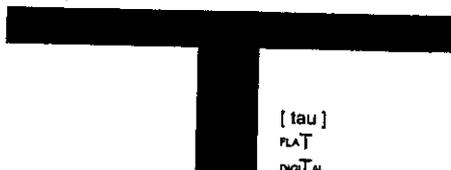


Panasonic®

Colour Television Operating Instructions

Model No.

TX-29P250X TC-29P250H
TX-68P250Z TC-34P250H
TX-80P250Z



[tau]
PLA T
DIGITAL

This is a combined Operating Instruction manual for all the above series of models.

Please read these instructions before operating your set and retain them for future reference.

TQB4G0909

Dear Panasonic Customer

Welcome to the Panasonic family of customers. We hope that you will have many years of enjoyment from your new colour television set.

To obtain maximum benefit from your set, please read these Instructions before making any adjustments, and retain them for future reference.

Retain your purchase receipt also, and note down the Model Number and Serial Number of your set in the space provided on the rear cover of these Instructions.

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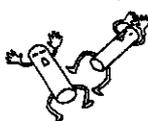
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Battery cautions

The incorrect use of batteries can cause electrolyte leakage which will corrode the Remote Control or cause the batteries to burst.

Old Batteries



New Batteries



Replace both batteries at the same time.



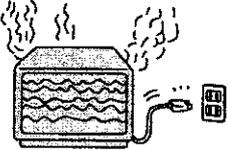
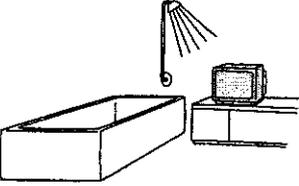
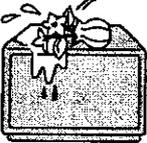
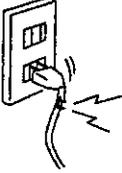
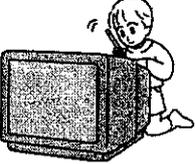
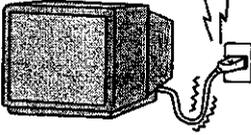
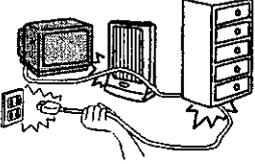
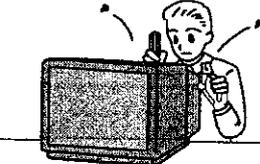
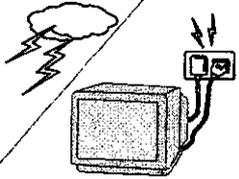
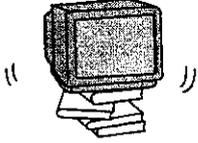
Don't mix battery types
(alkaline with carbon zinc, etc.)



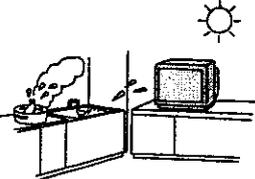
Don't Recharge.

Warnings and Cautions

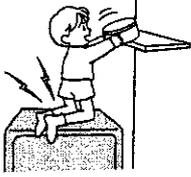
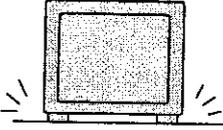
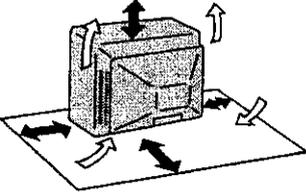
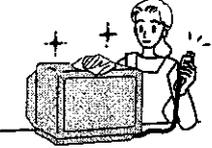
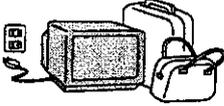
⚠ Warnings

	<p>Unplug the power cord in the event of any malfunction (screen goes blank, no sound, odd sounds, smoke or unusual odors coming from the unit). Unplug the power cord if foreign matter or water falls into the unit, or if the unit is dropped or the cabinet is damaged.</p>		<p>DO NOT use this unit near water. (near a bath tub, etc.)</p>
	<p>DO NOT place any of the following on the unit: Flower vases, flower pots, cups, small metal objects, or cosmetics containers, chemicals or water.</p>		<p>DO NOT use if the power cord or power plug is damaged, or if the plug does not fit tightly into the socket.</p>
	<p>DO NOT insert foreign objects (metal or easily flammable objects).</p>		<p>DO NOT use at a voltage other than indicated</p>
	<p>TAKE CARE NOT to damage the power cord.</p>		<p>DO NOT remove the rear cover as live parts and High Voltage components are accessible when the rear cover is removed.</p>
	<p>DO NOT touch the aerial cable and this unit when there is lightning.</p>		<p>DO NOT place in an unstable location</p>

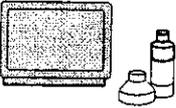
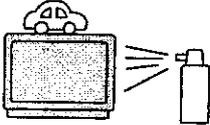
⚠ Cautions

	<p>DO NOT place in humid or dusty location, or areas exposed to smoke or steam. DO NOT place in direct sunlight and other sources of direct heat.</p>		<p>DO NOT touch the power plug if your hands are wet.</p>
---	---	--	---

Warnings and Cautions

 Caution			
	<p>DO NOT stand, or place heavy objects on the unit. Particular care should be taken by families with small children.</p>		<p>Place in a safe location.</p>
	<p>Adequate ventilation is essential to prevent failure of electrical components, we recommend that a gap of at least 10cm(↔) is left all around this unit even when it is placed inside a cabinet or between shelves.</p>		<p>Turn the power "Off" before connecting other electrical equipment.</p>
	<p>Before cleaning, unplug the power plug from the socket.</p>		<p>DO NOT joint the unit.</p>
	<p>Unplug the power plug from the socket if you are not going to use the unit for an extended period.</p>		<p>Ask your sales outlet to install the aerial.</p>

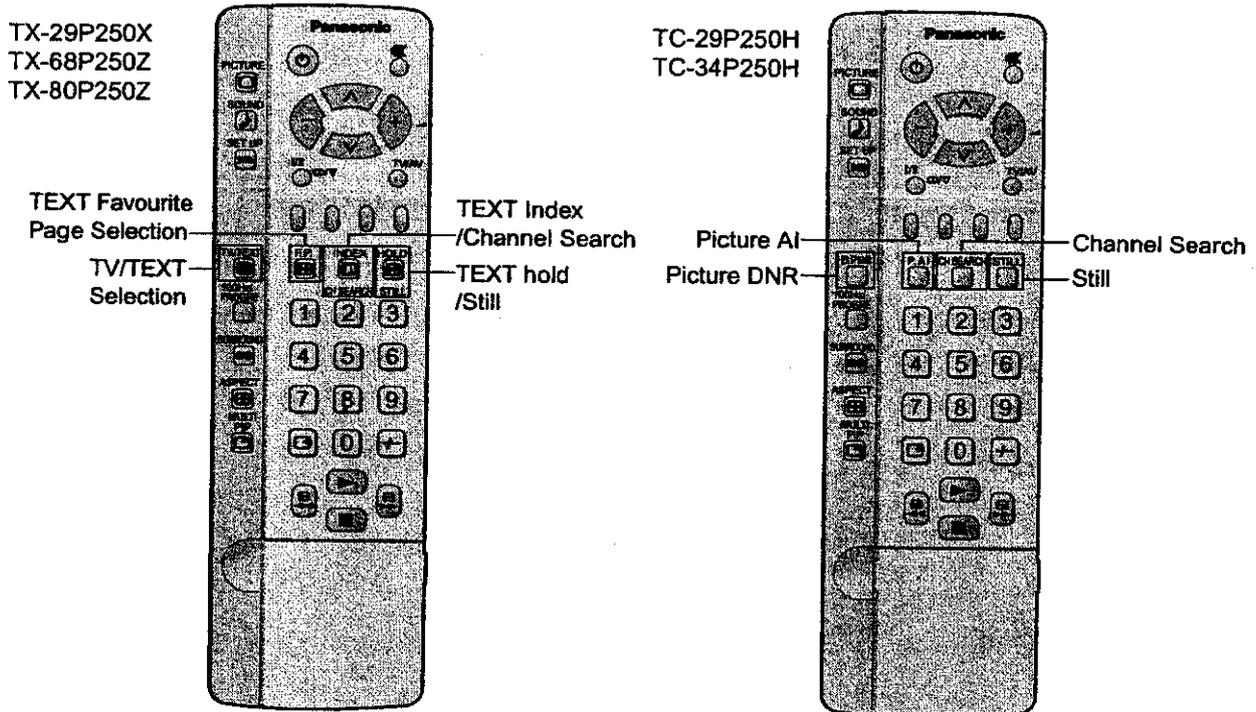
Cleaning

	<p>The unit contains many plastic parts. For this reason DO NOT use benzine, thinner or other chemicals to clean the unit.</p>		<p>Dust will accumulate on the picture screen. Please wipe with a soft cloth from time to time. If you use a chemically treated cloth, please be careful to follow the instructions that come with the cloth.</p>
	<p>DO NOT bring into contact with insecticide or other volatile substances. DO NOT allow the unit to come into contact for extended periods with rubber or vinyl products.</p>		<p>Remove dirt and soiling by wiping with a light cloth. Even if the unit is heavily soiled, do not apply cleaner directly to the unit. Soak a cloth in a solution of neutral cleanser thinned with water. Then wring out the cloth, wipe the unit clean, and finish by wiping with a dry cloth.</p>

Before Operating This Set

How to Use This Manual

1. Check the Model Number of your TV set; the Model Number is shown on the rear cover name plate on the set. Use the table on the opposite page to confirm which features your particular Model is equipped with. This will help you to know which sections of the manual apply to your set.
2. Check the Part Number on the rear of your Remote Control handpiece, and note the functions available, as shown below.



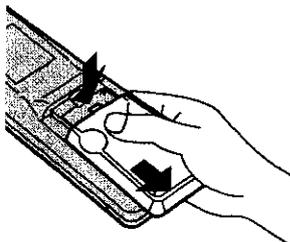
Note:

- Mainly the remote control for TX-29P250X, TX-68P250Z, TX-80P250Z is used as an example in the Operating Instructions.

Battery Installation

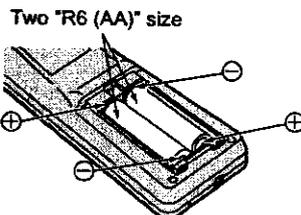
1

Open the cover.
Apply slight downward pressure while pulling towards the bottom.



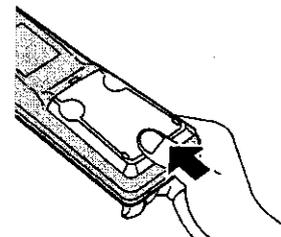
2

Batteries: Use two "R6 (AA)" size batteries.
Insert the batteries ensuring correct polarity. This is identifiable by the "+" and "-" symbols on both the batteries and inside the battery compartment.



3

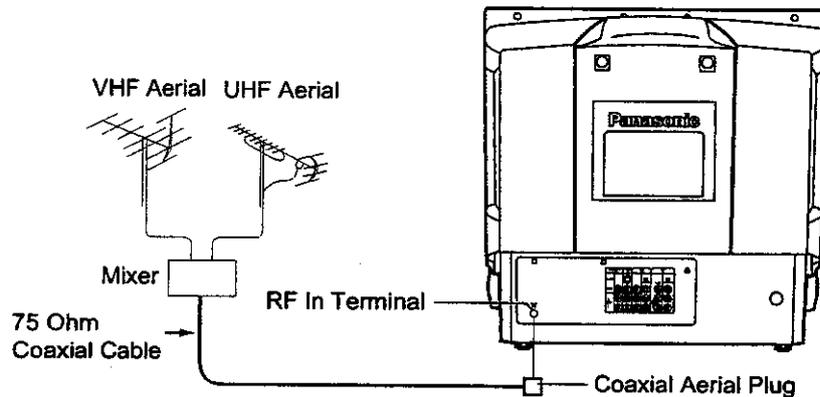
Replace the cover, and slide in reverse until the lock snaps.



Do not use rechargeable (Ni-Cd) batteries. They are different in shape and performance and may fail to ensure correct operation.

Before Operating This Set

Connecting the Aerial cable to the RF In Terminal

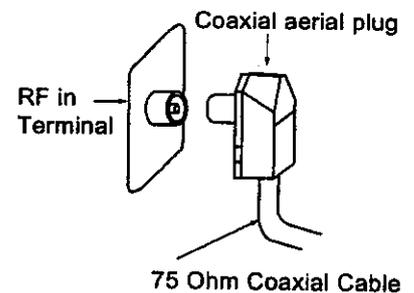


To obtain optimum quality picture and sound, an Aerial, the correct cable (75 Ohm coaxial) and the correct terminating plug are required.

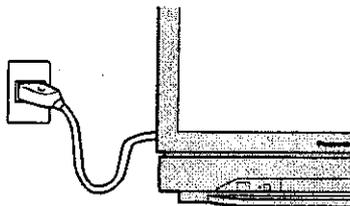
If a communal Aerial system is used, you may require the correct connection cable and plug between the wall Aerial socket and your television receiver.

Your local Television Service Centre or Dealer may be able to assist you in obtaining the correct Aerial system for your particular area and accessories required.

Any matters regarding Aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of you, the Customer.



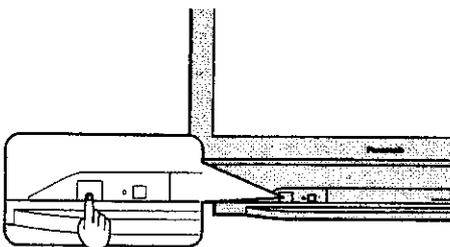
Connecting the Plug to the Wall outlet



Note:

- Mains plug types vary between countries. The mains plug shown at left may therefore not be the type fitted to your set.

How to turn the Power On

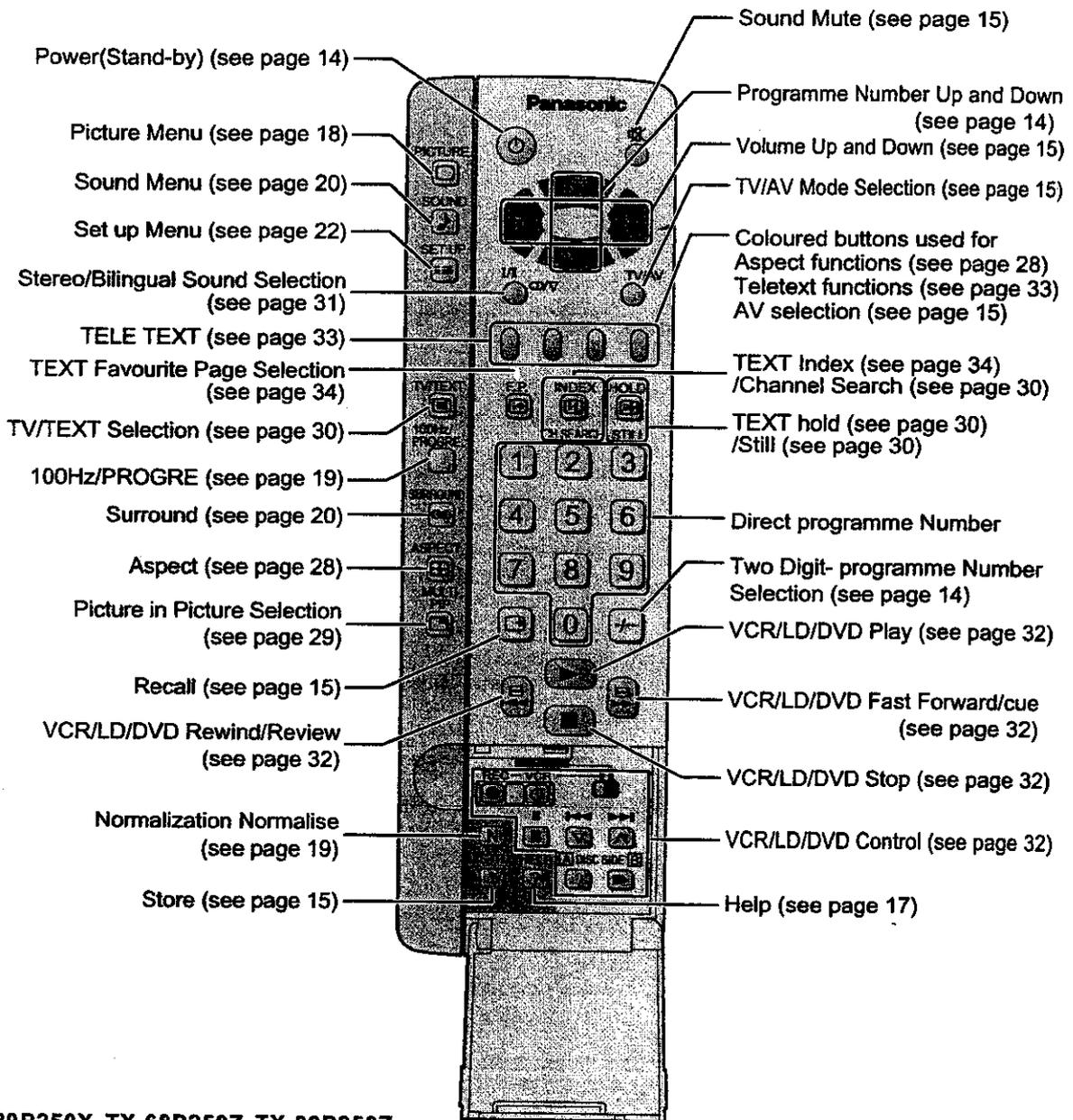


Press the Power switch on Television to turn the set on. (See page 14)

Location of Controls

Remote Control

TX-29P250X, TX-68P250Z, TX-80P250Z

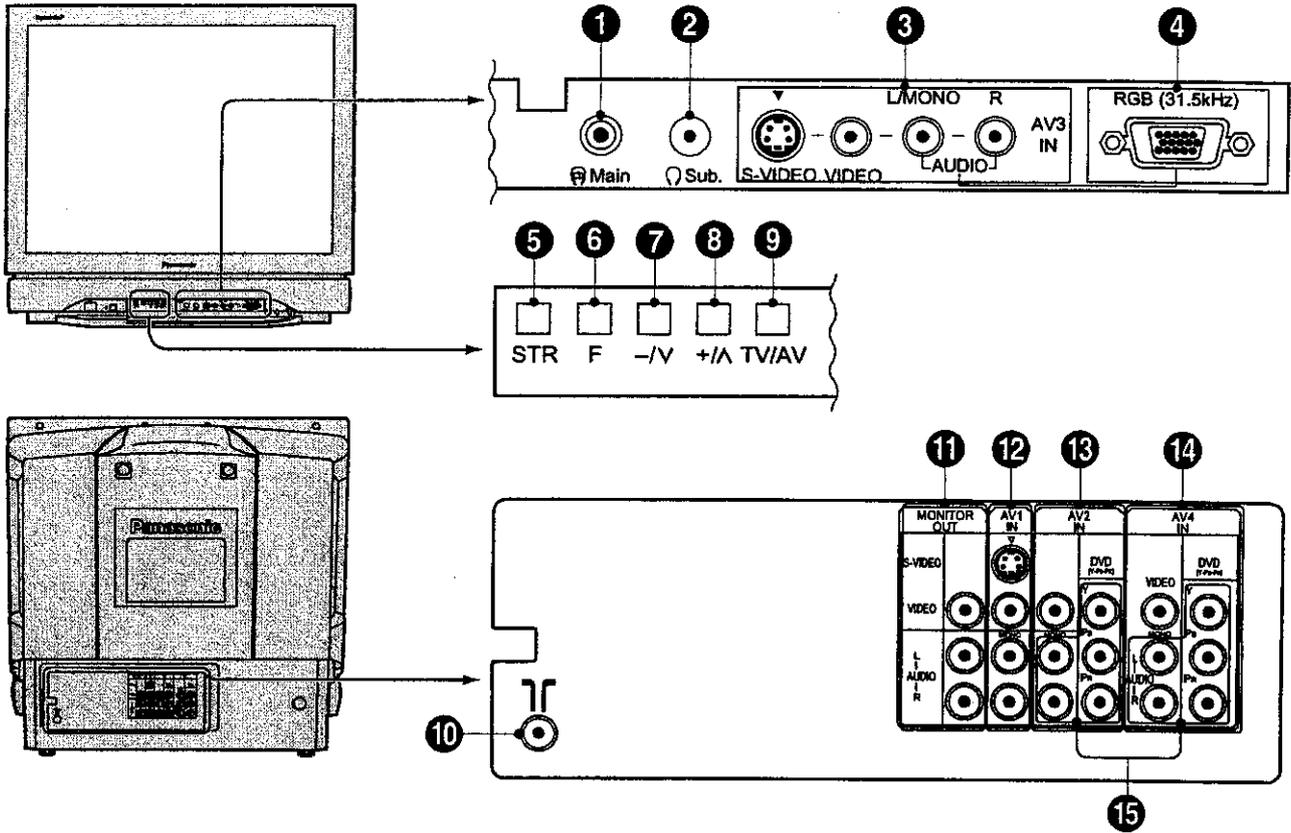


TX-29P250X, TX-68P250Z, TX-80P250Z



Location of Controls

Controls and Terminals on the TV

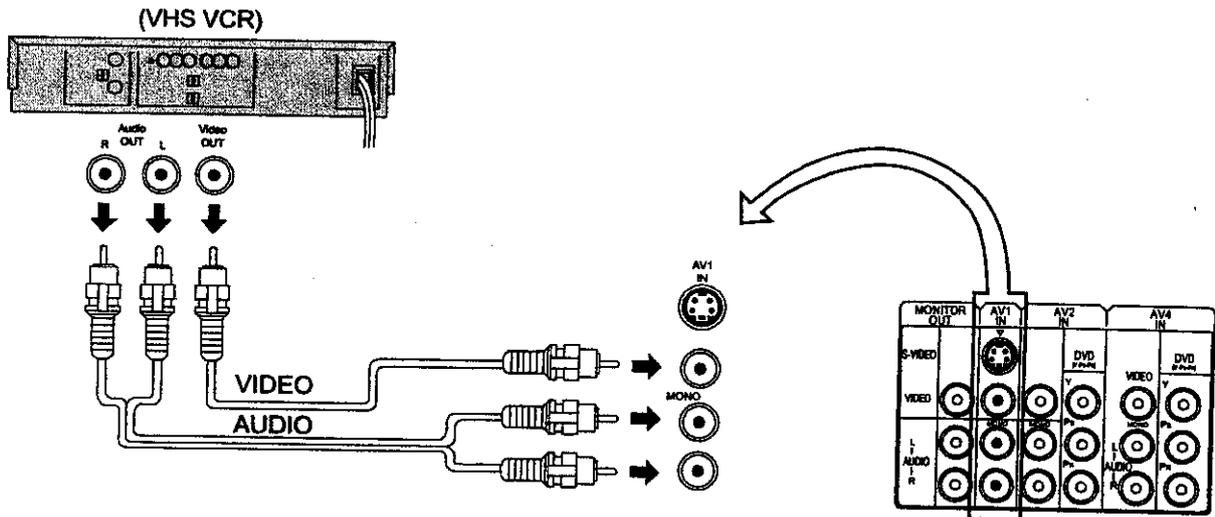
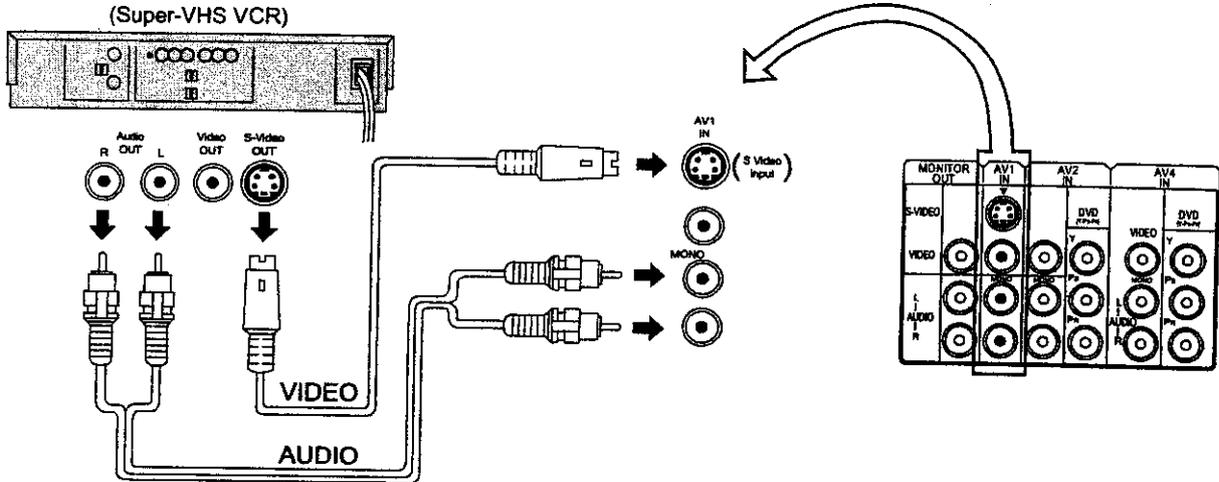


Item No.	Function	Refer to Page	Item No.	Function	Refer to Page
1	Main Headphones Jack	13	9	TV/AV Selection	15
2	Sub Headphones Jack	13	10	Aerial Terminal (RF In Terminal)	7
3	AV3 Input Terminals	10	11	Monitor Output Terminals	11
4	RGB Input Terminal	12	12	AV1 Input Terminals	10
5	STR	15	13	AV2 Input Terminals	10
6	Function	15	14	AV4 Input Terminals	10
7	Volume Down (-) / Programme Number Down (V)	14	15	DVD (Y, Pb, Pr) Input	11
8	Volume Up (+) / Programme Number Up (A)	14			

Connections

How to connect the "AV1, 2, 3 or 4" Input Terminals

Connect VCRs and other peripheral equipment

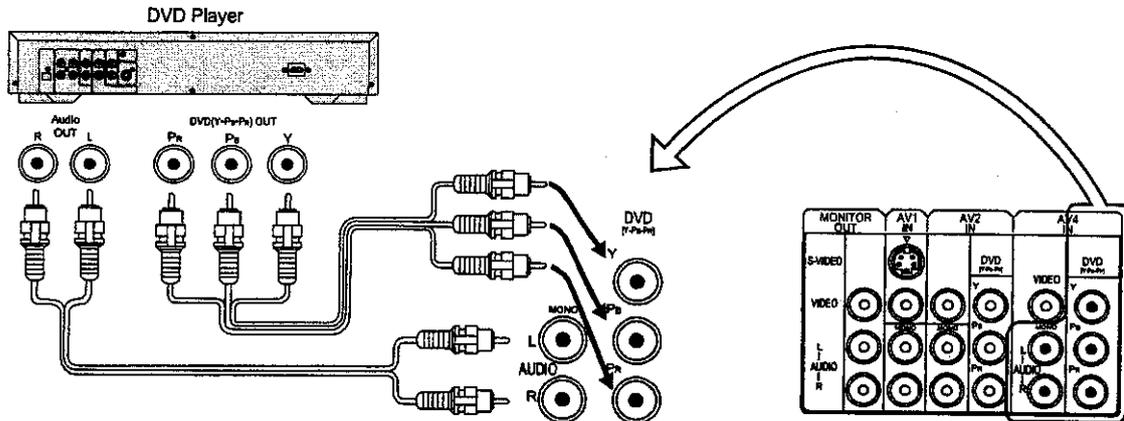


Notes:

- When an S-Video cable is connected to the S-Video terminal, the Video input will be automatically switched off for that AV mode.
- When a Monaural VCR is used, connect the Monaural Audio cable to the Audio "L" (Left) terminal.
- Select the desired AV input position by pressing the TV/AV button. (Refer to page 15)
- Input 3 is located on the front of the unit.
- The AV2 and AV4 audio input terminals serve as the audio input terminal for both the Video input and for the DVD input AV2.

Connections

How to connect the DVD Input Terminals

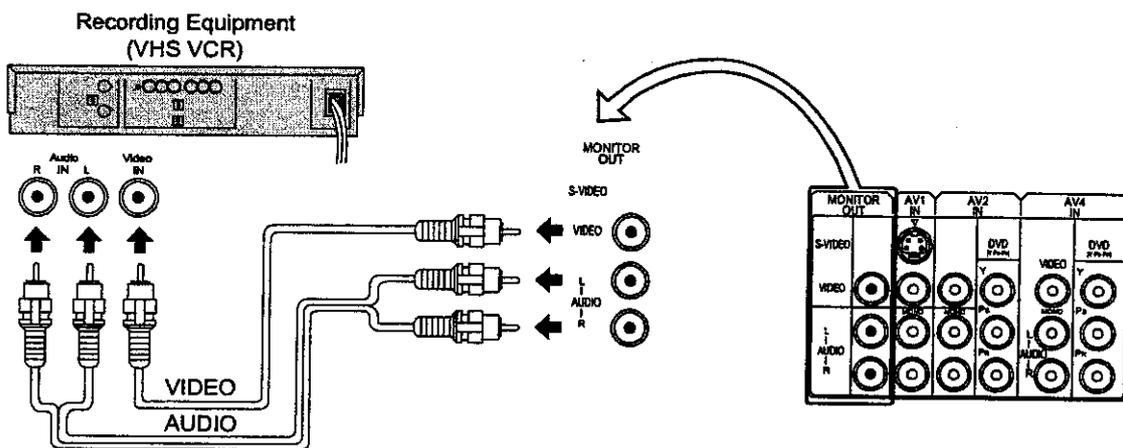


Notes:

- The AV4 audio signal is common for both AV4 and DVD input signal terminals.
- The DVD signal input terminal takes priority over the AV4 video signal input terminal.
- Similar connection are available at the COMPONENT VIDEO input 2 terminal.

How to connect the AV Monitor Output Terminals to other equipment

The "Monitor Out" Terminals output the same signals as main picture on the TV screen and sound from the speaker at that time, e.g. TV programmes or signals from AV1, AV2, AV3 or AV4 input.

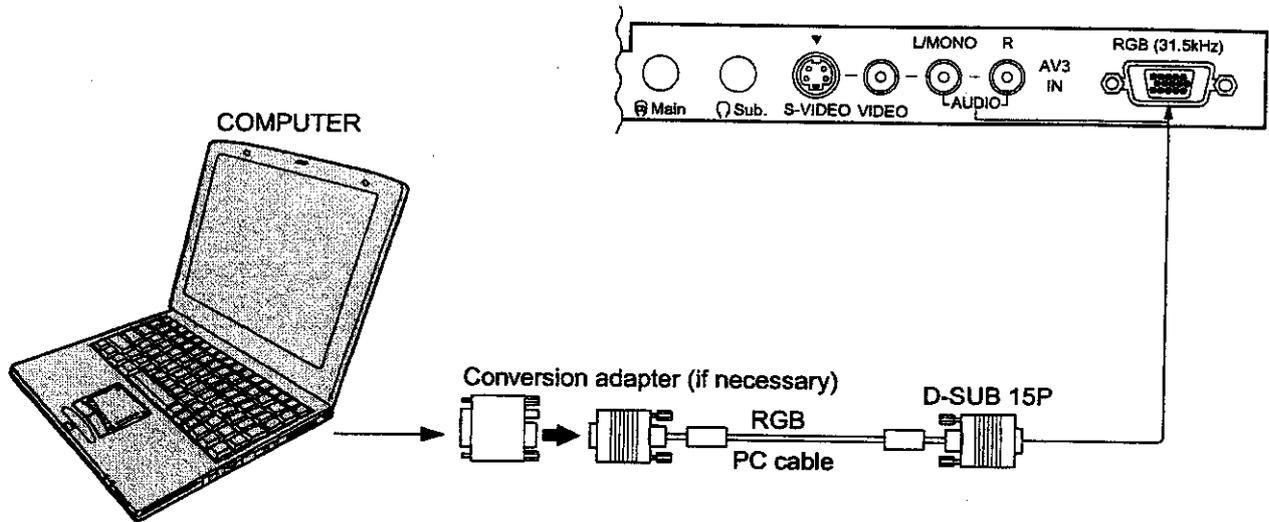


Notes:

- Never connect the same video recorder with both the VIDEO IN and MONITOR OUT terminals on this TV set, as this could cause incorrect operation.
- The monitor output emits the main picture normal video and audio signals.
- Teletext display on screen will not be output at the MONITOR OUT terminals.
- Even if the television is in picture-in-picture condition, MONITOR OUT terminals output the same signals as main picture on the screen and sound from speakers. Sub picture including strobe, still, channel search, etc. will not be output at the MONITOR OUT terminals.
- The RGB mode signal, and DVD signal (Y, Pb, Pr) are not output at the MONITOR out terminals.

Connections

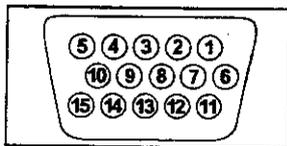
How to connect the RGB Input Terminals



Notes:

- This unit can be connected to PCs with 640 X 480 (31.5 kHz / 60 Hz) or 640 X 400 (31.5 kHz / 70 Hz) pixel.
- In some cases other PCs may not work with this TV set.
- There is no audio signal in RGB input.
- The sound of the RGB mode is combined with the Audio signal of AV3.
- Some PC models cannot be connected to the TV set.
- A commercially sold adapter is required to use the RGB cable (D-sub 15P) to connect a PC-98 series computer (which has a D-sub 15P terminal) or a Macintosh computer to the TV set.
- There is no need to use an adapter for computers with DOS/V compatible D-sub 15P terminal.

■ Signal Names for D-sub 15P Connector



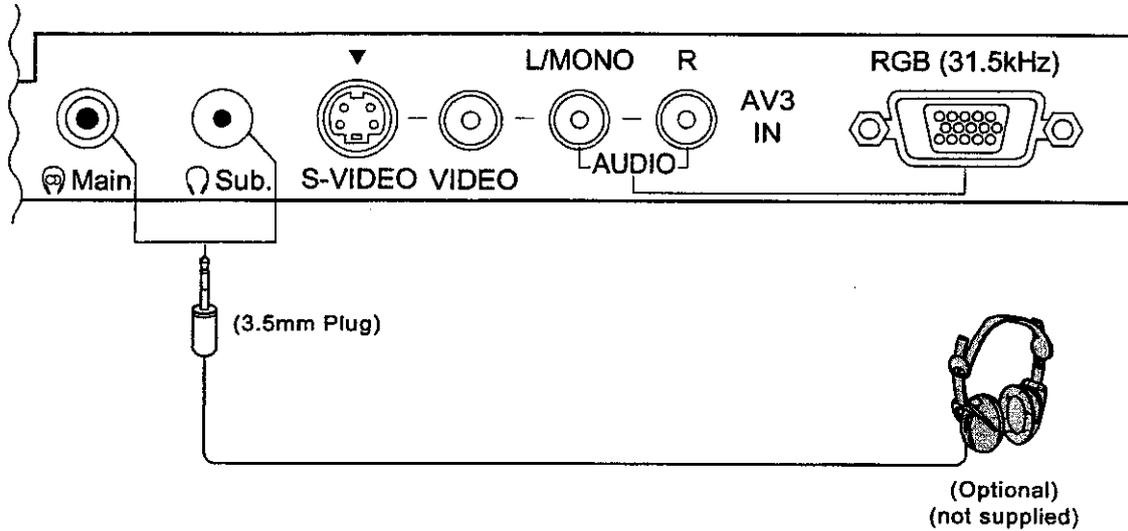
Pin Layout for RGB Input Terminal

Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
①	R	⑥	GND(Ground)	⑪	GND(Ground)
②	G	⑦	GND(Ground)	⑫	NC
③	B	⑧	GND(Ground)	⑬	HD/SYNC
④	GND(Ground)	⑨	NC(not connected)	⑭	VD
⑤	GND(Ground)	⑩	GND(Ground)	⑮	NC(not connected)

Connections

Connecting Headphones

Connect headphones as follows.



You can listen to sound from each of the headphones plugs as shown below.

Screen condition	Speaker Sound	Main Headphones	Sub Headphones	Monitor Output
Single picture/ Teletext	A (Stereo)	A (Stereo)	A (Mono)	A (Stereo)
Picture in Picture	A (Stereo)	A (Stereo)	B (Mono)	A (Stereo)
Picture in Picture/ CHANGE	B (Stereo)	B (Stereo)	A (Mono)	B (Stereo)

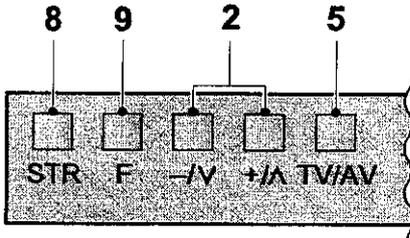
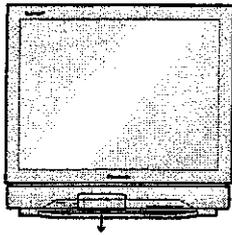
Main Headphones plug:

Use Volume Up "+" or Down "-" Button to control volume level.

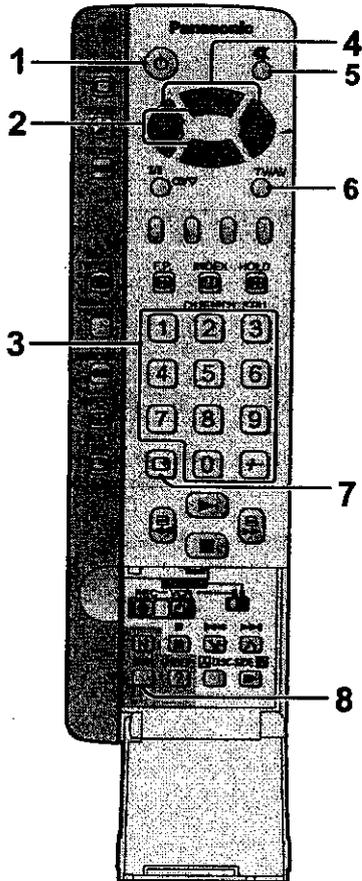
Sub Headphones plug:

For the sub Headphones volume control, refer to page 20.

General Operation



(TV set)



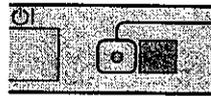
Note:

- Mainly the remote control for TX-29P250X, TX-68P250Z, TX-80P250Z is used as an example in the Operating Instructions.
- The TEXT Operation buttons not present for Models not equipped with certain features. The diagram on page 6 identify such variations.

1



How to switch the power ON or OFF
 The TV set must first be switched on at the wall outlet and at the Power Switch (refer to page 7).
 Press this button to turn the TV set ON, from STANDBY mode.
 Press it again to turn the TV set OFF, STANDBY mode.

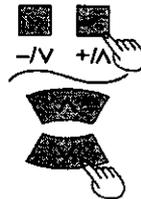


Power-Indicator
 STANDBY – RED
 Power ON – No light up

Note:

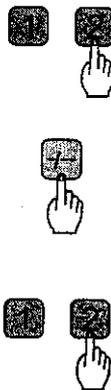
- It is also possible to turn the TV set on STANDBY by pressing the "Direct Programme Number Selection" Buttons (0-9) and the "Programme Number Up or Down" Button, either on the set or on the Remote Control.

2



Programme Number Selection
 Press the Programme Number Up "▲" or Down "▼" Button to select the next higher or lower Programme number.

3



Direct Programme Number Selection (CH SELECT = POSITION)

You can select the numbers directly by pressing "Number 0-9" button and the two digit Numbers by pressing "Two Digit" and "Programme Number" buttons.

Programme Number 8

Programme Number 12..... , ,

Direct Programme Number Selection (CH SELECT = DIRECT)

You can select the number directly by pressing the corresponding programme number button.

Programme Number 8.....

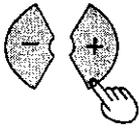
Programme Number 36..... ,

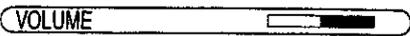
Programme Number 124... , ,

Note:

- When the Skip setting for Programme Number 100 through 125 is on, the channel selection time will be shortened, and thus you can not input three digits at a time.

General Operation

4  **Volume Adjustment**
 Press the Volume Up "+" or Down "-" Button to increase or decrease the sound volume level.



7  **Recall Button**
 Press the Recall button to display the current system status, for example, Programme number, Channel number, Stereo mode, Aspect mode, Picture menu, Sound menu, Scan mode and Sound system.

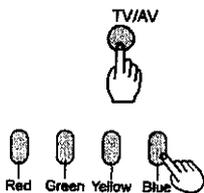
5  **Mute Button**
 Press this button to mute the sound completely. The "Mute" symbol will appear.
 Press the button once again to restore the previous sound level, and cancel the mute.

8  **STR Unit**
 Used to store tuning and other function settings. Also used to start the menu demonstration.
 Remote control :
 Stores some settings in TUNING menus.

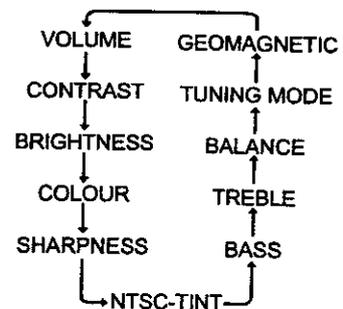


6  **TV/AV Mode Selection**
 Press the TV/AV button to select TV, AV1, AV2, AV3, AV4, RGB input signal modes sequentially.

Remote control :
 Press the TV/AV button to display AV1 - AV4 at the bottom of the screen. Each coloured button corresponds with each input. For example, pressing the Red button selects AV1.



9  **Function selection**
 Displays the on screen display functions, use repeatedly to select from the available functions. The following adjustments can be accessed directly.



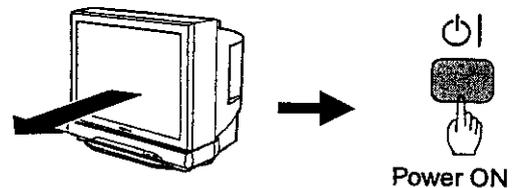
Notes:

- NTSC-TINT : Displayed when receiving NTSC signals.
- TUNING MODE : Not displayed during AV mode.
- B A L A N C E : Not displayed during SURROUND on.

Geomagnetic Correction

Slight tilting of the picture may be noticeable or coloured patches may sometimes appear at the corners of the screen (colour purity). The Geomagnetic Correction feature can be used to eliminate them, if necessary.

The power should be off when determining the installation location and direction.
At this time please verify what direction the TV screen is to face (direction indicated by the arrow).
Press the main power switch.



Geomagnetic corrections can be made from the remote control or the TV set.

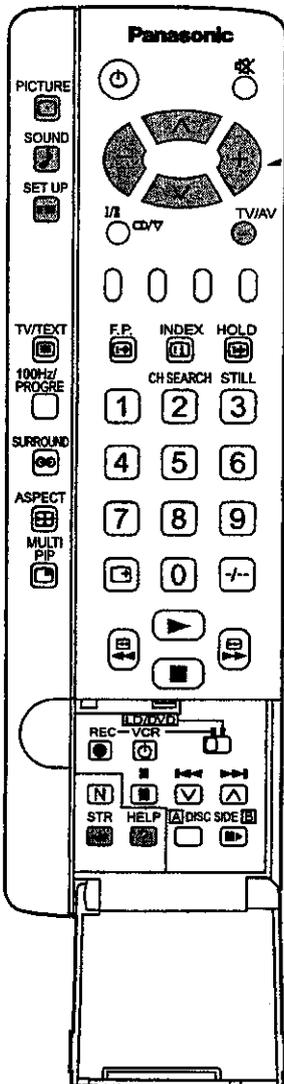
Operation from remote control	Operation from the TV
<p>PICTURE SOUND SET UP</p> <p>(Remote Control)</p>	<p>(TV set)</p>
<p>1. Press the SET UP button.</p> <p>2. Select the Geomagnetic correction menu by pressing .</p>	<p>1. Press the F (FUNCTION) button to access the Geomagnetic correction menu.</p>
<p>3. Press or to adjust the picture tilt or coloured patches as necessary.</p>	<p>2. Press or to adjust the picture tilt or coloured patches as necessary.</p>
<p>4. Press the TV/AV button to exit the Geomagnetic correction menu.</p> <p>Normal Viewing</p>	<p>3. Press the F (FUNCTION) button to exit the Geomagnetic correction menu.</p> <p>Normal Viewing</p>

Helpful Hint

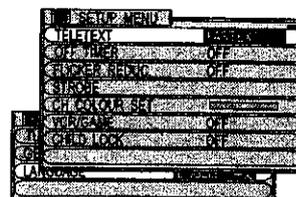
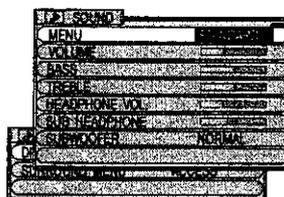
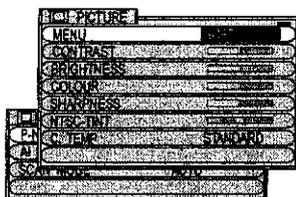
1. If geomagnetic changes still cause colour patches on the screen even after the TV is installed, turn the power off and turn back on again after about 30 minutes.
2. Adjustment for geomagnetism should be performed every time the location of the TV is changed.
3. In some cases colour patches will not be completely eliminated even after adjustment, particularly in ferro-concrete buildings and other structures susceptible to geomagnetism. In these cases adjust by changing the installation location.

Using the On Screen Displays

Many features available on this TV can be accessed via the On Screen Display menu system. Use the remote control as shown below to access and adjust features as desired.



The **PICTURE**, **SOUND** and **SET UP** buttons are used to open the main menus and also to return to the previous menu



ex. AV mode : COLOUR SYS is not displayed.



The **UP** and **DOWN** cursor buttons are used to move the cursor up and down the menus.



The **LEFT** and **RIGHT** cursor buttons are used to access menus, adjust levels or to select from a range of options.



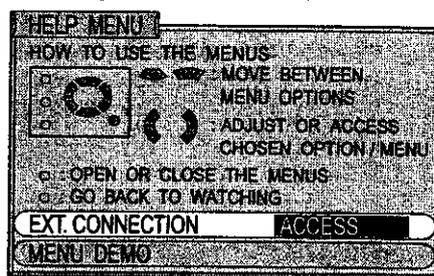
The **STR** button is used with a number of features to store settings after adjustments have been made or options have been set.



The **TV/AV** button is used to exit the menu system and return to the normal viewing screen.



The **HELP** button runs a demonstration of on screen display menus available. Press the **HELP** button and select one of the options

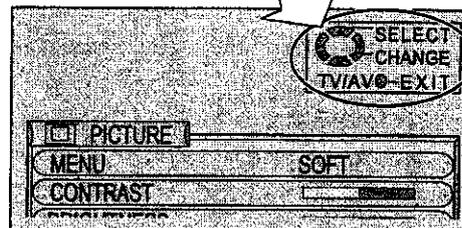


An On Screen Help box is displayed whenever a menu is displayed on the TV. This Help box indicates which keys on the remote control are used to navigate the menu shown, see above for descriptions of button functions.

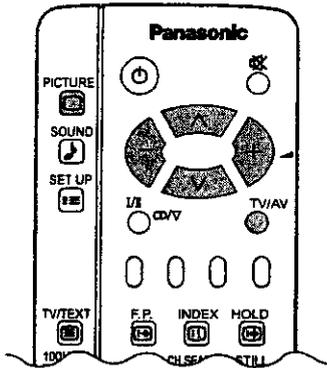
Note:

- The Help box is not shown in the menu pictures in this instruction book due to space limitations.

ON SCREEN HELP 'Instruction' box



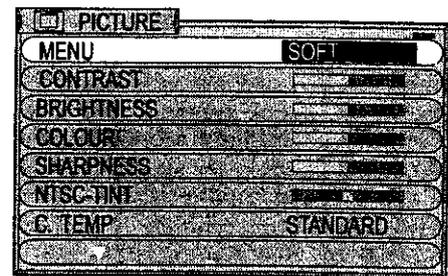
Picture Menu



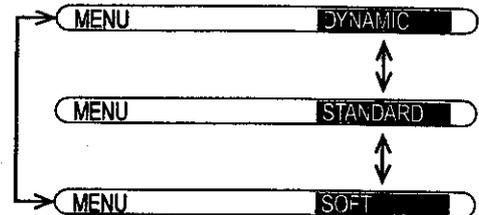
- 1 Press .
 - 2 Move to chosen menu option by using  or .
 - 3 Adjust chosen option or access chosen menu by using  or .
- Press  at any time to go back to watching TV.

MENU

You can change the level of each Function (COLOUR, NTSC-TINT, BRIGHT, CONTRAST, SHARPNESS) for each Picture Menu. Picture menu mode will be memorized for each TV, AV1, AV2, AV3 and AV4 mode.

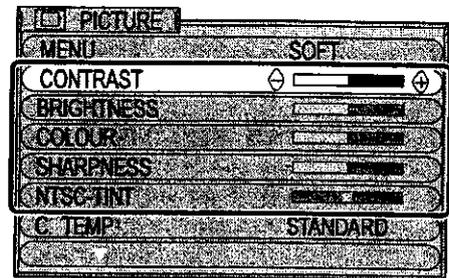


Picture Menu	Function
DYNAMIC	For viewing in brighter environments. This menu selects a higher than normal levels of Brightness and Contrast.
STANDARD	For viewing in normal (evening lighting) environments. This menu selects the normal levels of Brightness and Contrast.
SOFT	For viewing in a dark room. This menu selects reduced levels of Brightness and Contrast.



CONTRAST, BRIGHTNESS, COLOUR, SHARPNESS, NTSC-TINT

Increase or decrease the levels of CONTRAST, BRIGHTNESS, COLOUR and SHARPNESS options according to your personal preference. With an NTSC-TINT signal source connected to the TV, the picture hue can be adjusted to suit your taste.



Item	Effect	Function
CONTRAST	 	Adjust for contrast.
BRIGHTNESS	 	Adjusts for easier viewing of dark pictures such as night scenes and hair.
COLOUR	 	Adjusts slightly to a lighter colour.
SHARPNESS	 	Displays a sharp image.
NTSC-TINT	 	Adjust for proper skin colour.

Notes:

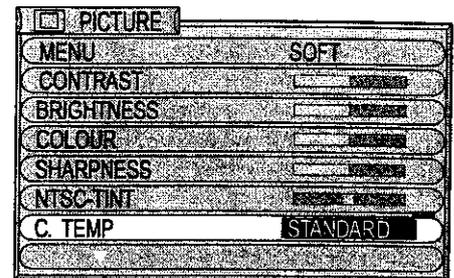
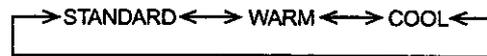
- When set to Multi PIP mode, the main and sub pictures are both adjusted simultaneously.
- When the TV is receiving NTSC signals, NTSC-TINT is displayed and level adjustment would be possible.
- Only CONTRAST and BRIGHTNESS will be displayed during RGB connection.
- Only CONTRAST will be displayed during TEXT mode.

Picture Menu

C. TEMP (Colour Temperature)

Allows you to set the overall colour tone of the picture.

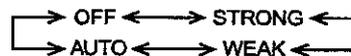
Press or to switch between modes



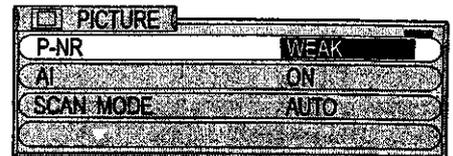
P-NR (Picture Noise Reduction)

Automatically reduces unwanted picture noise.

Press or to switch between modes



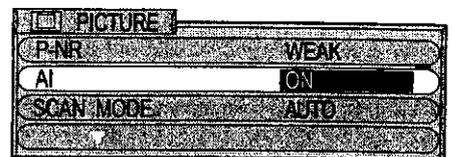
TC-29P250H, TC-34P250H switching is also possible using on the remote control



AI

Automatically analyses the incoming picture and processes it to give improved contrast and optimum depth of field.

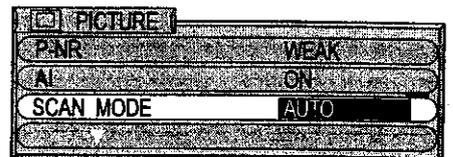
TC-29P250H, TC-34P250H switching is also possible using on the remote control



SCAN MODE

Lets you choose the screen refresh method:

Press or to switch between modes

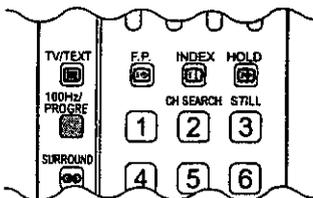


MODE	Function
AUTO	The TV software will select the best mode for the signal being viewed.
100 Hz MODE	100Hz will give a steady picture for most signal transmission.
PROGRESSIVE	Recommended when receiving NTSC signals.

Switching is also possible using on the remote control.

Note:

- We recommend that you set **Scan mode** to **Progressive** when viewing a PAL 60 or NTSC transmission. When viewing a PAL transmission (other than PAL 60) with **Scan mode** set to **Progressive**, the screen will flicker, this is not a fault.



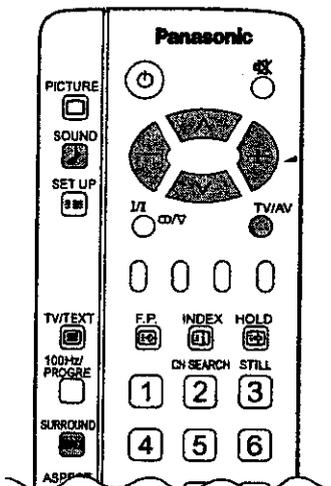
Helpful Hint (N Normalization)

By pressing the Normal "N" Button on the Remote Control while the Picture menu is displayed, the selected menu will be changed to the Normal Mode.

Normalization will not occur if the menu is not displayed when the "N" Button is pressed.

The Normal mode is the factory preset condition. Returning to this original condition is called "Normalization".

Sound Menu



- 1 Press .
- 2 Move to chosen menu option by using  or .
- 3 Adjust chosen option or access chosen menu by using  or .

The Sound menu screen consists of 2 pages.

Use  and  to change pages.

Press  at any time to go back to watching TV.

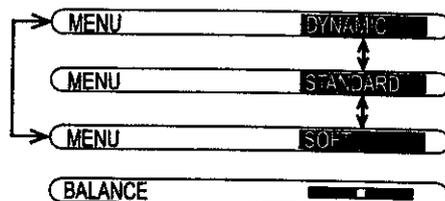
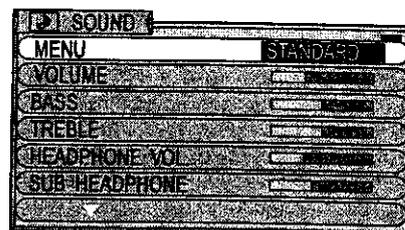
Some features are only available with the Surround feature switched off.

Press  to switch between On and Off.

MENU

You can change the level of each Function (BASS, TREBLE) for each Sound Menu. Sound menu mode will be memorized for each TV, AV1, AV2, AV3 and AV4 mode.

Sound Menu	Function
DYNAMIC	Amplifies the Low frequencies and outputs optimum sound. For music programmes for example.
STANDARD	For Normal use.
SOFT	Human voices (middle pitch sounds) will sound more clear.



The BALANCE for Sound Operation is displayed when Surround is turned OFF.

VOLUME, BASS, TREBLE, BALANCE, HEADPHONE VOL., SUB HEADPHONE

Item	Effect	Function
VOLUME	 	Adjusts output volume.
BASS	 	Adjusts low sounds.
TREBLE	 	Adjusts high sounds.
BALANCE	 	Adjust left and right volumes.
HEADPHONE VOL.	 	Adjust Headphone volume.
SUB HEADPHONE	 	Adjust Sub Headphone volume.

Notes:

- When set to Multi PIP mode, the main and sub sound are both adjusted simultaneously.
- When using one of the double window features, note that the headphones will relay the soundtrack for the programme in the main window, not the smaller window.

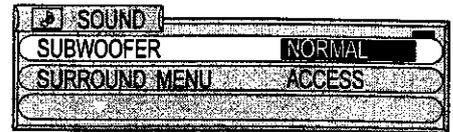
Sound Menu

SUBWOOFER

Press  or  to switch between modes



Off turns off subwoofer output, Normal provides a mid-level bass output and Full provides an enhanced bass effect.



SURROUND MENU

Press  or  to select SURROUND MENU.



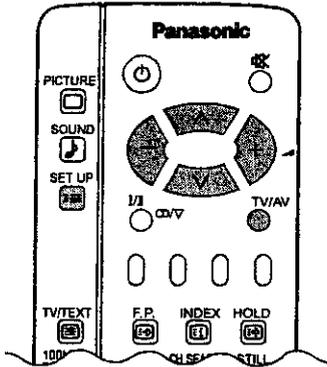
Helpful Hint (Normalization)

By pressing the Normal "N" Button on the Remote Control while the Sound menu is displayed, the selected menu will be changed to the Normal Mode.

Normalization will not occur if the menu is not displayed when the "N" Button is pressed.

The Normal mode is the factory preset condition. Returning to this original condition is called "Normalization".

Setup Menu



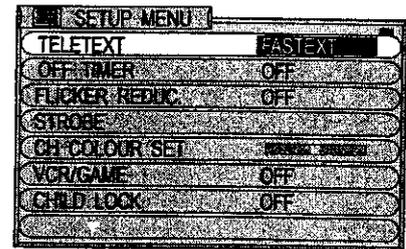
- 1 Press .
- 2 Move to chosen menu option by using or .
- 3 Adjust chosen option or access chosen menu by using or .

The SET UP menu screen consists of 2 pages.
Use and to change pages.

Press at any time to go back to watching TV.

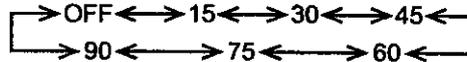
TELETEXT
(No indication for TC-29P250H and TC-34P250H)

Allows you to choose 2 modes. (See page 38)
LIST ↔ FASTEXT



OFF TIMER

Switches the TV off within a preset time which you can choose from between 0 to 90 minutes in 15 minute intervals.



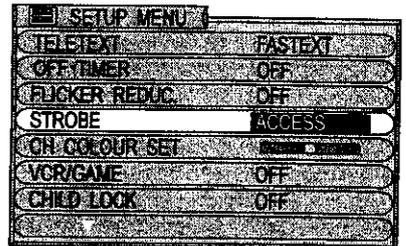
**F L I C K E R
REDUCTION**

Lets you control any picture movement. Set to Dynamic to activate motion compensation, to smooth the image and get rid of picture movement. Set to Normal to correct minor picture movement, or if slight ghosting of figures occurs when using the Dynamic setting. Set to Off to have no flicker reduction at all, occasional broadcasts may benefit from using this setting.



STROBE

Lets you take a series of freeze-frame photos of a piece of action (for example: the finish of a race). (See page 30)



**CH COLOUR
SET**

Colour density varying between broadcast channels can be adjusted to three levels for each reception channel.

VCR/GAME

Reproduction of irregular signals, such as certain TV games and rental video tapes, may be improved.

TEXT SELECT
(No indication for TC-29P250H and TC-34P250H)

Select character set, so that all characters needed are available for text on teletext pages (eg: cyrillic characters, etc).

Mode Languages: ENGLISH/CIS/E.EUROPE

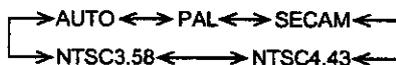
CHILD LOCK

If the Child-Lock function is set ON, picture and sound of the TV/AV mode being viewed will disappear and a Black screen will appear.

**COLOUR
SYSTEM**

During AV mode, COLOUR SYSTEM is displayed.

If a clear picture with current colours cannot be obtained when a Broadcast or AV signal is received. The colour system will change as shown.

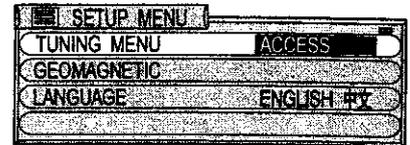


PAL, SECAM and NTSC 3.58 are different colour signal broadcast transmission systems applicable to differing countries NTSC 4.43 is a trick playback mode used in special VCR's to playback NTSC recorded video tapes through PAL television equipment.

Setup Menu

TUNING MENU

Provides access to many other features including system select and Auto TUNE. (See page 26)
Not displayed during AV mode.



GEOMAGNETIC

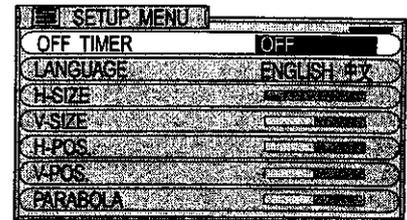
If you notice a slight tilt to the picture or if there are coloured patches at the corners of the screen, use this feature to eliminate them. (See page 16)

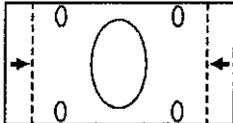
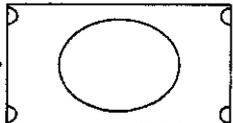
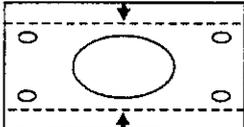
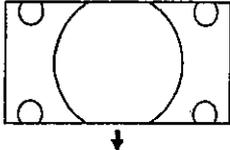
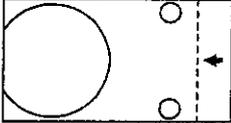
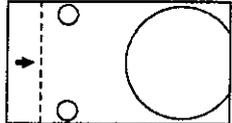
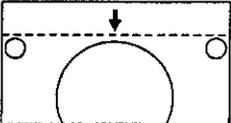
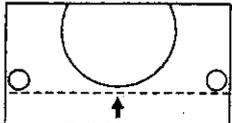
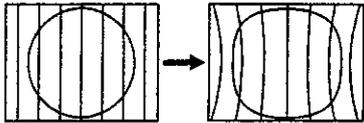
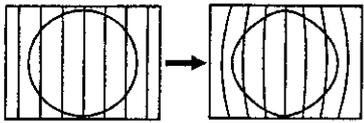
LANGUAGE

When you first install the TV, the On Screen Display language is set according to your choice of region. LANGUAGE lets you change the language used for On Screen Displays.

During "RGB" input signal modes.

The right SET UP is displayed during RGB connection. Details on each functions are as follows:

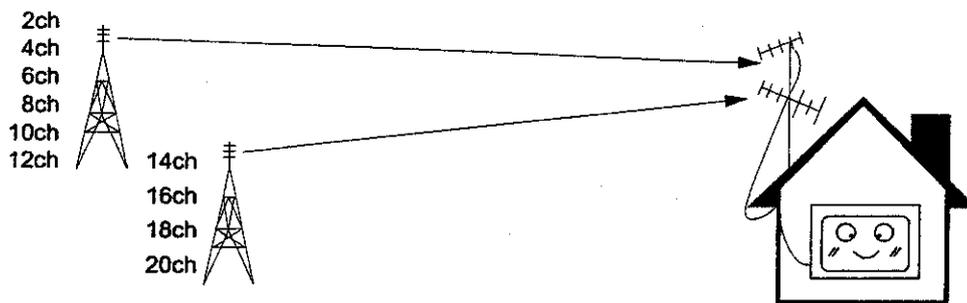


<p>H-SIZE</p>	<p>When the Position  is pressed</p> 	<p>When the Position  is pressed</p> 
<p>V-SIZE</p>	<p>When the Position  is pressed</p> 	<p>When the Position  is pressed</p> 
<p>H-POS</p>	<p>When the Position  is pressed</p> 	<p>When the Position  is pressed</p> 
<p>V-POS</p>	<p>When the Position  is pressed</p> 	<p>When the Position  is pressed</p> 
<p>PARABOLA</p>	<p>When the Position  is pressed</p> 	<p>When the Position  is pressed</p> 

Tuning Menu

Channel Selection

Select the most easily viewed channel selection method.



Example

Programme Number	Channel Display	Received Channel
1	2	2
2	4	4
3	6	6
4	8	8
5	10	10
6	12	12
7	14	14
8	16	16
9	18	18
10	20	20

POSITION SELECT

When the Channel Selection is on POSITION, and Auto Tune is performed, the unit memories the channels Tuned in order from Programme No.1.

Press the button ① to view channel 2.

Press the button ② to view channel 4.

Press the button ③ to view channel 6.

During Position mode various reception channels can be viewed.

Example

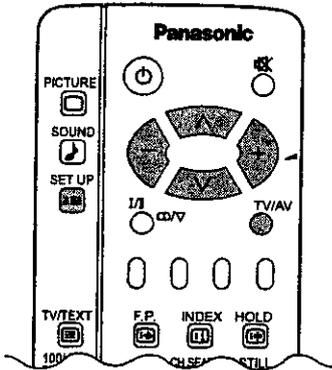
Programme Number	Channel Display	Received Channel
1	—	—
2	2	2
3	—	—
4	4	4
5	—	—
6	6	6
7	—	—
8	8	8
9	—	—
10	10	10
⋮	⋮	⋮
20	20	20
⋮	⋮	⋮

DIRECT SELECT

When the Channel Selection is on DIRECT, and Auto Tune is performed, the unit memories the programme number which is the same as the channel Tuned.

This method allows you to select the desired channel by pressing the channel display number directly on the remote control to select the station. The channel display numbers for the broadcast stations in each region are listed on Page 25.

Tuning Menu



- 1 Press .
- 2 Move to chosen Tuning menu option by using or .
- 3 Access Tuning menu by using or .
- 4 Move to chosen menu option by using or .
- 5 Adjust chosen option or access chosen menu by using or .

Press at any time to go back to watching TV.

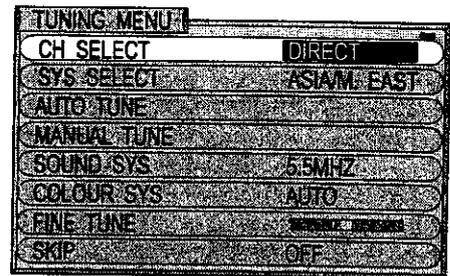
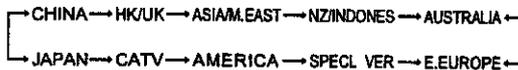
Pressing after having adjusted a feature will store the setting as the default (replacing the factory setting).

CH SELECT
(Channel Selection)

Select the most easily viewed channel selection method. (See page 24)

SYS SELECT
(System Selection)

Select the system.



System Select by Region

SYSTEM SELECT	REGION
CHINA	China
HK/UK	Hong Kong, United Kingdom
ASIAM.EAST	Malaysia, Singapore, Thailand, Asia countries, Kuwait, Saudi Arabia, United Arab Emirates, Middle East countries, etc.
NZ/INDONES	New Zealand, Indonesia, etc.
AUSTRALIA	Australia
E-EUROPE	CIS, Poland, etc.
SPECL VER	South Africa
AMERICA	U.S.A., Chile, Mexico, Panama, Peru, Philippines, Taiwan, Venezuela, etc.
CATV	USA CATV
JAPAN	Japan

AUTO TUNE

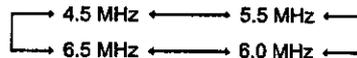
Allows you to automatically retune the TV. Useful if you move house and wish to retune your TV to the local stations. (See page 26)

MANUAL TUNE

Allows individual program positions to be tuned, manually. (See page 27)

SOUND SYS
(Sound System)

You can change the sound system used for a programme channel. Choose the required sound system:



COLOUR SYS
(Colour System)

Lets you select the correct transmission standard for the transmission signal being received.

FINE TUNE

Use to make small adjustments to the tuning of an individual station (useful for example when weather conditions are affecting reception quality of a program).

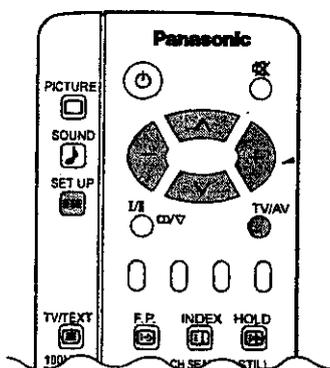
SKIP

It is possible to skip Program Number on which no TV stations are tuned appearing on the screen. The function is only effective when selecting Program Numbers by pressing the Program Number UP or DOWN button either on the TV set or the remote control.

Tuning Menu

Auto tune

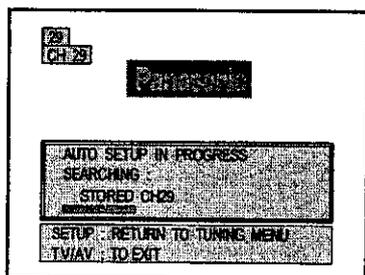
Before Auto tune, set the "SYSTEM SELECTION" and "CHANNEL SELECT" mode.



- 1 Press .
- 2 Move to chosen menu option by using or .
- 3 Access Tuning menu by using or .
- 4 Move to chosen menu option by using or .
- 5 Access AUTO TUNE by using or .

Notes:

- If you proceed with the next step all tuning data will be erased (all stations and their programme positions stored in your TV's memory will be wiped out so the new settings can be stored).
- If you exit the procedure after this point and before AUTO TUNE is complete, no station information will be stored. Restart and complete the AUTO TUNE procedure so that the TV is re-tuned.



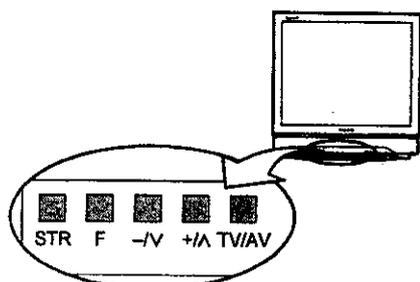
- 6 Start AUTO TUNE by using or .

Once this operation is completed the TV will display the program now stored on programme position 1.

Press at any time to go back to watching TV (please read the Note in the above procedure).

Auto tune (via front panel)

It is also possible to use the control panel buttons on the front of the TV to tune individual programme positions



- 1 Press (Front panel) until Tuning mode is reached.
- 2 Press or to access Tuning mode.
- 3 Press (Front panel) to access Auto tune.
- 4 Press or to start search.

When the desired station is found, press to store.

The programme position will flash.

Repeat above procedure to tune additional programme positions.

Press at any time to exit the Tuning menu.

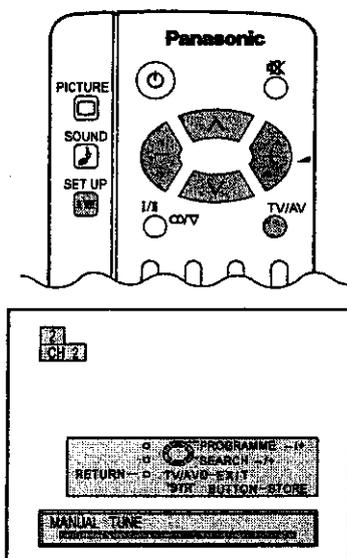
Helpful Hint

1. If a clear picture with correct colours cannot be obtained when a Broadcast or AV signal is received, refer to the "Colour System Selection" operation on page 25.
2. After the Automatic tune is finished, press the Programme Number "Up" Button to confirm the tuning condition for each Programme Number. If some Programme Numbers are unused, it is possible to skip such Programme Numbers. Please refer to the Programme.

Tuning Menu

Manual tune

Before Auto tune, set the "SYSTEM SELECTION" and "CHANNEL SELECT" mode.



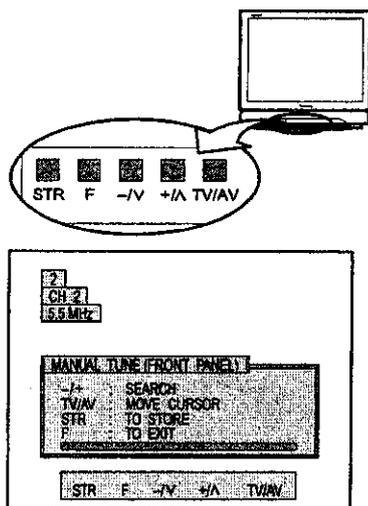
- 1 Press .
- 2 Move to chosen menu option by using or .
- 3 Access Tuning menu by using or .
- 4 Move to chosen menu option by using or .
- 5 Access Manual Tune by using or .
- 6 Select the programme position to be tuned by using or .
- 7 Press repeatedly until required station is found by using or .

When the desired station is found, press to store.
The program position will flash.

Press at any time to go back to watching TV.

Manual tune (via front panel)

It is also possible to use the control panel buttons on the front of the TV to tune individual programme positions



- 1 Press (Front panel) until Tuning mode is reached.
- 2 Press or to access Tuning mode.
- 3 Press to move between Change programme, Search and Change TV system.
- 4 Press or to change programme position or start search.

When the desired station is found, press to store.

The programme position will flash.

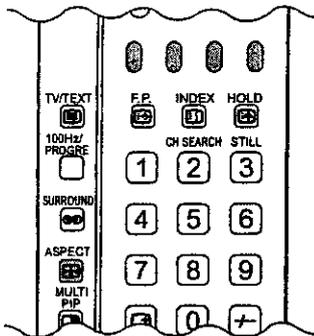
Repeat above procedure to tune additional programme positions.

Press at any time to exit the Tuning menu.

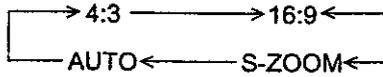
Helpful Hint

1. If a clear picture cannot be obtained even when a Broadcast or AV signal is received, refer to the "Colour System Selection" operation on page 25.
2. After the Manual tune is finished, press the Programme Number "Up" Button to confirm the tuning condition for each Programme Numbers. If some Programme Numbers are unused, it is possible to skip such Programme Numbers.
3. When using a VCR without video and audio input/output terminals, it is convenient to connect the aerial cable as indicated in the instruction manual of VCR and to set the designated channel to programme No."0". In that case, perform manual tune after setting the colour system and sound system in advance. Further, in multi-system VCR, it is more convenient to set the designated channel to several programme Numbers.

Aspect Controls



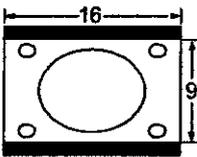
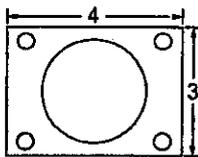
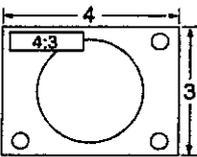
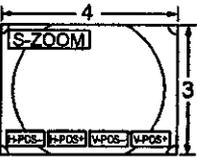
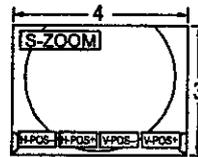
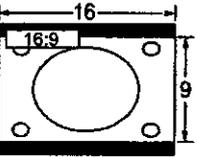
Press  to move through the aspect options:



Notes:

- Simply press  to display mode information in the top left of the screen.
- 16:9 picture has been used to illustrate all of the aspect modes described in this section.
- During AV mode, AUTO is added to the options displayed above.

The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for some Aspect functions clear after a few seconds. If you want to select an operation when the keys are not shown, press  once more and the keys will reappear.

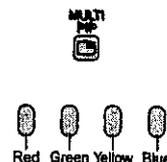
Mode	Picture	Explanation
AUTO	 <p>16:9 Signal</p>  <p>4:3 Signal</p>	<p>When a wide screen signal from the special video is detected by S1-Video Terminal of the unit, the Aspect ratio auto-matically set to 16:9 screen.</p> <p>There is a wide variety of software available with aspect ratios from 1.78:1 (16:9) to 2.35:1 (cinema vision).</p>
4 : 3		<p>4:3 will display a 4:3 picture at its standard 4:3 size without any stretching.</p>
S-ZOOM	 <p>Zoom</p>  <p>Blue button has been pressed to move picture upwards</p>	<p>S-Zoom displays the picture at a greater magnification than Zoom mode does.</p> <p>Press the red or green buttons to move the picture horizontally. Press the yellow or blue buttons to move the picture vertically.</p>
16 : 9		<p>16:9 will display the picture at its maximum size but with slight stretching. Black stripes will be visible down the top and bottom of the picture.</p>

Menu Operation

Multi PIP

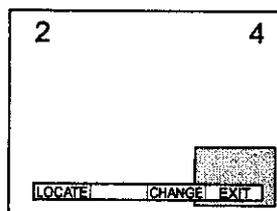
Press  (whilst the on screen selector keys are on screen) to move between watching the current programme, the **picture in picture** feature, **picture out of picture** and **picture and picture** feature.

The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for the features clear after a few seconds. If you want to select an operation when the keys are not shown, press  once more and the keys will reappear.

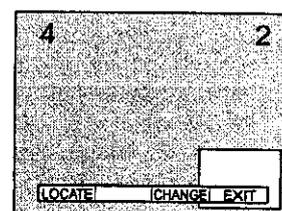


Picture in picture

Allows two pictures to be viewed at the same time. Press the yellow button to swap the contents of the two windows. Use the remote control to select a TV channel or an AV source to appear in the main window.



Picture in picture mode



The two programmes have been swapped, the programme in the smaller window has become the main window program.

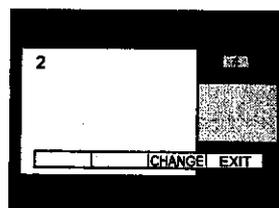
Picture out of picture

This feature allows two programmes to be viewed at the same time, as **picture in picture** does. The difference is how the two programmes are displayed: in **picture in picture** the smaller window appears within the main image; in **picture out of picture** the smaller window appears to the right of the main image.

Use the remote control to change channel (while the on screen selector keys are still displayed).

Press the yellow button to swap the contents of the two windows.

Use the remote control to select a TV channel or an AV source to appear in the main window.

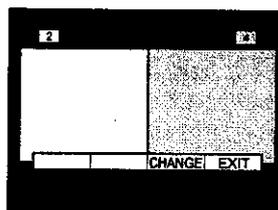


Picture out of picture mode

Picture and picture

Allows two pictures to be viewed at the same time. Press the yellow button to swap the contents of the two windows.

Use the remote control to select a TV channel or an AV source to appear in the left window.



Picture and picture mode

Note:

- MULTIPIP operations cannot be made during RGB mode, or progressive signal input (Y, P_B, P_R).

Menu Operation

Channel search

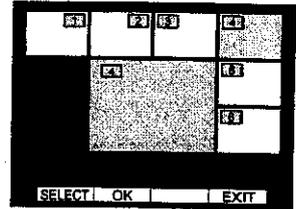
Press () to show freeze-frames of the programmes being broadcast on all of the stored channels. These images are displayed in series clockwise around the edge of the screen, starting from the top left.

The current programme is displayed in the centre of the screen, still playing.

The feature cycles through the stored channels until either () is pressed to pause the search or () is pressed to exit the feature.

Press the red button to select each channel's freeze-frame in turn. Press the green button to watch the selected channel, exiting the feature.

Press the blue button to watch the current programme (displayed centre screen), exiting the feature.



Channel search



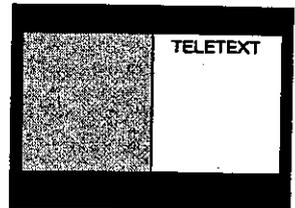
Picture and text (No indication for TC-29P250H and TC-34P250H)

Press to move between watching the current programme, viewing teletext and the picture and text feature. Picture and text lets you see the current programme and a page of teletext side by side.

Whilst using this feature, the remote control affects the teletext page; if you wish to make changes to the programme viewed press to return to watching the programme on its own then make the desired changes.



TELETEXT mode



Picture and text mode

Still

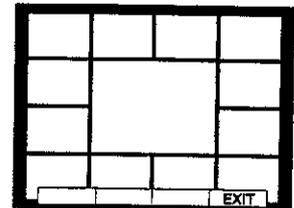
Press () to freeze the picture, press again to return to watching the current programme.



Strobe

(Access **Strobe** via the **Setup** menu, see page 24). Takes a series of up to twelve freeze-frame images (one second delay between each image being taken) from the current programme watched, these are displayed in series clockwise around the edge of the screen, starting from the top left. The current programme is displayed in the centre of the screen, still playing.

To pause (freeze) **Strobe**, press () on the remote control, press again to continue taking the freeze-frames. To exit the **Strobe** feature and return to watching the current programme, press any button on the remote control other than **STILL**.

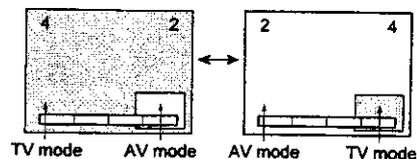


Strobe mode

CHANGE Mode

When the CHANGE Mode is ON to Swap from Main picture to sub picture and vice versa.

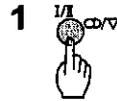
A bar is displayed at the bottom of the screen when is pressed. Press the yellow button to switch to Change mode.



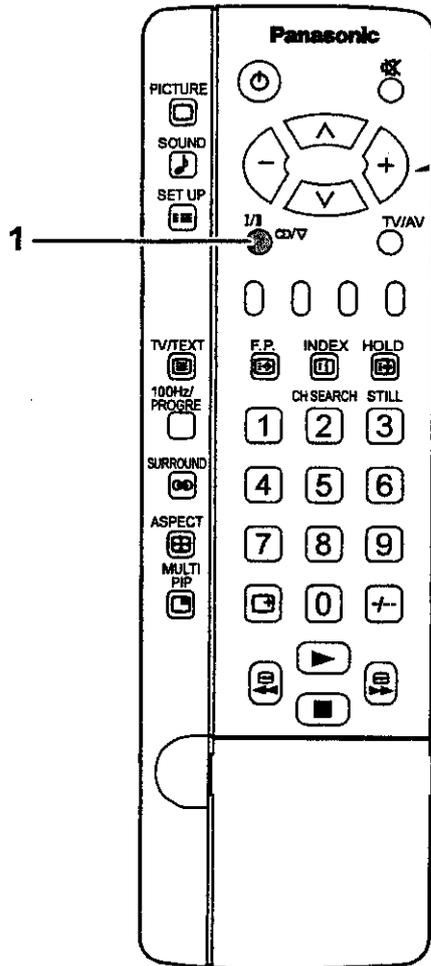
TV mode AV mode AV mode TV mode

Advanced Remote Control Operation

Stereo Reception



1 When you receive the stereo/bilingual sound system, sound output modes can be selected by pressing the stereo/bilingual sound selection button.



Audio Signal	Mode Indicator
STEREO	⊕ ⊙
MAIN I	I
SUB II	II
MONO	▽

	Type of broadcast	Mode Indicator
NICAM	Regular broadcast (Standard Audio)	No Indicator ← → ▽
	Regular + NICAM MONO I (MAIN I)	I ← → ▽
	NICAM STEREO	⊕ ⊙ ← → ▽
	NICAM DUAL MONO (MAIN I / SUB II)	I → II ↑ ▽ ↓
A2 (German)	Regular broadcast (Standard Audio)	No Indicator ← → ▽
	BILINGUAL or DUAL MONO : MAIN I / SUB II	I ← → II
	STEREO	⊕ ⊙ ← → ▽

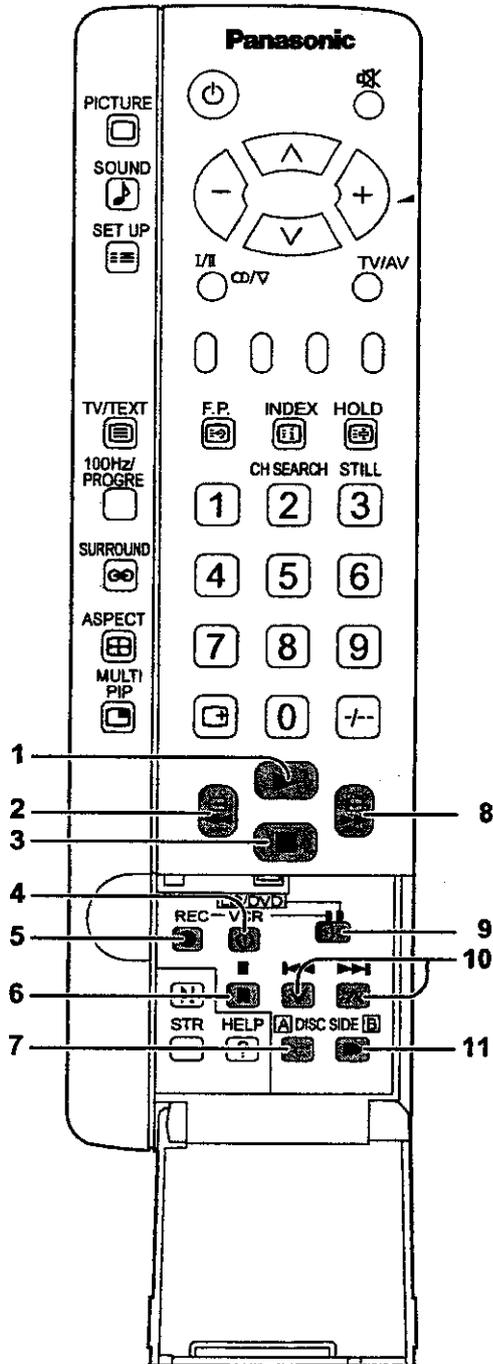
Notes:

- The "A2 (German)" stereo/bilingual TV sound transmission system is used in the following region; Australia, Malaysia, Thailand, Indonesia, etc.
- The "NICAM" stereo TV sound transmission system is used in the following region; New Zealand, Singapore, China.
- If the stereo signal is poor or the receiving conditions are not optimum or if STEREO:MONO automatic switching occurs, it is recommended you switch from STEREO to MONO.
- Even when the contents of the receiving signal undergo changes, selection mode is kept intact.
- When the receiving conditions deteriorate, listening will be easier if the mode is set to the "MONO" position, using the stereo/bilingual sound selection button.
- "DUAL", also known as "DUAL MONO" or as "BILINGUAL" is not currently transmitted in some countries.

Advanced Remote Control Operation

VCR / LD / DVD

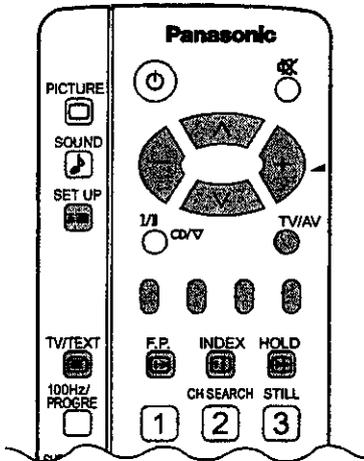
The Remote Control is capable of operating some functions of selected Panasonic VCRs, LD and DVD (Digital Versatile Disc) equipment. Some VCR, LD and DVD equipment have different functions. So to ensure compatibility please refer to the equipment's instruction book or consult your dealer for details.



Button	Function	
	VCR	LD/DVD
1	Play button	
2	Rew (Rewind)/Review button	
3	Stop button	
4	VCR Power button	LD/DVD Power button
5	REC (Record) button	
6	Pause/Still button	
7		DISC SIDE A Selection button
8	FF (Fast Forward)/Cue button	
9	VCR/LD, DVD Select button	
10	Programme Number Up and Down buttons for VCR	Programme Skip button
11	Still Advance button	DISC SIDE B Selection button

Advanced Remote Control Operation

TELE TEXT (No indication for TC-29P250H and TC-34P250H)



- Teletext features may vary depending on the Broadcasting Companies and is only available if the channel selected is transmitting Teletext.
- Pressing the Picture button whilst in Teletext operation will display the contrast function with a cyan bar, press or to alter the setting as required.
- Pressing the Setup button whilst in Teletext operation will display special function options at the bottom of the screen.
- When in Teletext mode, the volume may still be altered to the desired listening level.

What is LIST mode?

In LIST mode, four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory.

What is FASTEXT?

In FASTEXT mode, four differently coloured subjects are situated at the bottom of the display. To access more information about one of these subjects, press the appropriately coloured button. This facility enables fast access to information on the subjects shown.

Note:

- Characters will be illegible unless you select the Text Language which matches the text being received. Select the correct LANGUAGE (Refer to page 23).



TV / Teletext mode

Press to switch between the current programme, teletext and the picture and text feature (lets you see the current programme and teletext side by side, see page 30).



Page Selection

Pages can be selected in two ways:

- Press or to increase or decrease the page number by one.
- By entering the page number, using 0-9 on the remote control.



Full / Top / Bottom

Press to display special functions, followed by the **Green** button. Press the **Green** button again to expand the **BOTTOM** half. Press again to return to normal (FULL) size.



Reveal

Press to display special functions, followed by the **Red** button to reveal hidden words e.g. quiz page answers. Press again to hide.

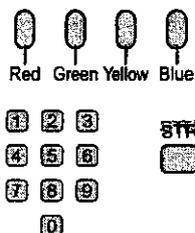


Red / Green / Yellow / Blue buttons

In FLOF mode these correspond to the differently coloured subjects. In LIST mode they correspond to the differently coloured page numbers.

Advanced Remote Control Operation

It is not possible to change the programme position when in News flash, Update or Sub Coded Page Access operation.



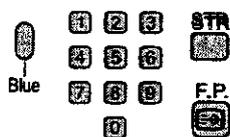
List Store

In LIST mode the four page numbers can be altered (programme positions 1 - 25 only). To do this, press one of the four coloured buttons and enter the new page number. Press and hold , the page numbers will change to white indicating that the page is stored.



Hold

To hold the Teletext page when viewing multi-page information Press again to return to automatic page update.



Favourite Page (F.P.)

Stores a favourite page in memory for instant recall. To store such a page, the TV must be in LIST mode, and the programme position must be from 1 - 25. Press the **Blue** button, select the page number, then press and hold . The page number is now stored. Press  to recall this page.

Update Display

Press  to display special functions, followed by the **Yellow** button to view the TV picture whilst searching for a Teletext page (this is not necessary in picture and text mode, as the picture is displayed on the left of the screen). When found, the screen will display the page number at the top left. Press the **Yellow** button to view the page. Press  again to return to normal TV operation.



News Flash

When a news flash page has been selected, press , **Yellow**, to view the TV picture. When an update is received, the page number will be displayed on screen. Press the **Yellow** button to display the News Flash. Press  to return to normal TV operation.

Update

Press , **Yellow** to see the update of information on certain pages. When an update is received, the page number will be displayed at the top left of the screen. Press the **Yellow** button to view the page. Press  to return to normal TV operation.

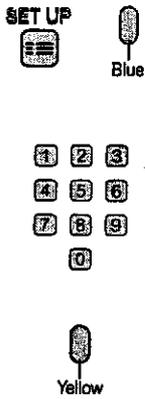


Index

When in FLOP operation

Press  to return to the main index page. Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.

Advanced Remote Control Operation



Sub Coded Page Access

When Teletext information exceeds more than one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require. It is possible to enter your required sub page and continue watching the normal programme until the correct sub page is found.

Select the required page number using buttons 0 - 9.

If the top of the page indicates that sub pages are being transmitted yet the page does not change, then the number at the top of the page is there to indicate that the broadcaster has updated the page's contents, there are no sub pages.

Press  followed by the **Blue** button; T**** will be displayed at the top right of the screen.

Enter desired sub page number before the T**** disappears. To select page 6 enter 0, 0, 0 and 6. (if in LIST mode, a 'T' will appear in the current box at the bottom).

Press the **Yellow** button to view a normal TV programme - this is not necessary in picture and text mode, as the picture is displayed on the left of the screen.

(Press , **Yellow** in LIST mode).

When the page is available, press the **Yellow** button to view the page. To clear the page perform one of the following:

- Press .
- Select a new page number.
- Press  to return to normal TV operation.

Channel Allocation

- CATV (USA CATV) channel numbers as recommended by the joint EIA/NCTA Engineering committee and published as EIA INTERIM STANDARD No.6-CABLE TELEVISION CHANNEL IDENTIFICATION PLAN-MAY 1983.
- The receiving channels are as follows;

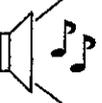
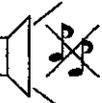
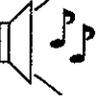
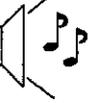
SYS SELECT	CHINA	HK/UK	ASIA/M.E	NZ/INDONES	AUSTRALIA	E.EUROPE	SPECL VER	AMERICA	CATV	JAPAN
CH DISPLAY	RECEIVE CHANNEL									
0	-	-	-	-	-	-	-	-	-	-
1	1	-	-	1	0	1	1	-	1	1
2	2	-	2	2	1	2	2	2	2	2
3	~	-	~	~	2	~	~	~	~	~
4	~	-	~	~	3	~	~	~	~	~
5	~	-	~	~	4	~	~	~	~	~
6	~	-	~	~	5	~	~	~	~	~
7	~	-	~	~	S2	~	~	~	~	~
8	~	-	~	~	~	~	~	~	~	~
9	~	-	~	~	~	~	~	~	~	~
10	~	-	~	~	~	~	~	~	~	~
11	~	-	11	11	~	11	11	~	~	~
12	12	-	12	-	~	12	12	~	~	12
13	13	-	-	-	~	-	13	13	~	13
14	~	-	-	-	~	-	~	14	~	~
15	~	-	-	-	S10	-	-	-	~	~
16	~	-	-	-	6	-	-	-	~	~
17	~	-	-	-	~	-	-	-	~	~
18	~	-	-	-	9	-	-	-	~	~
19	~	-	-	-	9A	-	-	-	~	~
20	~	-	-	-	-	-	-	-	~	~
21	~	21	21	21	10	21	21	~	~	~
22	~	~	~	~	11	~	~	~	~	~
23	~	~	~	~	12	~	~	~	~	~
24	~	~	~	~	S11	~	~	~	~	~
25	~	~	~	~	~	~	~	~	~	~
26	~	~	~	~	~	~	~	~	~	~
27	~	~	~	~	~	~	~	~	~	~
28	~	~	~	~	~	~	~	~	~	~
29	~	~	~	~	~	~	~	~	~	~
30	~	~	~	~	~	~	~	~	~	~
31	~	~	~	~	~	~	~	~	~	~
32	~	~	~	~	~	~	~	~	~	~
33	57	~	~	~	S44	~	~	~	~	~
34	~	~	~	~	20	~	~	~	~	~
35	~	~	~	~	21	~	~	~	~	~
36	~	~	~	~	~	~	~	~	~	~
37	~	62	62	62	~	62	62	62	62	62
38	~	63	63	63	~	63	63	63	63	C13
39	~	69	69	69	~	69	69	69	69	~
40	~	~	~	~	~	~	~	~	~	~
41	~	~	~	~	~	~	~	~	~	~
42	~	~	~	~	~	~	~	~	~	~
43	~	~	~	~	~	~	~	~	~	~
44	~	~	~	~	~	~	~	~	~	~
45	~	~	~	~	~	~	~	~	~	~
46	~	~	~	~	~	~	~	~	~	~
47	~	~	~	~	~	~	~	~	~	~
48	~	~	~	~	~	~	~	~	~	~
49	~	~	~	~	~	~	~	~	~	~
50	~	~	~	~	~	~	~	~	~	~
51	~	~	~	~	~	~	~	~	~	~
52	~	~	~	~	~	~	~	~	~	~
53	~	~	~	~	~	~	~	~	~	~
54	~	~	~	~	~	~	~	~	~	~
55	~	~	~	~	~	~	~	~	~	~
56	~	~	~	~	~	~	~	~	~	~
57	~	~	~	~	~	~	~	~	~	~
58	~	~	~	~	~	~	~	~	~	~
59	~	~	~	~	~	~	~	~	~	~
60	~	~	~	~	~	~	~	~	~	~
61	~	~	~	~	~	~	~	~	~	~
62	~	~	~	~	~	~	~	~	~	~
63	~	~	~	~	~	~	~	~	~	~
64	~	~	~	~	~	~	~	~	~	~
65	~	~	~	~	~	~	~	~	~	~
66	~	~	~	~	~	~	~	~	~	~
67	~	~	~	~	~	~	~	~	~	~
68	~	~	~	~	~	~	~	~	~	~
69	~	~	~	~	~	~	~	~	~	~
70	~	~	~	~	~	~	~	~	~	~
71	~	~	~	~	~	~	~	~	~	~
72	~	~	~	~	~	~	~	~	~	~
73	~	~	~	~	~	~	~	~	~	~
74	~	~	~	~	~	~	~	~	~	~
75	~	~	~	~	~	~	~	~	~	~
76	~	~	~	~	~	~	~	~	~	~
77	~	~	~	~	~	~	~	~	~	~
78	~	~	~	~	~	~	~	~	~	~
79	~	~	~	~	~	~	~	~	~	~
80	~	~	~	~	~	~	~	~	~	~
81	~	~	~	~	~	~	~	~	~	~
82	~	~	~	~	~	~	~	~	~	~
83	~	~	~	~	~	~	~	~	~	~
84	~	~	~	~	~	~	~	~	~	~
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Specifications

Power Source	TX-29P250X AC Auto 110-240 V, 50/60 Hz TX-68P250Z, TX-80P250Z AC Auto 230-240 V, 50 Hz TC-29P250H, TC-34P250H AC Auto 220 V, 50 Hz																																																
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Receiving Stereo System	NICAM I, NICAM B/G, NICAM D, A2 (German)																																																

Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms		Checks
Picture	Sound	
 Snowy Picture	 Noisy Sound	Aerial Location, direction or Connections
 Multiple Image	 Normal Sound	Aerial Location, direction or Connections
 Interference	 Noisy Sound	Electrical Appliances Cars/Motorcycles Fluorescent Lamps
 Normal Picture	 No Sound	Volume (Check whether the mute function has been activated on the Remote Control.)
 No Picture	 No Sound	Not plugged into AC outlet Not switched on Contrast and Brightness/Volume setting (Check by pressing the Power Switch or Stand-by Button on the Remote Control.)
 No Colour	 Normal Sound	Colour Control
 Scrambled	 Normal or Weak Sound	Retune Channels
 Coloured Patches	 Normal Sound	Magnetic interference from unshielded equipment; TV set moved while "ON". Turn the TV set off for 30 minutes, using the "Power" Switch on the TV set.
 No Colour	 Noisy Sound	Sound Menu (Refer to page 20) Picture Menu (Refer to page 18)

Specifications

Tuning System	Frequency synthesizer Auto Search Tuning	POSITION : 100 Position DIRECT : 125 Position
Picture Tube	Overall Picture tube measured diagonally Viewable Picture tube measured diagonally CRT Deflection	TX-29P250X, TX-68P250Z, TX-80P450Z, TC-34P250H TC-29P250H 72 cm 86 cm 68 cm 80 cm 104° 104°
Audio Output	64 W [2-way, 4-speakers ; 12 W + 12 W, AFB woofer ; 12 W] (10 % THD)	
Headphones	3.5 mm Plug	
Aerial Impedance	75 Ω Unbalanced coaxial	
Video/Audio/Component Terminals	AV 1, 2, 3, 4 Monitor Out	S-Video In DVD(Y/P _B /P _R) Video In Audio In Video Out Audio Out Y:1 Vp-p, 75 Ω C:0.3 Vp-p, 75 Ω 1 Vp-p, 75 Ω Approx. 0.4V 47K Ω 1 Vp-p, 75 Ω Approx. 0.4V 1K Ω
RGB input	High-DENSITY D-sub 15pin 31.5 kHz / 60 Hz (640 × 480 dot) and 31.5 kHz / 70 Hz (640 × 400 dot)	
Remote control Transmitter	EUR511226 TX-29P250X, TX-68P250Z, TX-80P250Z EUR511227 TX-29P250H, TX-34P250H R6 (AA) Battery × 2 75 Ω coaxial aerial plug	
Dimensions (W × D × H)	TX-29P250X, TX-68P250Z, TC-29P250H 652 mm × 517 mm × 612 mm	TX-80P250Z, TC-34P250H 762 mm × 558 mm × 706 mm
Weight (Mass)	TX-29P250X, TX-68P250Z, TC-29P250H 53 kg (Net)	TX-80P250Z, TC-34P250H 74 kg (Net)

Note:

- Design and Specifications are subject to change without notice. Weight and Dimensions shown are approximate.

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Customer's Record

The model number and serial number of this product can be found on its cabinet. You should note this serial number in the space provided below and retain this book plus your purchase receipt as a permanent record of your purchase to aid in identification in the event of theft or loss and for Warranty Service purposes.

Model Number _____

Serial Number _____

Matsushita Electric Industrial Co.,Ltd.

Central P.O. Box 288, Osaka 530-8692, Japan

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