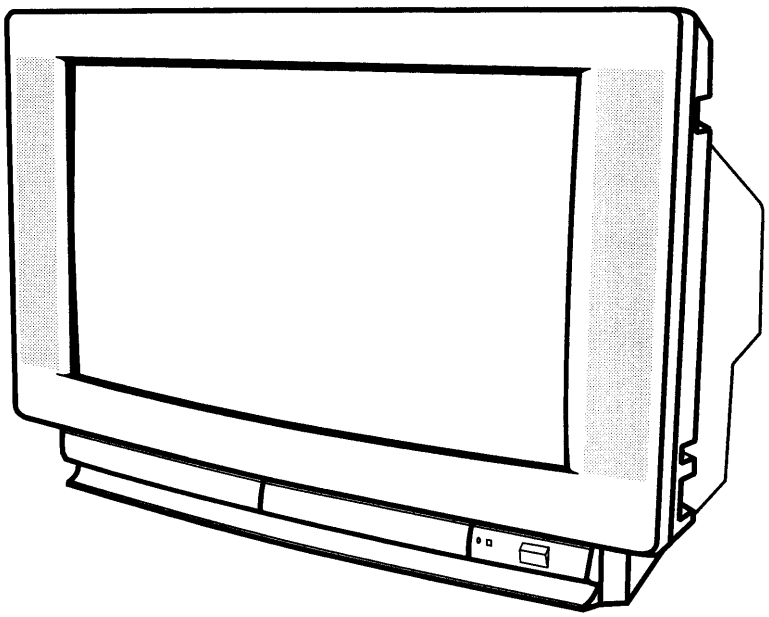
SANYO

Instruction Manual

CE28WP3-B
CE32WP3-B

Colour Television



DOLBY SURROUND
PRO • LOGIC

PLUG & PLAY AUTO TUNE/SORT

TEXT TOP FLOF

SURROUND

NICAM

2 EURO-AV

V L R FRONT-AV

Please read this Instruction book before using your television.
We wish you many hours of pleasure from your new television.

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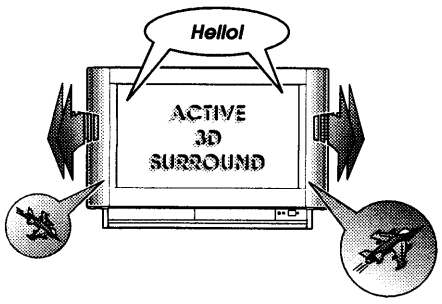
What is Dolby Pro Logic Surround ?

DOLBY SURROUND PRO • LOGIC

Manufactured under license from Dolby Laboratories Licensing Corporation.
Dolby, the double-D symbol and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

This TV set is equipped with a Dolby Pro Logic Surround decoder which gives you an enhanced audio visual experience when watching programmes encoded with Dolby Surround.
In Dolby Pro Logic Surround system, in addition to the left and right sound channels there are two special sound channels available by giving to the sound a three dimensional quality. A centre channel is added to balance stereo image because the traditional stereo sound is effective only for viewers sitting near the centre axis of the screen. A rear surround channel is added to give depth and presence to the surround image.



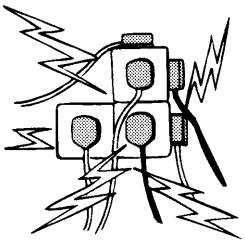
What is Active 3D Surround ?

In traditional stereo sound, left and right channels combine to create a stereo image. Better speakers can create a larger perceived sound stage, so sound seems to emanate from a few feet behind the monitor. Sound can have a much wider presence with Active 3D Surround technologies. Music and sound effects appear to come from points in the room far from the speakers. Objects (such as jets) seem to move in space toward and then past the listener, whilst the important dialogue channel is still appearing to come from the centre of the screen.

SAFETY PRECAUTIONS

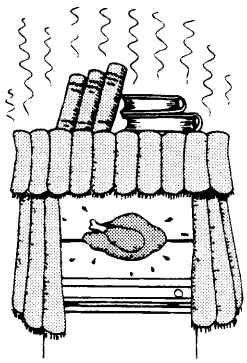
CAUTION: Please read and retain for your safety. This unit has been engineered and manufactured to assure your personal safety. But improper use can result in potential electric shock or fire hazards. In order not to defeat the safeguards incorporated in this receiver observe the following basic rules for its installation, use and servicing.

Installation



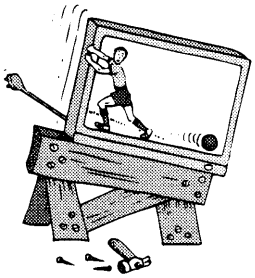
Do not allow anything to rest on the power cord. **Do not** locate this television receiver where the cord will be damaged by people walking on it.

Do not overload wall outlets and extension cords as this can result in fire or electric shock.

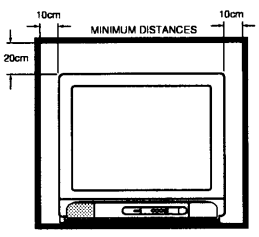


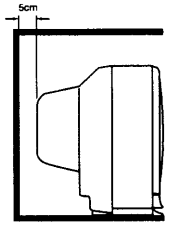
Slots and openings in the cabinet and in the back or bottom are provided for ventilation to ensure reliable operation and to protect it from overheating. These openings **must not** be blocked or covered. The opening **should never** be covered with a cloth or other material, and the bottom openings **should not** be blocked by placing the television receiver on a bed, sofa, rug, or other similar surface.

This television receiver **should never** be placed near or over a radiator or heater.



Do not place your television receiver on an unstable stand, shelf or table. Serious injury to an individual, and damage to the television may result if it should fall. Your sales person can recommend approved stands or shelf and wall mounting instructions.

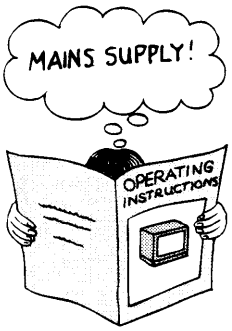




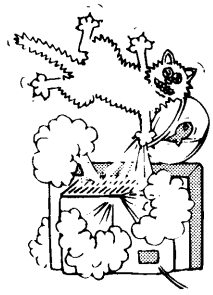
This television receiver should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.

If the television is built into a unit, or enclosed, the minimum distances for ventilation must be maintained. Heat build up can reduce the life of your television, and can be dangerous.

Use

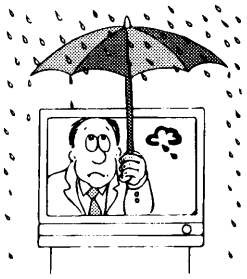


This television receiver should be operated only from the type of power source indicated on the television or as indicated in the Operating Instructions. If you are not sure of the type of power supply in your home, consult your sales person or your local power company.



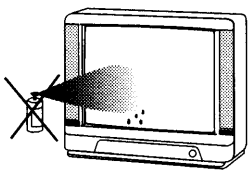
Never add accessories that have not been specifically designed for this television.

Do not drop or push objects into the television cabinet slots or openings. Some internal parts carry hazardous voltages and contact may result in an electric shock hazard. **Never** spill liquids of any kind on the television receiver.



Do not expose the television receiver to rain or use near water. For example, near a bathtub, kitchen sink, in a wet basement, etc. Before cleaning, unplug the television receiver from the wall socket.

Never stand on, lean on or push suddenly the television or its stand. You should pay special attention to children. Serious injury may result if it should fall.



Do not apply liquid cleaners or aerosol cleaners directly onto the television receiver. Use a damp cloth for cleaning.

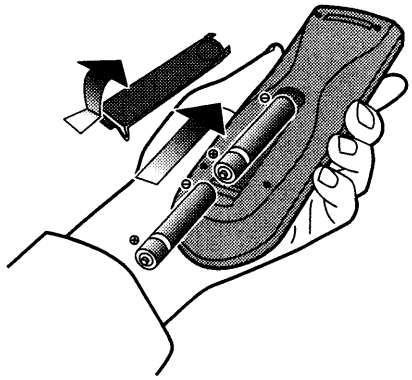
INSTALLATION

Battery Installation

1. Remove the battery cover by sliding it in direction of the arrow.

2. Install two "AA" 1.5 volt batteries so that the "+" and "-" marks on the batteries match the "+" and "-" marks inside the unit.

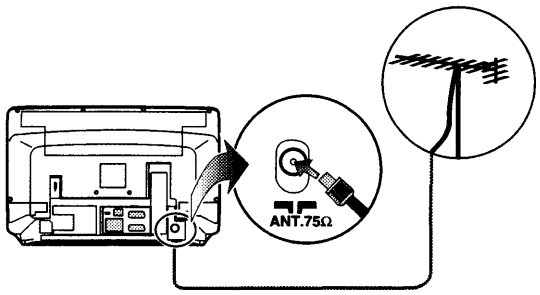
3. Close the battery cover.



Replace the batteries when the TV set is showing the following symptoms: Operation is unsteady or erratic, sometimes the TV does not work with the transmitter. Discharged batteries may leak and damage the unit. The normal life of batteries should be from nine to ten months.

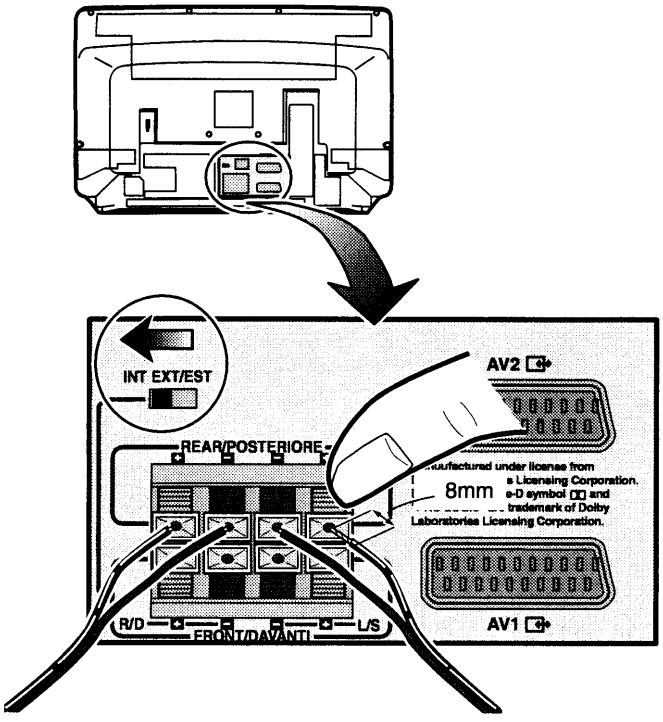
Aerial Connection

- The aerial socket is located on the back of the TV set.
- For all aerial problems please consult your local dealer.
- The connection to the peripheral AV equipment, refer to section "Connection of AV equipment" on page 16-17.



Surround Speakers

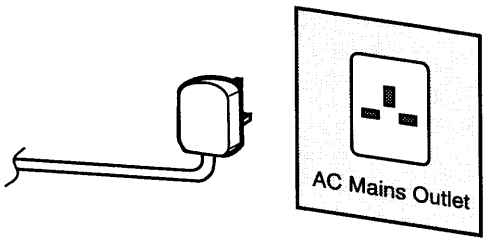
- Check if the Internal/External speaker selector on the back of the TV set is in the **INT.** position.
- Connect the two rear surround speakers to the connector clips on the back of the TV set.
- Connect the left rear surround speaker at **REAR L** and the right rear surround speaker at **REAR R** on the back of the TV set.
- Push the connector clip down and insert the end of the wire into the opening: the positive wire(marked with white line) to the red surround speaker connection; the negative wire to the black surround connection. Do not insert the wires too far.
- The centre speaker should always be located in the TV stand and the rear surround speakers should always be located behind or to either side of the listener. If preferred you can also hang the rear surround speakers on the wall.
- If you want to use the external speakers instead of the internal front speakers, connect the external left front speaker at **FRONT L** and the right front speaker at **FRONT R** on the back of the TV set, and then switch the Internal/External speaker selector to **EXT.** position.



INSTALLATION

Mains Supply

The TV set is prepared for a mains voltage AC220~240V, 50Hz. Connect the power cord of the TV set to a wall outlet. When the TV set is not to be used for an extended period of time, it is advisable to disconnect the power cord from the power outlet.



WARNING!
High voltages are used in the operation of this set. Refer service to qualified service personnel.

Important:
This equipment is fitted with an approved non rewireable UK mains plug. To change a fuse in this type of plug proceed as follows:

1. Remove the fuse cover and fuse.
2. Fit a new fuse which should be a BS1362 5Amp A.S.T.A. or BSI approved type.
3. Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place. If the mains plug contains a fuse, this should have a rating of 5Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5Amp.

Note: The severed plug must be destroyed to avoid a possible shock hazard should it be inserted into a 13Amp socket elsewhere.

The wires in this mains lead are coloured in accordance with the following code:

Blue -------> Neutral **Brown ----> Live**

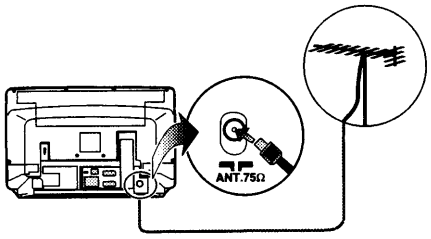
1. The Blue wire must be connected to the terminal which is marked with the letter "N" or coloured BLACK.
2. The Brown wire must be connected to the terminal with the letter "L" or coloured RED.
3. **Do not** connect either wire to the earth terminal in the plug which is marked with the letter "E" or by the earth symbol or coloured GREEN or GREEN and YELLOW.

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the wires.

Quick Set Up

This TV set provides a self-automatic tuning and sorting system function called "Plug & Play". It automatically begins searching and storing all available channels when switching-on the TV set for first time. To ensure that this feature works properly please follow the steps below before you switch on the TV set.

1. Connect your aerial cable socket to the rear of the TV. Don't worry about other AV equipment you should add this later referring to the section "Connecting AV equipment" in the instruction manual.

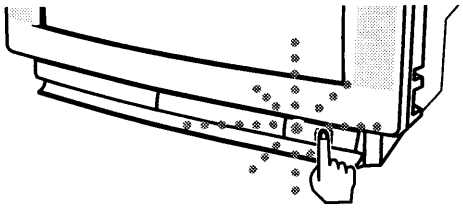


2. Plug the Mains cable plug into a wall socket.

This TV set is prepared for a mains voltage of AC220~ 240V 50Hz.

Please make sure that the aerial cable is connected to the aerial socket of the TV set before switching-on.

3. You are now ready to switch on. Simply press the **Mains ON/OFF** ⏻ switch on the front of the TV set.



If no picture appears but the power indicator is on, press the ⏻, **P▼**, **P▲**, or **0 - 9 button** as the TV set is in the standby mode.

A red power indicator will appear.

Please make sure that the aerial cable is connected to the aerial socket of the TV set before switching-on.

To receive the satellite broadcasting, a satellite tuner is required. Before carrying out the automatic setting up, receive the satellite broadcasting on the satellite tuner.

A self-automatic tuning and sorting system will be started as follows;

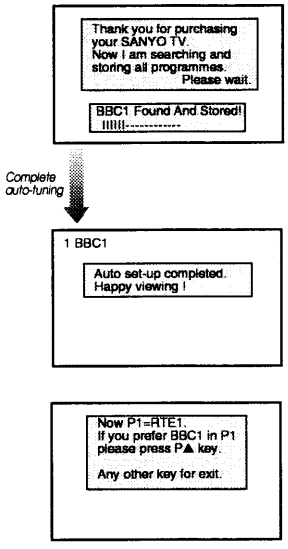
The tuning status and welcome messages will appear on the screen.

After completing this procedure, the ending messages appear on the screen.

To make this message disappear, press any of the control buttons.

Now the installation is completed !

If the TV set finds both of the stations (BBC1 or BBC2) and (RTE1 or RTE2) during the automatic setting up procedure, the resorting message will appear to ask you to set your preferred programme ordering, see case 3 or 4 on next page.



Channel Sorting

The channels are stored in consecutive programme positions starting at programme position "9". After all receivable channels have been found and stored, the TV set automatically allocates following major stations in the UK and Ireland into the programme positions 1 to 8.

RTE1	**RTE2**	**BBC1**	**BBC2**	**ITV**
CH4	**CH5**	**SKY**	**BBC-W**	**BBC-P**

CH4: Channel 4 or S4C

SKY: SKY GOLD, SKY SPORTS.etc

BBC-W: BBC World,BBC Worldwide feature 1

BBC-P: BBC Prime

● The channel sorting rule is as follows,

Case 1: There is no BBC1 and BBC2 channel, but RTE1 or RTE2 channel.

Programme position 1 : RTE1
Programme position 2 : RTE2
Programme position 3 : copied station from programme position 9
Programme position 4 : copied station from programme position 10
Programme position 5 : copied station from programme position 11
Programme position 6 : copied station from programme position 12
Programme position 7 : copied station from programme position 13
Programme position 8 : copied station from programme position 14

Case 2: There is no RTE1 and RTE2 channel, but BBC1 or BBC2 channel.

Programme position 1 : BBC1
Programme position 2 : BBC2
Programme position 3 : ITV
Programme position 4 : CH4 or S4C
Programme position 5 : CH5
Programme position 6 : SKY, BBC-W or BBC-P
Programme position 7 : copied station from programme position 9
Programme position 8 : copy station from programme position 10

Case 3: There are both of BBC1/BBC2 and RTE1/RTE2

Programme position 1 : RTE1
Programme position 2 : RTE2
Programme position 3 : BBC1
Programme position 4 : BBC2
Programme position 5 : ITV
Programme position 6 : CH4 or S4C
Programme position 7 : CH5
Programme position 8 : SKY, BBC-W or BBC-P

Case 4: There are both of BBC1/BBC2 and RTE1/RTE2 (Resorting order)

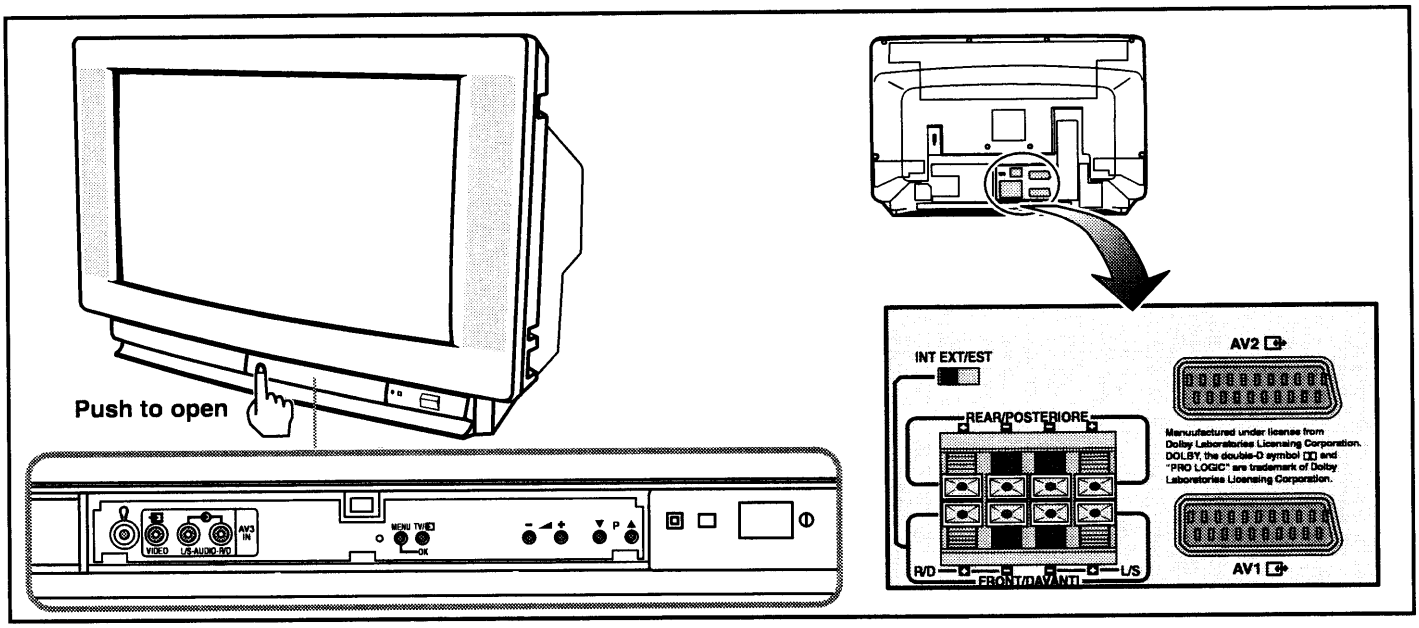
Programme position 1 : BBC1
Programme position 2 : BBC2
Programme position 3 : ITV
Programme position 4 : CH4 or S4C
Programme position 5 : CH5
Programme position 6 : SKY, BBC-W or BBC-P
Programme position 7 : RTE1
Programme position 8 : RTE2

✎ If any of them are not available in your reception area, some programme positions from 1 to 8 will not have a stored station. The remaining stations will be stored from programme position 9 in sequence as found.

✎ This procedure only appears at the first switch-on time.

✎ If additional channels become available (you move to another city or cable is installed), please follow the description "PRESETTING" on page 20.

GENERAL OPERATION

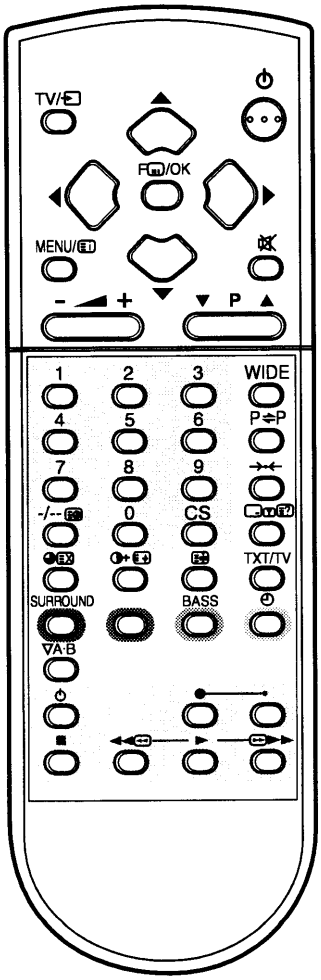


Controls and Terminals on TV

Symbol	Function
⏻	Mains On/Off switch
P▼ P▲	Programme down/up
-◢ ◢+	Level down/up
OK, TV/⊡	OK or TV/AV selector
MENU	Menu function call
⊡	Video input AV3
⊖	Audio input L R AV3
🎧	Headphone socket

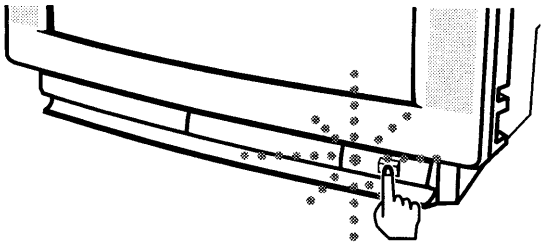
Controls on Remote Control Handset

Symbol	Function
▲ ▼	Pointer Up/Down operates as the Programme down/up button
◀ ▶	Pointer Left/Right operates as the Level Down/Up button
P▼ P▲	Programme down/up
-◢ ◢+	Level down/up
TV/⊡	TV/AV selector
🔇	Sound attenuation
⏻	Power on/Standby
MENU	Menu function call
SURROUND	Active 3D & Dolby Pro Logic surround mode selector
→•←	Picture setting recall
[-][Y]	Programme status call
◷	Time display
BASS	Bass
0-9	0-9 Numeric buttons
-/--	Digit
CS	Channel Selection mode selector
F[...]/OK	OK or Function
◕	Timer setting
∇A•B	Nicam/Bilingual selector
P⇌P	Previous programme selector
WIDE	Screen Mode selector



GENERAL OPERATION

Mains ON/OFF



■ To turn the TV set ON, press the **Mains ON/OFF ⏻ switch**. The power indicator illuminates red to show the power is on.

■ To turn the TV set OFF, press it again.

If no picture appears but the power indicator is on, press the ⏻ **button, P▲ P▼** or **0-9 button** as the TV set is in the Standby mode.

Standby

■ To turn the TV set into standby mode, press the ⏻ **button**. The power indicator illuminates more brightly.

■ To turn the TV set ON from standby mode, Press any of the following buttons: ⏻ **button, P▲ P▼, 0 to 9 Numeric buttons.**

In the Standby mode the TV set is still partially powered, this is denoted by the red Standby/Power indicator illuminating more brightly than in Power mode.

The **Mains ON/OFF ⏻ switch** must be in the ON position before the using remote control transmitter.

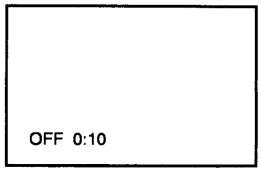
NOTE: It is not possible to turn on with the **Mains ON/OFF ⏻ switch** from the standby mode.

Be sure to set the **Mains ON/OFF ⏻ switch** to the off position, if a power failure occurs while viewing.

If you found a power indicator flashing, please turn the TV set off completely with the Mains ON/OFF switch and contact our Service desk. This warning is a sign to let you know that the power protection function of this TV set is now operating.

Auto Shut Off

This TV set will automatically switch into the standby mode, 10 minutes after a signal is no longer received. The time until the set will switch off is displayed on the screen.

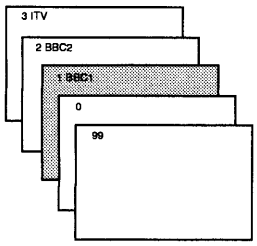


■ If the aerial is removed the TV set will automatically switch into the standby mode after 10 minutes.
■ When the TV set is switched on by using the On-timer function with no signal being received, the auto-shut off function will be ignored.

Programme Selection

■ **Direct Programme Selection**
For selection of programme position 0 to 9, press the corresponding **numeric button**. If the required programme is equal or more than 10, for example 23, first press the **-/- - button** and enter **2** then **3**.

■ **Up/Down Programme Selection**
Press the **P▲ button** to increase the programme position.
Press the **P▼ button** to decrease the programme position.



Channel Selection

■ If you know the channel number of the station

1. Press the **CS button** on the remote control handset. The current channel number, programme position and channel ID if available will be displayed on the screen.

2. Enter the channel number using the **0-9 numeric buttons**.

For example: To enter channel number 2 enter **0** and **2**.
To enter channel number 35 enter **3** and **5**.

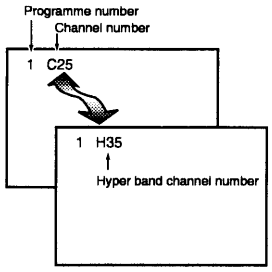
If you wish to select hyper channel, select "H--" by pressing the **CS button**. Then enter the hyper channel number. Each time the **CS button** is pressed, the channel number changes as follows.

current channel number ➜ normal channel mode ➜ hyper channel mode ➜

Please refer to channel table on page 26 for further information of channel allocation.

3. While the screen display is still on the screen, press the **F▭/OK button** on the remote control handset to store in the memory.

The programme and channel number will momentarily flash.



■ If you do not know the channel number of the station

1. Press the **CS button** on the remote control handset. The current channel number, programme position and channel ID if available will be displayed on the screen.

2. Press the **P▲** or **P▼ button** to start channel searching. When a station is found searching stops automatically.

If this is not required station repeat until the desired station is found.

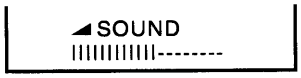
3. While the screen display is still on the screen, press the **F▭/OK button** on the remote control handset to store in the memory.

The programme and channel number will momentarily flash.

Sound & Picture settings

■ Sound volume control

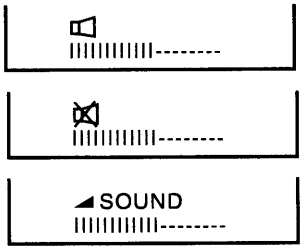
To adjust the sound volume level, press the + or - **button**.



■ Sound attenuation

This function has two attenuation stages.
Press the **button** once, the sound from the speakers will be attenuated, press it again it will be muted completely.
Press the **button** again to switch the sound back on.

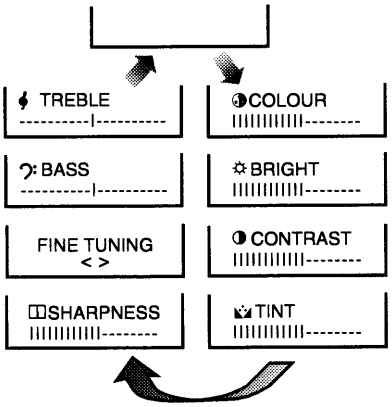
When the + or - **button** is pressed, the sound attenuation will be cancelled.



■ Control selection and adjustment

Press the **F/OK button** repeatedly to select your desired control and then press the + / - **button**.

The control display changes as illustration below.



Picture Controls

COLOUR : To adjust the picture colour.

BRIGHT : To adjust the picture brightness.

CONTRAST : To adjust the picture contrast.

TINT : To adjust the colour phase. (This appears when NTSC signal inputs)

SHARPNESS : To adjust the picture sharpness.

< > FINE TUNING : To make fine adjustments to tuning. (This does not appear in the AV mode)

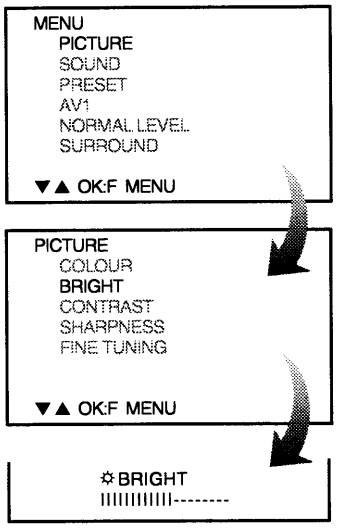
Sound Controls

BASS : To adjust low frequency sounds.

TREBLE : To adjust high frequency sounds.

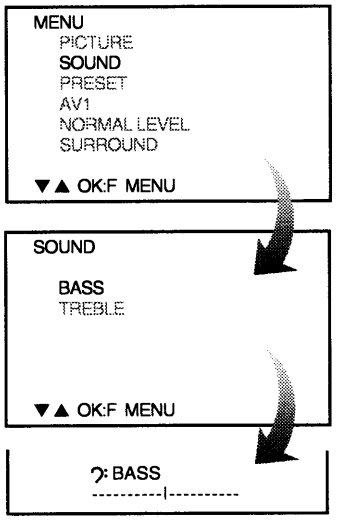
■ Picture adjustment using the menu function

1. Press the **MENU/ button** to display the main menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the desired control from the menu eg. BRIGHT, then press the **OK button**.
3. Press the + or - **button** to adjust the selected control level up or down.



■ Sound adjustment using the menu function

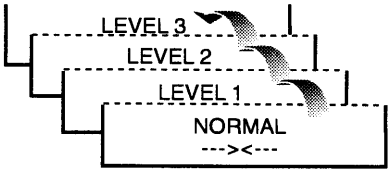
1. Press the **MENU/ button** to display the main menu. Use the ▲ or ▼ **button** to highlight the SOUND menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the desired control from the menu eg. BASS. Press the **OK button**.
3. Press the + or - **button** to adjust the selected control level up or down.



Personal Picture Preference

This TV provides one normal picture and sound preference, and three picture mode preferences which can be stored and chosen to your preference style.

NORMAL	: normal picture and sound settings
PICTURE LEVEL 1	: personal picture preference 1
PICTURE LEVEL 2	: personal picture preference 2
PICTURE LEVEL 3	: personal picture preference 3



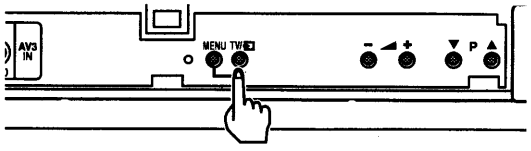
Press the →•← **button** repeatedly, to choose your desired picture setting.

For example,

You can set your preference picture level suitable for brightly lit room into PICTURE LEVEL 1, and suitable for dimly-lit room into PICTURE LEVEL 2, and suitable for watching a cinema into PICTURE LEVEL 3.

■ To store picture and sound settings in the memory

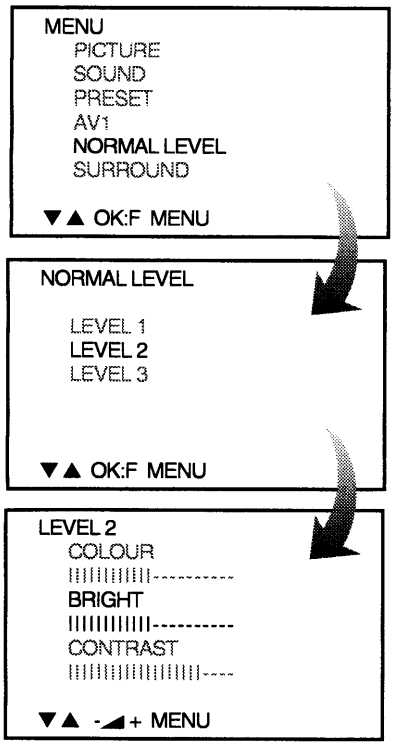
1. Set the picture and sound settings to your preferred levels.
2. Press the **OK button** on the TV front panel while one of the controls is displayed on the screen.



MEMORY
---> <---

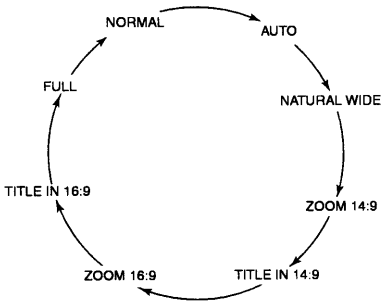
■ Picture level setting for NORMAL LEVEL 1, LEVEL 2 and LEVEL 3

1. Press the **MENU/ button** to display the main menu. Use the ▲ or ▼ button to highlight the NORMAL LEVEL menu, then press the **OK button**.
2. Use the ▲ or ▼ button to highlight the desired level control from the menu eg. LEVEL 2. Press the **OK button**.
3. Use the ▲ or ▼ button to highlight the desired level control, and adjust by pressing the + or - **button**.
4. Press the **MENU/ button** to return to normal TV mode.



Selection of the Picture Size

The size of the picture image can be selected in many modes, the resultant picture will depend upon the transmission format. Currently pictures are transmitted in a variety of aspect ratios, eg. 4:3, 16:9, 14:9 or video formats such as letterbox.



To select the picture modes press the **WIDE button**, each time it is pressed the mode changes as follows.

AUTO

4:3: This will automatically switch to the NATURAL WIDE mode.
14:9: This will automatically switch to the NATURAL WIDE mode.
16:9: This will automatically switch to the NATURAL WIDE mode.
LETTERBOX: Automatically detects the black bands at the top and bottom of the screen and switches to ZOOM 16:9 mode.

NATURAL WIDE

4:3: Stretches the picture horizontally and fills the screen, the picture is more stretched at the sides.
14:9: Height is expanded to fill screen.
16:9: Fills the whole screen with the correctly proportioned picture.
LETTERBOX: The black bars top and bottom remain and the height is compressed to fit into the picture area.

ZOOM 14:9

4:3: The correct picture width is maintained but the top and bottom of the picture are cropped.
14:9: Zooms in slightly cropping the top and bottom.
16:9: Zooms in slightly cropping the top and bottom.
LETTERBOX: The black bars top and bottom are smaller and the pictures height is compressed slightly.

TITLE-IN 14:9

4:3: Zoom as zoom 14:9 but the bottom half of the picture is compressed to show more image to include sub titles.
14:9: The bottom half of the picture is compressed to show sub titles.
16:9: The bottom half of the picture is compressed to show sub titles.
LETTERBOX: The bottom half of the picture is compressed to show more image to include sub titles. A small black bar becomes visible.

ZOOM 16:9

4:3: The correct picture width is maintained but the top and bottom of the picture are cropped more than in zoom 14:9.
14:9: Zooms in slightly cropping the top and bottom more than in zoom 14:9.
16:9: Zooms in slightly cropping the top and bottom more than in zoom 14:9.
LETTERBOX: Fills the screen with the correct proportions with no black bars.

TITLE-IN 16:9

As Zoom 14:9 TITLE-IN but the picture is compressed more at the bottom.

FULL

4:3: The whole screen is filled stretching the width.
14:9: The whole screen is filled with the height slightly expanded at the edges.
16:9: The whole screen is filled with the correct aspect ratio.
LETTERBOX: A black bar is present top and bottom with the picture compressed to fit the height.

NORMAL

4:3: The correct ratio is maintained giving black bars left and right.
14:9: Black bars left and right the height is stretched to fill the height.
16:9: Black bars left and right the height is stretched to fill the height.
LETTERBOX: Black bars left and right and top and bottom.

RECEPTION➡	4:3	14:9	16:9	Letterbox Video
MODE ↓				
AUTO				
NATURAL WIDE				
ZOOM 14:9				
TITLE-IN 14:9				
ZOOM 16:9				
TITLE-IN 16:9				
FULL				
NORMAL				

Selection of Surround Mode

This TV provides the following surround modes. Please select the optimum surround mode according to your speaker placement and receiving signal source. The table below shows our recommended surround mode for input source and speaker system.

Source	Speaker system	Recommended surround mode
Encoded Dolby Surround	Front-L/R, Centre	Dolby 3 Stereo
	Front-L/R, Centre, Surround	Dolby Pro Logic Surround
Stereo	Front-L/R, Centre, Surround	3D Pro Surround
Stereo or Monaural	Front-L/R	Active 3D Surround

There are 2 ways to select the desired surround mode.

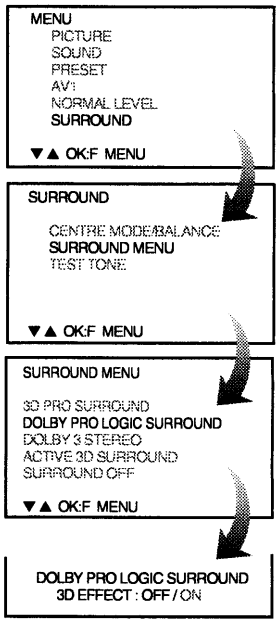
SURROUND key selection

Press the **SURROUND button** repeatedly until the desired surround mode is displayed on the screen, and if you want to switch the surround sub mode, 3D effect On/Off or Active 3D surround, press the ◀ or ▶ **button** repeatedly.

MENU key selection

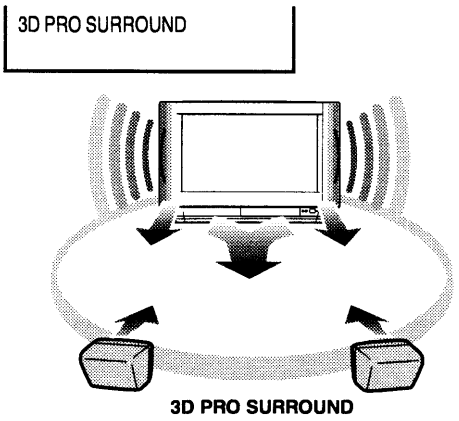
1. Press the **MENU/▣ button** to display the main menu. Use the ▲ or ▼ **button** to highlight the SURROUND menu, and then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the SURROUND MENU menu, and then press the **OK button**.
3. Use the ▲ or ▼ **button** to highlight the desired surround mode, and then press the **OK button**.
4. If you want to switch the surround sub mode, 3D effect On/Off or Active 3D surround, press the ◀ or ▶ **button** repeatedly.

✎ It may not display the surround sub mode depending on the selected surround mode.



■ 3D PRO SURROUND

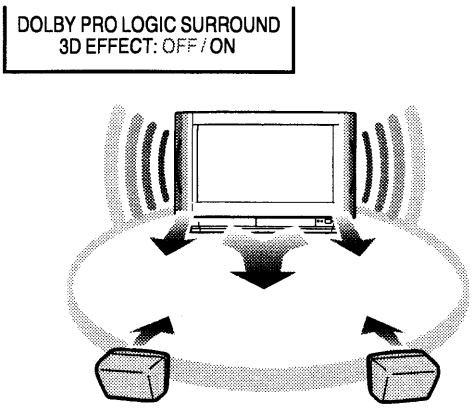
This mode is recommended when you wish to add the surround sound to a programme not encoded with Dolby Surround or movie. This TV provides an active 3D surround processor which can realise an incredible 3 dimensional sound effect when receiving a standard stereo signal, bilingual signal or monaural signal.



3D PRO SURROUND

■ DOLBY PRO LOGIC SURROUND

This mode is recommended when you watch a movie or programme which is encoded with Dolby Surround. It is marked with ◫◫ **Dolby Surround**.
The left, right front speakers, the centre and the rear surround speakers reproduce the Dolby Pro Logic Surround sound.

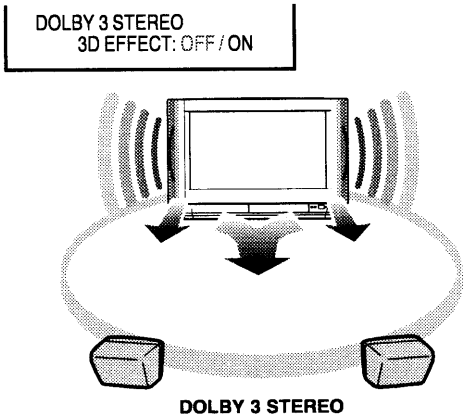


DOLBY PRO LOGIC SURROUND

3D EFFECT : ON	To add an enhanced 3 dimensional sound effect to the receiving sound source, select 'On' by pressing the ◀ or ▶ **button** while the 3D effect display is still on the screen.

■ DOLBY 3 STEREO

This mode is recommended when the rear surround speakers are not connected and you want to watch a movie or programme which is encoded with Dolby Surround. It is marked with **Dolby Surround**.
You can obtain the Dolby Pro Logic Surround effect through the left, right front and centre speakers.

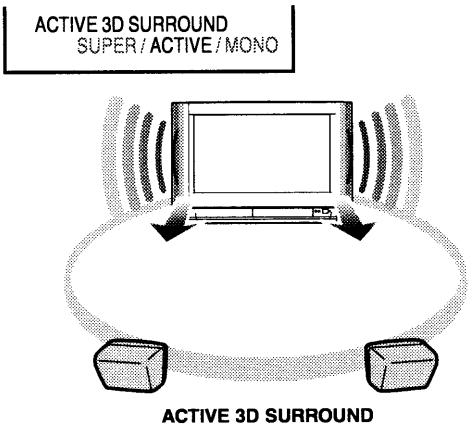


DOLBY 3 STEREO

3D EFFECT : ON	To add an enhanced 3 dimensional sound effect to the receiving sound source, select 'On' by pressing the ◀ or ▶ **button** while the 3D effect display is still on the screen.

■ ACTIVE 3D SURROUND

This mode is recommended when you wish to add the surround sound to a programme not encoded with Dolby Surround or movie.
This TV provides an active 3D surround processor which can create a 3 dimensional sound effect when receiving a standard stereo signal, bilingual signal or monaural signal.
You can choose the following 3D surround modes by pressing the ▲ or ▼ **button** while the active 3D surround display is still on the screen.

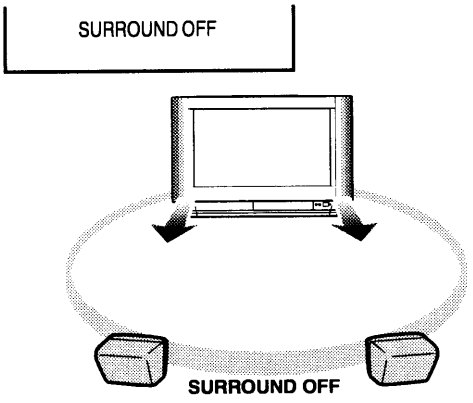


ACTIVE 3D SURROUND

SUPER	This emphasises the 3D surround sound to produce a wider sound effect, similar to listening at a cinema or theatre.
ACTIVE	Normal 3D surround sound, set to give the optimum 3D surround effect.
MONO	This mode is especially prepared for Nicam-mono broadcasting. Select this mode, when you can not get the 3D surround effects even if the status is Nicam stereo. You may feel 3D surround effect.

■ SURROUND OFF

This mode reproduces only the left and right front sound signals. The rear and centre speakers are not active.



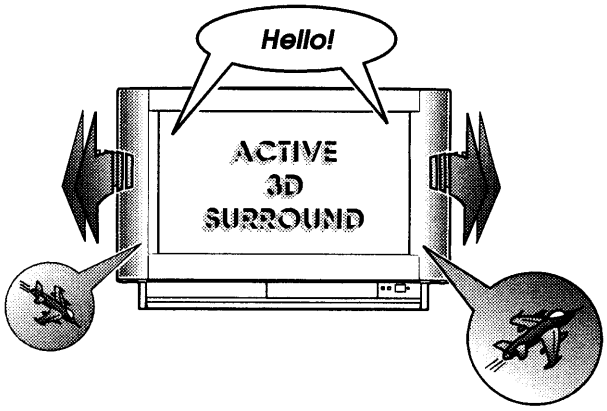
SURROUND OFF

✐ If the receiving signal source is a monaural programme, and the surround mode is selected to the **DOLBY PRO LOGIC SURROUND** or **DOLBY 3 STEREO**, the sound only reproduces from the centre speaker. In this case, you should switch to another surround mode.

■ Guidance for the best enjoyment of active 3D surround and Dolby Pro Logic Surround

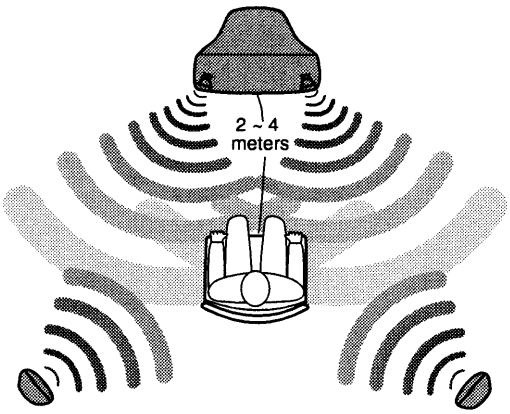
Optimum positioning

- Keep a distance of 2 to 4 meters approx. from the TV set.
- Listen facing the centre of the TV set.
- There should be no obstruction between you and the TV set.



What is Active 3D Surround ?

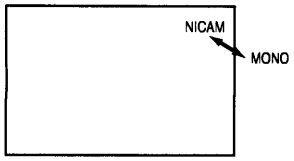
In traditional stereo sound, left and right channels combine to create a stereo image. Better speakers can create a larger perceived sound stage, so sound seems to emanate from a few feet behind the monitor. Sound can have a much wider presence with Active 3D Surround technologies. Music and sound effects appear to come from points in the room far from the speakers. Objects (such as jets) seem to move in space toward and then past the listener, whilst the important dialogue channel is still appearing to come from the centre of the screen.



Stereo and bilingual reception

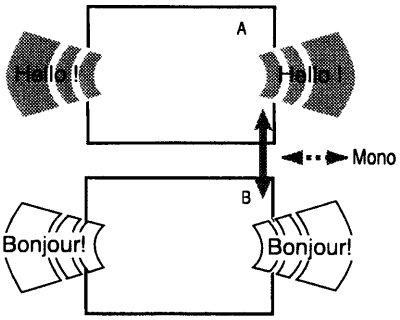
■ Nicam sound reception

If the TV receives nicam programs, it automatically switches to nicam sound reception. The word "NICAM" appears on the screen briefly.



■ Bilingual reception

If the TV receives bilingual programs, the TV initially selects language A and displays "A" on the screen briefly. If you want to switch to language B or MONO, press the **▽A•B button**.



If the nicam sound reception is poor in quality, you can switch to "MONO" sound reception by pressing the **▽A•B button**.

Adjusting the Sound Balance

If you wish to adjust each sound level for each speaker individually, proceed as follows:

1. Press the **MENU/▣ button** to display the main menu. Use the ▲ or ▼ **button** to highlight the SURROUND menu, and then press the **OK button**.

2. Use the ▲ or ▼ **button** to highlight the CENTRE MODE/ BALANCE menu, and then press the **OK button**.

3. Use the ◀ or ▶ **button** to select one of the following surround modes:

   3D PRO SURROUND
   DOLBY PRO LOGIC SURROUND
   DOLBY 3 STEREO
   ACTIVE 3D SURROUND
   SURROUND OFF

4. Use the ▲ or ▼ button to highlight the desired control from the menu as follows, and adjust the sound balance by using the ◢+ or ◢- **button**.

MODE : To select the surround mode depending on the speaker system. See description "Setting of centre mode" on page 21.

BALANCE : To equalise sound level from the left and right front speakers.

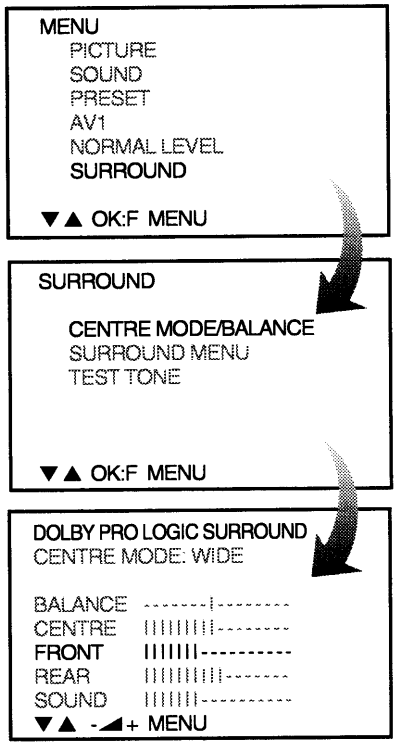
CENTRE : To adjust sound level from the centre speaker.

FRONT : To adjust sound level from the front speakers.

REAR : To adjust sound level from the rear surround speakers.

SOUND : To adjust the whole of sound level.

5. To return to the TV mode, press the **MENU/▣ button**.



Blacked out controls may appear depending on the selected surround mode or centre sound, as these controls are not available.

Note : To obtain the best sound performance, please set the front sound level to the Centre or greater. When it is set around the minimum level an adequate sound output may not be obtained.

The following table shows the adjustable sound controls under each surround mode.

Surround Mode \ Controls		Balance	Centre	Front	Rear	Sound
3D Pro Surround		✔	✔	✔	✔	✔
Dolby Pro Logic Surround	Wide	✔	✔	✔	✔	✔
	Normal	✔	✔	✔	✔	✔
	Phantom	✔	--	✔	✔	✔
Dolby 3 Stereo		✔	✔	✔	--	✔
Active 3D Surround		✔	--	--	--	✔
Surround Off		✔	--	--	--	✔

Using AV Equipment

You can connect a VCR, S-VHS VCR, Satellite Tuner, PAY TV Decoder or Camcorder, as this TV has two Scart terminal on the rear panel and one pair of AV input terminal on the front panel.

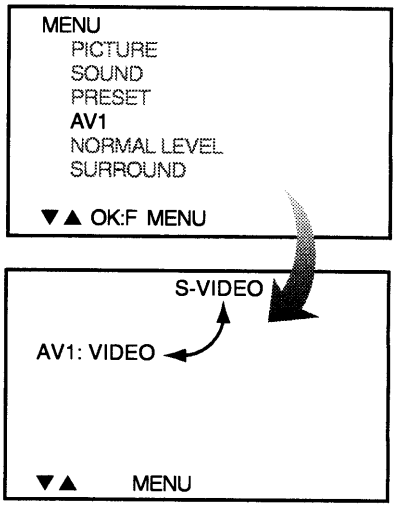
● Selection of AV mode

Most AV equipment will automatically switch to the AV mode (because of the pin 8 function signal) by pressing the PLAY button on your AV equipment. If not, press the **TV/⊏ button** to select the desired AV mode manually.

● Setting of AV1 input mode

If you want to use a VCR which is equipped with the S-VHS capability to obtain the best performance, you should connect the AV1 terminal and select the S-Video mode in the AV1 mode.

1. Press the **MENU/⊏ button** to display the main menu. If required use the ▲ or ▼ **button** to highlight the AV1 menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the desired AV1 input mode, video or S-video.
3. To return to the TV mode, press the **MENU/⊏ button**.



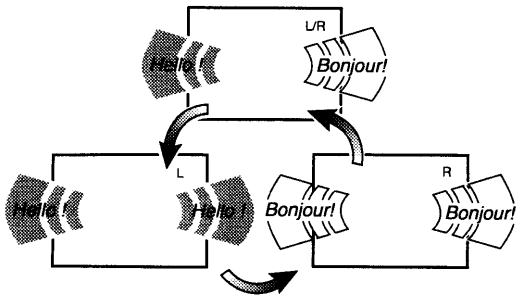
● Use of front AV3 terminal

This TV provides one pair of AV input terminals on the front panel. It is very convenient for use as a game or camcorder connection.

Press the **TV/⊏ button** repeatedly to select the AV3 mode.

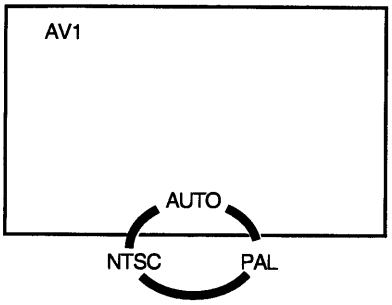
● Selection of the sound track from the equipment

By pressing the **▽A•B button** repeatedly, you can select the sound track L (left), R (right) or L/R from the equipment connected to the scart terminals or the front AV terminal.



● Selection of colour system

This TV provides the multi-colour system decoder. The default mode of each AV mode is "AUTO". This mode automatically selects the correct colour system from the input source signal. If you have the incorrect colour images on the screen, please switch to PAL or NTSC colour system by pressing the **TV/⊏ button** followed by the **⊏⊡ button** repeatedly.



CONNECTION OF AV EQUIPMENT

The following are our recommended standard connections for AV equipment. There are various types of connections depending on the equipment which you have or its use. For further information please consult your local dealer. If you have a S-VHS type VCR, to obtain the best performance it should be connected to the AV1 terminal which has been specially designed for S-VHS.

Use of a VCR

Connection

✔ Connect RF cables. Roof aerial to VCR & VCR to TV.

✔ Better picture quality can be obtained if you also connect a Scart cable.

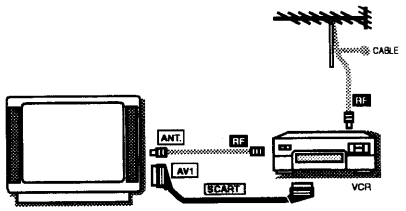
Ability

✔ Watch TV programmes.

✔ Watch the playback from the VCR on position 0 *or when using a Scart cable in AV1 mode.*

✔ Record TV programmes.

When you connect the VCR to the aerial terminal on the TV using an RF cable, it is advisable to tune the VCR channel to the programme position 0, this is a useful position for VCR use.



Use of a VCR and Pay TV Decoder

Connection

✔ Connect RF cables. Roof aerial to VCR & VCR to TV, dish aerial to satellite tuner.

✔ Connect Scart cables. AV1 to VCR & AV2 to satellite tuner & VCR to satellite tuner.

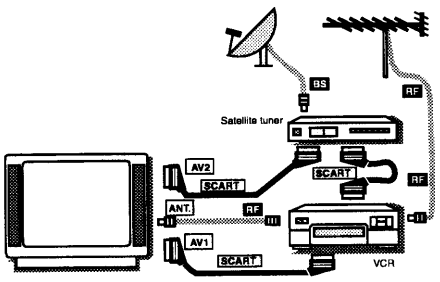
Ability

✔ Watch TV programmes.

✔ Watch satellite programmes on AV2 mode.

✔ Watch the playback from the VCR on AV1 mode.

✔ Record TV and satellite programmes.



Use of a Camcorder or Game Equipment

Connection

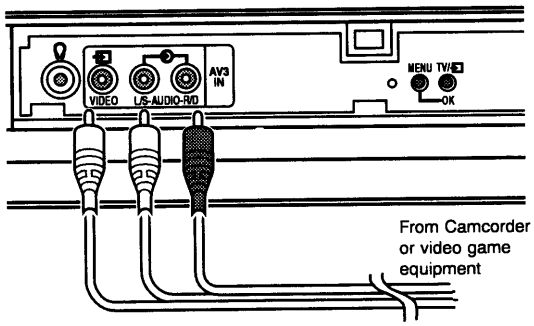
✔ Connect an RCA cable from the front AV terminal (AV3) to a camcorder or to game equipment.

For monaural units, connect the sound cable to the L-socket.

Ability

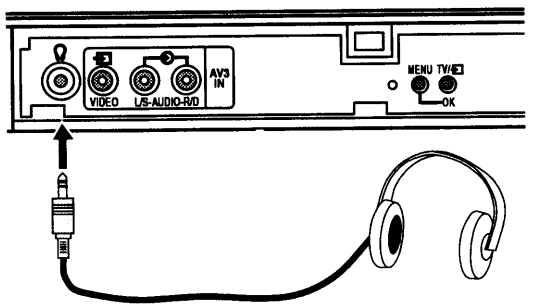
✔ Watch the playback from the camcorder or enjoy playing games on AV3 mode.

You must select the AV3 mode manually.



Use of Headphones

The 3.5mm mini-stereo jack socket located behind the door of the TV can be used for headphones. When the headphones are inserted the sound from the TV speakers is muted.



☞ If you are selecting the surround mode as **DOLBY PRO LOGIC SURROUND**, **DOLBY 3 STEREO**, you should switch to **ACTIVE 3D SURROUND** or **SURROUND OFF** mode by pressing the **SURROUND button**, refer to page 12 & 13.

GENERAL OPERATION - Additional Functions

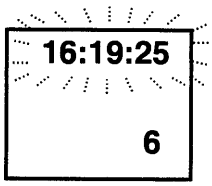
Bass Expander

To get an emphasised bass sound, press the **BASS button**.
The word "BASS" appears on the sound display.

Time Display

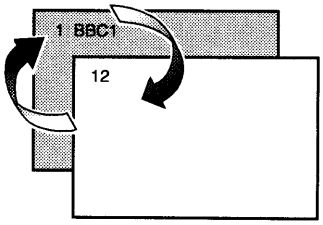
In the TV mode, if the receiving programme has a teletext service when the ⏲ **button** is pressed, the present time will be displayed on the screen for 5 seconds.

Note: The present time will not be fully displayed when the picture size is showing **Zoom** (14:9) (16:9) or **Title In** (14:9) (16:9). See page 11 for Selection of the Picture size.



Previous Programme Selection

Press the **P⇌P button** and the TV set will alternately select the current programme position and the previous programme position viewed.



Programme Information Call

Press the ⊡ⓘ **button** once, the programme information such as current programme number, stereo status, remaining timer if set.

VCR Use

This remote control transmitter has been designed to be used in conjunction with selected **SANYO VCR's**. Some SANYO VCR's may have their own functions, so please refer to the individual instruction booklet when using this remote control to ensure compatibility.

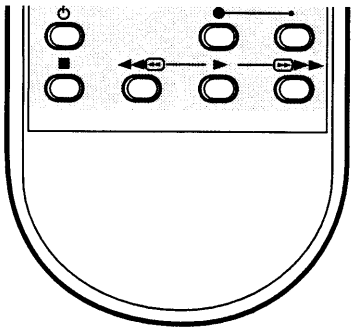
⏻ POWER On/Off :
Use to turn VCR power on and off.

▶ PLAY :
Use to playback the tape.

■ STOP :
Use to stop the movement of the tape.

▶▶▶▶ FAST/CUE :
Use to advance the tape at fast speed, or in order to playback the tape at fast speed.

◀◀◀◀ REWIND/REVIEW :
Use to rewind the tape or in order to playback the tape in reverse at fast speed.



TIMER FUNCTIONS

Timer Setting

This TV has two timer functions and you can select the following modes by pressing the ◕ **button** repeatedly.
The available time periods and time steps for each mode are shown in the table below.

■ **Off timer setting** You can select a time period from which the set will switch into the standby mode.

■ **On timer setting** You can set a time period from which the set will switch on from the standby mode.

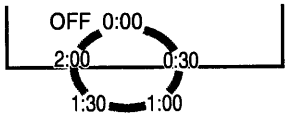
To cancel the set timer, select "0:00" in step 2 by using the below procedure or turning off the TV set with the **Mains Switch** ⏻.

Function	Maximum time periods	Step
OFF-TIMER	2:00 hours	30 min.
ON-TIMER	24:00 hours	15 min.

Off Timer Setting

1. Press the ◕ **button** once, the word "OFF 0:00" will appear on the screen.
2. Set the time period by pressing the ◀ or ▶ **button**.

If you have set a time, one minute before the TV switches off the remaining minute automatically appears on the screen.

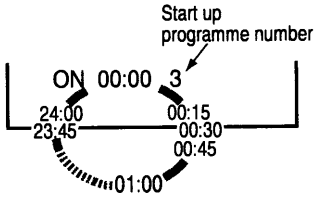


On Timer Setting

1. Press the ◕ **button** twice, the word "ON 00:00" will appear on the screen.
2. Set the time period by pressing the ◀ or ▶ **button**. If you specify the start up programme or AV position, enter the desired programme number using the **0-9 numeric buttons**, **digit** or **TV/AV button.**
3. Press the ⏻ **button** to switch into the standby mode.

The TV set automatically switches on after the time period has elapsed.

- When It reaches the set on-timer period during the TV set is powered on, the programme position will be changed to the specified position in step 2.
- When the TV set is switched on by using the on-timer function, the TV set will automatically switch into the standby mode after 2 hours if no key control is input.



- If the TV set is switched off by the **Mains Switch** ⏻ or a power failure occurs, the timer settings will be cancelled.
- You can confirm the remaining time for each timer mode by pressing the ◕ **button**.

PRESETTING

Up to 100 broadcast stations in your reception area can be stored in the electronic memory.

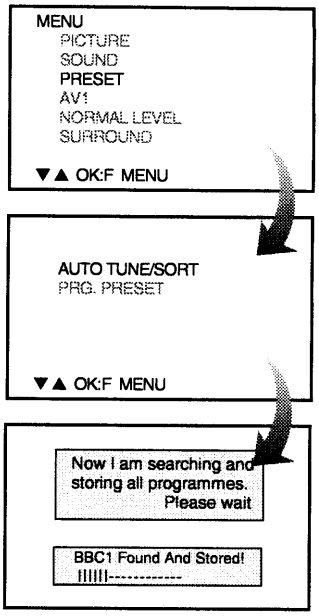
There are three ways of pre-setting modes:

■ **Automatic tuning and sorting (AUTO TUNE/SORT)**
All receivable channels are automatically tuned in and memorised as they are found in consecutive programme positions.

■ **Manual tuning (PRG.PRESET)**
Manually tune a channel if it cannot be automatically tuned, such (when signal is poor).

Automatic tuning/sorting (AUTO TUNE/SORT)

1. Press the **MENU/▣ button** to display the main menu. Use the ▲ or ▼ **button** to highlight the PRESET menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the AUTO TUNE/SORT menu, then press the **OK button** to begin automatic tuning and sorting.



✎ *The automatic tuning operation can be cancelled at any time by pressing the* **MENU/▣** ***button.***

After all receivable channels have been found and stored, the TV set automatically returns to TV mode and receives a station available in your area.

✎ If the TV set finds both of the stations (BBC1 or BBC2) and (RTE1 or RTE2) during the automatic tuning procedure, the resorting message will appear to ask you to set your preferred programme ordering, see further information of "Quick Set Up" on page 5.

■ Channel sorting

The channels are stored in consecutive programme positions starting at programme position "9". After all receivable channels have been found and stored, the TV set automatically allocates following major stations in the UK and Ireland into the programme positions 1 to 8. For further information of channel ordering, please refer to "The channel sorting rule" on page 6.

RTE1	**RTE2**	**BBC1**	**BBC2**	**ITV**
CH4	**CH5**	**SKY**	**BBC-W**	**BBC-P**

CH4: Channel 4 or S4C
SKY: SKY GOLD, SKY SPORTS.etc
BBC-W: BBC World,BBC Worldwide feature 1
BBC-P: BBC Prime

✎ You can change the order of the stations, by using the channel swapping function.

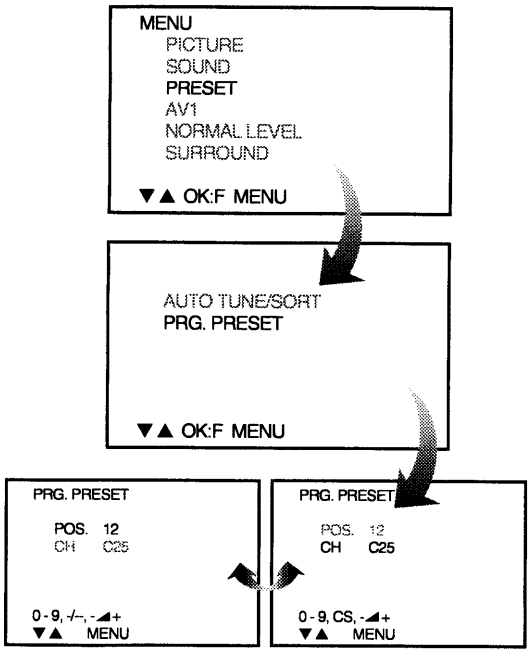
Manual tuning (PRG.PRESET)

1. Press the **MENU/▣ button** to display the main menu. If required use the ▲ or ▼ **button** to highlight the PRESET menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the PRG. PRESET menu, then press the **OK button**.
3. Use the ▲ or ▼ **button** to highlight the POS. menu. Select a programme position where you wish the station to be stored by using the 0 to 9, -/--, ◀ or ▶ **button.**
4. Use the ▲ or ▼ **button** to highlight the CH menu. Select your desired station by using the 0 to 9, CS, ◀ or ▶ **button.**

This completes the presetting. There is no action to store a station into a memory.

Repeat steps 3 to 4 for other desired channels.

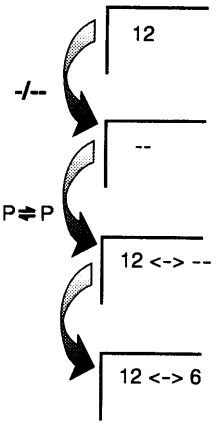
✎ *To exit the presetting mode, press the* **MENU/▣** ***button*** *once.*



Channel Swapping

Use this channel swapping feature to swap the channels between two stored programme positions. This feature is particularly useful after automatic tuning/sorting.

1. Select one of the TV channels you wish to swap by using the **P▲, P▼** or using the **(0-9) numeric buttons**.
2. Press the **-/-- button**. "--" appears on the screen.
3. Press the **P⇌P button**. Channel swapping mode is displayed.
4. Enter other programme number by using the **(0-9) numeric buttons** with two digit numbers.



For example:
Selection of programme position 6, first enter **0** and then enter **6**.
Selection of programme position 12, first enter **1** and the enter **2**.

The two TV channels will now have changed places.

Repeat steps 1 to 4 for all other TV channels you want to swap.

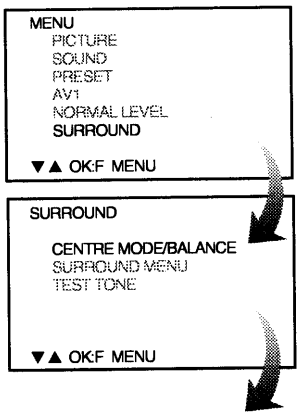
The above procedure must be done while the on-screen display is still on the screen.

DOLBY PRO LOGIC INSTALLATION

Setting of the Centre mode

When selecting the Dolby Pro Logic Surround or Dolby 3 Stereo mode, this TV has the following 3 centre modes according to your centre speaker system.

1. Press the **MENU/▣ button** to display the main menu. Use the ▲ or ▼ **button** to highlight the SURROUND menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the CENTRE MODE/BALANCE menu, then press the **OK button**.
3. Use the ◀ or ▶ **button** to select the DOLBY PRO LOGIC SURROUND or DOLBY 3 STEREO menu.
4. Use the ▲ or ▼ **button** to highlight the surround mode and select the WIDE, NORMAL or PHANTOM menu by pressing ◀ or ▶ **button.**



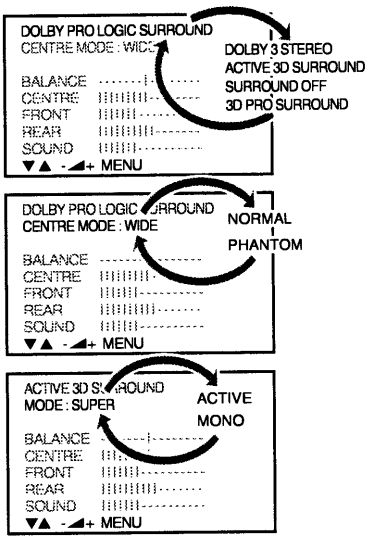
Refer to the following note.

5. To exit the adjusting mode, press the **MENU/▣ button**.

Wide
When using a full-range centre speaker similar in size and sound quality to the front speakers.

Normal
When using a centre speaker having limited low-frequency response. The low-frequency sounds are distributed over the left and right front speakers.

Phantom
When a centre speaker is not used. The centre sound components are distributed over the left and right front speakers.



You can select **3D PRO, ACTIVE 3D SURROUND** mode (SUPER, ACTIVE, MONO) or **SURROUND OFF** mode through the above steps. Please see the selection of surround mode on page 13 for further information of Active 3D surround function.

✎ It is advisable to set the centre mode to **WIDE** when using the centre speaker.
✎ Centre mode can not be selected to **PHANTOM** when the surround mode is selected to **DOLBY 3 STEREO**.

DOLBY SURROUND PRO • LOGIC

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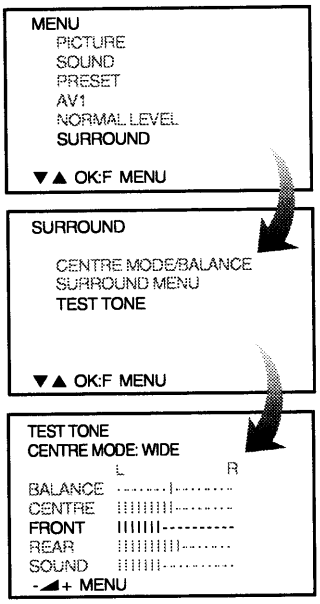
Setting of the sound balance with test tone

For optimum surround sound performance, adjust the sound volume as follows. The adjustment can be made at the listening point using the remote control handset.

1. Press the **MENU/▣ button** to display the main menu. If required use the ▲ or ▼ **button** to highlight the SURROUND menu, then press the **OK button**.
2. Use the ▲ or ▼ **button** to highlight the TEST TONE menu, then press the **OK button**. The steady noise tone is switched sequentially through the left, right, centre speakers and rear surround speakers for about 2 seconds each. The active speaker is represented with the red screen text, and allows you to adjust the sound level.



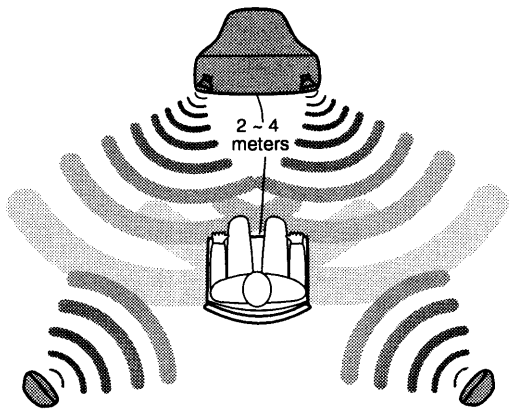
- **DOLBY PRO LOGIC SURROUND**-*WIDE/NORMAL*
  Front Left → Front Right → Centre → Rear →
- **DOLBY PRO LOGIC SURROUND**-*PHANTOM*
  Front left→ Front Right → Rear →
- **DOLBY 3 STEREO**
  Front Left → Front Right → Centre

3. Adjust each sound level by pressing the ◢- / ◢+ **button** until the sound level from each speaker sounds the same.
4. To exit the test tone mode, press the **MENU/▣ button**.

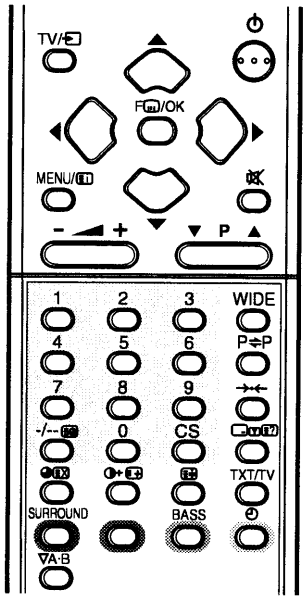
✎ *When you wish to adjust the whole of sound volume, press the ◢- or ◢+ **button** on the TV set.*

✎ *To obtain the best sound performance, please set the front sound level to the centre or greater. When it is set around the minimum level an adequate sound output may not be obtained.*

✎ *Blacked out controls may appear depending on the selected surround mode or centre mode.*



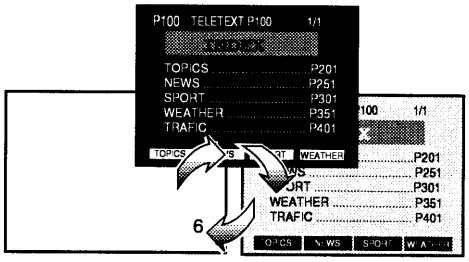
Teletext Controls



Symbol	Function
TXT/TV	Teletext/Mix/TV mode switch
0-9	0-9 numeric buttons
P▼ P▲	Page down/up
P⇌P	Previous viewed page selection
	Index page selection
	Hold
	Size
	Cancel
	Sub code entry mode
	Reveal
	Red
	Green
	Yellow
	Blue

Switching to the Teletext mode

Press the **TXT/TV button**, and the screen changes as illustrated.



When switching from TV mode at NORMAL picture size to teletext mode, the teletext screen will also be at NORMAL picture size. When switching from TV mode at AUTO, NATURAL WIDE, ZOOM, TITLE IN or FULL picture size to teletext mode, the teletext screen also be at FULL picture size.

Brightness & Sound Control in teletext mode

● Brightness mode switching

You can select the optimum level from "MAXIMUM", "CENTRE" and "MINIMUM" by pressing the **F/OK button** repeatedly.

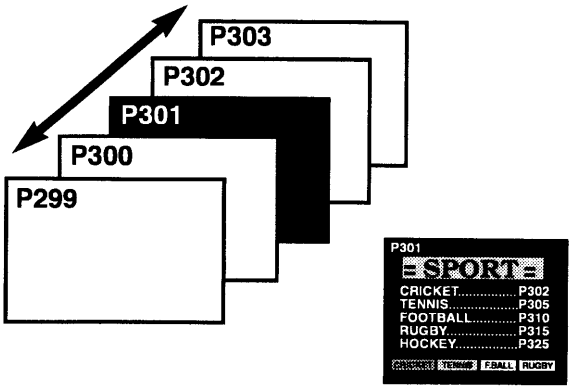
● Sound control in the teletext mode.

Only sound volume and muting can be controlled in the teletext mode.

Page Selection

■ Direct page access

A page can be selected with the **0-9 Numeric buttons**. eg. To display page 301, press buttons 3, 0 and then 1. The selected page number will appear on the screen.



■ Up/down page access

When a page is displayed on the screen and you want to read the following page number, *press the up* (**P▲**) **button** instead of selecting the new page number. To read the previous page, press the (**P▼**) **button**.

P▲ : P301 → P302 → P303 .... P399 → P400 ....
P▼ : P301 → P300 → P299 → P298 ....P201 ....

Hold the button for rapid page change.

■ Coloured page access

Depending on the TV channel, teletext is transmitted in different systems. The system utilised can be recognised by the coloured line at the bottom of the screen.

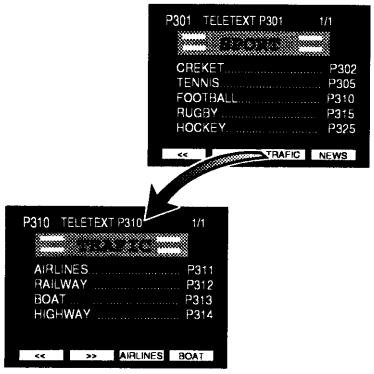
Press one of the **4 coloured buttons** to select the topics shown at the bottom of the text screen.

For example the Red topic can be selected using the **Red button**, the Blue topic by the **Blue button**, and so on forth with the other colours.

NOTE : When the teletext service is not transmitting with the TOP or FLOF, 4 coloured page numbers will appear at the bottom of the screen instead of the topics.

■ Previous viewed page selection

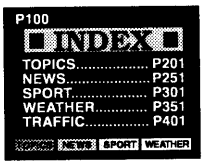
You can select the previous viewed pages up to 4 pages, by pressing the **P⇌P** ***button*** *repeatedly.*



TELETEXT

Index Page Selection

Press the **button** to select one of the teletext index pages.



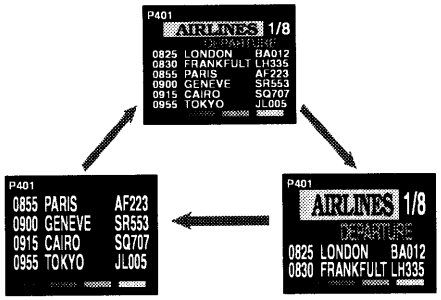
Hold

Press the **button** to stop sub pages changing. The word "HOLD" will appear instead of the page number.

Some teletext pages are made up of several sub pages. These sub pages are automatically changed. Sub page is shown as P4/8 (sub page 4 of 8 pages) the location on the text page depends on the text service.

Double Letter Height

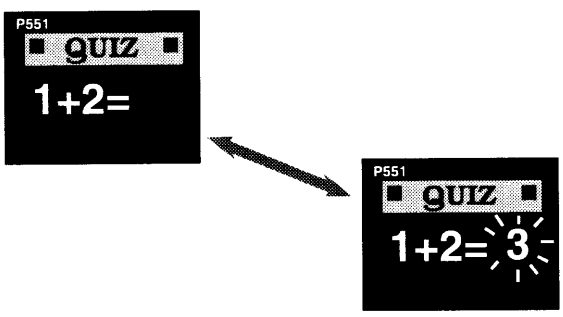
Either the top half or the bottom half of the page can be expanded to fill the whole screen by pressing the **button**. Each time the button is pressed, the display changes as illustrated.



Displaying Concealed Information

Press the **button** to reveal hidden items on the text page.

Some pages such as quiz pages have the answers hidden. The button may have to be held to keep the answer on the screen, or pressed again to remove the answers.



Sub Page Access

When the teletext information is longer than one page, it may take some time to reach the required page which is automatically changed. By using the sub-coded page access, you can continue watching the TV picture until the sub-page is reached.
Select a teletext page with sub pages.

1. Press the **button**. The characters **"T****"** will be displayed instead of the page number.

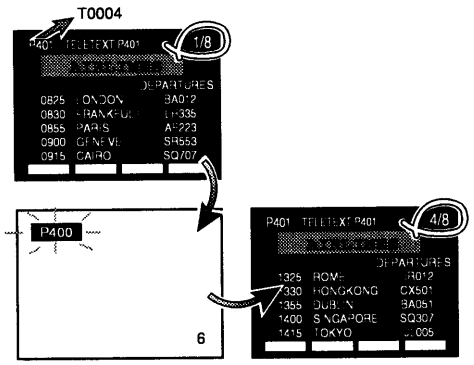
2. Enter the sub page number by using the **(0-9) buttons**.

For example, to enter the sub page **4**, press buttons **0**, **0**, **0** and **4**.

3. Press the **button** to return the normal TV picture.

Immediately the requested sub-coded page is found, the page number will appear over the TV picture.

4. Press the **TXT/TV button** to view the sub-coded page.



Updated Pages

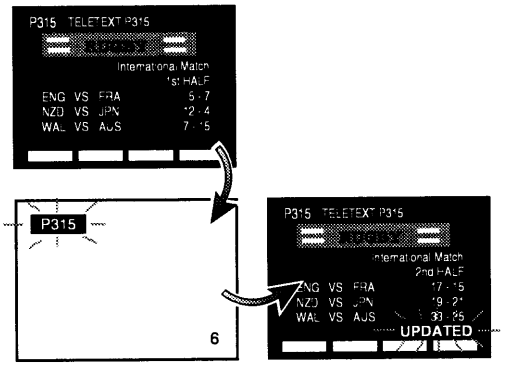
There are teletext pages which are updated as events progress, such as sports results, news reports or traffic information. Select a page which will be updated.

1. Press the **button** to return to the normal TV picture.

   Immediately the selected page is updated, the page number will appear over the normal TV picture.

2. Press the **TXT/TV button** to view the updated page.

Note: If the page has sub pages the number will appear when the sub page is changed.



● **Cancel**

When you press the **button**, the TV picture appears on the screen. Whilst in this mode you can not select another TV programme. You should first switch back to TV reception by pressing the **TXT/TV button** if required.

● **Teletext reception**

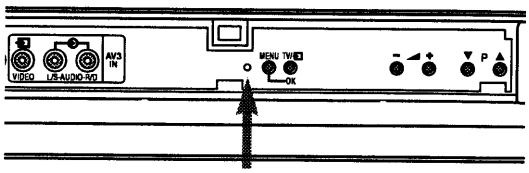
If your aerial signal is poor, the teletext reception may be poor.

OTHERS

Special Functions

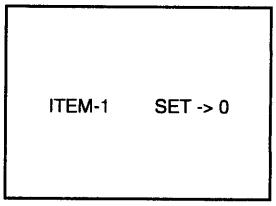
This TV set allows you to set up the following special functions.

1. Press and hold the **SERVICE SWITCH** on the TV set and then press the **button** on the Remote control handset.



Service Switch

2. To select the "Item" number, press the ▲ or ▼ **button** on the remote control handset.



3. To select the "Set" number, press the ◀ or ▶ **button** repeatedly.

4. To return to the normal TV mode, press the **button**.

■ **Prohibition of presetting and CS key entry**

ITEM 1 Sets prohibitation of presetting.

SET→ 0 NO SET→ 1 YES

■ **Start up programme position**

ITEM 2 Presets the programme position when the set is switched on.

SET→ 0 Last programme position start
SET→ 1 "AV1" start

The setting conditions of all items can be confirmed.

Special functions are not cancelled if the TV set is switched off or the mains disconnected.

TV Specifications

Power source	AC 220~240V, 50Hz
Television system	System I
Colour system	PAL/Modified NTSC/NTSC in AV mode
Receiving channel	VHF:A~J
	UHF: 21~69
Aerial input impedance	75 ohm
AV terminal	
21-Pin Terminal	AV1 : CENELEC Standard (with RGB/ S-inputs)
	AV2 : CENELEC Standard
Front AV Terminal	AV3 : RCA Terminal, Video and Audio (L/R) Input
Sound output Main L/R	10 watts x 2
(Continuous) Centre	12 watts
Rear	6 watts x 2
Picture tube (Inches)	28 (CE28WP3-B)
	32 (CE32WP3-B)
Dimensions	780 x 526 x 513 (CE28WP3-B)
(W x H x D mm)	880 x 583.5 x 567.5 (CE32WP3-B)
Weight	35 Kg (CE28WP3-B)
	50 Kg (CE32WP3-B)

Speaker system	**Centre speaker**	**Surround speakers**
Unit used	Full range: 10cm cone type	Full range: 10cm cone type
Rated Input Power	20 watts	20 watts
Maximum Input Power	40 watts	40 watts
Normal impedance	4 ohms	8 ohms
Dimensions (W x H x D)	270 x 130 x 145 mm	180 x 130 x130 mm
Weight	1030 g	630 g (per speaker)

Specification subject to change without notice.

Scart Specifications

The specification of the 21 pin connector is as follows.

AV Terminal

Pin		
1	Audio output (R-channel) *3	0.5V/ 1 K ohm
2	Audio Input (R-channel)	0.5V/10 K ohm
3	Audio output (L-channel) *3	0.5V/ 1 K ohm
4	Audio earth	
5	Earth (blue)	
6	Audio Input (L-channel)	0.5V/10 K ohm
7	Blue (B) input *1	0.7Vpp/75 ohm
8	Remote switch input	L:0-2V H:10-12V
9	Earth (green)	
10		
11	Green (G) input *1	0.7Vpp/75 ohm
12		
13	Earth (red)	
14	Earth	
15	Red (R) *1 or chrominance input *2	0.7Vpp/75 ohm
16	Fast blanking *1	L:0-0.4V H:1-3V
17	Earth(video)	
18	Earth	
19	Video output *3	1 Vpp/75 ohm
20	Video/sync.*1 or luminance input *2	1 Vpp/75 ohm
21	Connector shield	

*1: AV2 terminal does not provide RGB inputs.
*2: AV2 terminal does not provide S-video inputs.
*3: AV1 terminal outputs TV output. AV2 terminal outputs the monitor output.

SERVICING & HELPFUL HINTS

Servicing

Your television is fully transistorised and does not contain any user serviceable components.

Removal of the cabinet cover may expose you to dangerous voltages. Refer all servicing to qualified service personnel.

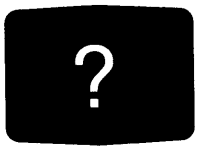
Unplug the television receiver from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- If the power cord or plug is damaged.
- If liquid has been spilt into the television receiver.
- If television receiver has been exposed to rain or water.
- If the television receiver has been dropped or the cabinet has been damaged.
- If the television receiver exhibits a distinct change in performance.
- If the television receiver does not operate normally by following the operating instructions.

Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage. This will often require extensive work by a qualified technician to restore the television receiver to normal operation.

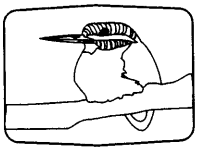
When replacement parts are required, have the service technician verify that the replacements he uses have the same safety characteristics as the original parts. Use of manufacturers specified replacements can prevent fire, shock or other hazards.

Helpful Hints

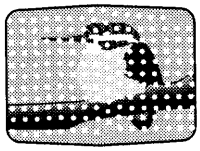


■ **NO PICTURE, NO SOUND**
- Check if TV is plugged in.
- Try a different channel, if OK, probably station trouble.

■ **POOR PICTURE, SOUND OK**
- Adjust BRIGHTNESS control.
- Adjust FINE TUNING control.
- Check aerial connections.

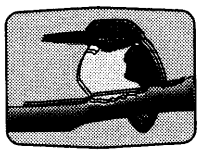


■ **NO COLOUR, PICTURE OK**
- Adjust COLOUR control.
- Adjust FINE TUNING control.
- Is the programme in colour ?



■ **WEAK PICTURE**
- Check aerial connections on back of set.
- Check aerial for broken wires.
- Re-orient aerial.

The following faults are not caused by the receiver:



"GHOSTS"
Reflections of signals from mountains or high buildings will cause multiple images, called "Ghosts". These abnormal conditions can be reduced to minimum by repositioning aerial or by installing new one suited for your area.

"INTERFERENCE"
Interference may be caused by electrical appliances, car ignition systems, etc. This should normally be a temporary condition, but should this interference persist, contact your dealer.

CHANNEL BAND TABLE

The table below shows the receivable channels and channel allocation for this TV set.

	Displayed channel no.	Available channel in Ireland	Available channel in UK	CCIR channel	Vision Frequency [MHz]
VHF band	C 1	--	--	--	43.25
	C 2	A	--	E2	48.25
	C 3	B	--	E3	55.25
	C 4	C	--	E4	62.25
	C 5	D	--	E5	175.25
	C 6	E	--	E6	182.25
	C 7	F	--	E7	189.25
	C 8	G	--	E8	196.25
	C 9	G	--	E9	205.25
	C10	H	--	E10	210.25
	C11	I	--	E11	217.25
	C12	J	--	E12	224.25
UHF band	C21	21	21	E21	471.25
	C22	22	22	E22	479.25
	C23	23	23	E22	487.25
	C24	24	24	E23	495.25
	C25	25	25	E25	503.25
	C26	26	26	E26	511.25
	C27	27	27	E27	519.25
	C28	28	28	E28	527.25
	C29	29	29	E29	535.25
	C30	30	30	E30	543.25
	C31	31	31	E31	551.25
	C32	32	32	E32	559.25
	C33	33	33	E33	567.25
	C34	34	34	E34	575.25
	C25	35	35	E35	583.25
	C36	36	36	E36	591.25
	C37	37	37	E37	599.25
	C38	38	38	E38	607.25
	C39	39	39	E39	615.25
	C40	40	40	E40	623.25
	C41	41	41	E41	631.25
	C42	42	42	E42	639.25
	C43	43	43	E43	647.25
	C44	44	44	E44	655.25
	C45	45	45	E45	663.25
	C46	46	46	E46	671.25
	C47	47	47	E47	679.25
	C48	48	48	E48	687.25
	C49	49	49	E49	695.25
	C50	50	50	E50	703.25
	C51	51	51	E51	711.25
	C52	52	52	E52	719.25
	C53	53	53	E53	727.25
	C54	54	54	E54	735.25
	C55	55	55	E55	743.25
	C56	56	56	E56	751.25
	C57	57	57	E57	759.25
	C58	58	58	E58	767.25
	C59	59	59	E59	775.25
	C60	60	60	E60	783.25
	C61	61	61	E61	791.25
	C62	62	62	E62	799.25
	C63	63	63	E63	807.25
	C64	64	64	E64	815.25
	C65	65	65	E65	823.25
	C66	66	66	E66	831.25
	C67	67	67	E67	839.25
	C68	68	68	E68	847.25
	C69	69	69	E69	855.25

	Displayed channel no.	Available channels in Ireland	Available channels in UK	CCIR channels	Vision Frequency [MHz]
VHF band (CATV)	C75			X	69.25
	C76			Y	76.25
	C77	C		Z	83.25
	C78			Z+1	90.25
	C79			Z+2	97.25
	C80			S1	105.25
	C81			S2	112.25
	C82			S3	119.25
	C83			S4	126.25
	C84			S5	133.25
	C85			S6	140.25
	C86			S7	147.25
	C87			S8	154.25
	C88	C2		S9	161.25
	C89	C3		S10	168.25
	C90	13		S11	231.25
	C91	14		S12	238.25
	C92			S13	245.25
	C93	15		S14	252.25
	C94	16		S15	259.25
	C95	17		S16	266.25
	C96	18		S17	273.25
	C97	19		S18	280.25
	C98	20		S19	287.25
	C99	21		S20	294.25
VHF-hyper band (CATV)	H21			S21	303.25
	H22			S22	311.25
	H23			S23	319.25
	H24			S24	327.25
	H25			S25	335.25
	H26			S26	343.25
	H27			S27	351.25
	H28			S28	359.25
	H29			S29	367.25
	H30			S30	375.25
	H31			S31	383.25
	H32			S32	391.25
	H33			S33	399.25
	H34			S34	407.25
	H35			S35	415.25
	H36			S36	423.25
	H37			S37	431.25
	H38			S38	439.25
	H39			S39	447.25
	H40			S40	455.25
	H41			S41	463.25

WARRANTY TO CUSTOMER

Sanyo U.K. Sales Ltd. (the company) warrants to the initial retail purchaser that if this equipment is or becomes defective and that, in the opinion of the Company, the defect is due to faulty material or workmanship the Company will, for a period of 12 calendar months from the date of sale to the original purchaser repair or replace, at its sole option, free of charge, any such defective component part of the equipment, always provided that:-

1:The equipment has at all times been used in accordance with the operating instructions issued by the Company, and has not been connected to an electrical mains supply for which it has not been adjusted.

2: Accidental damage or damage caused by negligence of misuse by the user, is specifically excluded.

3: Unauthorised repairs, or any modification to the equipment which has not been expressly approved by the Company, shall render this warranty null and void.

4:Failure due to fair wear and tear of any item is specifically excluded.

This warranty is not transferable and is only applicable within the United Kingdom (and the Republic of Ireland).

Nothing in this express warranty affects the statutory rights available to the purchaser of this equipment.

Note: This warranty supersedes any other form of guarantee that may inadvertently have been enclosed with or attached to the product.

Dear Customer.

Thank you for buying *SANYO*. This equipment should give you many years of pleasure and faithful service but in the event that a fault occurs, the following notes for you guidance may be helpful:-

1:PLEASE RETAIN YOUR PURCHASE RECEIPT WHICH WILL BE REQUIRED FOR SERVICE DURING WARRANTY.

2:If your Sanyo equipment proves faulty during the period of guarantee, take it or send it back to the dealer who originally supplied it together with this guarantee and the proof of purchase. We have made arrangements with our approved dealers under which they will carry out inguarantee service repairs on our behalf. In this way, we hope to reduce to a minimum the amount of time you will be without your equipment.

3:If for some reason it is impossible to return the equipment to the original supplier, please contact our Service Department at the address below for further advice.

4:Should the equipment require servicing after the expiry of the guarantee period, take or send it to the original supplier or any other Sanyo dealer. He will be pleased to give you a quotation for the repair.

Service Departments,
Sanyo U.K. Sales Ltd.,
Sanyo House,
Otterspool Way,
Watford, Hertfordshire WD2 8JX
Tel: 01923 246363

Part No. 1AA6P1P1859-- F7HC/YC

SANYO

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