The 2005 range DVD Recorder products are repaired centrally. Defective sets must be identified, labelled and stored for pick-up. This document gives full instructions for a functional check. Technical information to repair faulty sets is therefore not provided in this document.

To test in-coming sets the following must be performed:
1. Verify / Reproduce the customer’s problem
2. Verify that set has latest Firmware (see chapter 2) and upgrade if it is not the latest version.
3. Full functional check
1. Technical Specifications and Connection Facilities

1.1 General:

- Mains voltage: 220V – 240V
- Mains frequency: 50 Hz
- Power consumption (record): 40 W
- Standby Power Consumption: < 6 W

1.2 RF Tuner

Test equipment: Fluke 54200 TV Signal generator
Test streams: PAL BG Philips Standard test pattern

1.2.1 System

- PAL B/G, PAL D/K, SECAM L/L', PAL I

1.2.2 RF - Loop Through:

- Frequency range: 45 MHz – 860 MHz
- Gain: (ANT IN - ANT OUT): -5dB to 0dB

1.2.3 Receiver:

PLL tuning with AFC for optimum reception
- Frequency range: 45.25 MHz – 857 MHz
- Sensitivity at 40dB S/N (video unweighted): ≤ 60dB μV at 75 Ω

1.2.4 Video Performance:

- Channel 25 / 503.25 MHz,
  Test pattern: PAL BG PHILIPS standard test pattern,
  RF Level 74dBV, Measured on SCART 1
- Frequency response: 0.1 MHz – 4 MHz ± 3dB
- Group delay (0.1 MHz - 4.4 MHz): 0 nsec ± 150 nsec

1.2.5 Audio Performance:

Audio Performance Analogue - HiFi:
- Frequency response at SCART 1 (L+R) output: 100 Hz – 12 kHz / 0 ± 3dB
- S/N Ratio (20Hz – 20kHz) unweighted: ≥ 50dB
- Harmonic distortion (1 kHz, ± 25 kHz deviation): ≤ 0.5%

Audio Performance NICAM:
- Frequency response at SCART 1 (L+R) output: 40 Hz – 15 kHz / 0 ± 3dB
- S/N Ratio (20Hz – 20kHz) unweighted: ≥ 60dB
- Harmonic distortion (1kHz, ± 25 kHz deviation): ≤ 0.5%

1.2.6 Tuning

Automatic Search Tuning
- Scanning time without RF signal: 3min. typical
- Stop level (vision carrier): ≥ 37dB/μV
- Maximum tuning error of a recalled program: ± 100 kHz
- Maximum tuning error (drift) during operation: ± 100 kHz

Tuning Principle:
Automatic B, G, I, DK and L/L’ detection
Manual selection in “STORE” mode

1.3 Analog Inputs / Outputs

1.3.1 SCART 1 (Connected to TV)

Pin Signals:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Description</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Audio-out R</td>
<td>1.8V RMS</td>
</tr>
<tr>
<td>2</td>
<td>Audio-in R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Audio-out L</td>
<td>1.8V RMS</td>
</tr>
<tr>
<td>4</td>
<td>Audio GND</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Blue / Chroma GND</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Audio-in L</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Blue-out / Chroma-in</td>
<td>0.7Vpp ± 0.1V into 75Ω</td>
</tr>
<tr>
<td>8</td>
<td>Function switch</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Green GND</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>P50 control</td>
<td>not use</td>
</tr>
<tr>
<td>11</td>
<td>Green / Chroma GND</td>
<td>0.7Vpp ± 0.1V into 75Ω</td>
</tr>
<tr>
<td>12</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Red / Chroma GND</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Fast switch GND</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Red-out / Chroma-out</td>
<td>0.7Vpp ± 0.1V into 75Ω</td>
</tr>
<tr>
<td>16</td>
<td>Fast switch</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Y/CVBS-out GND</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>CVBS-in GND</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>CVBS-out / Y-out</td>
<td>1Vpp ± 0.1V into 75Ω</td>
</tr>
<tr>
<td>20</td>
<td>CVBS-in</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Shield</td>
<td></td>
</tr>
</tbody>
</table>

1.3.2 SCART 2 (Connected to AUX)

Pin Signals:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Description</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Audio-out R</td>
<td>1.8V RMS</td>
</tr>
<tr>
<td>2</td>
<td>Audio-in R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Audio-out L</td>
<td>1.8V RMS</td>
</tr>
<tr>
<td>4</td>
<td>Audio GND</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Blue / Chroma GND</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Audio-in L</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Blue-in / Chroma-in</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Function switch</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Green GND</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>P50 control</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Green / Chroma GND</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Red / Chroma GND</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Fast switch GND</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Red-in / Chroma-in</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Fast switch</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Y/CVBS-out GND</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>CVBS-in GND</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>CVBS-out / Y-in</td>
<td>1Vpp ± 0.1V into 75Ω</td>
</tr>
<tr>
<td>20</td>
<td>CVBS-in / Y-in</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Shield</td>
<td></td>
</tr>
</tbody>
</table>
1.3.3 Audio/Video Front Input Connectors

**Audio - Cinch**
Input voltage : 2Vrms
Input impedance : > 10kΩ

**Video - Cinch**
Input voltage : 1Vpp ± 3dB
Input impedance : 75Ω

**Video - YC (Hosiden)**
According to IEC 933-5
Superimposed DC-level on pin 4 (load > 100kΩ)
< 2.4V is detected as 4:3 aspect ratio
> 3.5V is detected as 16:9 aspect ratio
Input voltage Y : 1Vpp ± 3dB
Input impedance Y : 75Ω
Input voltage C : 300mVpp ± 3dB
Input impedance C : 75Ω

1.3.4 Audio/Video Output rear Connectors

**Audio - Cinch**
Output voltage : 2Vrms max.
Output impedance : > 10kΩ

**Video - Cinch**
Output voltage : 1Vpp ± 3dB
Output impedance : 75Ω

**Video - YC (Hosiden)**
According to IEC 933-5
Superimposed DC-level on pin 4 (load > 100kΩ)
< 2.4V is detected as 4:3 aspect ratio
> 3.5V is detected as 16:9 aspect ratio
Output voltage Y : 1Vpp ± 3dB
Input impedance Y : 75Ω
Output voltage C : 300mVpp ± 3dB
Input impedance C : 75Ω

1.4 Digital Inputs / Outputs

1.4.1 Digital Output

**Digital Audio – Coaxial / Optical**
LCM : according IEC 60958
MPEG 1, MPEG 2, AC3 : according IEC 61837
DTS : according IEC 61837 + addendum

1.4.2 Digital Video Input (IEEE 1394)

**Implementation Standard according:**
IEEE Std 1394-1995
IEC61883 - Part1
IEC61883 - Part 2 SD-DVCR (02-01-1997)
Specification of consumer use digital VCR’s using 6.3mm magnetic tape – dec. 1994
Mechanical connection according to Annex of IEC 61883-1

1.5 Video Performance

All outputs loaded with 75Ω
SNR measurements over full bandwidth without weighting.

1.5.1 SCART (RGB)

SNR : ≥ 55dB on all output
Bandwidth : 4.8MHz -3dB

1.6 Audio Performance

1.6.1 Cinch Output Rear

Output voltage 2 channel mode : 1.8Vrms ± 2dB
Channel unbalance (1kHz) : < 1dB
Crosstalk 1kHz : > 85dB
Crosstalk 20Hz-20kHz : > 70dB
Frequency response 20Hz-20kHz : ± 0.5dB
Signal to noise ratio (unweighted) : > 80dB
Dynamic range 1kHz : > 75dB
Distortion and noise 1kHz : > 70dB
Distortion and noise 20Hz-20kHz : > 55dB
Intermodulation distortion : > 70dB
Mute : > 85dB
Outband attenuation (above 30kHz) : > 40dB

1.6.2 Scart Audio

Output voltage 2 channel mode : 1.4Vrms ± 2dB
Channel unbalance (1kHz) : < 1dB
Crosstalk 1kHz : > 85dB
Crosstalk 20Hz-20kHz : > 70dB
Frequency response 20Hz-20kHz : ± 0.5dB
Signal to noise ratio (unweighted) : > 80dB
Dynamic range 1kHz : > 75dB
Distortion and noise 1kHz : > 70dB
Distortion and noise 20Hz-20kHz : > 55dB
Intermodulation distortion : > 70dB
Mute : > 85dB
Outband attenuation (above 30kHz) : > 40dB

1.7 Dimensions and Weight

Height of feet : 5.5mm
Apparatus tray closed : WxDxH:435x340x65mm
Apparatus tray open : WxDxH:435x477x65mm
Weight without packaging : 4.3kg
Weight with packaging : 6.0kg

1.8 Laser Output Power & Wavelength

1.8.1 DVD

Output power during reading : 0.8mW
Output power during writing : 20mW
Wavelength : 650nm

1.8.2 CD

Output power : 0.3mW
Wavelength : 780nm

1.9 Read / Write Speed

<table>
<thead>
<tr>
<th>Type of Disc (Function)</th>
<th>Disc Rotation Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read Speed CD</td>
<td>7X CAV</td>
</tr>
<tr>
<td>Read Speed DVD</td>
<td>4X CAV</td>
</tr>
<tr>
<td>Write Speed DVD+R/+RW</td>
<td>2.4X 2CAV</td>
</tr>
<tr>
<td>Write Speed DVD-R/-RW</td>
<td>2X</td>
</tr>
</tbody>
</table>

1.10 Commercial Difference

<table>
<thead>
<tr>
<th></th>
<th>DVDR3300H</th>
<th>DVDR3330H</th>
<th>DVDR5330H</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD capacity</td>
<td>80GB</td>
<td>160GB</td>
<td>250GB</td>
</tr>
</tbody>
</table>
### 1.11 Playability

<table>
<thead>
<tr>
<th></th>
<th>DVDR3300H</th>
<th>DVDR3300H</th>
<th>DVDR5330H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Video Playback</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Disc Media:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>CD-R/-RW, MP3-CD, VCD/SVCD, DVD-Video, DVD+R/+RW, DVD-R/-RW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Compression Format:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>MPEG1, MPEG2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Audio Playback</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Disc Media:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>CD, CD-R/-RW, MP3-CD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Compression Format:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Dolby Digital, MP3, MPEG2 Multi-channel, PCM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MP3 bit rates:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>80-320 kbps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Still Picture Playback</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Disc Media:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Picture CD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Picture Compression Format:</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>JPEG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Test Disc & Repair Hints

2.1 Test Disc

1) 7104 099 96611 CD-RW printed Audio Disc
2) 9965 000 25728 DVD Player Test Pack
3) - Blank DVD+RW
4) - Blank DVD-RW

2.2 Open the DVD Tray manually

Note: This procedure needs to be performed on condition that:
- a customer’s Disc is jammed in the DVD Tray
- the DVD Tray cannot be open via the normal open/close button on the set.

1) Place the set on the table with the bottom faced upwards as shown below.
2) Insert a screw driver into the slot and open the DVD Tray by sliding the screw driver in the direction shown.

![Figure 2-1](image-url)
3. Firmware Upgrading

All new firmware will be published via symptom/cure information at AYS website: www.atyourservice.ce.philips.com

A. Preparation to upgrade firmware:
1. Unzip the zip-archive file
2. Start the CD Burning software and create a new CD project (data disc) with the following settings:
   - File system: Joliet
   - Format: MODE 2: CDROM XA
   - Recording mode: SINGLE SESSION (TRACK-AT-ONCE), FINALIZED CD

   Note: Long file name is necessary for the preparation of the upgrade disc
3. Place the content of the zip-archive into the root directory of the new CD project.
4. Burn the data onto a blank CDR or CD-RW

B. Procedure to apply the firmware upgrade:
1. Hold the Record + Next buttons down and Power up the set to go into “Forced Download”. The tray door opens automatically and the display shows:
   
   DOWNLOAD ->.........PUT DISC

2. Insert the prepared Upgrade CDROM and close the tray.
3. The set will display:
   
   READING -> DOWNLOAD ->.........

   The whole process takes less than 10 minutes
   Note: Do not press any buttons or interrupt the mains supply during the upgrading process, otherwise the set may become defective.
4. When the upgrade is completed the tray opens automatically and the set will display:
   
   REMOVE

5. Remove the Upgrade CDROM and close the tray. The display shows:
   
   DONE

6. The set switches automatically into Standby mode. Power off the set to complete the download process.

C. How to read out the firmware version to confirm set has been upgraded.
1. Power up the set
2. Press <System menu> button on the Remote control and select {Feature} option
3. Press <Right> to select {Access Control option}
4. Press <1> <5> <9> <6> buttons in sequence
5. The TV connected to the set will display:

   AB 1.18.1.9 DB F05_4/53117
   BE 43.2.14 SV 11203 DV 1234567890
   BASE 52_221_20050730 dev xsc 3300h rad_int
   SpectraCORE 3300v1.13
4. Service Flow Chart

4.1 Start Process

Start

- Is the complaint documented?
  - Yes
  - No

- Is it a known complaint?
  - Yes
  - Is it a Hardware problem?
    - Yes
    - Upgrade to latest Firmware
    - Is Firmware solution available?
      - Yes
      - Upgrade to latest Firmware
      - No
      - Is the complaint solved?
        - Yes
        - Return set to Customer with Report on action done
        - No
    - No
    - Is the complaint documented?
      - Yes
      - Perform built-in Dealer Test (Press & hold Play button on Front Panel down + Power-up the set)
      - Does the set pass the Dealer Test?
        - Yes
        - A (Verification Test)
        - Pass
        - A (Verification Test)
        - Fail
        - Send refurbished set from pool stock to Trade / customer
        - Attached Defect Description Report and Proof of Purchase
        - Pack defective set
        - Store defective set for pick-up
        - Service W/S to contact the Trade / Customer to work out an action plan.
        - Examples:
          - Explain them that the Firmware solution is not ready
          - Upgrade disc will be send to them the moment a solution is ready
          - etc.
      - No
      - No

- No
- Yes
- No
4.2 Verification Process

- If complaint is related to System Menu setting

A  (Verification Test)

Connect up the Recorder to TV antenna, TV set and an External source

Can the set Start-up ?

Yes

Check the Firmware version on the set

Is Firmware the last released version ?

Yes

Upgrade to latest Firmware

No

B  Recording Check

C  Playback Check

D*  System Menu

Are the checks result ok ?

Yes

Return set to Customer with Report on action done

No

- Attached Defect Description Report and Proof of Purchase.
  - Pack defective set
  - Store defective set for pick-up

Send refurbished set from pool stock to Trade/customer
4.3 Recording Process

Manual Recording with TSB
Archive on DVD Recordable disc:

1) Switch the Recorder to Tuner source
   - The active Tuner channel will be recorded into the TSB (time shift buffer), a temporary HDD storage area.
2) By pressing the "+/-" button the Time shift bar appears on the screen, check the following features:
   - search forward / backward
   - instant replay, pause, etc. on the live TV function.

B Recording Check

HDD: Manual Recording

Does Timer recording functions ?

Yes

Does manual recording functions ?

Yes

1) Make a short recording (1 minute) by selecting a portion in the TSB to be recorded.
2) Playback the recorded title from the HDD browser

Does the TSB feature works ?

Yes

Recording Check

No

Does the recording functions ?

Yes

1) Insert a DVD+RW disc
2) In the HDD browser select the recorded title for copy (archive) to recordable DVD
3) From the Disc Menu select the archived title and do the following:
   - check Disc/Title setting feature
   - play the title
4) Repeat with DVD-RW

Does archive function ?

Yes

Continue

No

Send refurbished set from pool stock to Trade / customer

Make a Timer recording with:
- VPS/PDC on and off
- Show View System
- external Cable Box/Satellite Receiver
Playback the recorded title from HDD browser

Are Timer edit & delete feature working ?

Yes

Does Timer recording functions ?

Yes

Continue

No

No

3139 785 31480
4. EN 9
### 4.4 Playback Process

**C Playback Check**

- **HDD playback Check**
  - Play a title from the HDD browser and check the following features:
    - edit scene
    - play mode
    - T/C tools

- **Disc playback Check**
  - From the DVD Menu play a DVD video disc title and check the following:
    - Pause, Search & Jump functions
    - Next / Previous chapter
    - Edit chapter (for DVD+RW)
    - Play mode
    - T/C tools

**Does the set work?**

- **Yes**
  - Continue

- **No**
  - Does the set work?
    - **Yes**
      - Continue
    - **No**
      - Playing other type of disc:
        1) Use discs of DVD PLAYER TEST PACK for:
          - (Super) Video CD
          - MP3 disc
          - Picture disc (slide show)
          - special DVD playback check by layer change test using DVD disc of this package
        2) For AUDIO CD use of CD-RW printed Audio Disc to check:
          - Track 3 finger print
          - Track 8: 600u black dot (max. after 1 min.)

**Does the set work?**

- **Yes**
  - Attached Defect Description Report and Proof of Purchase.
  - Pack defective set
  - Store defective set for pick-up

- **No**
  - Send refurbished set from pool stock to Trade / customer
### System Menu Process

**Setup Menu - Video**
- TV Shape
- Black Level
- Video Shift
- Video Output

**Setup Menu - Sound**
- Digital Output
- Analog Output
- Night Mode

**Setup Menu - Features**
- Access Control
- Status Display
- Resume
- Low Power Standby

**Setup Menu - Language**
- Audio
- Subtitle
- Menu
- Country

**Setup Menu - Recording**
- Record Mode
- Filter Mode
- Auto Chapter
- SAT Record
- Dual Language

**Setup Menu - Setup**
- Auto Install
- Manual Search
- Sort TV Channels
- Time & Date

---

Does the set work?

- Yes: Continue
- No:
  - Attached Defect Description Report and Proof of Purchase.
  - Pack defective set
  - Store defective set for pick-up

Send refurbished set from pool stock to Trade / customer
5. Directions For Use

The following except of the Quick Use Guide serves as an introduction to the set. The Complete Direction for the Use can be downloaded in different languages from the internet site of Philips Customer care Center: www.p4c.philips.com

What’s in the Box

1. Connect
2. Set Up
3. Enjoy

Play recording while recording it

Recording to hard disk

Troubleshooting

Tip

Remote control

Problem

- Aim remote control at recorder (not TV) or remove any obstacles in the way.
- Batteries are weak; replace the batteries.
- The child lock is on. Refer to user manual to unlock it.
- Wrong region code. The DVD must be coded for ALL regions or Region 2.
- Check if the disc is defective, scratched or warped. Clean the disc or try another disc.
- The disc does not match the TV colour system standard (PAL/NTSC). When playing DVD set Record Mode to high-quality speed to improve picture quality.
- The picture is distorted. Channel you are recording is not stored or the wrong programme number is selected.
- Recordings are not occurring as scheduled. If you adjust the clock after you set a timer recording, reset the timer recording.
- New recordings cannot be made. A finalised DVD+R has been inserted. Change disc.
- The recorder cannot duplicate copyrighted material onto a recordable DVD.

Need help?
User Manual
See the user manual that came with your hard disk/DVD recorder.

Online
Go to www.philips.com/support 2005 © Koninklijke Philips N.V. All rights reserved.

12 NC 31 39 246 17151 www.philips.com
1 Connect

**Connection without VCR**

**A Before connecting**
Your TV should be connected to the cable box/set-top box, satellite receiver or aerial, unplug the antenna cable from the TV.

**B Connecting**
1. Connect the antenna cable (plugged out from the VCR or TV) to the ANTENNA socket at the rear of the recorder.
2. Connect the supplied RF coaxial cable into the TV socket and into the Antenna In socket of the TV.
3. Connect the SCART cable to the SCART IN socket of the TV and to the EXT1 socket at rear of the recorder.
4. Plug in the power cable from the recorder to an AC power outlet.

**Connection with VCR or similar device**

**A Before connecting**
Your new Philips hard disk/DVD recorder can replace the VCR for all your recording needs, just unplug all the connections from your VCR.

**B Connecting**
1. Follow steps 1 to 4 of ‘Connecting’ under ‘Connection without VCR’ to connect the recorder before you proceed to step 2 below.
2. Connect another SCART cable (not supplied) into the EXT2 AUX I/O SCART socket at the rear of the recorder.
3. Connect the other end into the SCART OUT socket at your VCR.
4. Plug in the power cable from your VCR to an AC power outlet.

Note: In this setup the VCR cannot record TV programmes.

---

2 Set Up

**A Inserting batteries**

**B Finding the viewing channel**

1. Press **STANDBY-ON** on the recorder.
2. Switch on the TV.
3. Press ‘0’ on the TV’s remote control, then press the Channel Down button repeatedly until you see the General Setup page. This is the correct viewing channel for the recorder.
4. You may press the AV or SELECT button on the TV’s remote control (if available) to select the correct viewing channel. See your TV’s user manual.

**C Conduct installation**

1. Select your Audio Language, Subtitle Language, Menu Language, Country and TV Shape.
2. Press **SETUP** to save and you are now prompted to connect the antenna.
3. Press **SETUP** again for a 30 minutes recording.
4. Check Date and Time.
5. Press **SETUP** to finish installation.

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3 Enjoy

**Pause Live TV**

Sometimes you might be interrupted while watching your favourite programme. Now you can PAUSE it, as if you were in control of the broadcast.

1. Press **PAUSE** while watching any live TV programme to suspend it.
2. Press **PLAY** to continue.
3. When the recorder is switched on, the programme you are watching is temporarily recorded. In Pause Live TV the recorder replays the recorded footage, which will be erased when the recorder is switched to standby.
4. Press **TUNER** to go back to live broadcast.

**Playback from hard disk**

1. Press **HDD** to see the titles on hard disk.
2. Press **UP** or **DOWN** to select a title.
3. Press **PLAY** on the title you want.

**Record**

1. Press **REC** to record.
2. Key in the amount of time to record or press **REC** again for a 30 minutes recording.
3. Every time you press **REC**, an additional 30 minutes is added to the recording time.
4. Press **STOP** to stop the recording.