keys. If this code is accepted, the LED again blinks twice. If the code does not exist in the table, the LED lights for about two seconds.

1.4 Station search

Follow the instructions for programming the code for VCR, DVD, CD, tuner, tape as far as the step where the code number is entered. Then enter the three-digit code number "001" for the station search. The LED blinks twice to acknowledge the input. Then press and hold the "Station-search" key (which depends on the operating level; see the table on pages 10 and 11) until the device stops or is switched off (a STOP or OFF command is issued automatically every 1.5 seconds).

Release the "Station search" key and press the "Select" key to confirm that you want to execute a station search (the code which was found is saved).

After completion of the station search, or when all code numbers have been interrogated, the corresponding LED blinks five times.

2. Determining which code is already programmed (read-out mode)

 When you select the steps a)...e), you have about 15 seconds to continue with the next step. If you do not do so within this time, the unit automatically returns to the TV level.

- a) In order to determine which code is

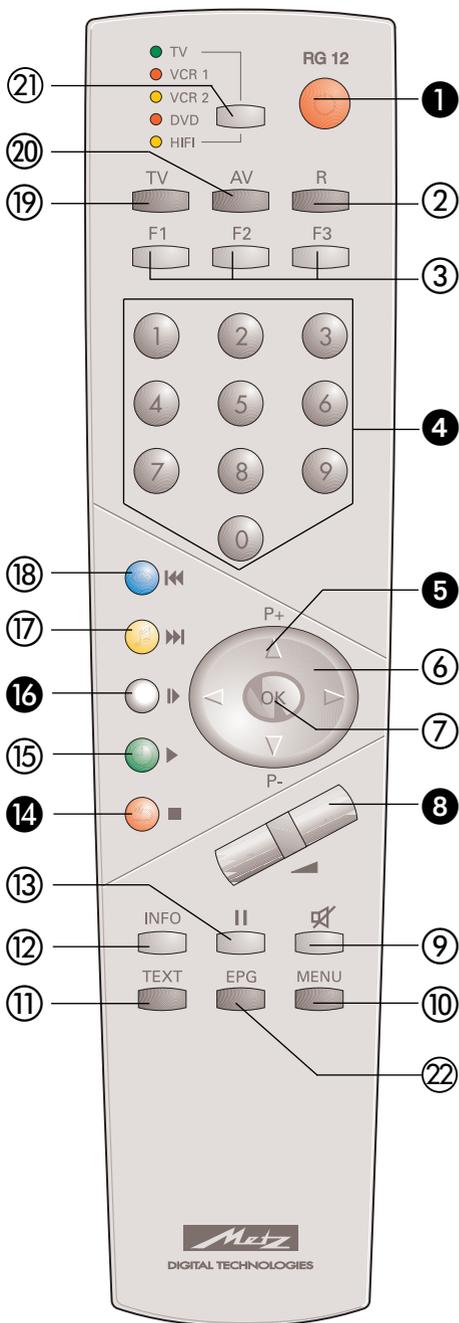
programmed for a level, first select the level as described in section 1.1, steps a) and b).

- b) Enter ①①② on the numeric keys. The LED blinks twice to acknowledge your input.
- c) Press numeric key ① (for the first digit of the code). The LED now blinks the number of times corresponding to the programmed digit (if, for example, the LED blinks three times, the digit 3 is programmed).
- d) Press numeric key ② (for the second digit of the code). The LED now blinks the number of times corresponding to the programmed digit (if, for example, the LED does not blink, the digit 0 is programmed).
- e) Press numeric key ③ (for the third digit of the code). The LED now blinks the number of times corresponding to the programmed digit (if, for example, the LED blinks seven times, the digit 7 is programmed).

In this example, the currently programmed code is thus ③①⑦

If you lose count while reading out the code, simply start again at step 2c).

3. Remote control unit



Key		VCR 1 / 2
①	On	On / Standby
②	R	Record
③a	F 1	Time in display
③b	F 2	
③c	F 3	
④	0...9	Numeric keys;programme selection
⑤	P +/-	Programme +/-
⑥	< >	Fast forward/Rewind
⑦	OK	OK
⑧	Vol.+/-	TV volume +/-
⑨	Mute	Mute TV
⑩	Menu	MENU
⑪	Text	
⑫	Info	TV-set INFO*
⑬		Pause
⑭	red	STOP / Station search
⑮	green	PLAY
⑯	white	Slow-motion
⑰	yellow	
⑱	blue	
⑲	TV	
⑳	AV	AV input
㉑	Select	Select operating
㉒	EPG	Switching voltage on/off**

* In preparation: If the TV set is switched on, the current operating level is indicated.

** AV-Link with Panasonic VCR

Note:

The assignments of the operating levels to the device functions apply only for the AV devices preset in the factory. If other AV devices in accordance with the code table are used, some of these assignments may differ or be restricted.

Station search:

Programme the code for VCR, DVD, CD, tuner or tape and execute the steps up to the input of the code number. Then enter "001" as the 3-digit code for station search. The LED blinks twice to acknowledge this input. Then press and hold the

3. Remote control unit

Key	DVD	HiFi			
		CD (F1)	TUNER (F2)	TAPE (F3)	
①	On	On / Standby	ON: display time/track ON + AV, ON: on/standby	ON: radiotext on/off ON + AV, ON: on/standby	
②	R	Return			
③a	F 1	Angle		F1 & ON: CD	F1 & ON: CD
③b	F 2	Audio	F2 & ON: tuner		F2 & ON: Tuner
③c	F 3	Subtitle	F3 & ON: tape-input	F3 & ON: tape input	
④	0...9	Numeric keys: title selection	Num.Keys: title selection	N.Keys: programme selection	
⑤	P +/-	Cursor up / down	Titel +/-	Programme +/-	
⑥	< >	Cursor left/right		Frequency +/-	
⑦	OK	OK / Enter			
⑧	Vol. +/-	TV volume +/-	AMP volume +/-	AMP volume +/-	AMP volume +/-
⑨	Mute	Mute TV			
⑩	Menu	MENU			
⑪	Text	Display			
⑫	Info	TV set INFO*	TV set INFO*	TV set INFO*	TV set INFO*
⑬	I I	Pause	PAUSE		
⑭	red	STOP / Station search	STOP / OPEN-CLOSE / Station search	num. key ②=Station search	Station search
⑮	green	PLAY	PLAY		
⑯	white	EJECT			
⑰	yellow	Skip +			
⑱	blue	Skip -			
⑲	TV				
⑳	AV	Repeat	AUX Input	AUX input	AUX input
㉑	Select	Select operating level	Select operating level	Select operating level	Select operating level
㉒	EPG	Title			

"Station search" key (depending on the operating level: see the table) until the device stops running or switches off (an OFF or STOP command is automatically transmitted every 1.5 seconds). Release the "Station search" key and start the search with the "Select" key (the code you entered is saved). When the station search has been completed or all code numbers have been interrogated, the corresponding LED blinks five times.

Reset:

Programme the code for VCR, DVD, CD, tuner or tape and execute the steps up to the input of the code number. Then enter "000" as the 3-digit code for "Reset". The LED blinks twice to acknowledge this input. This resets all codes to the factory settings.

The reset is executed for all operating levels, regardless of the operating level from which it is executed.

Call the menu

4. General operating notes

When designing this TV set, we have tried to make its operation as easy as possible so that you will enjoy learning how to use it. The TV set itself can provide the answers, with the menu „Information“, to any questions you may have during installation and switching on. To use this function, simply press the „INFO“ key to display the table of contents of the „Information“ on the screen.

INFO



Information
Contents (1/2)

▶

Index

Programme selection
Picture settings
Sound settings
AV playback / recording / satellite recording
Teletext
Function key
Satellite radio mode -->

Use the cursor to select an underlined text.
OK: further information INFO: help index
Previously visited pages: ● backwards ● forwards

The menu „Information“ (help function)

In the table of contents, or in the index, you can then select the information you need with the cursor control key.

„Cursor right“ ▶: move to next page of the index.

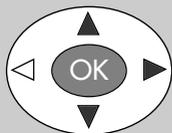
„Cursor left“ ◀: scroll backwards through the index.

„Cursor up“ ▲: select the previous underlined text or the arrow -->.

„Cursor down“ ▼: select a line in the list. Then press the „OK“ key to display this information.

You can select any underlined words in the table of contents, the index or the explanatory text with the cursor and press „OK“ in order to display further information about them.

You can scroll back and forth through previously selected help pages with the aid of the red and green keys.



4. General operating notes

Using the menus

With the „TV menu“, we help you to find your way through the many operating functions of your TV set.

Do not hesitate to try out the options in the various menus. Any changes you make become permanently effective only if you save them by pressing the „OK“ key. If you are not sure that you want to retain a new setting, you can simply exit from the menu by pressing the „TV“ key. The new setting is then discarded.

While you are in the TV menu, you can return to the main menu item at any time by pressing the „MENU“ key. If you do not understand a menu item, press the „INFO“ key for more information. To return to the menu, press the „INFO“ key twice.

The five main sections of the menu can be opened with the coloured keys. The help information is shown in the form of two card files containing the subjects (blue) and the sections of the selected subject (yellow). You can select the subjects and sections with the aid of the red triangular cursor, which is moved with the oval key.

Pressing the „OK“ key then moves you to the setting window below the file boxes. The current setting is displayed here and you can change it with the _ + key.

To save the new setting, press the „OK“ key. This also returns you to the file of yellow section cards. If you do not want to save the new setting, press the „MENU“ key to return to the related main menu item or press the „TV“ key to exit from the menu.

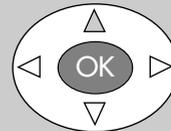
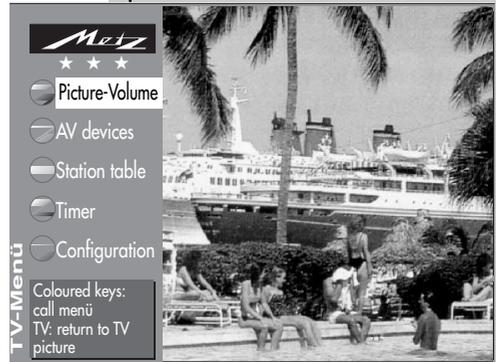
You can delete your input by pressing the || key.

Call the menu

MENU

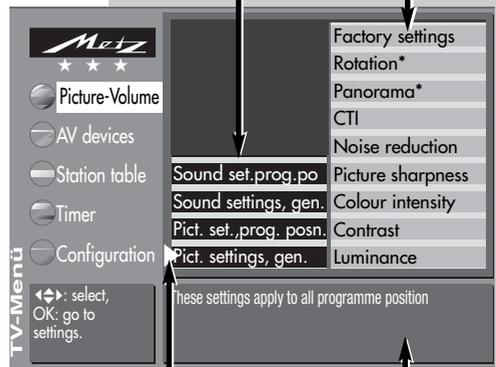


Main menu items



Subjects*

Sections*



Cursor

Setting window

5. Daily operation

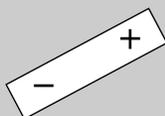
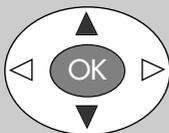
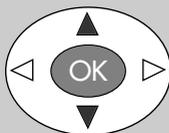
Switching on

Switch on the TV set with the main switch. The red standby indicator lights.

Then enter the desired programme position on the numeric keys of the remote control unit.

Alternatively, simply press the  key with the TV set in standby mode to select the programme position you were watching before the set was switched off.

If you have defined an initial programme position (see page 66), pressing the  key with the TV set in standby mode will select this programme position.



Switching off

Press the  key to switch the TV set to standby mode or press the main switch on the TV set to switch it off completely.

Station selection

You can select a station (programme position) with the numeric keys, with the rocker key „P+/P-“ or from the station table.

To call the station table, press the white key . Use the cursor control key to select the desired station and then press the „OK“ key to confirm your selection.

Adjusting the volume

You can adjust the volume with the - + key.

Adjusting picture and sound settings

Call the picture settings with the blue key  or the sound settings with the yellow key .

At the bottom left of the screen, you will then see the setting box with the various functions. Select the desired function with the rocker key „P+/P-“ and adjust the setting with the - + key.

5.1 Setting the operating mode

Call the menu

The TV set can be switched on at the desired operating level with the keys "TV", "AV" and "R". These keys can also be used to switch between the operating levels.



When the TV set is switched on with one of these keys, the station which was last selected at this operating level is again set.

TV = television mode

AV = audio-visual mode for use with AV devices

R = radio mode ¹⁾

⁽¹⁾ available only if a SAT receiver is installed)

5.2 Operating scope

Call the menu

Until we introduce Version 2.1 of the software, this menu item is available only in the service menu. If you wish to reduce the operating scope of your TV set, please consult your local Metz dealer.

MENU



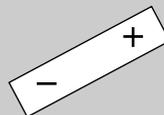
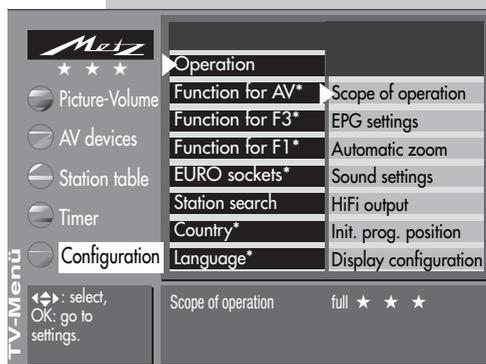
The operating scope of the TV set is indicated by asterisks in the menus and can be reduced in two stages in order to prevent inadvertent changing of certain settings.



Programming the operating scope

(Software version V2.1 or higher)

- Press the "MENU" key to open the TV menu.
- Press the red key  to open the menu "Configuration".
- Use the cursor control key to select "Operation".
- Press the "OK" key and then use the cursor control key to select "Operation".
- Press the "OK" key and then, in the setting window, select the desired operating scope with the - + key.



5.2 Operating scope

- ★★★ The full TV menu is displayed

- ★★ A reduced TV menu is displayed. The following functions are no longer available:
 - Special picture settings such as panorama, CTI, noise reduction, picture sharpness, etc.
 - Special sound settings such as stereo wide, spatial sound, balance, tone settings, etc.
 - Picture and sound settings for individual programme positions.
 - Programming of the function keys.
 - Settings for the EURO sockets.
 - Special functions in the menu "Operation".

- ★ The TV menu cannot be opened, Only the standard functions of the remote control are available.
 - Save the changed setting by pressing the "OK" key.

If you want to open a menu although only the operating scope with one asterisk is active, then:

- Press and hold the "MENU" key for at least five seconds to open the TV menu.
- The menu item "Operation" is automatically selected.
- Use the - + key to select the desired operating scope and press the "OK" key to save the changed setting.

6. Setting the language and country

Call the menu

 In a menu with two asterisks (**), the settings for the menu items "Language" and "Country" cannot be changed.

Setting the language for the TV menu

You can select one of the available languages for the display of the TV menu. The text in the menu and in the help function (Information) is then displayed in the selected language.

Setting the country

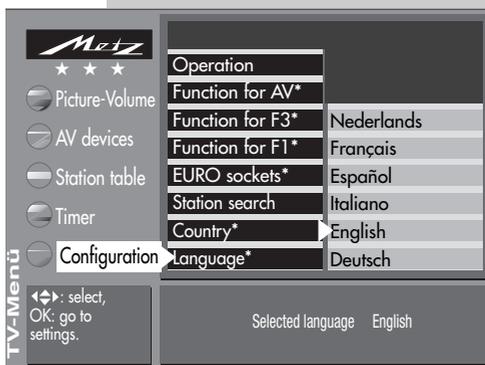
After installing the TV set, you must select the country where it is installed. This information is used by the TV set to make certain basic settings (such as the channel spacing, the sorting sequence for the stations, etc.).

Setting the language and country:

- Press the „MENU“ key to open the TV menu.
- Press the red key  to open the menu „Configuration“.
- Press the „OK“ key and use the cursor control key to set the desired language or country.
- Press the „OK“ key to save the settings.
- Press the „TV“ key to close the menu.

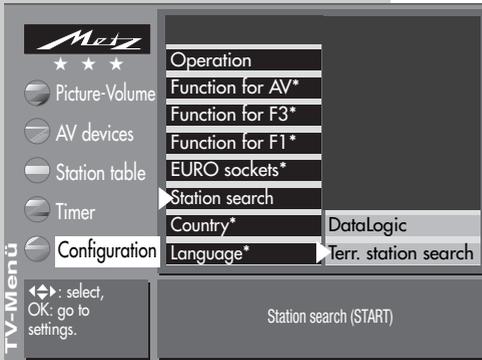
 The menu language can also be set in the help function (Information) by selecting the appropriate national flag.

MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



* The number of subjects and sections displayed here depends on the operating scope setting.

7. Programming stations

You can programme the TV stations in three different ways.

a) Automatic station search

The automatic station search function searches the entire range of reception frequencies for TV stations. All stations which are found are placed in the station table, which is displayed at the end of the search operation. If you are not satisfied with the order in which the stations are stored, you can shift or delete stations as described in the next section.

Executing an automatic station search

- Press the „MENU“ key to call the TV menu
- Press the red key  to open the „Configuration“ menu.
- Move the cursor to „Automatic station search“.
- Press the „OK“ key several times until the message „Searching for stations“ is displayed.
- A station table containing all stations which are found is displayed on the left side of the screen.
- At the end of the search, all stations which were found are sorted and displayed.
- To delete any unwanted stations, select them with the cursor and press the „||“ key.
- To save the stations, press the „OK“ key and enter, with the numeric keys, the number of the programme position where the first station is to be saved. The remaining stations are saved in the following programme positions.

b) Station search

The station search function permits you to search for specific stations if you do not know their channel number or frequency.

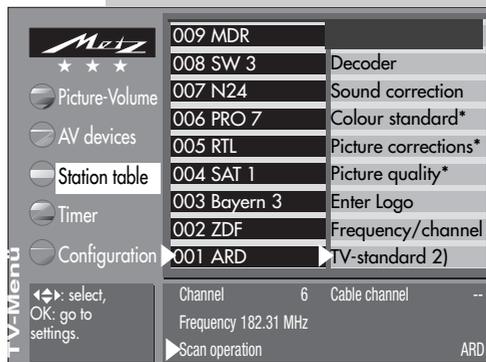
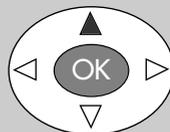
7. Programming stations

Call the menu

Executing a station search

- Press the „MENU“ key to display the TV menu.
- Press the white key  to display the station table.
- Move the cursor to an empty programme position (or to a position containing a station you wish to replace with the new station).
- Move the cursor to „Frequency/Channel“.
- Press the „OK“ key.
- In the setting window which is then displayed, move the cursor to „Search“.
- Press the - + key to start the search.
- The search stops when the first station is found.
- If you want to save this station, press the „OK“ key.
- If you do not want to save this station, press the - + key again to continue the search.

MENU

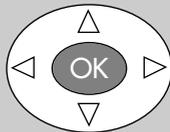
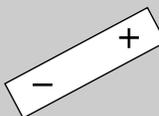


c) Direct channel input

You can programme a station directly by entering its channel number with the numeric keys (you must, of course, know the channel number of the desired station).

Executing direct channel input

- Press the „MENU“ key to display the TV menu.
- Press the white key  to display the station table.
- Move the cursor to an empty programme position (or to a position containing a station you wish to replace with the new station).
- Move the cursor to „Frequency/Channel“.
- Press the „OK“ key.



2) Available only on TV sets which are equipped with this option.

* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



7. Programming stations

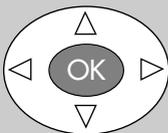
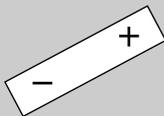
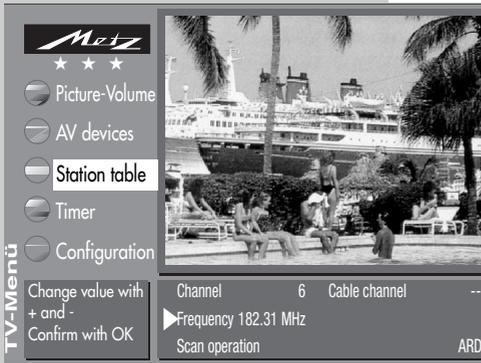
- In the setting window which is then displayed, move the cursor to „Channel“ or „Special channel“.
- Enter the number of the channel or special channel with the numeric keys.
- Press the „OK“ key to save the station.
- Press the „TV“ key to close the menu.

Fine tuning

When you programme stations, each channel is automatically tuned to the centre frequency. This is normally sufficient. If this automatic function does not produce satisfactory results, you can carry out fine tuning.

Executing fine tuning

- Select the desired programme position.
- Press the „MENU“ key.
- Press the white key  to open the station table.
- Move the cursor to the subject card „Frequency/Channel“.
- Press the „OK“ key to confirm your selection.
- In the setting window, select „Frequency“ and use the - + key to change the frequency value until the picture is as clear as possible.
- Save the new setting by pressing the „OK“ key.
- Press the „TV“ key to close the menu.



8. Station logo

Call the menu

Each station which transmits VPS signals also sends a station logo with up to eight characters, which is automatically assigned to this station in the station list. If this automatic function does not work correctly, or if you want a different station logo, you can overwrite the logo manually.

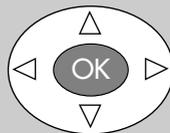
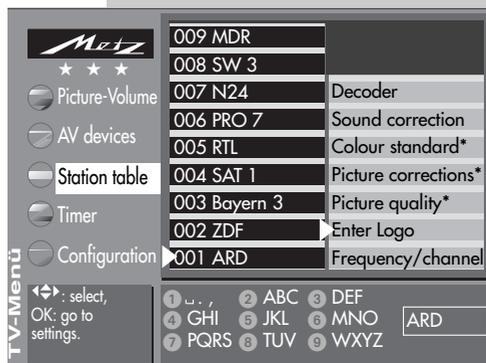
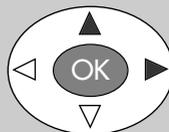
Setting the station logo

- Select the desired programme position.
- Press the „MENU“ key.
- Press the white key  to open the station table.
- Move the cursor to the subject card „Logo“.
- Press the „OK“ key to confirm your selection. In the setting window, you can now enter the desired logo with the aid of the numeric keys.

As long as the red cursor is selected, you can enter the desired letters and digits by pressing the numeric keys (e.g. key : J-K-L-5). If you make a mistake, you can delete the characters before the red cursor, one at a time, with the red key. To delete the entire logo, press the  key.

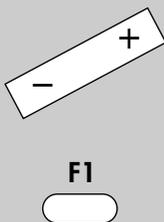
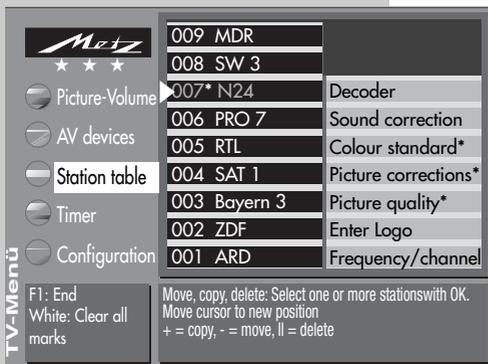
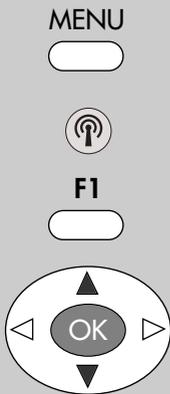
- When you are finished, press the „OK“ key to save the new logo.
- Press the „TV“ key to close the menu.

MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



9. Sorting stations

In the station table, you can shift or copy one or more stations to other programme positions. You can also delete any unwanted stations.

Copying, shifting and deleting stations

- Press the „MENU“ key to call the TV menu.
- Press the white key to call the station table.
- Press the „F1“ key to enable editing of the station table.
- Use the cursor control key to select the programme position you want to copy, shift or delete.
 - Press the „OK“ key to mark this programme position: the text colour changes to orange and an asterisk is displayed after the last digit of the programme position number (in the example on the left: position 007).
 - To shift or copy this station, move the cursor to the programme position before or after which the selected station(s) is/are to be inserted. If these stations originally had a lower position number than this position, it/they will be inserted before this programme position. Stations which originally had a higher number will be inserted after this programme position.
- Press the - + key to copy (+) or shift (-) the selected station(s).
- To delete a station, press the || key.
- Press the „F1“ key to save the new settings

* The number of subjects and sections displayed here depends on the operating scope setting.

10. Selecting stations

Call the menu

Station selection and programme position management

Your TV set can manage up to 999 programme positions in the station table. You can select these programme positions with the numeric keys, with the oval „P+/P-“ rocker key or via the station table.

When you enter a position number on the numeric keys, the first digit you enter is the „hundreds“ digit. If there are less than 100 programme positions defined, this digit automatically moves to the „tens“ position. If less than 10 programme positions exist, it automatically moves to the „ones“ position.

After pressing any numeric key, you have three seconds to enter further digits.

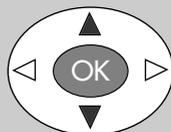
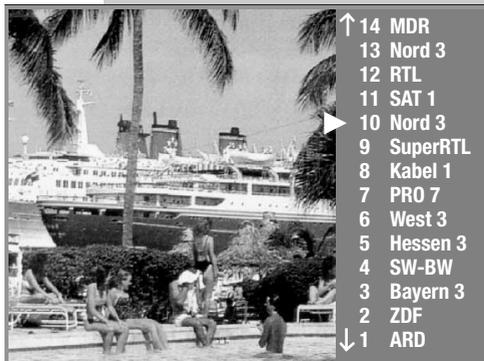
Selecting programmes from the station table

In normal TV mode, you can open the station table with the white key . In the table which is then displayed, you can select a station with the oval „P+/P-“ rocker key. Then press the „OK“ key to switch to this station.

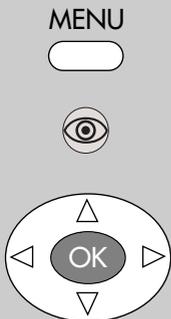
If more than 20 stations are stored in the station table, you can display the next 10 stations by pressing the oval cursor control key.

Return to previous station

With the red key , you can switch back and forth between the last two stations you selected.



Call the menu



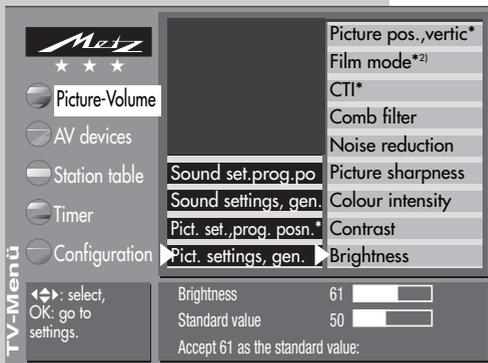
11. Picture settings, general

In a menu with two asterisks (**), the settings for certain menu items cannot be changed.

You can adjust the picture settings (brightness, contrast, chrominance, etc.) for all programme positions and save these settings as the standard values. These standard values can be recalled at any time by pressing the „OK“ key.

Defining the picture settings:

- Press the „MENU“ key to open the TV menu.
- Press the „OK“ key to open the menu „Picture and sound“.
- Use the cursor control key to select the individual picture settings.
- Press the „OK“ key and then use the - + key to change the setting in the setting window.
- Use the cursor control key to select the 3rd line in the setting window "... accept as a standard value: OK".
- Save the new setting as the standard value by pressing the „OK“ key.
- Press the „TV“ key to close the menu



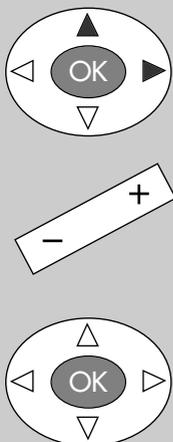
If these standard settings are unsatisfactory for some programme positions, you can define special individual settings for these positions as described on the next page.

2) Rotation

This function can be used to compensate for any tilting of the picture caused by the earth's magnetic field. The function should be executed when the set is first installed and if the set is subsequently moved to a different position.

3) Film mode – see glossary.

2) Available only on TV sets which are equipped with this option.



* The number of subjects and sections displayed here depends on the operating scope setting.

11. Picture settings, general

In a menu with two asterisks (**), the settings for certain menu items cannot be changed.

Panorama function ²⁾

This setting can be made only on 16:9 TV sets.

The panorama function can be used to expand "normal" programmes in 4:3 format to the 16:9 format. This is done by increasing the width of the picture to fill the complete width of the screen.

Setting Panorama²⁾ mode:

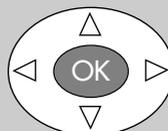
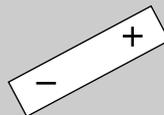
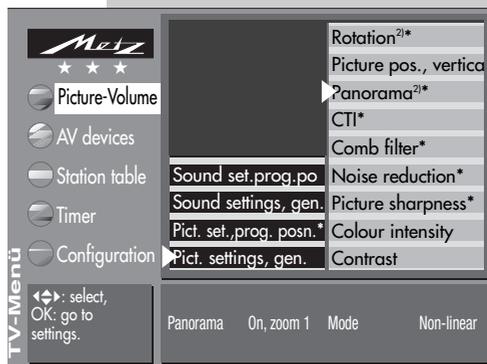
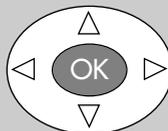
- Press the "MENU" key to open the TV menu.
- Press the "OK" key to open the menu "Picture and sound".
- Use the cursor control key to select "Panorama".
- Press the "OK" key and then, in the setting window, use the - + key to change the setting for "Panorama".
- Use the cursor control key to select the menu item "Mode" and use the - + key to select either "linear" or "non-linear".
- Press the "OK" key to save your changes. The picture shows the factory setting.
- Press the "TV" key to close the TV menu.

The functions "Panorama²⁾" and "Zoom" can also be used together.

2) Available only on TV sets which are equipped with this option.

Call the menu

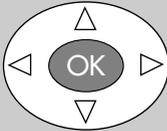
MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu

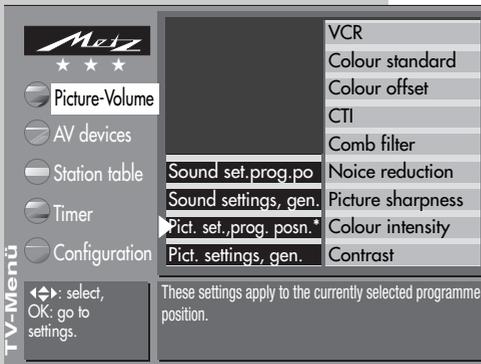
MENU



11.1 Picture settings for a specific programme position ...

In a menu with two asterisks (), the picture settings for a specific programme position cannot be changed.**

If the standard settings are not satisfactory for certain programme positions, you can define different settings for these positions with the menu item „Picture settings for Pr ...“. These settings apply only to the selected programme position and cannot be overwritten by the standard settings.

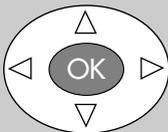
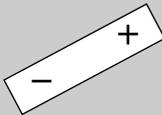


Defining different picture settings for Pr. xy:

xy:

- Select the programme position for which you want to define different picture settings.
- Press the „MENU“ key to open the TV menu.
- Press the „OK“ key to open the menu „Picture and sound“.
- Use the cursor control key to select the item „Picture settings for Pr. xy“.
- Press the „OK“ key and then select the setting you want to change.
- Press the „OK“ key to confirm your selection and then, in the setting window, use the - + key to change the setting.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

You can also define and recall the individual picture settings in the station table.



12. Sound settings, general

Call the menu

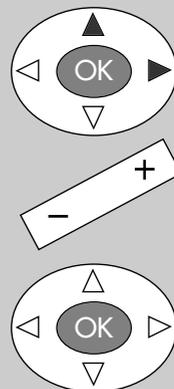
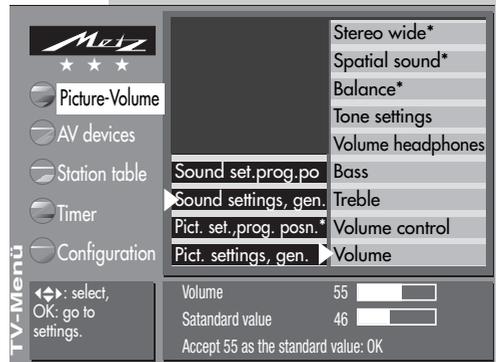
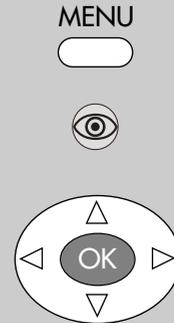
 **In a menu with two asterisks (**), the settings for certain menu items cannot be changed.**

You can adjust the sound settings (volume, treble, bass, etc.) for all programme positions and save these settings as the standard values. These standard values can be recalled at any time by pressing the „OK“ key.

Defining the sound settings:

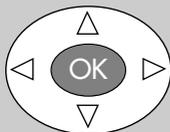
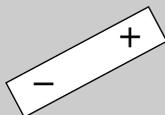
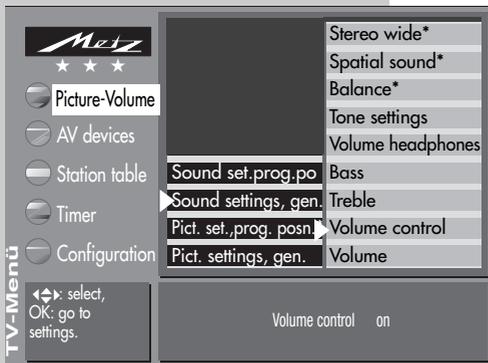
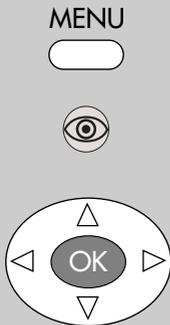
- Press the „MENU“ key to open the TV menu.
- Use the blue key  to select the menu „Picture and sound“ and press the „OK“ key to open it.
- Use the cursor control key to select the item „Sound settings, general“.
- Press the „OK“ key and then select the setting you want to change.
- Press the „OK“ key to confirm your selection and then, in the setting window, use the - + key to change the setting.
- Press the „OK“ key to save the new setting as the standard value.
- Press the „TV“ key to close the menu.

 **If these standard settings are unsatisfactory for some programme positions, you can define special individual settings for these positions as described on the next page.**



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



12. General sound settings

Automatic volume correction

Some stations transmit their commercials at a higher volume than the actual programme. In order to avoid having to adjust the volume with the remote control each time this happens, you can activate the automatic volume correction function.

This function compensates, as far as possible, for the differences in the sound volume.

The setting made here applies to all programme positions.

Activating automatic volume correction:

- Press the "MENU" key to open the TV menu.
- Press the "OK" key to open the menu "Picture and sound".
- Use the cursor control key to select "General sound settings".
- Press the "OK" key and then use the cursor control key to select "Volume correction".
- Press the "OK" key and then, in the setting window, use the - + key to change the setting.

* Press the "OK" key to save your changes.

* Press the "TV" key to close the TV menu.

 **The "Volume correction" function in the menu "General sound settings" overrides the "Volume correction" function in the menu "Sound settings for Pr...".**

* The number of subjects and sections displayed here depends on the operating scope setting.

12.1 Sound settings for a specific programme position ..

 **In a menu with two asterisks (**), the settings for certain menu items cannot be changed.**

If the standard settings are not satisfactory for certain programme positions, you can define different settings for these positions with the menu item „Sound settings for Pr...“. These settings apply only to the selected programme position and cannot be overwritten by the standard settings.

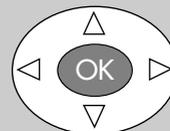
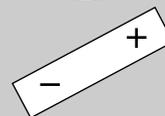
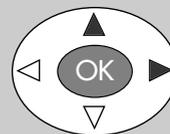
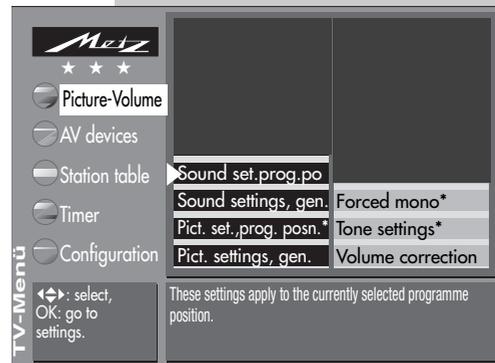
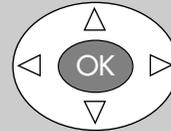
Defining different sound settings for Pr. xy:

- Select the programme position for which you want to define different sound settings.
- Press the „MENU“ key to open the TV menu.
- Use the blue key  to select the menu „Picture and sound“ and press the „OK“ key to open it.
- Use the cursor control key to select the item „Sound settings for Pr. xy“.
- Press the „OK“ key and then select the setting you want to change.
- Press the „OK“ key to confirm your selection and then, in the setting window, use the - + key to change the setting.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

 **You can also define and recall the individual sound settings in the station table.**

Call the menu

MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu

MENU



12.2 HiFi output

Audio sockets are provided on the back of the TV set (see Page 76 of the Operating Instructions) and can be used to connect the TV set to a HiFi system. If this is done, some changes must be made in the menu "HiFi output".

If you wish to adjust the sound settings only on the HiFi system, you must set the HiFi output to **constant**.

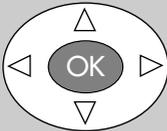
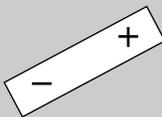
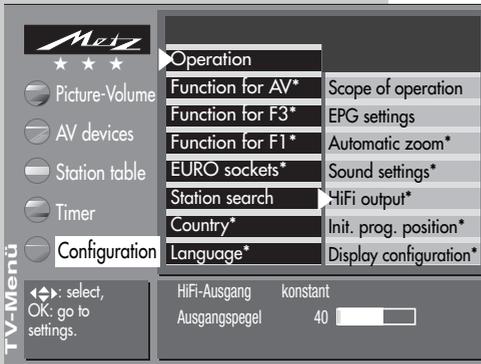
If you do this, it is no longer possible to adjust the sound with the Metz remote control (except for the mute function).

If you want to be able to adjust the sound with the

Metz remote control, you must set the HiFi output to **variable**.

Setting the HiFi output

- Press the "TV" key to open the TV menu.
- Press the red key to open the "Configuration" menu.
- Use the cursor control key to select "Operation" and then "HiFi output".
- Press the "OK" key and then, in the setting window, use the - + key to set the desired parameter.



- Press the "OK" key to save your changes..

- Press the "TV" key to close the TV menu.

In normal TV mode, the setting "Sound via..." can be changed with the yellow key and the - + key.

* The number of subjects and sections displayed here depends on the operating scope setting.

12.3 Sound settings

Call the menu

In the menu "Sound settings" you can activate a volume reduction (two-stage muting) function.

If this function is active, you can reduce the volume in TV mode in two stages with the key "Mute" .

Activating the volume reduction function

- Press the "Menu" key to open the TV menu.
- Press the red key  to open the menu "Configuration".
- Use the cursor key to select "Operation" and "Sound settings".
- Press the "OK" key and then, in the settings window, use the $- +$ key to set "Mute (two-stage)" to "On".

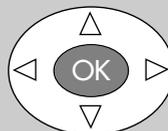
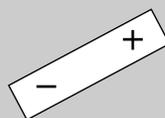
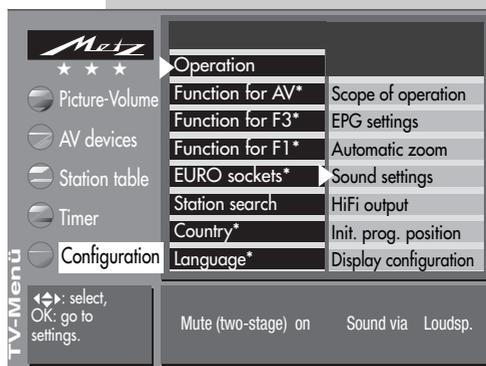
You can also select the desired sound output with the function "Sound via", where you can choose one of the following options with the $- +$ key: loudspeakers, HiFi or Surround.

- Press the "OK" key to save the new settings.
- Press the "TV" key to close the TV menu.

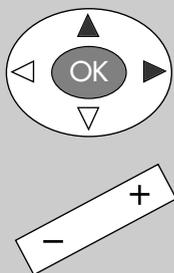
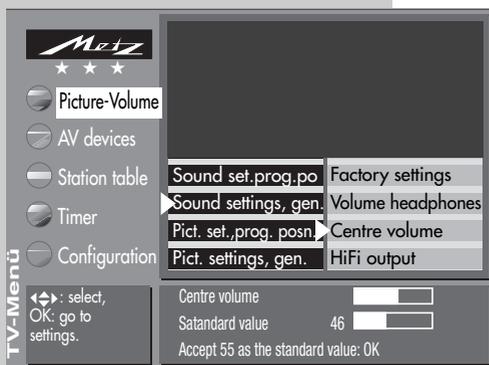
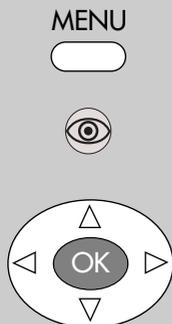
In normal TV mode,

- pressing the mute key  once reduces the volume by 12 points on the scale;
- pressing it again within the next five seconds reduces the volume to "00".
- You can subsequently restore the volume to the default value by pressing the mute  key again.

MENU



Call the menu



12.4 Centre loudspeaker

If you use a surround-sound system for playing back the TV sound signal, the TV set acts as the centre loudspeaker.

In normal TV mode, press the yellow key  and use the P+/P- key to select "Sound via". Then use the _ + key to select the setting "Sound via surround".

Setting the centre loudspeaker volume

- Press the "Menu" key to open the TV menu.
- Press the "OK" key to open the menu "Picture and sound".
- Use the cursor key to select "Sound settings, general" and then "Centre loudspeaker".
- * Press the "OK" key and then, in the settings window, use the _ + key to set the desired volume.
- Press the "OK" key to save the new settings.
- Press the "TV" key to close the TV menu.

In normal TV mode, you select the "Sound via" options by pressing the yellow key  and then using the _ + key.

13. Colour standard

 In a menu with two asterisks (**), the settings for the menu item "Colour standard" cannot be changed.

Your TV set normally detects the colour standard (PAL, SECAM, NTSC, NTSC44, PAL60, PAL M) automatically. If this automatic function does not work, you can select the colour standard manually.

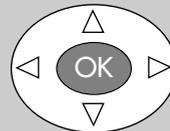
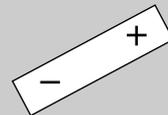
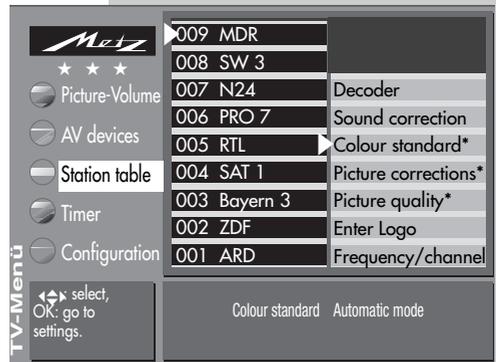
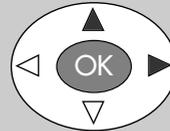
The colour standard function is set in the factory to „Automatic“.

Setting the colour standard:

- Select the programme position for which you want to set the colour standard.
- Press the „MENU“ key to open the TV menu.
- Press the white key  to open the „station table“.
- Move the cursor to „Colour standard“.
- Press the „OK“ key to confirm your selection and then, in the setting window, use the - + key to select the appropriate colour standard.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

Call the menu

MENU



2) Available only on TV sets which are equipped with this option.

* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



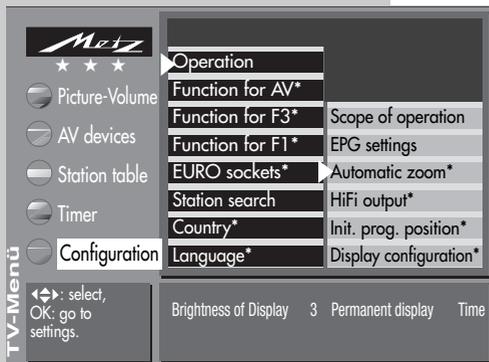
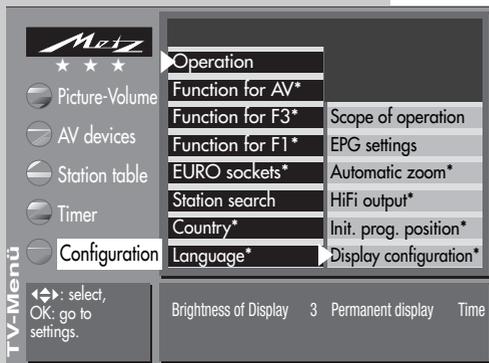
14. Display configuration

In a menu with two asterisks (**), the settings for the menu items "Display configuration" and "Automatic zoom" cannot be changed.

The green display²⁾ can be programmed to show the time, the station logo or the programme position number.

Setting the display configuration:

- Press the „MENU“ key to open the TV menu.
- Press the red key to open the menu „Configuration“.
- Use the cursor control key to select „Operation“ and then „Display configuration“.
- Press the „OK“ key.
- In the setting window, use the cursor control key to select either „Display brightness“ or „Permanent display“.
- Change the setting with the - + key.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.



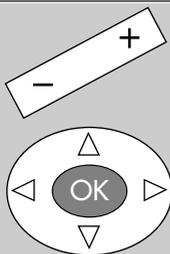
Setting the automatic zoom

If the automatic zoom function is activated, pictures in "widescreen" format, such as 16:9 programmes, will be expanded automatically to fill the full height of the TV screen.

If the automatic zoom function is deactivated, the picture will not be expanded automatically.

2) Available only on TV sets which are equipped with this option.

* The number of subjects and sections displayed here depends on the operating scope setting.



15. Childlock

Call the menu

With this function, you can determine when the TV set can be switched on and which programmes may be viewed at specific times. The childlock may be set:

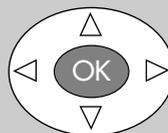
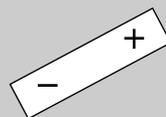
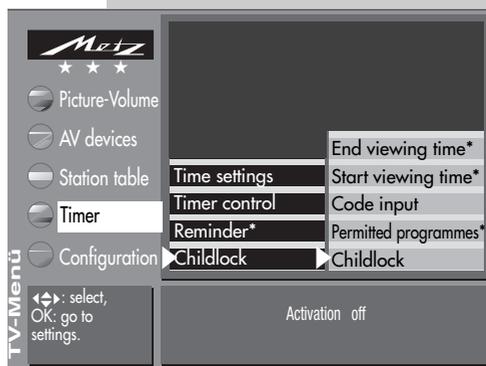
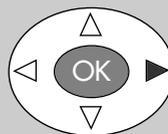
- for all programmes,
- so that one to six programmes (Prog A ... Prog F), called permitted programmes can still be viewed,
- so that all or all permitted programmes may be viewed during a preset period (between the specified start and end times).

After setting, the childlock must be saved with a 4-digit „Code“

Setting the childlock:

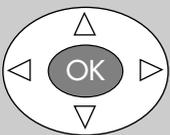
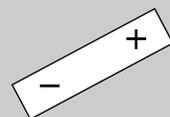
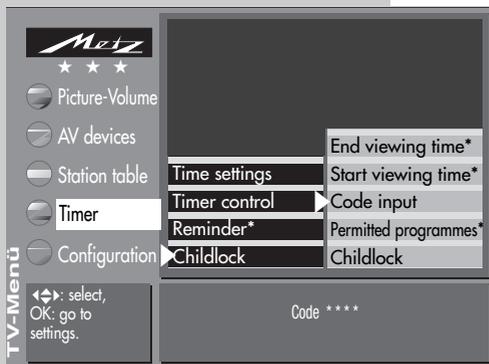
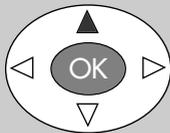
- Press the „MENU“ key to open the TV menu.
 - Press the green key  to open the menu „Timer“.
- Setting the childlock for all programmes:
Use the cursor control key to select „Childlock“ and press the „OK“ key. In the setting window, use the – + key to set the childlock to „Active“.
 - Permitted programmes
Activate the childlock as described in step a), above.
Use the cursor control key to open the file card „Permitted programmes“ and press the „OK“ key. In the setting window, use the numeric keys to enter the numbers of the permitted programme positions or press the „AV“ key to permit use of the AV programme position.
- Press the „OK“ key to save the new setting.

MENU



Factory settings
Code: 0000

Call the menu



15. Childlock

c) Start and end times

Use the cursor control key to open the file card „Start viewing time/End viewing time“, and press the „OK“ key. In the setting window, enter the start and end times with the numeric keys.

Protecting the childlock settings with a code

- Use the cursor control key to open the file card „Code input“ and press the „OK“ key. In the setting window, enter your personal code with the numeric keys.

 **Make a note of the code, since the childlock can be switched off only by entering it again!**

- Press the „OK“ key to save the code.
- Press the „TV“ key to close the menu.
- Switch off the TV set with the  key.

 **The childlock is activated only when the TV set is switched off.**

Deactivating the childlock

If the childlock is active, this is indicated by the display of a message when you switch the TV set on. If you then enter the correct code, the childlock is temporarily deactivated and the TV set can be operated „normally“ as long as it remains switched on. If you wish to permanently deactivate the childlock, proceed as follows:

- Press the „MENU“ key to open the TV menu.
- Press the green key  to open the menu „Timer“.
- Use the cursor control key to select „Childlock“ and press the „OK“ key.
- In the setting window, use the - + key to set the childlock to „Inactive“.
- Press the „OK“ key to save the new setting.

* The number of subjects and sections displayed here depends on the operating scope setting.

16. Reminder

Call the menu

 ***In a menu with two asterisks (**), the settings for the menu item "Reminder" cannot be changed.***

If you want to be reminded of something while watching television, you can set a reminder time. At this time, a box with the reminder appears on the screen of the TV set.

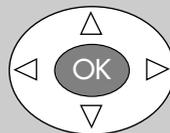
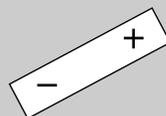
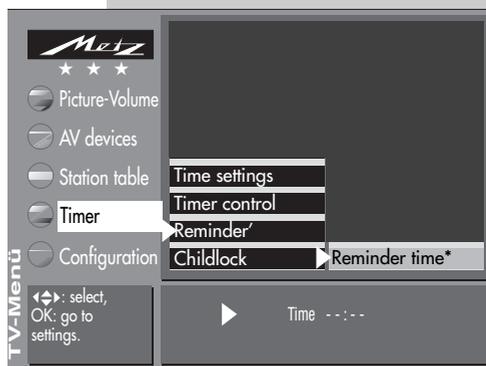
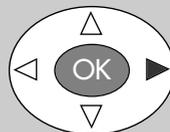
Setting the reminder time

- Press the „MENU“ key to open the TV menu.
- Press the green key  to open the menu „Timer“.
- Use the cursor control key to select „Reminder“.
- Press the „OK“ key twice and then, in the setting window, enter the desired time (four digits) with the numeric keys.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

At the specified time, a box with the reminder appears on the screen of the TV set. You can clear this display by pressing any key.

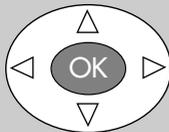
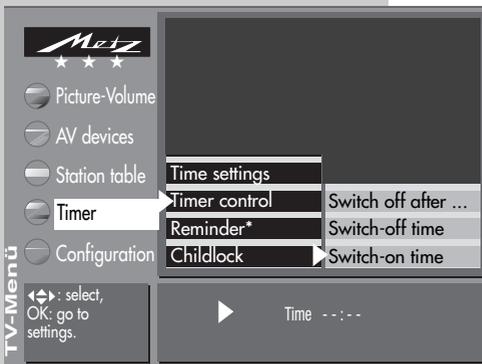
 ***If you do not want the reminder to appear each day, you must clear it in the menu by pressing the **||** key.***

MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Call the menu



17. Timer control

ⓘ In a menu with two asterisks (**), the settings for the menu items "Switch-on time" and "Switch-off time" cannot be changed

In the menu item „Timer control“, you can programme a switch-on time, a switch-off time and a sleep timer (switch off after ...).

Switch-on time: the TV set is switched on at the specified time.

Switch-off time: the TV set is switched off at the specified time.

Switch off after ...: (**Sleep Timer**): the TV set is switched off after the period you specify (in increments of 15 minutes).

Setting the times

- Press the „MENU“ key to open the TV menu.
- Press the green key  to open the menu „Timer“.
- Use the cursor control key to select "Timer control".
- Use the cursor control key to select „Switch-on time“ or „Switch off time“.
- Press the „OK“ key twice and then, in the setting window, enter the desired time (four digits) with the numeric keys.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

At the specified switch-on time, the TV set switches from standby mode (red LED on) to normal TV mode. If you do not press any key on the remote control unit within 10 minutes, the TV set switches back to standby mode. This ensures that the TV set does not remain switched on if you are not at home.

ⓘ If you do not want the TV set to switch itself on or off each day, you must clear the times in the menu by pressing the **||** key.

18. Setting the time

Call the menu

When the TV set is switched on with the main switch, it normally gets the date and time from the data transmitted with the programme (if it is tuned to a station which transmits Teletext).

If the data are not received correctly, or if the station you are watching does not send such data, you can set the date and time manually.

Normally, this function is not needed: even the changeover between summer and winter time is executed automatically.

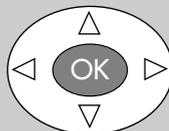
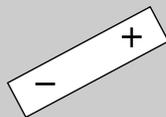
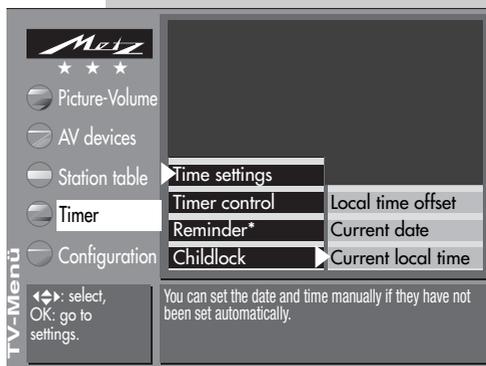
Setting the time and date

- Press the „MENU“ key to open the TV menu.
- Press the green key  to open the menu „Timer“.
- Use the cursor control key to select the file card „Set time“.
- Press the „OK“ key twice.
- In the setting window, enter the current time with the numeric keys.
- The clock starts running from this time when you press the „OK“ key.
- Use the cursor control key to select the file card „Current date“.
- Press the „OK“ key.
- In the setting window, enter the current date with the numeric keys.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the menu.

i The local time offset is the difference between the local time and Greenwich Mean Time (GMT). This time difference and any necessary switching between summer time and winter time are normally detected automatically by the TV set.

They need to be set manually only if the TV set does not detect them automatically.

MENU



Call the menu

F1



19. Function keys

The remote control has four functions keys: F1, F2 AV and F3. You can program function keys F1, AV and F3 with any desired function.



Special Functions 1

- 1 PIP on
- 2 9-programme on
- 3 Picture format
- 4 Picture pos., vertical

The function keys F1 and F3 are programmed in the factory with the setting "All functions", which means that all available special functions are displayed when you press one of these keys.

Programming function key F1, AV or F3 with a desired

MENU



- Press the "MENU" key to open the TV menu.
- Press the red key to open the "Configuration" menu.
- Use the cursor control key to select "Function for F1, AV or F3".
- Press the "OK" key and use the cursor control key to select one of the available functions.
- Press the "OK" key and then, in the setting window, use the - + key to set the selected function to "On".

★ ★ ★

- Picture-Volume
- AV devices
- Station table
- Timer
- Configuration

TV-Menü

: select menu item

Operation	
Function for AV*	
Function for F3*	
Function for F1*	
EURO sockets*	All F1 functions
Station search	Picture format
Country*	9-programme
Language*	PIP

The function key can be programmed with any desired function.

- Press the "OK" key to save your changes.
- Press the "TV" key to close the TV menu.

* The number of subjects and sections displayed here depends on the operating scope setting.

20. Special functions

Picture-in-picture (PIP)

Call the menu

The remote control unit has three function keys: F1 and F3. These keys are pre-programmed in the factory.

The PIP picture can be used to display a second TV station or the picture from an AV device.

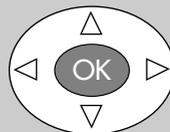
Calling picture-in-picture (PIP) function:

- If "F1" is already programmed with the function "Picture in picture", briefly press the "F1" key; otherwise, hold the "F1" key depressed until "Special functions 1" is displayed and then press the ① key to display the PIP picture.
 - You can shift the PIP picture with the cursor control keys ◀ ▶ . The current position is saved.
 - With the "OK" key, you can switch the PIP frame to active (red) or inactive (white).
 - The contents of the PIP picture can be changed only when the PIP frame is active (red). If this is the case, you can use the numeric keys or the "P+/P-" rocker key to select another programme position for display in the PIP picture. To display the picture from an AV device connected to the TV set, press the "AV" key and then select the AV device with the numeric keys.
 - Pressing the red key ⌚ exchanges the two pictures.
 - Pressing the green key ⌚ causes the PIP picture to be displayed as the large picture and terminates the PIP function.
 - To remove the PIP picture from the screen, press the „TV" key.
- 👉 If a recording has been programmed in the timer menu, the program being recorded is displayed in the PIP picture when the PIP function is activated.**

F1



1



Call the menu

20. Special functions

9-programme overview

F1



2



With this function, you can open an overview of the current programme position and the next eight positions. The nine small programme windows are updated at intervals. Each shows a snapshot of the current programme.

Calling the 9 PRG. overview:

- If "F1" is already programmed with the function "9x multipicture", briefly press the "F1" key; otherwise, hold the "F1" key depressed until "Special functions 1" is displayed and then press the ② key to display the 9x multipicture.
- You can use the "P+/P-" rocker key to select the previous or following nine programme positions.
- To switch to one of the programmes displayed in this function, simply press the corresponding numeric key ① to ⑨.
- To terminate the 9 Prg. overview, press the "TV" key.



Not possible with an external satellite receiver!

20. Special functions

Picture format

Call the menu

Calling the picture format function:

- If "F1" is already programmed with the function "Picture format", briefly press the "F1" key; otherwise, hold the "F1" key depressed until "Special functions 1" is displayed and then press the ③ key and select the desired picture format.
- You can use the "P+/P-" rocker key to select the various functions. You can also set the zoom factor for the selected picture format within the next five seconds.
- The settings made here (except for the automatic zoom in the TV menu) remain stored until you switch to another programme position or switch off the TV set.

Zoom

After selecting the "Zoom" function, you can adjust the zoom factor with the $- +$ key.

In addition to adjusting the zoom factor, you can move the picture up or down on the screen so that, for example, the station logo or subtitles remain visible. To do this, press the F1 key and then the ④ key and move the picture with the "P+/P-" rocker key.

Standard 4:3

This is the standard setting for all programmes with the aspect ratio 4:3.

Panorama*

With the Panorama function, you can adjust the picture of a programme in 4:3 aspect ratio to fill the 16:9 format of the screen (only on sets with 16:9 screen). The picture is expanded uniformly in the horizontal direction. You can also zoom the picture. The Panorama function can be switched on and off in the menu "Picture and Sound" under the heading "Picture settings, general".

16:9 full screen

This function is used to display the picture format of external devices (such as 16:9 video recorders) with the correct aspect ratio.

F1



3



*The menu item "Panorama" can be activated only on TV sets which support the 16:9 aspect ratio.

Call the menu

21. Teletext

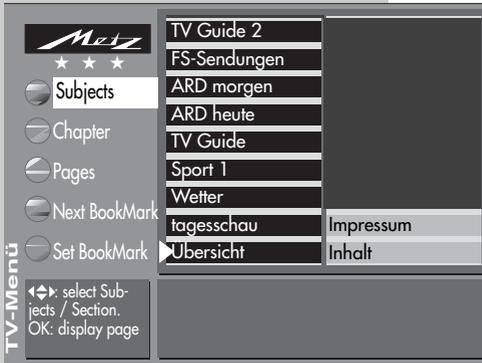
TEXT



i Teletext is a free information service provided by many TV stations. Within this „electronic newspaper“, you can scroll through the pages in various ways.

Calling Teletext:

- Press the „TEXT“ key.
If the station you are watching transmits „TOP“ teletext, two file-card boxes are displayed (see the picture on the left). Otherwise, page 100 appears (see the lower picture).
- In the case of „TOP“ stations, you can select a file card with the cursor control key.
- After selecting a card, press „OK“ to open it.



Controlling Teletext when the pages are displayed directly:

The blue key is used to preselect the subject selection function.

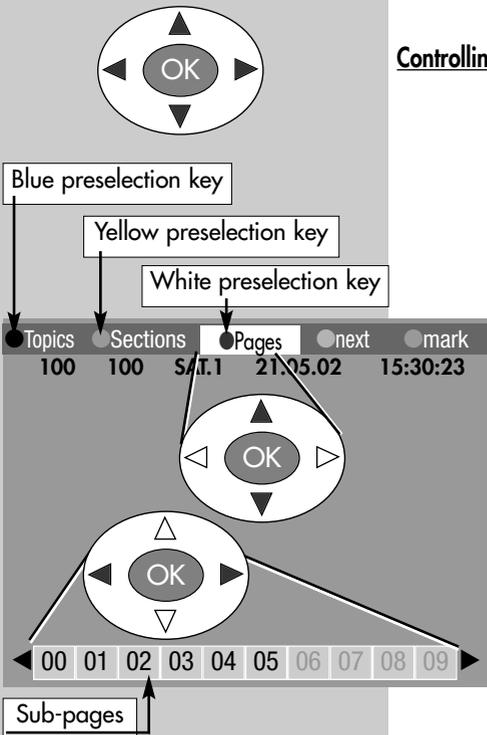
The yellow key is used to preselect the section selection function.

The white key is used to preselect the page selection function.

After pressing one of these preselection keys, you can step through the subjects, sections or pages with the rocker switch „P+/P-“.

You can also move directly to a page by entering its number with the numeric keys. If multiple sub-pages exist for the selected page, their numbers are displayed in black. In the example on the left, there are five sub-pages.

You can scroll through the sub-pages with the cursor control key.



21. Teletext

Double font size

When viewing Teletext pages, you can switch to a larger font with the F1 key. The first time you press this key, the upper third of the page is displayed with the large font. Pressing it again displays the centre third of the page and pressing it a third time displays the bottom third of the page. Pressing the key a fourth time returns to the full-page display with the normal font size.

Riddle solution key

Function key F2 is programmed to display hidden text on a Teletext page, such as the solutions to riddles.

Return to last contents page

You can return directly to the last contents page at any time by pressing the  key.

Page stop

You can stop the automatic stepping through a multiple page by pressing the **II** key or the "OK" key. Pressing the same key again restarts the automatic stepping.

Page selection with cursor

If you press the "OK" key, the page is stopped and the cursor  is displayed at the top left corner of the screen. You can then use the cursor keys     to move the cursor within the currently displayed page. This function is useful for selecting pages from an index page (such as page 100, 200, etc.). When the cursor is positioned on the desired page number, press the "OK" key to display this page.

Teletext: setting marks³⁾

You will probably have your favourite Teletext pages, such as stock exchange reports, news, weather forecasts, which you visit frequently.

To permit rapid access to such pages, you can set so-called „marks“ on these pages.

To do this, first go to the page on which you want to set the mark.

- Then press the red key  for „Set mark“ to set a mark on this page. A „paper-clip“ symbol appears at the top left corner of the page. If the page has sub-pages, the mark is always set and displayed on the currently displayed sub-page.

 **Up to 10 marks can be set on each programme position. The total number of marks (on all programme positions) is restricted to 120.**

Teletext: scrolling by marks³⁾

With Teletext active, you can scroll sequentially through all marked pages by repeatedly pressing the green key .

You can even view your favourite pages directly from the TV mode with the „TEXT“ key. Pressing the „TEXT“ key opens Teletext and selects the first marked page. You can then scroll through the marked pages with the „TEXT“ key. Pressing the „TEXT“ key with the last marked page displayed switches back to the TV programme.

3) Not possible with an external satellite receiver!

21. Teletext

Teletext: displaying active marks³⁾

If marks are set for a programme position, pressing the F3 key displays a list of all marks, showing where they are set. Pressing F3 again hides the list. With the list displayed, you can select any desired mark with the numeric keys.

Teletext: deleting marks³⁾

Call the teletext page whose mark you want to delete and press the red key  „Clear mark“ to delete the mark.

Teletext: subtitles

Your TV set can display subtitles transmitted on Teletext together with the programme. If such subtitles are available, the station normally displays a message at the beginning of the programme, telling you where to find the subtitles.

- Press the „TEXT“ key to open Teletext.
- In the case of „**TOP**“ stations, press the „OK“ key to open any page.
- Use the numeric keys to enter the number of the page containing the subtitles.

3) Not possible with an external satellite receiver!

22. AV devices

Call the menu

i **AV (Audio/Video) devices** are devices which provide picture and/or sound signals for playback on your TV set (for example, video cassette recorders, DVD players, etc.).

In the menu „AV devices“, the setting window displays a list of all common AV units.

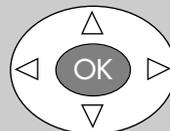
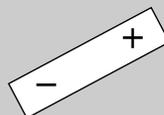
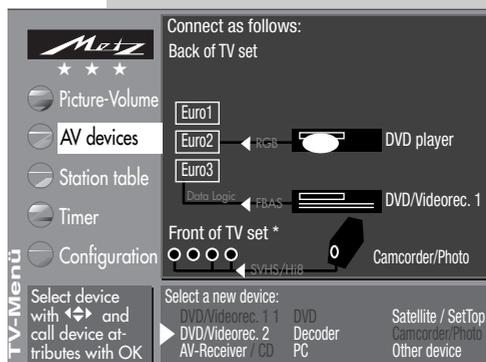
👉 **Always connect AV devices exactly as shown in the connection diagram in the TV menu of your TV set!**

SVHS/Hi8 and Data Logic video recorders must always be connected as „Video recorder 1“. A „normal“ VHS video recorder may be connected as „Video recorder 1“ or „Video recorder 2“.

Connecting AV devices

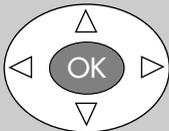
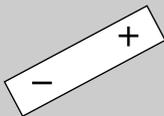
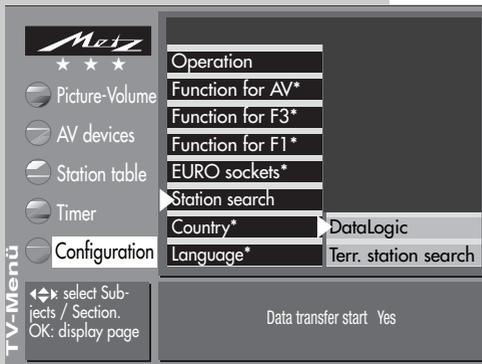
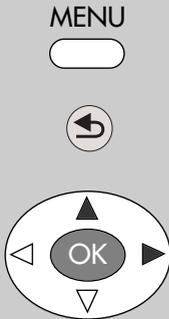
- Press the „MENU“ key to open the TV menu.
 - Press the yellow key  to open the menu „AV devices“. Some of the EURO sockets are pre-programmed in the factory (see the picture on the right). If you want to change these settings, you can select one of the AV devices with the cursor control key and delete it by pressing the **||** key.
 - Use the cursor control key to select the device you wish to connect to the TV set.
 - Press the „OK“ key to confirm your selection and, in the setting window, set the parameters „Signal OUT“ and „Signal IN“ to match the AV device (see the operating instructions for the AV device for details).
 - Press the „OK“ key. The newly connected device appears in the connection diagram.
- 👉** **Caution: connecting a new device may cause an existing connection to be modified. If this happens, you will have to move the cables for the affected AV device to the correct positions.**

MENU



Call the menu

 **In a menu with two asterisks (**), the settings for this menu item cannot be changed.**



* The number of subjects and sections displayed here depends on the operating scope setting.

22. AV devices

Data Logic video recorder

i „Data Logic“ is a system which permits a dialogue between the TV set and a video recorder. This „intelligent“ system provides such functions as:

- Automatic transfer of the settings for terrestrial and cable stations to the video recorder.
- One-touch recording: the video recorder records the programme you are currently watching.
- Automatic switching to the AV programme position.
- Direct control of recording from the timer menu of the TV set.
- Automatically switching off the video recorder when the TV set is switched to standby mode.

Under "Video recorder 1" in the menu "AV devices", set the field "Data Logic" to "On" and connect your video recorder to the EURO socket as shown in the picture.

Other comparable dialogue systems: Qlink (Panasonic), EasyLink (Philips), Megalogic (Grundig), SMARTLINK (Sony).

Data Logic: transferring the station table

- Press the „MENU“ key to open the TV menu.
- Press the red key  to open the menu „Configuration“.
- Use the cursor control key to select „Automatic station search“.
- Press the „OK“ key and then use the cursor control key to select „Data Logic“.
- Press the „OK“ key and then, in the setting window, select „Start data transfer: yes“ with the - + key.
- Press the „OK“ key to transfer the stations table from the TV set to the video recorder
- Press the „TV“ key to close the TV menu.

22.1 AV playback

Call the menu

AV playback

(Devices with switching voltage)

AV playback is the term for playing back video-cassettes, DVDs, etc. from an AV device for viewing them on a TV set.

In order to view the pictures, you must programme your TV set so that it automatically switches to the AV programme position when a signal is received at the EURO socket to which the AV device is connected.

Programming automatic switching

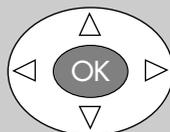
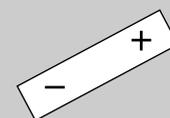
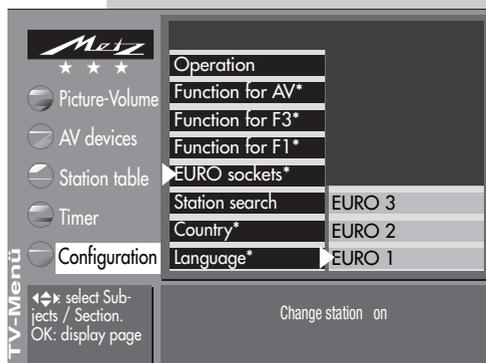
 ***In a menu with two asterisks (**), the settings for this menu item cannot be changed.***

 ***Programme switching is set to "On" in the factory for both EURO sockets.***

- Press the „MENU“ key to open the TV menu.
- Press the red key  to open the menu „Configuration“.
- Use the cursor control key to select „EURO socket“.
- Use the cursor control key to select "EURO 1" "EURO 2" or "EURO 3".
- Press the „OK“ key and then, in the setting window, set „Programme switching“ to „ON“ with the - + key.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the TV menu.

When you subsequently start a playback operation on the connected AV device, the TV set switches to playback mode, regardless of the currently selected programme position.

MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

This mode remains active until the TV set is switched to another programme position.

AV

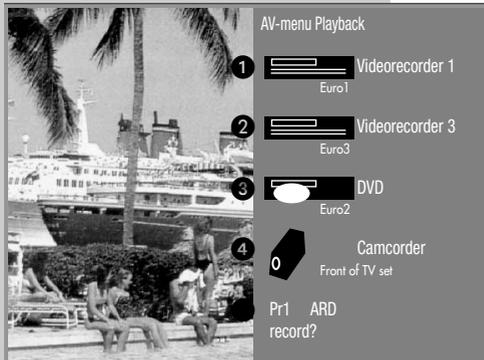


AV playback

(Devices without switching voltage)

In order to view the pictures, you must manually switch your TV set to playback mode.

- Select any programme position.
- Press the „AV“ key.
- Press the numeric key for the desired AV device.
- The TV set now switches from the current programme to playback mode.
- Start the playback operation on the AV device. Playback mode remains active until you switch to another programme position.



Picture quality when playing back from tape machines

The VCR function provides the best possible picture quality when playing back recordings from a tape machine, such as a camcorder or video recorder.

Setting the VCR function

- Select the appropriate programme position.
- Press the „MENU“ key to open the TV menu.
- Press the „OK“ key to open the menu „Picture and sound“.
- Use the cursor control key to select „Picture settings for Pr xy“.
- Press the „OK“ key and then use the cursor control key to select „VCR“.
- Press the „OK“ key for confirmation and use the – + key to select „Opt. 1“ . If this setting does not produce a satisfactory picture quality, switch to „Opt. 2“ .
- Press the „OK“ key to save the new setting.

 ***In a menu with two asterisks (**), the settings for the menu item "VCR" cannot be changed.***

22.2 Copying between AV devices

- Select any programme position.
- Press the „AV“ key to display the „AV menu Playback“.
- Select the AV playback device with the numeric keys.
- The TV set switches from the current programme to the selected playback device.
- Press the „AV“ key again.
- Then press the red key  to select the recording device.
- Press the green key to lock the selected signal connection. If a Data Logic video recorder is connected, it will immediately start to record, providing there is a cassette with a protection tag inserted.
- Start recording with the recording AV device.
- Play back with the playback AV device.

23. EPG - NexTView

NexTView is an **Electronic Program Guide (EPG)** for all important programme providers. This EPG is transmitted by various stations and also contains the programme data for the other stations.

The TV set needs about 20 minutes to collect the large amount of data for the first time.

- On TV sets with two tuners (standard configuration) the data are collected by the second tuner (see the next page) during normal operation of the TV set. When the data have been collected, the TV set stores the EPG in a special memory. The EPG is updated regularly in this memory as long as the TV set is not switched off with the main switch.
- On TV sets with only one tuner (e.g. if your set has been converted and has only one satellite tuner):
 - the set must be left tuned to the NeexTView programme position for at least 20 minutes, or
 - the data are collected during the night (between 02:30 - 03:00) while the set is in standby mode.

Not possible with an external satellite receiver!

23.1 Activating the EPG NexTVView

Call the menu

The EPG function can be switched on and off as desired. It is set to "On" in the factory.

On all programme positions where NexTVView is received, the TV set displays the following message after a short delay:

This station is sending NexTVView (EPG). Save it as the EPG programme position?

- Yes
- No

The TV set is asking you whether you want to use this programme position for collecting the data for the EPG NexTVView.

Press the red key for "No" - this programme position is not used for receiving the NexTVView data. The message is still displayed for all other programme positions where NexTVView data are received.

Press the green key for "Yes" - this programme position will be used for receiving the NexTVView data. The message is then not displayed for other programme positions where NexTVView data are received.

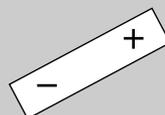
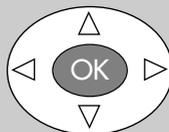
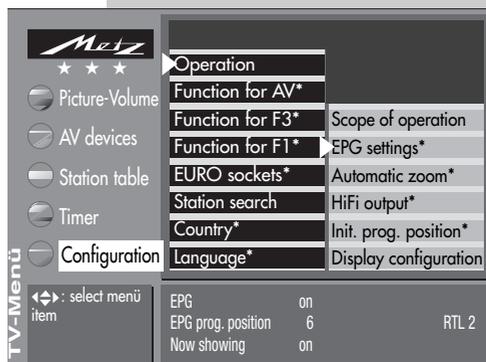
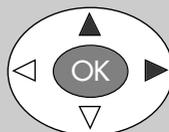
If you know the programme position for a NexTVView station, you can also enter its number directly on the numeric keys.

You can overwrite any existing programme position number or delete the number by pressing the **||** key.

EPG



MENU



* The number of subjects and sections displayed here depends on the operating scope setting.

Not possible with an external satellite receiver!

23.2 Collecting NexTVView data

The EPG NexTVView is transmitted by various stations and the information provided by each station may differ. You thus have a choice between several different NexTVView programme guides.

- On TV sets with only one tuner (e.g. if your set has been converted and has only one satellite tuner):
Switch to the NexTVView programme position.
Leave it on this programme position for at least 20 minutes.
- TV sets with two tuners:
The TV set collects the NexTVView data with the aid of its second tuner.

Special notes:

Stations which are listed in the TV station list of the TV set with an automatic logo (set automatically by the TV set) are also shown in the EPG. Stations which carry two different programmes (such as a children's programme in the daytime and another programme in the evening) must be stored in two different programme positions.

The collection operation is interrupted or cancelled if:

- you switch the programme position from terrestrial to SAT or vice versa;
- you call the "Picture in Picture" function;
- you open the Teletext function;
- a recording is programmed in the menu "AV recording";
- a "timer recording" is running or will begin within the next hour;

- the Teletext function "Subtitles" is active.

If the TV set is switched to standby mode during data collection, the text "NexTVView" appears on the green display to remind you that the data-collection operation is still running.

Not possible with an external satellite receiver!

23.3 Using NextView

Call the menu

Once all of the data have been collected, pressing the "EPG" key displays the NexTVIEW programme guide, showing the programme currently running on this programme position.

The left column of the EPG shows the keys with special functions in this mode:

P+/P- Select a programme

OK Watch the selected programme or set a reminder for it

Cursor control key ◀▶ Scroll forward or back through the programme times

0-9 Enter a time for which programmes are to be displayed

TV Return to the TV picture

blue Display all programme types

yellow Display only programme types which match the current user and their preferences

white Set user preferences

green Select a user (father, mother, teenager, child)

red Selected programme is ready for recording (see Page 55)

Selecting and viewing a programme, setting a reminder

In the EPG, you can select a programme with the "P+/P-" rocker key.

- By pressing the "OK" key, you can
 - watch the programme if it is already running or
 - set a reminder for it if it starts later. In this case, a green check mark appears after the start time.

EPG



Not possible with an external satellite receiver!

23.3 Using NextView

Setting the user

By repeatedly pressing the green key, you can set the current user (father, mother, teenager, child) for the NextView programme guide.

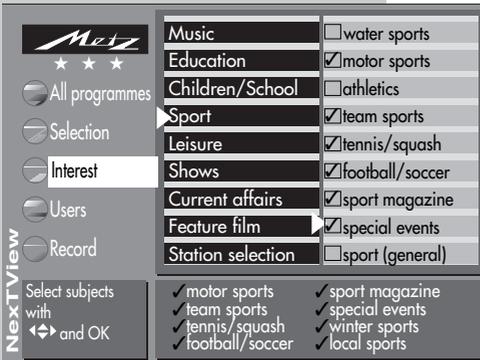
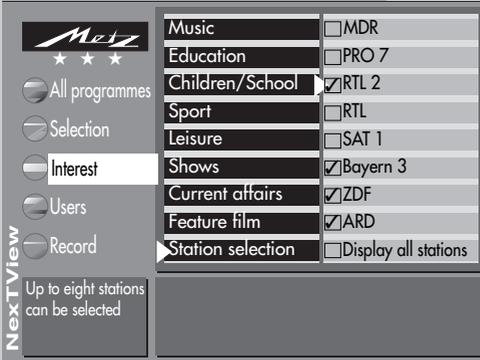
Setting preferences

Each user can set the NextView programme guide to reflect the personal preferences.

- Press the white key .
- Use the "P+/P-" rocker key to select one of the blue cards.
- Use the cursor control key to switch to the yellow page.
- Use the "P+/P-" rocker key to select the appropriate yellow cards and mark each one by pressing the "OK" key.

 **Up to eight preferences can be selected for each user.**

- You can remove the red check marks again by pressing the "OK" key.
- Save the selected preferences by pressing the red key .



Not possible with an external satellite receiver!

23.3 Using NexTVView

Recording a programme

If you have a Metz video recorder with dialogue system, the NexTVView programme guide permits you to start a recording by pressing a single key.

- Open the NexTVView programme guide.
- Use the "P+/P-" rocker key to select the programme you want to record.

If a **video recorder with dialogue system** is connected:

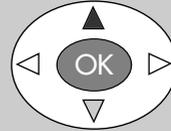
- Switch on the video recorder.
- Insert a cassette.
- Press the red key  on the remote control of the TV set.

If a **normal video recorder** is connected:

- Switch on the video recorder.
- Insert a cassette.
- Press the red key  on the remote control of the TV set - the TV timer is programmed.
- On the video recorder programme a timer with the date and time on the AV programme position so that the programme provided by the TV timer will be recorded.

 **If you want to record a programme from a terrestrial station (received via antenna or cable), you must programme the video recorder itself.**

Call the menu




The screenshot shows the Metz NexTVView interface. On the left, there is a vertical menu with options: All programmes, Selection, Interest, Users, and Record. Below this menu are instructions: '0..9: Zeit wählen', '◀▶: auswählen', and 'OK: ansehen'. The main display area shows a weekly program guide for 'Heute' (Today) at 20:07. The days of the week are listed as - Mo Di Mi Do Fr Sa So +, with the current day 'Di' highlighted. The time 13.08 is shown. The program list includes: 20:00 RTL 2 (Tagesschau), 20:00 Nord 3 (Tagesschau), 20:00 West 3 (Tagesschau), and 20:00 3 SAT (Tagesschau). Each program has a progress bar and a duration of -20:15. At the bottom, there is a section for 'Nachrichten - News'.



Not possible with an external satellite receiver!

Call the menu



24. Sat system

i You must use the menu „SAT system“ to inform the TV set of the settings for the SAT system.

These settings should always be made in the order indicated by the yellow file cards, i.e. LNB supply, DiSEqC control, etc.

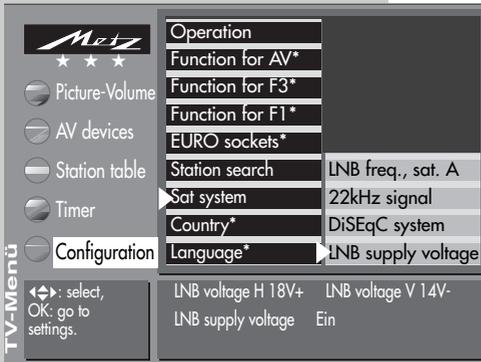
LNB supply voltage

The LNB supply voltages for selecting the polarisation (horizontal H = 18 V, vertical V = 12 V) are fixed and do not normally need to be changed.

If it should be necessary to change these voltages, note the following setting sequence.

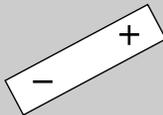
Changing the settings

- Press the „MENU“ key to open the TV menu.
- Press the red key  to open the menu „Configuration“.
- Use the cursor control key to select „SAT system“.



- Use the cursor control key to select „LNB supply“ and press „OK“ to confirm your selection. The cursor is now located before the entry „LNB voltage H“ in the setting window.
- You can now adjust the voltage slightly up (+) or down (-) with the – + key.
- Press the „OK“ key to save the new setting.

 If your TV set is connected to a community satellite system, the LNB supply voltage must always be set to „Off“.



Possible only if a satellite upgrade kit is installed!

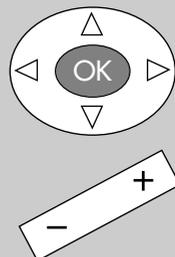
24. Sat system

Call the menu

DiSEqC system

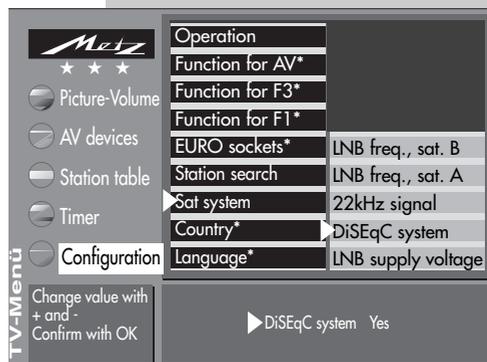
The DiSEqC system permits your TV set to control the SAT system via the existing antenna cable. It is a prerequisite for reception from more than two satellites (e.g. reception from Astra, Eutelsat and Hotbird).

- i It is not yet necessary to upgrade SAT systems which are used only for reception from Astra. Control of the SAT system for reception from three or more satellites (e.g. Astra on 19.2° Eutelsat on 16° and Hotbird on 13°) is no longer possible without DiSEqC.



Switching the DiSEqC system on and off

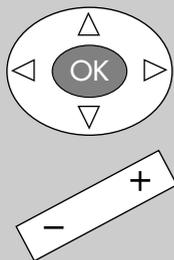
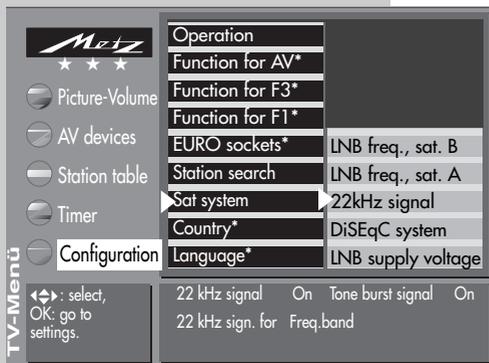
- Press the „MENU“ key to open the TV menu.
- Press the red key  to open the menu „Configuration“.
- Use the cursor control key to select „SAT system“.
- Use the cursor control key to select „DiSEqC system „ and press „OK“ to confirm your selection. The cursor is now located before the entry „DiSEqC system“ in the setting window.
- Use the _ + key to select „Yes“ or „No“.
- Press the „OK“ key to save the new setting.
- Press the „TV“ key to close the TV menu.



Possible only if a satellite upgrade kit is installed!

Call the menu

MENU



24. Sat system

22 kHz signal/toneburst signal

These two signals are needed only for Sat systems equipped with a multiswitch.

i The 22 kHz signal should be used for switching between the upper and lower frequency bands (called the high band and the low band). The toneburst signal should be used for switching between satellites (e.g. Astra and Eutelsat) in different positions.

The settings depend on the components used in the Sat system and it may be necessary to reverse the signal assignments.

Switching the 22 kHz and toneburst signals on and off

- Use the cursor control key to select „22 kHz signal“ and press „OK“ to confirm your selection. The cursor is now located before the entry „22 kHz signal“ in the setting window.
- Use the - + key to switch this signal „On“ or „Off“.
- If you select „On“, you must specify, in the second line, whether the 22 kHz signal is to be used for the „Frequency band“ or the „Position“.
- You can then programme the toneburst signal in a similar manner, selecting the other function.
- Press the „OK“ key to save the new settings.

Possible only if a satellite upgrade kit is installed!

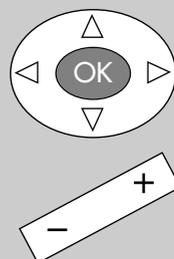
24. Sat system

Call the menu

LNB frequencies for Sat A, Sat B, etc.

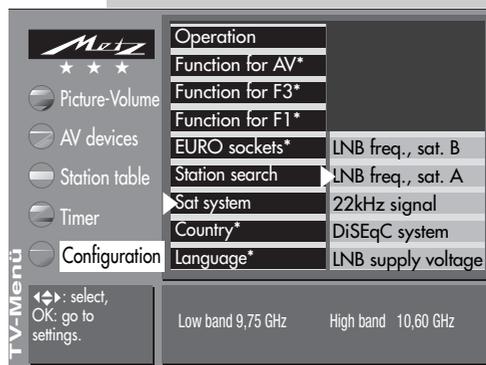
The LNB frequencies are used for switching between the high band and the low band. In the factory, these frequencies are set to the standard values of 9.75 GHz for the low band and 10.60 GHz for the high band.

The settings depend on the components used in the Sat system. Please consult the data sheets or the label attached to the LNB(s) for details of the correct settings.



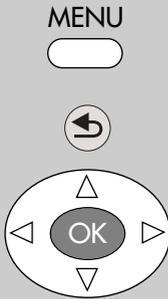
Setting the LNB frequencies

- Use the cursor control key to select „LNB freq. Sat A“ and press the „OK“ key to confirm your selection. The cursor is now located before the entry „Low band“ in the setting window.
- Use the - + key to set the frequency to the correct value.
- Use the cursor control key to switch to „High band“ and use the - + key to set the frequency to the correct value.
- Press the „OK“ key to save the new settings.



Possible only if a satellite upgrade kit is installed!

Call the menu

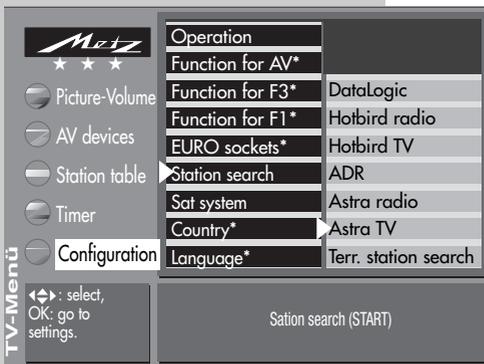


25. Automatic Sat station search

Most of the common Sat programmes are already stored in the TV set. These programmes are divided into groups as shown in the right-hand column of the picture on the left. Each of these groups can be read in only in its entirety

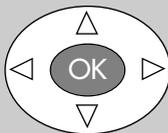
Starting the station search

- Use the cursor control key to select the desired Sat station card (in the example on the left: Astra) and press the „OK“ key to confirm your selection.
- Press the „OK“ key again to load the selected Sat stations.



- After all stations have been loaded, they are displayed in a station list.
- If desired, you can then select individual stations and delete them by pressing the II key.
- Press the „OK“ key to confirm that you want to save the remaining stations.

- Use the numeric keys to enter the number of the programme position in which the first station in this list is to be saved. The other stations in the list will be saved in the programme positions following the selected position. **CAUTION!** This will overwrite any stations currently in the specified and following positions!



- If you are not sure whether you want to save the stations, you can cancel the operation by pressing the „TV“ key.
- If you want to save the stations in the list, press the „OK“ key.

If you are not satisfied with the order in which the Sat stations are saved, see the section „Sorting stations“.

Possible only if a satellite upgrade kit is installed!

26. Specific Sat station search

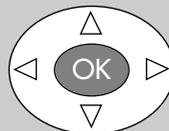
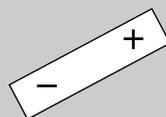
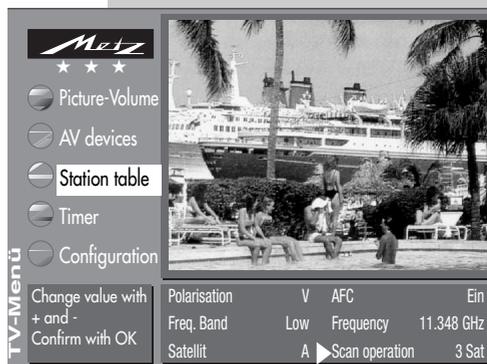
Call the menu

In the menu „Station table“, you can search for individual Sat stations or enter their parameters manually.

Direct frequency input or starting the station search

- Press the „MENU“ key to open the TV menu.
- Press the white key  to open the station table.
- Use the cursor control key to select an empty programme position or a programme position which you want to change.
- Press the „OK“ key twice and then use the **_ +** key to set the reception type to „TV Sat“.
- Press the „OK“ key. The cursor is now located before „Reception type“.
- Use the cursor control key to select „Frequency“.
- Press the „OK“ key, use the cursor control key to select „search“ and start the station search with the **_ +** key. Or: select the various menu items with the cursor control key and then use the **_ +** key or the numeric keys to set the individual parameters.
- Press the „OK“ to save the new station.
- Press the „TV“ key to close the TV menu.

MENU



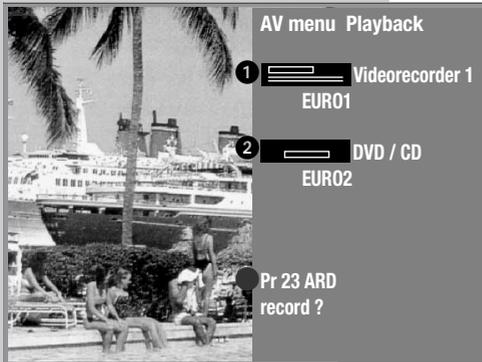
Possible only if a satellite upgrade kit is installed!

AV



Most video recorders do not have a satellite receiver, which means that they cannot directly record a programme from a satellite station.

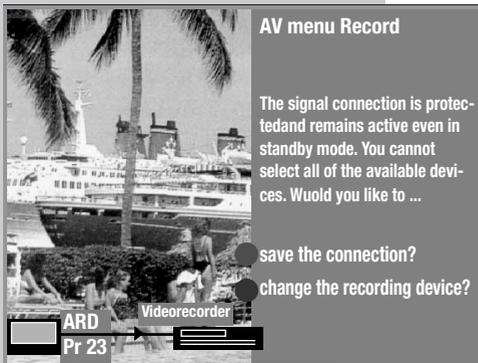
However, you can record such a programme with the aid of the OTR (one-touch recording) function of your TV set.



- Select the programme position for the Sat station whose programme you want to record.
- Press the „AV“ key to open the menu „AV playback“.
- Press the red key to make this Sat station available for recording.
- The last signal connection you made is now displayed. If this is not the one you want, use the numeric keys to select the correct connection.



- Press the green key to save the connection.



If you have a **Data Logic video recorder**, recording starts automatically (providing there is a cassette in the recorder).

If you have a **standard video recorder**, switch to the AV programme position and start a **one-touch recording (OTR)**.

- Press the „TV“ key to close the menu.

Do not switch your TV set to a different programme position while recording, since this will cause the wrong programme to be recorded.



Possible only if a satellite upgrade kit is installed!

28. Sat timer recording

If your TV set is equipped with a satellite receiver, you can use the "Sat timer recording" menu in the TV to record satellite programmes on your video recorder.

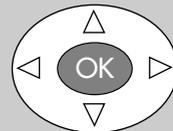
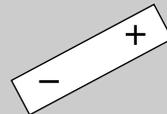
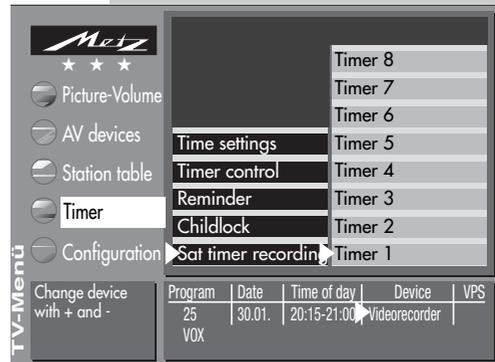
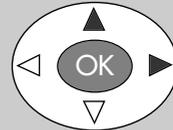
- Press the „MENU“ key to open the TV menu.
- Press the green key  to open the menu „Timer“.
- Use the cursor control key to select „Sat timer recording“.
- Press the „OK“ key and then use the cursor control key to select one of the timers.
- Press the „OK“ key and then, in the setting window, use the numeric keys to enter the programme position and the start and end times*. Use the - + key to select the recording device.
- Press the „OK“ key to save the settings.
- Press the „TV“ key to close the menu.

If you have a **Data Logic video recorder**, the TV set will automatically start the recording on the video recorder at the specified time. If you have a **standard video recorder**, you must also programme the recording on the video recorder. In this case, specify as the source the AV programme position (e.g. AV1) to which your TV set is connected.

For **VPS** recordings, the TV set switches to the recording state one hour before the specified start time, so that it can react if the programme you want to record starts earlier than planned. If you have programmed a timer recording, do not switch off the video recorder with its main switch.

Call the menu

MENU

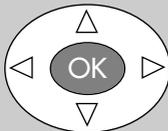
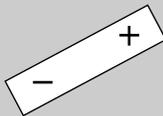
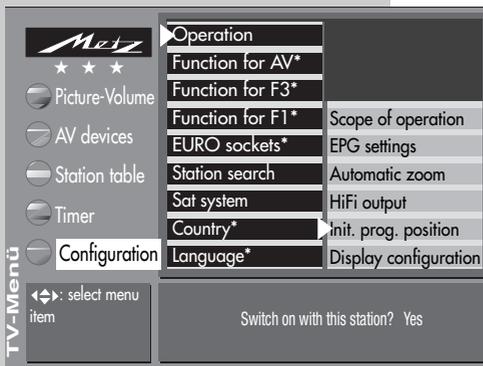


* Please note, for VPS recordings, that you must enter the VPS start time as the start time for the recording.

Possible only if a satellite upgrade kit is installed!

Call the menu

MENU



29. Initial programme position

You can define a so-called initial programme position in this TV set. This is intended primarily to enable you to switch to the AV programme position when you are using an external Sat receiver.

Setting the initial programme position

In a menu with two asterisks (**), the settings for this menu item cannot be changed.

In the menu „AV devices“ (see also section 22, „AV devices“), select and connect a Sat receiver (Sat/SetTop).

- Press the „AV“ key.
- In the „AV playback menu“, use the numeric keys to select the position „Sat/SetTop“.
- Press the „MENU“ key to open the TV menu.
- Press the red key to open the menu „Configuration“.
- Use the cursor control key to select „Operation“ and then „Initial programme position“.
- Press the „OK“ key and then, in the setting window, use the – + key to select „Yes“.
- Press the „OK“ key to save the new setting.

After this, the AV programme position will be selected automatically if you switch your TV set on with the main switch and then press the key on the remote control unit.

30. Operation without the remote control unit

The following procedures are intended only for cases where the batteries of the remote control unit are exhausted or the remote control unit is not available.

The TV controls are at the front of the set. Depending on the TV model, they are located underneath a cover which can be opened by pressing at the marked position.



Switching on

Press the main switch on the TV set to switch the set to standby mode. To switch the set on with programme position 1 selected, press and hold the F key until the green display lights up.

You can also execute the following functions with the controls on the front of the TV set. The preselected function remains active for 10 seconds.

Changing programme positions:

Press the - + keys.

Volume:

Press the preselection key F until the bar display for volume appears on the screen. Then press the - or + key to adjust the volume.

Contrast:

Press the preselection key F until the bar display for contrast appears on the screen. Then press the - or + key to adjust the contrast.

31. Technical data

Mains voltage:

230 V ~ 50 / 60 Hz

240 V ~ (Australia only)

Antenna input::

75 Ohms unbalanced

DIN 45325

Reception bands:

Standard channels 2 - 12,

21 - 69

Special channels S1 - S20,

S21 - S41,

S42 .. S46 (Belgium OIR channels)

Power consumption:

	Power consumption (to CENELEC/TC 59 X)	Music output power to DIN 45324 into 4Ω(at 1 kHz (sinusoidal power)
Spectral-72 Corum-72	ca. 140 W	2 x 20 + 40 W (2x12 + 24 W)
Astral-72	ca. 140 W	2 x 20 + 40 W (2x12 + 24 W)
Spectral-82	ca. 135 W	2 x 20 + 40 W (2x12 + 24 W)
Spectral-84	ca. 170 W	2 x 20 + 40 W (2x12 + 24 W)
Artos-82	ca. 135 W	2 x 20 + 40 W (2x12 + 24 W)

Power consumption per hour:

See power consumption in Wh.

Standby mode: approx. 1.7 W

32. Options

- **Satellite upgrade kit 081 NH 1017**

for reception of satellite stations without the need for a separate Sat receiver.

- **Satellite upgrade kit 083 NH 1014**

similar to the above, but also capable of receiving unencrypted ADR (Astra Digital Radio) stations.

- **DVB-S upgrade kit 025 NK 1014 (CI)
or 025 NL 1138**

for reception of analogue and digital satellite stations broadcasting TV and radio programmes without the need for a separate Sat receiver.

- **DVB-T upgrade kit 057 NH 1118 (CI)**

for the reception of digitally transmitted terrestrial TV and radio stations which can be received with a rod antenna or a terrestrial house antenna without the need for an separate receiver.

- **TV-HDR upgrade kit 010 NK 1014**

This kit is for installation of a hard disk on which programmes can be recorded and managed. The hard disk feature also permits time-shift operation and the remote programming (at extra charge) of your TV set.

For other upgrade kits, please consult your local dealer.

Important note for users of the TV set:

Unauthorised modification of this TV set, in particular changing the high voltage or using a CRT of a different type, can result in the emission of high levels of X-ray radiation. TV sets modified in this manner no longer conform to the official approval for operation and may not be used.

33. Connecting headphones

The headphone socket is located on the front of the TV set. On many models, you must first open a cover by pressing at the marked location in order to expose the socket.

We recommend using headphones with an impedance of at least $32\ \Omega$. The use of headphones with a lower impedance (about $8\ \Omega$) will reduce the dynamic range.

The headphone volume can be saved as one of the standard settings. In the case of dual-language programmes, you can listen to either sound channel 1 or 2 on the headphones, regardless of the channel selected for the loudspeakers.

34. Cleaning the TV set

 **Always switch off the TV set with the main switch before cleaning it!**

Clean the case of the TV set only with a soft, dry (or slightly moistened) cloth. Do not use aggressive detergents or scouring powders, since these could damage the paintwork and/or remove the inscriptions. Clean the screen with a moist window leather.

35. Glossary

AV programme position

AV devices have one or more sockets, depending on the model. These sockets are labelled on the device, for example with AV1.

These sockets can be selected on the AV device and the selected socket is shown on the display of the AV device, for example A1 for socket AV1.

Bandwidth (optional)

The bandwidth needs to be set for sound sub-carriers. For ASTRA stations, the bandwidth should normally be set to 130 kHz.

Stereo wide

When receiving programmes with stereo sound, the physical distance between the loudspeakers can be increased artificially to improve the stereo effect.

Code

The settings for the childlock are protected by a 4-digit numerical code which you can set a desired. Write down or remember the code you define. If you forget the code, ask your local dealer for assistance

CTI

The CTI (Colour Transient Improvement) circuit is an electronic circuit which ensures precise transitions between differently coloured parts of the picture, preventing the colour smearing which could otherwise occur. The CTI function is active for programmes received via the antenna input and for picture signals from AV devices.

De-emphasis (optional)

This is a method for reducing noise on the sound channel of stations received via satellite. The appropriate settings can be found in specialist magazines.

For ASTRA stations, always select „Panda“.

35. Glossary

Tone settings

You can switch the tone settings between „Normal“ and „Speech“.

Volume correction

The sound signals from different stations may vary considerably in their volume. You can correct the volume of a particularly loud or soft station so that it is similar to that of the other stations. The volume correction remains active even when the standard values are recalled.

Standard settings

Standard settings are all values (such as brightness, volume, chrominance, etc.) which are the same for all programme positions.

Spatial sound

An artificial stereo effect can be generated for mono transmissions.

Noise reduction

This setting can be used to improve the quality of pictures with „snow“ or other noise resulting from poor reception conditions. Depending on the amount of interference, various correction facilities are available and the noise reduction can be set individually for each programme position.

VCR

The VCR function ensures optimum picture quality when playing back recordings from tape devices such as camcorders and video recorders.

Video level (optional)

The video level adjustment can be used to achieve a uniform contrast for Sat stations with varying modulation levels. However, this adjustment affects only the signal at the EURO sockets and the correct setting must be determined by trial and error (by making test recordings).

35. Glossary

Forced mono

In some cases, your TV set may switch from mono to stereo during a programme, although the station is not transmitting a stereo signal. This is normally due to the local reception conditions. If you activate „forced mono“ for the selected programme positions, all programmes will be reproduced in mono, regardless of the received signal.

Film mode

The function "Film mode" improves the picture quality when viewing black-and-white programmes and cinema films. Moving objects are displayed more smoothly and the picture looks more plastic. This function is set in the factory to "Automatic". For normal TV programmes, the automatic setting switches the film mode off. We also recommend setting film mode to "Off" when playing back "noisy" films from a video recorder.

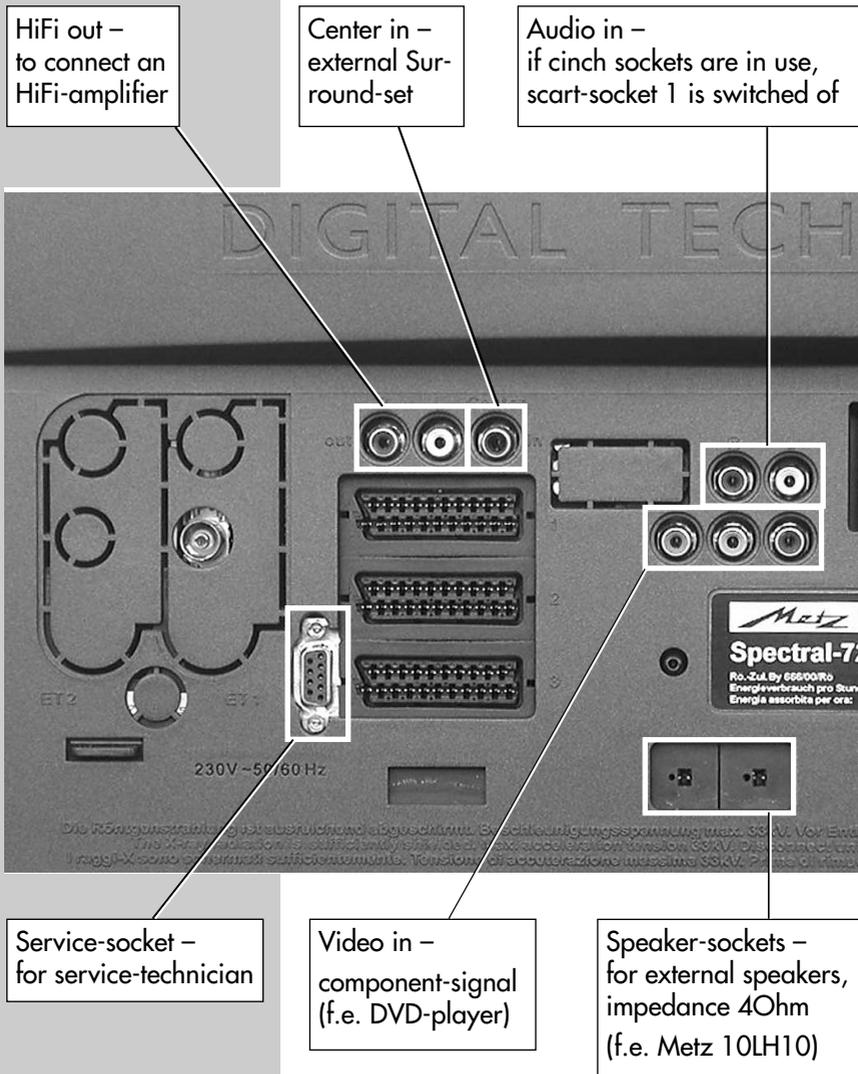
Progressive Scan

This function improves the sharpness and contrast of the picture, particularly when playing back films from a DVD player which is connected via YUV (see page 75). For watching normal TV programmes, the progressive scan function should be set to "Automatic".

Problem	Possible cause	Remedy
The TV set does not react to commands from the remote control unit.	<ul style="list-style-type: none"> • There is no visual contact between the remote control unit and the TV set. • Sunlight is falling directly on the infrared of the TV set. • The batteries in the remote control unit are exhausted. • The TV set has been switched off with the mains switch. • The microprocessor is faulty. 	<ul style="list-style-type: none"> • Ensure that there are no obstacles. • Avoid direct exposure to sunlight. • Replace the batteries. • Switch on the TV set with the mains switch. • Switch the TV set off with the mains switch and then switch it on again.
Unnatural colours, coloured spots on the screen	<ul style="list-style-type: none"> • Strong magnetic fields in the vicinity of the TV set (from loudspeakers or other devices) 	<ul style="list-style-type: none"> • Move the loudspeakers away from the TV set. • If the coloured spots persist, switch the TV set off with the mains switch, wait a few seconds and then switch it on again.
After the TV set has been switched on, the message „Please enter code“ is displayed.	<ul style="list-style-type: none"> • The childlock function has been programmed to prevent selection of any station. 	<ul style="list-style-type: none"> • Enter the code number with which the childlock function was programmed.
The TV set does not switch to the selected programme position. Instead, a list of stations is displayed with a teddy-bear symbol.	<ul style="list-style-type: none"> • The childlock function has been programmed to permit selection of only the stations shown in the list. 	<ul style="list-style-type: none"> • Enter the code number with which the childlock function was programmed.
You are playing back a film from an AV device in the aspect ratio 16:9, but the picture is displayed in the 4:3 format.	<ul style="list-style-type: none"> • The picture format for the AV programme position (e.g. AV2) has not been set correctly in the TV menu. 	<ul style="list-style-type: none"> • Select the AV programme position and set the picture format to 16:9 or "Automatic" (see Section 11.1).

Problem	Possible cause	Remedy
Immediate recording of a terrestrial station (received via your house antenna or cable) with Data Logic does not work.	<ul style="list-style-type: none"> • The Data Logic video recorder is not connected to the house antenna or cable outlet. 	<ul style="list-style-type: none"> • Connect the Data Logic video recorder to the house antenna or cable outlet with the aid of an antenna cable.
General problems with an external AV device connected to the TV set.	<ul style="list-style-type: none"> • The AV device has not been set up correctly in the TV set. 	<ul style="list-style-type: none"> • In the menu „AV devices“, select the appropriate device with the cursor, set the „Signal OUT/IN“ accordingly and press the „OK“ key. Connect the AV device only as shown in the connection diagram.
Data Logic does not work.	<ul style="list-style-type: none"> • The Data Logic video recorder with data interchange has not been set up correctly in the TV set. • The Data Logic video recorder is not connected to the EURO socket (see av Menu) • The Euro-AV (Scart) cable being used does not have all 21 pins connected. 	<ul style="list-style-type: none"> • In the menu „AV devices“, define the Data Logic video recorder as video recorder 1 with „Datalogic ON“. • Connect the Data Logic video recorder to the EURO socket with a Scart cable. • Use a Euro-AV (Scart) cable with all 21 pins connected.

Connecting facilities at back-panal of TV-sets



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VC21, VC43, VC44					
VC62, 21VB11					
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ADVANTZ	481				
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	508	527	530	532	
	607	609	610	612	
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BONDSTECBRANDT	505				
BRANDT ELECTRONIQUE	503	504	505	524	
	574				
BRAUN	570				
BRIONVEGA	450	575			
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BRUNS	466	487	490		
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GRUNDIG	461	462	463	464	MAGNAVOX	481	507	527	547
	491	492	493	495	MAGNIN	481	547		
	496	497	507	527	MAGNUM	581	582		
	530	531	563	584	MANESTH	487			
	585	600	606	609	MARANTZ	491	528	565	566
	610	611	612	613	MARQUANT	487	490		
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H ANSEATIC	481	575			MATRIX	481			
HANTAREX	575				MATSUI	486	509	560	561
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HITACHI	481	485	503	505	MGN	547			
	530	535	601	603	MINERVA	606	609	610	612
	604				MINOLTA	477			
HYPSON	487				MITSUBISHI	477	505	519	527
I MPERIAL	510	575				542	609	612	
INGERSOL	509					487	547	468	477
INNO HIT	510	547	575			481			
INNO HIT	616				MULTITECH	466	481	487	575
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	600	601	603	604	NEC	504	505	576	
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NIKKAI	466					512	513	519	528
NIKKO	481					529	541	565	575
NOBLIKO	606					599	604	606	609
NOKIA	450	468	470	483		610	611	612	614
	488	489	503	504		616	621		
	505	510	516	517	QUESTAR	466			
	518	547	551	553	R ADIALVA	481	487	527	
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	575				RANK/BUSH/MURPHY	601			
O CEANIC	483	489	601	604	RCA	477	481	483	547
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ORION	481	509	531	536	RICOH	481			
	537	538	558	559	ROADSTAR	481	487	547	617
	560	561	589	591	ROYAL	466	487		
OTTO VERSAND	527	474	493	496	S ABA	499	503	504	505
	508	512	513	541	SABA	515	521	524	540
	544	565	575	599	SABA	574	601	603	
	609	610	611	612	SAISHO	486	509	575	
	616	620	621		SALORA	467	468	470	483
P AEL	606				SALORA	516	517		
PALLADIUM	481	487	491	505	SAMBERS	606			
PANASONIC	507	508	527	532	SAMEX	547			
	533	549	600	601	SAMSUNG	510	547	575	575
	623					597			
PATHE MARCONI	503	505			SANKY	487			
PAXSONIX	547				SANSUI	487	505	575	
PENNEY	477	481	527	547	SANWA	509			
PENTAX	477				SANYO	468	469	470	471
PERSHIN	606					551	577	586	
PHILCO	481	507	527	547	SBR	527			
PHILIPS	481	491	507	528	SCHAUB LORENZ	450	468	483	505
PHILIPS	529	530	547	548	SCHNEIDER	477	478	481	487
PHILIPS	550	563	564	565		510	527	529	530
PHILIPS	568	575	620	621		563	564	569	571
PHILIPS	624	625				573	575	578	581
PHILIPS (F)	491	565	575			582	604		
PHONOLA	527				SCOTT	481			
PILOT	481				SEARS	468	477	481	
PIONEER	477	527	539	575	SEG	487	490	510	547
PRIMA	505	547			SEI-SINUDYNE	509	528		
PROFEX	487	490	529		SELECO	503	504	505	545
PROFILE	547				SENTRA	466			
PROSCAN	477	481	483	547	SETRON	466	487		
PROTEC	487				SHARP	468	544		
PULSAR	481	547			SHINTOM	487			
PULSER	468	481	547		SHIVAKI	481	575		
PYE	565	575			SHOGUN	547			
Q TY1	592				SHORAI	509			
QUARTER	468				SICE	609	612		
QUARTZ	481	547			SIEMENS	459	461	462	464
QUASAR	507	527				468	469	470	472
QUELLE	450	459	461	464		479	480	481	486
	470	471	474	477		491	492	493	494

Codetabel

	495	496	497	498	TRIAD	575			
	511	525	530	584	TRIX	481			
	607	609	610	611	TVA	466			
	612	614			U HER	466	477	481	503
SILMA	575					505	510	543	
SILVA	481				ULTRAVOX	450	616		
SINGER	487	547	575	616	UMA	565	575	601	604
SINUDYNE	509	513	527	575	UMA	606	609	612	614
	599				UNITECH	547			
SOLAVOX	466	604			UNITED	560			
SONOKO	575				UNIVERSUM	481	483	491	527
SONOLOR	601					530	547	571	575
SONTEC	481					606	609	612	621
SONY	506	512	513	514	UNIVOX	604			
	541	599	623		V ICTOR	505	545		
SR1000	547				VIDEOMASTER	466			
STS	477				VIDEOPLUS	554	562	589	
SUNWOOD	487				VIDEOSONIC	547			
SYLVANIA	527				VIEWMARK	481			
SYMPHONIC	481	487	527		VIEWMAX	481			
T AISHO	509				W ARDS	477	487	547	
TALENT	609	612			WEGAVOX	575			
TANDBERG	623				WELTBlick	481			
TANDY	468				WHITE WESTINGHOUSE	450	565		
TASHIKO	528	529			WINSTON	575			
TATUNG	505	527			WIZJA	528			
TEAC	505				WORLDVIEW	575			
TEC	466				X R1000	487	547		
TECHLINE	487				Y AMISHI	487			
TECHNICS	527	532			YOKAN	487			
TECHNILAND	575				YOKO	466	481	487	490
TECHNISAT	563					510	547		
TEKNANT	575				Z ENITH	481			
TEKNIKA	481								
TELEAVIA	503								
TELEAVIA	505								
TELEFUNKEN	500	503	504	505					
	515	521	524	574					
	579	594							
TELEORDER	547								
TELERENT	505								
TELESERVICE	609	612							
TELETECH	487								
TENOSAL	487								
TENSAI	481	487	490	509					
	575	593							
THOMAS	547								
THOMSON	499	500	503	504					
	505	524	574	594					
	60	6226							
THORN	474	482	501	503					
	505	542	565	575					
	586	604	606	609					
	612								
THORN-FERGUSON	501	503	504	505					
	575	601	604	606					
	609	612							
TOKAI	481	487							
TOSHIBA	474	481	505	527					
	547								
TOTEVISION	481	547							
TOWADA	487	490							
TOWIKA	487								

Codes DVD-Player

M ETZ	204	239		
AKAI	214			
CYBER HOME	223			
DENON	216	230		
GRUNDIG	222	232	238	
HARMAN/KARDON	206			
HITACHI	205	210		
JVC	212			
KENWOOD	208	231		
LABWAVE	200	201		
LINN	215			
LOEWE	219			
MARANTZ	218	219	236	
MEDION	221			
NAD	207			
NONAME	228			
ONKYO	209	225	226	
PANASONIC	216			
PHILIPS	219	220	227	233
PHILIPS	234	235	236	237
PIONEER	203	204		
SAMSUNG	210			
SEG	201			

Codetabel

SHERWOOD	224				MINOWA	972			
SONY	211	229			MISSION	908	909		
TECHNICS	216	217			MTC	955			
THOMSON	213				NAD	947			
TOSHIBA	202				NAIM	908			
YAMAHA	216				NAKAMICHI	930			
Codes HI-FI - CD					NOKIA	938			
AIWA	815	816	817	884	NONAME	888			
AKAI	856	857	872	921	NSM	802	803	804	805
AKKAI	856					806	807		
AMSTARD	957				OKANO	869	871		
AMSTRAD	929	940	942	956	ONKYO	819	827	861	881
ARCAM	908				PALLADIUM	810	851	866	870
ASWO	909				PANASONIC	834	915	918	
BANG & OLUFSEN	808				PHILIPS	833	908	909	911
BRAUN	975	976				965			
BUSH	888				PIONEER	824	825	826	850
CAMBRIDGE	945					862	863	864	922
CAMBRIDGE AUDIO	945					923			
CARVER	908				PMG	906			
DAEWOO	876				PROTON	908			
DENON	801	812	845	846	QUAD	908	965		
	853	899	900	901	RADIOTONE	958			
	961	962			RADMOR	911			
DIORA	949				REVOX	829			
DUAL	822	832	859	994	REVOX/STUDER	910			
FISCHER	830	831	920	953	ROTEL	818	908		
GOLDSTAR	885				SABA	926			
GOODMANN'S	872				SAE	908			
GOODMANN'S	888				SAMSUNG	939	951	966	968
GRUNDIG	908	911	912	913	SANSUI	908			
HARMAN KARDON	905	931	934	935	SANYO	852	860	919	
HITACHI	853				SCHNEIDER	821	840	841	868
INTERSOUND	960					869	870	873	885
ITT	937					888	892	911	927
JVC	844	848	849	902		928	929	955	959
	903	904	992			960	972	973	977
KENWOOD	820	847	858	859		978	979	980	981
	877	878	879	925		982	983	984	985
	948	963				986	987	988	989
KRELL	908				SHARP	799	800	813	847
LINN	908	964			SHERWOOD	936	943	944	
LUXMAN	924	946	967		SIEMENS	833	867	868	869
METZ HE11	882					872	873	874	875
MARANTZ	833	908				876	880	883	885
MATSUI	908					886	887	889	890
MEDION	955					891	969	970	971
MERIDIAN	908				SINOTEC	892			
MAGNAVOX	908				SINOTEC (PEPSI-DOSE)	892			
MICROMEGA	908				SONY	842	843	893	895
						896	897	898	932
						990	991		
					SUPERTECH	888	945		
					SYLVANIA	908			
					T+A	882	974		

Codetabel

T+A ELECTROAKUSTIK	882			
TECHNICS	809	916	917	918
	950	993		
TENSAI	954			
THOMSON	823			
UHER	814			
UNIVERSUM	869	872	908	952
	966	979		
UNKNOWN	995			
YAMAHA	828	854	855	933
	941			

Codes HI-FI - Tape

AIWA	842	843	844	962
	963			
AKAI	845	849	913	933
	934	945	951	987
AMSTRAD	916			
ASWO	976			
BANG & OLUFSEN	836			
BRAUN	870			
BUSH	835			
DAEWOO	907			
DENON	834	840	841	879
	891	892	970	971
	972			
DIORA	899	900		
DUAL	837	850	851	935
	936			
FISCHER	893	894	985	998
GOLDSTAR	964			
GOODMANN'S	833			
GOODMANS	867			
GRUNDIG	976	979	980	
HARMAN KARDON	926	984		
HITACHI	915	931		
ITT	918	919		
JVC	862	863	974	975
	994	995	996	997
KENWOOD	848	917	935	936
	957	958	990	993
LINN	888	889		
LUXMAN	876	877	884	989
METZ HE11	961			
MARANTZ	887	922	999	
NAD	903	904	905	906
NAKAMICHI	927			
NOKIA	920			

OKANO	948	949		
ONKYO	846	847	856	901
	902			
ONKYO	959	960		
PALLADIUM	944			
PANASONIC	928	929	982	
PHILIPS	921	976	980	999
PIONEER	853	854	855	912
	938	939	941	942
	943	988		

RADMOR	978			
REVOX	860	861		
REVOX/STUDER	977			

SAMSUNG	883	885	886	896
	897			
SANY	985			
SANYO	930	937	986	
SCHNEIDER	866	867	868	869
	872	873	874	878
	918	919	947	964
	976			
SHARP	839	864	993	
SHERWOOD	890	908	909	910
	911	923		

SIEMENS	880	881	882	946
	947	950	951	952
	953	954	955	956
	964	976		
SONY	865	925	965	966
	967	968	969	991
	992			

T+A	871	961		
T+A ELEKTROAKUSTIK	961			
TECHNICS	838	898	981	983
THOMSON	852			

UNIVERSUM	868	875	886	895
	947	950		

YAMAHA	857	858	859	914
	924	932		

Codes HI-FI - Tuner

AIWA	376	377	745	
AKAI	734	737	993	
AMSTRAD	452	455	464	468
	469			
ASH	744			
ASWO	427			
BANG & OLUFSEN	369			
BUSH	748			
DAEWOO	458	739		
DENON	371	372	423	424
	445	471	991	
DIORA	461			

Codetabel

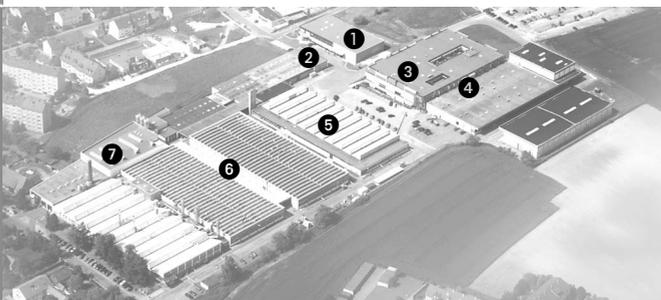
DUAL	370	381	994			737	738	739	746
FISCHER	434	449				747			
GOLDSTAR	746					749			
GOODMANN'S	737					SINOTEC (PEPSI-DOSE)			
GOODMANN'S	748					SONY	416	420	421
GRUNDIG	427	429	450			SUPERTECH	466		
HARMAN KARDON	418	730				T+A	405	743	
HITACHI	453	991				T+A ELEKTROAKUSTIK	743		
ITT	412					TECHNICS	387	430	431
						TENSAI	406		462
						THOMSON	382		
JVC	414	425	444	447		UHER	375		
	448					UNIVERSUM	403	467	473
							737		733
KENWOOD	417	439	446	740		YAMAHA	385	415	435
	741	994					992	454	
LINN	472					Codes HIFI - Amp			
LUXMAN	438	474				AIWA	777	985	986
METZ HE11	743					AKAI	753	754	766
MARANTZ	450					AMSTRAD	785	813	829
MINOWA	409						840		831
MISSION	426					ASH	776		
NOKIA	410					ASWO	793		
NAD	459					BANG & OLUFSEN	996		
NAKAMICHI	419					BRAUN	960		
NONAME	748					BUSH	748	782	
OKANO	733	736				DAEWOO	770		
ONKYO	379	440	460	742		DENON	751	789	790
							817	988	791
PALLADIUM	731	735				DIORA	835		
PANASONIC	371	432	451			DUAL	952	981	995
PHILIPS	427	450				FISCHER	750	820	839
PIONEER	383	384	436	437		GRUNDIG	794	795	804
	996	997	998	999		GOODMANN'S	749	766	782
						GOLDSTAR	779		
REVOX	386					HARMAN KARDON	760	823	
REVOX/STUDER	427					HITACHI	751		
RADMOR	428					ITT	827		
ROTEL	378					JBL	821	975	
						JVC	792	816	819
SAMSUNG	411	463	465	473		KENWOOD	755	771	818
	475	476				LINN	794	795	
SANYO	433	990	995			LUXMAN	810	845	954
SCHNEIDER	374	380	388	390		METZ HE11	774		
	391	392	393	394		MARANTZ	794	795	798
	395	396	397	398		MEDION	785		
	399	400	401	402		MERIDIAN	795		
	403	404	407	408					
	409	412	441	442					
	443	469	470	732					
	733	735	746	748					
	749								
SHARP	373	446							
SHERWOOD	413	456	457						
SIEMENS	426	427	477	478					
	479	480	732	733					

Codetabel

MINOWA	978			
MISSION	799			
NOKIA	826			
NAD	834			
NAKAMICHI	822			
NIAM	795			
NONAME	782			
OKANO	763	765		
ONKYO	772	982		
PALLADIUM	761	783	991	
PALLADIUM/OKANO	764			
PANASONIC	805	808	994	
PHILIPS	793	794	795	796
	797	798	803	992
PIONEER	757	758	795	
PRO-LOGIC	957			
QUAD	795			
RADIOTONE	841			
RADMOR	801	802	803	
REVOX	843	977		
REVOX/STUDER	796	797	798	
ROTEL	983	984		
SABA	811			
SAMSUNG	828	837	844	846
SANYO	750	756		
SCHNEIDER	763	764	768	779
	782	783	784	785
	786	794	812	813
	814	815	827	840
	842	951	953	956
	961	962	963	964
	965	966	967	968
	969	970	971	972
	973	978		
SHARP	818	990		
SHERWOOD	825	832	833	
SIEMENS	762	763	766	767
	768	769	770	775
	779	780	781	784
	785	794	800	947
	948	950		
SINOTEC	786			
SINOTEC (PEPSI-DOSE)	786			
SONY	787	788	974	991
SUPERTECH	782			
T+A	774	959		
T+A ELEKTROAKUSTIK	774			
TECHNICS	805	806	836	976
	993			
TENSAI	958			
THOMSON	980			
UHER	987			
UNIVERSUM	763	766	838	844
	963			
YAMAHA		752	809	824
			979	830



- ① Service Centre
- ② Training Centre
- ③ Administration and development
- ④ Storage/Dispatch
- ⑤ Mecablitz production
- ⑥ TV production
- ⑦ Plastics technology



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Postfach 1267, D-90506 Zirndorf

Fon: +49 911 - 97060
Fax: +49 911 - 9706340

www.metz.de
info@metz.de

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