**APPROVED** for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

S/1000/3/N/502691

*Overseas offices in Africa, the Americas, Australasia, the Middle East, the Far East and Europe.*

The telecommunications services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

© British Telecommunications plc 1998
Registered office:
81 Newgate Street, London EC1A 7AJ.
Registered in England No: 1800000.
Printed in England. TPU 1748 Issue 1(1/98)

**User guide**

# *Relate 2000*

## *Videophone*

# Contents


Page

**4 Before you use your Relate 2000**

4 About the Relate 2000
5 About this guide
6 Conventions used in this guide
6 Unpacking your Relate 2000
7 Do you have the right phone socket?
7 Hearing impaired users
7 Calling the emergency services

**8 Setting up and lighting**

8 Siting the Relate 2000
8 Lighting
13 Power connection
13 Connecting the Relate 2000
13 Tone and pulse dialling
14 Adjusting the volume of the ringing tone
14 Adjusting the speaker volume
15 Fitting the plinth
15 Wall mounting
16 Fitting a 13 amp plug
16 Removing and refitting the stored number card window

**17 Using your Relate 2000 (basic instructions)**

17 Making a call
17 Switching to video operation
19 Ending a call
20 Receiving a call
20 Using the loudspeaking facility
21 Redialling the last number

Page

**22 Using your Relate 2000 (detailed instructions)**

22 Before you switch to video operation
23 Adjusting the video picture
25 Additional video facilities
28 Temporary tone dialling
28 Using the secrecy facility
29 Checking the length of your call
30 Using the memories
33 Network services
34 International calls
35 Transferring a call
37 Transferring a call on a business exchange (PABX)
37 Receiving a transferred call on a PABX and using the video facility
38 Tone/pulse dialling when connected to a PABX
38 Repeated dialling and video calls on a PABX
39 Changing the ringer tone

**40 Help**

40 No dial tone
40 No incoming calls
41 Voice and video absent
42 Video absent, voice present
43 Video poor quality
46 Other problems
47 Setup facility

**48 Guarantee and service**

48 Guarantee (warranty)
49 Out of warranty
50 Return address (out of warranty)

**51 Maintenance**





Page

**52 Technical information**

52 Specifications
52 Approval
53 Use with other equipment
53 Ringer Equivalence Number (REN)
54 Summary of display messages
55 Additional notes
55 If the power fails
56 Software rights

**57 Index**

**63 Your Relate 2000 videophone at a glance**

# *Before you use your Relate 2000*

You can very quickly start using your Relate 2000 videophone; however, it is important that you read this section of the *User guide* before attempting to operate it. This section details the areas of the *User guide* that are essential to your satisfactory use of the videophone.

The Relate 2000 videophone is simple to operate as a basic videophone; however, it has a number of refinements and features which you may wish to use as you get more familiar with it. A number of these enable you to improve picture quality and may be referred to from the section entitled *Using your Relate 2000 (basic instructions)*.

When using your videophone the most important consideration is good lighting: low light, strong back or side lighting will produce a very poor video image.

## About the Relate 2000

The Relate 2000 videophone is able to send and receive colour pictures over a standard telephone line, when calling another Relate 2000 or any other videophone which bears the MVTS symbol. It works in the same way as a standard (voice-only) phone when calling any other type of telephone.

When using the video facility you will find that there is a delay which is most noticeable in the pauses for reply in a conversation. It is similar to the delay you may experience on some international calls. You may hear a faint echo of your own voice; this is a result of the delay.

If you find this delay very difficult to cope with, refer to the paragraph entitled *Other problems* in the *Help* section of this guide.

**Help**

*To help you, there is a diagram at the back of this user guide which shows all the product's features. This can be unfolded so that you can refer to it while you are reading the guide.*





Although the quality of the video picture achievable on the Relate 2000 is high, it is not of the quality you may see from a television. This is due to the limited capacity of the telephone network. To send a picture of television quality through the network it would require a capacity many tens of times greater. As an analogy it is like comparing the capacity of a domestic water pipe to the capacity of a mains water pipe in the road.

When in video mode, the speech quality may be slightly degraded. This should not normally be noticeable using the handset, but may be more pronounced in loudspeaking mode.

## About this guide

The guide is divided into a number of sections, the titles of which appear at the top of each page. These sections are listed in the contents at the front of this guide along with the headings of the major paragraphs in those sections. In addition an index is provided at the back of the guide.

Initially you only need to read a small part of this guide to use your Relate 2000; however, as you become more familiar with it you can refer back to this guide to find out about the more advanced features and facilities. This guide also tells you how to look after your Relate 2000 and should help you solve most of the problems you may encounter.

For basic operation of your Relate 2000 you should read the following sections in full:

- *Before you use your Relate 2000* (this section)
- *Setting up and lighting*
- *Using your Relate 2000 (basic instructions)*.

## Conventions used in this guide

The following conventions are used throughout this guide:

- Keys that you have to press are shown as ✱, **SHIFT** or **LOUDSPEAKING**
- Text that appears on the liquid crystal display is shown as ANSWER or CALL.

*Note – The Relate 2000 uses a* SHIFT *key to provide some functions. Unless otherwise specified this operates in the same manner as the* SHIFT *key on a typewriter/keyboard and must be pressed and held while the other key is pressed, or pressed simultaneously with the other key.*

## Unpacking your Relate 2000

The Relate 2000 is supplied complete with built-in telephone and handset line leads and a separate transformer to plug into the mains for the power supply. In addition to this guide, the following items should be packed in the box:

- One Relate 2000 videophone with attached line cord and handset
- One transformer, complete with leads and plugs
- A packet containing screws for wall mounting
- A postcard requesting conversion of the telephone line to a modern socket
- A questionnaire
- A quick reference guide
- A plinth. This must be fitted for ease of operation.

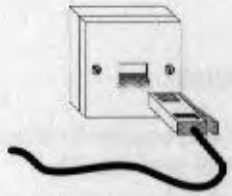
If any of these are missing, please contact your supplier.

*Note – If present remember to remove the transparent plastic peel-off protection from the videophone display.*





## Do you have the right phone socket?



Your Relate 2000 can only be plugged into the new-style phone socket shown here. If you do not have the correct socket, or you would like an extension fitted, call free on 150. Alternatively, fill in the enclosed card and send it to your nearest BT sales office.

*Note – Once you have a new-style socket, you can fit extensions yourself using approved kits. There are no extra rental charges for extensions.*

## Hearing impaired users

An inductive loop circuit is included in the Relate 2000 handset to assist users with a hearing impairment, and operates with a hearing aid switched to the 'T' setting. Slow speed signing and lip reading are also practical with the Relate 2000 in video mode.

## Calling the emergency services

The emergency services can be contacted using this telephone by dialling 999. If your Relate 2000 is connected to a switchboard you may need to key in an access code (for example 9) to get an outside line before dialling 999.

# *Setting up and lighting*

**WARNING**
**The Relate 2000 is mains powered and in common with other mains powered equipment should not be used in damp environments as this may make it electrically unsafe and also would cause damage to the phone.**

CAUTION
If the Relate 2000 is used in temperatures outside the range 5°C to 40°C the screen may appear blank or black. At extremely high or low temperatures the components may undergo chemical reactions and damage the display.

## Siting the Relate 2000

The more care and attention you give to siting your Relate 2000, the better it will perform. The following guidelines are provided to ensure that you obtain maximum performance from your videophone, with the most significant factor governing performance being lighting.

Ideally the Relate 2000 should be kept free of dust, moisture, high temperatures and vibration, and should not be exposed to direct sunlight. If it gets wet, wipe it quickly with an absorbent cloth.

If you intend to use the loudspeaking facility regularly, you should site the Relate 2000 in a quiet room, as background noise will be picked up by the loudspeaking microphone resulting in poorer performance. Rooms with carpets and curtains will generally give better performance than sparsely furnished rooms, which may produce echoes. Large rooms may also give your voice an echo effect, which can be confusing for the person you are speaking to. Such background noises will make it harder for the person at the other end to hear you.

## Lighting

Good lighting is vital because as with all cameras and videos the quality of the picture is affected by various factors, ranging from the surrounding lighting intensity, type and direction, to the background. Consideration needs to be given to these factors when deciding where to position the Relate 2000.

*Note – The telephone line quality also affects the picture.*



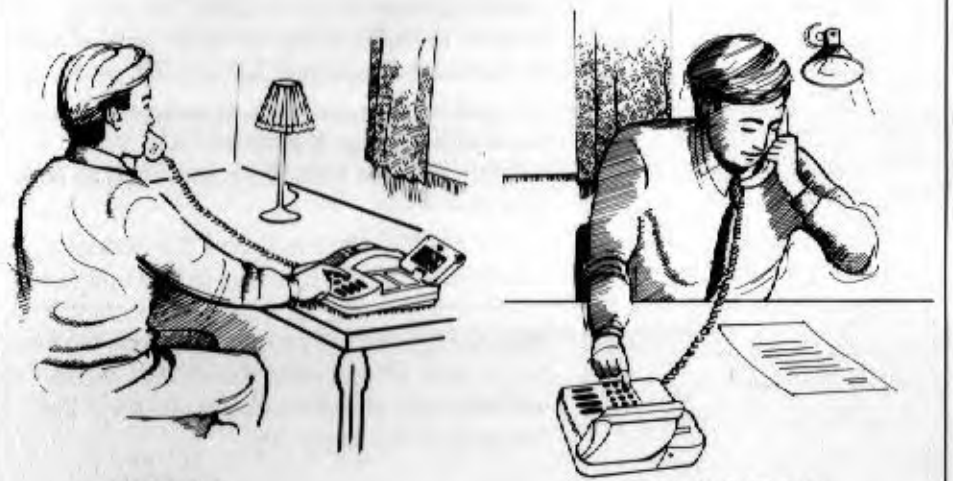


For the best video results, position Relate 2000 in an environment which:

- Provides equal and ample light that illuminates your face
- Does not have light shining from behind you
- Avoids direct bright light on to the camera
- Is not too dark
- Avoids bright light from one side
- Avoids a background that is patterned or cluttered.

Examples of good and bad lighting are shown in Figures 1 and 2.

*Figure 1* Examples of good and bad lighting



Good lighting, because it is on the face.

Bad lighting, because although the amount of light is the same it is from behind, silhouetting the user.

If you move around vigorously the image will blur, so the stiller you are, the better the picture will be. Small movements such as smiling, nodding or shaking your head are fine as they will not have much effect on the picture.

## Lighting considerations summarised

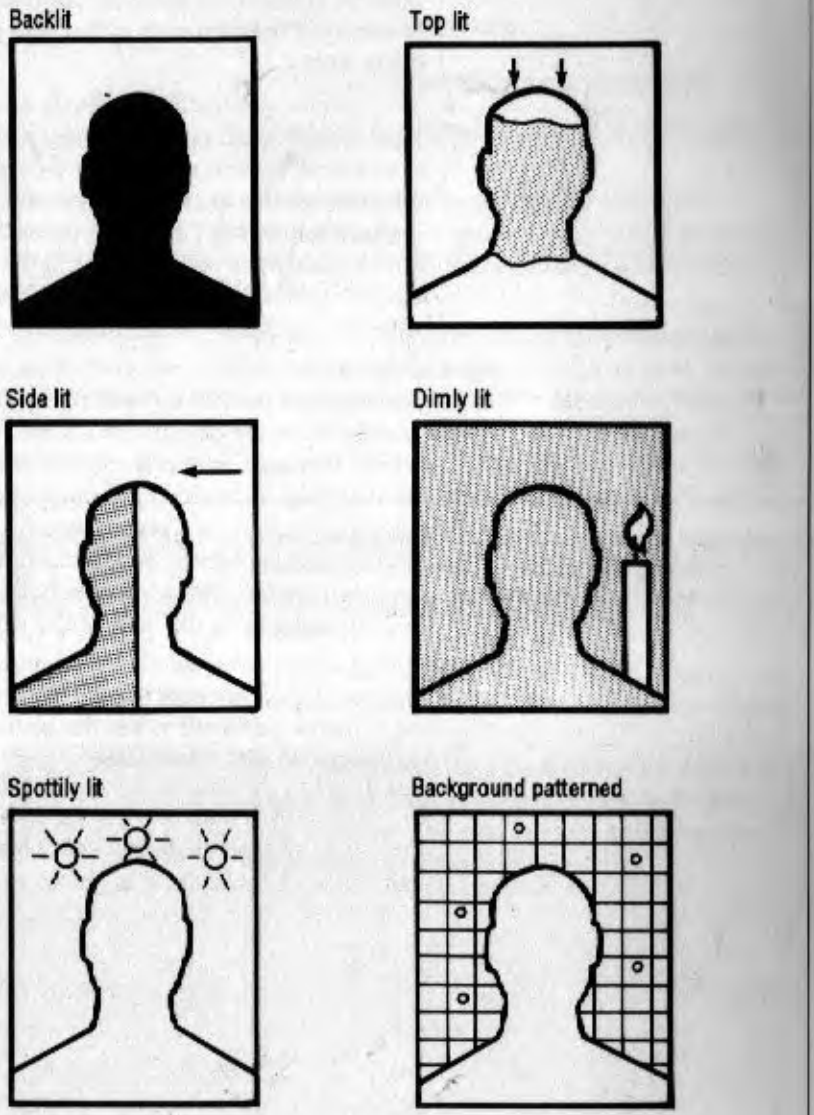
- The ideal direction is on the face, a little off centre.
- Both lighting intensity and direction are important, but in general direction is far more critical. Side lighting and back lighting may cause problems.
- In general, performance of the videophone is better in daylight than in artificial light. When choosing a site for your videophone, bear in mind that somewhere that may be a good position in daylight may not be so good at night because the direction of lighting has changed.
- A bright background such as a white wall may cause silhouetting. If your face is lit more brightly than the wall, this is less likely to be a problem.
- A patterned background gives the camera more to record and code, resulting in less time being spent on improving the quality of the picture. A plain background of a contrasting tone to your face is best. Blue is often the ideal as it goes well with hair and skin colours and gives the impression of a sunny day.





- Dealing with silhouette, dimness, poor colour: before you ask the other person to move their videophone, the problems of silhouette can often be reduced by pressing **CONTRAST-**. Similarly, if the picture is rather dim press **BRIGHTNESS+**.
- The camera automatically adjusts for changing light intensity and colour, usually within a few seconds. If, however, the picture colour is poor, for example it is too red, ask the other party to press and hold **SHIFT** and then press **COLOUR+**, which makes the picture bluer. If the picture is too blue ask them to press and hold **SHIFT** and then press **COLOUR-**, which makes it redder.
- Often artificial light, especially from low wattage bulbs, is not adequate, resulting in poor picture quality. Long life halogen bulbs are available, which although relatively expensive have a dramatically increased light output per watt, resulting in improved picture quality. The best performance achieved in artificial light is with a table lamp fitted with a halogen bulb, sited behind and a bit to one side of the videophone.
- You should bear in mind that sunlight falling on the screen will not only silhouette your face, but also makes it difficult to see the picture, as often experienced with televisions.

*Figure 2* Further examples of bad lighting








CAUTION
Use only the transformer supplied with the Relate 2000.

CAUTION
The videophone's power supply is designed for continuous use – it may be left plugged in and switched on, all the time. However, if you are not going to use the phone for an extended period of time, it is recommended that you switch the mains power off. The programmed memories are retained for at least five years.

## Power connection

The Relate 2000 is approved for use with the power supply provided (BT item code 877998). Other usage will invalidate any approval given to this apparatus if as a result it ceases to comply with BS 6301:1989. 17·5v ac

## Connecting the Relate 2000

1 Plug the telephone line lead into the telephone wall socket.

2 Plug the black power supply lead on the supplied transformer into the power socket at the rear of the Relate 2000.

3 Plug the mains plug of the transformer into a mains socket and switch the mains wall socket on.

*Note – If there is no mains power (for example in the event of a power cut), the Relate 2000 will still operate as an ordinary (voice-only) telephone; but without the video, loudspeaking or timer facilities. Any information stored in the memories is retained.*

## Tone and pulse dialling

The Relate 2000 can be set to dial by three methods using the Mode switch located on the underside of the phone (see Figure 3). It is set at manufacture to tone dialling (T-TB). This setting is usually correct; however, this quick check must be carried out to ensure correct operation of the videophone:

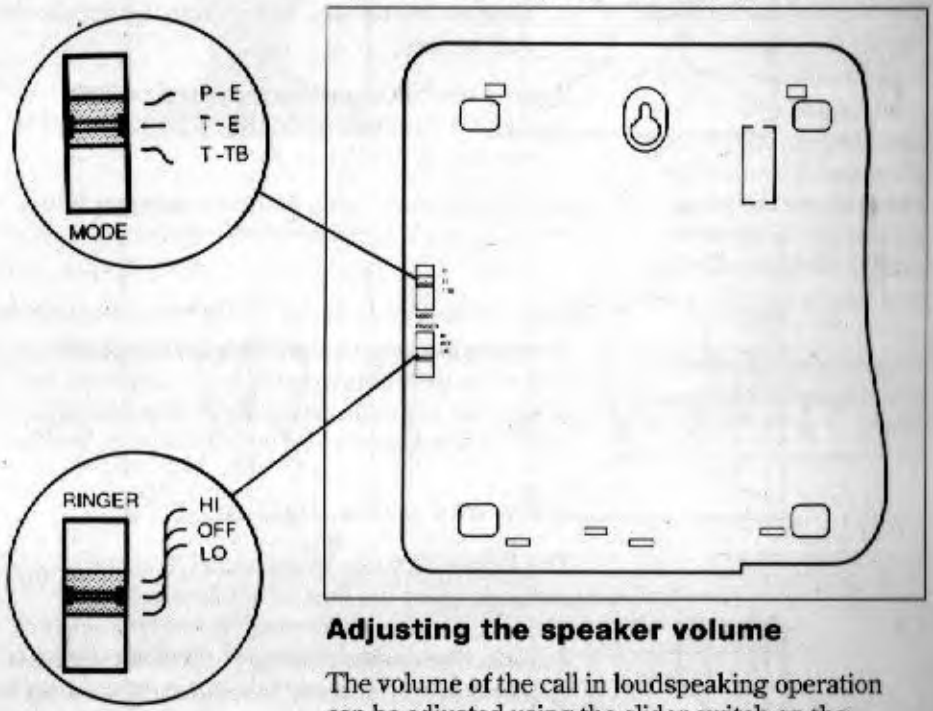
1 Lift the handset and you hear the dial tone.

2 Dial a single digit. If you can no longer hear dial tone, the mode switch is correctly set. If, however, you can still hear dial tone, replace the handset and set the Mode switch to P-E.

## Adjusting the volume of the ringing tone

The volume of the ringing tone can be set to HI, OFF, or LO, using the three-position switch on the underside of the phone (see Figure 3). The Relate 2000 is supplied with the ringer volume set to HI.

*Figure 3* Dialling mode and ringing tone switches

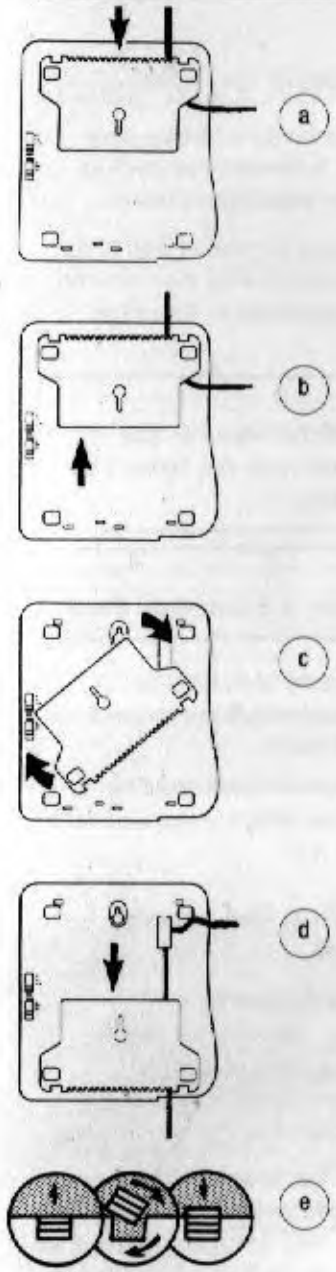



## Adjusting the speaker volume

The volume of the call in loudspeaking operation can be adjusted using the slider switch on the right-hand side of the phone. This does not affect the volume of the ringing tone, or the volume of anything you hear through the handset. The Relate 2000 is supplied with the speaker volume set to high.








## Fitting the plinth

Fit the plinth as shown in diagram a.

## Wall mounting

It is possible to wall mount your Relate 2000 to save space. This, however, is likely to make it slightly more difficult to achieve satisfactory lighting for the video mode. It is therefore essential that you take a great deal of care when selecting the location for your videophone.

Having selected where you wish to mount the videophone, proceed as follows:

1 Remove the plinth – diagram b.

2 Turn the plinth round – diagram c.

3 To help the Relate 2000 fit flush against the wall, push the cord through the channel underneath.

4 Attach the plinth by pushing down until it clicks into position – diagram d.

5 Remove the wall mounting template from the middle of this book, put it on the wall and mark the fixing positions.

6 Drill the holes and put in the screws leaving about 5mm of the screws exposed to hang the phone on.

7 Slide the handset clip out of its recess (hidden by the handset when on hook), turn it through 180° and refit it with the lip protruding into the recess for the top end of the handset – diagram e.

8 Hang the phone on the wall.

### Fitting a 13 amp plug

Your videophone is supplied with a 13 amp plug fitted with a 3 amp fuse. If, however, you have to replace the plug, follow the instructions below.

As the colours of the wires in the mains lead of the videophone may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

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

| | |
|---|---|
| Blue | Neutral |
| Brown | Live |

**WARNING**
**Do not connect either of the wires to the terminal which is marked with the letter E or coloured green-and-yellow.**

IMPORTANT
The cable entering the plug must be firmly secured using the cable clamp.

**WARNING**
**The videophone must have a 3 amp fuse fitted.**

- The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

### Removing and refitting the stored number card window

The stored number card is covered by a transparent plastic window. The window may be easily removed by pressing down on it with forefinger and thumb placed about 5cm apart, drawing them together, squeezing the window and popping it out of its sockets.

Remember always to write in pencil on the card, so that it may be erased.

When you have finished altering the information on the card, refit the window by reversing the above procedure.





# *Using your Relate 2000 (basic instructions)*

The Relate 2000 is designed to protect your privacy. For this reason, its video facility cannot be switched on until an ordinary call is underway, and unless both parties agree. All calls therefore begin as voice-only.

*Note – The Relate 2000 uses a* SHIFT *key to provide some functions. Unless otherwise specified this operates in the same manner as the* SHIFT *key on a typewriter/keyboard and must be pressed and held while the other key is pressed, or pressed simultaneously with the other key.*

### Making a call

1 Either lift the handset or press the **LOUDSPEAKING** key. If you press **LOUDSPEAKING** the indicator lights.

2 Dial the telephone number using the number keys.

3 When the person at the other end answers, carry on the conversation as normal. The person you are calling will not know you are using a videophone unless you tell them.

### Switching to video operation

When using the video facility you will find that there is a delay which is most noticeable in the pauses for reply in a conversation. It is similar to the delay you may experience on some international calls. If you wish to minimise this delay, refer to the paragraph entitled *Other problems* in the *Help* section of this guide.

### Help

*To help you, there is a diagram at the back of this user guide which shows all the product's features. This can be unfolded so that you can refer to it while you are reading the guide.*

If you and the person you are talking to are both using compatible (MVTS) videophones, and you wish to see each other as you speak:

1 If necessary lift the hinged video flap to gain access to the video control keys. Set the angle of the video flap such that the screen is visible and directly facing you.

To protect your privacy, the Relate 2000 is switched into video mode only by mutual consent; both of you must press VIDEO ON/OFF together (within five seconds of each other).

2 At an agreed moment, both press **VIDEO ON/OFF**. The VIDEO ON/OFF indicator lights up. If one of you does not press the key, or presses it too late, the videophones wait for several seconds and then return to voice-only operation. A `NO REPLY` message is displayed on the video screen.

3 The line goes quiet for five seconds and the message `WAIT ...` appears at the bottom of the video screen. If you talk during this period you will not be heard.

   If the connection is successful the message `LINK OK` appears briefly at the bottom of the video screen.

4 When the person you are calling appears on the screen, you can continue your conversation as normal.

   You will notice that a black and white picture of yourself is displayed in the top left-hand corner of the screen. This image is referred to in this guide as a 'picture within a picture'. It helps you to check that you are correctly positioned for the other person to see you. To remove the picture within a picture, press **SELF VIEW**. To restore the picture within a picture, press **SELF VIEW** again.





During the video call:

- Either you, or the person you are calling, can switch the video facility off at any time, by pressing the **VIDEO ON/OFF** key again.
- If the message `BAD LINK` appears on the screen this means that the videophones were unable to establish or continue a video call. If this happens, try again to establish a link before changing to a slow picture rate by pressing and holding **SHIFT** and pressing **FAST/SLOW** twice (see the paragraph entitled *Video problems* in the *Help* section of this guide for further details).

It is possible in certain circumstances that the telephone connection you are using is unable to support the normal fast picture rate. To ensure optimum results from your videophone, the design allows you to select a slow picture rate. However, if the message `BAD LINK` persists a video link may not be possible.

*Note – You should not press the* VIDEO ON/OFF *key when you are calling an ordinary telephone, as Relate 2000 will send audible squeaky signals down the line which may be uncomfortable for the person you are calling.*

## Ending a call

To end the call replace the handset, or if you are using the handsfree facility, press the **LOUDSPEAKING** key.

*Note – If the video facility is still in use at the end of a call, it is automatically turned off when you hang up. If the person at the other end of the line hangs up first, the screen freezes until you replace the handset (or press* LOUDSPEAKING*), when it goes blank. If you hang up first, the screen goes blank immediately.*

## Receiving a call

1 When the videophone rings, either lift the handset or press the **LOUDSPEAKING** key.

2 Carry on your conversation as normal. At any time during the conversation you can switch to video operation or change from handset to handsfree operation, and back again.

3 At the end of the call replace the handset, or if you are using the handsfree facility press the **LOUDSPEAKING** key.

## Using the loudspeaking facility

The loudspeaking or 'handsfree' facility allows you to make and receive telephone calls without using the handset.

To select handsfree operation, press the **LOUDSPEAKING** key. The indicator lights up.

Pressing the LOUDSPEAKING key is the equivalent of lifting the handset; you can make a call by pressing LOUDSPEAKING and dialling, and you can answer a call by pressing LOUDSPEAKING and talking.

You do not have to be directly in front of the phone in order to use this facility, but the quality of sound is improved if you are facing the phone as you speak. If you are using the video facility as well you will need to face the phone anyway.

*Note – In the event of a power failure the loudspeaking facility is lost.*





When using the handsfree facility the best results will be obtained if the following points are considered:

- The room should be relatively quiet and free from background noise. Rooms with carpets and curtains will generally give better performance than sparsely furnished rooms, which may produce echoes.
- Do not set the volume control higher than is necessary for normal listening.
- Speak alternately otherwise parts of the conversation may be lost.
- Speak directly at the phone from a distance of about 600mm (approximately two feet).

You may need to experiment with the position of the phone to obtain the best handsfree performance.

### Changing from handsfree to handset

You can change from handsfree to handset and back again at any time during a call:

- To change from handset to handsfree, press the **LOUDSPEAKING** key and replace the handset.
- To change from handsfree to handset, lift the handset. The loudspeaking facility is automatically switched off.

## Redialling the last number

The Relate 2000 stores the last number you dialled (up to 32 digits). You can redial this number automatically by pressing the **REDIAL** key. This is particularly useful if you have dialled a long number which was engaged. However, if the last number dialled is over 32 digits then it is not retained and pressing REDIAL has no effect.

# *Using your Relate 2000 (detailed instructions)*

*Note – The Relate 2000 uses a* SHIFT *key to provide some functions. Unless otherwise specified this operates in the same manner as the* SHIFT *key on a typewriter/keyboard and must be pressed and held while the other key is pressed, or pressed simultaneously with the other key.*

## Before you switch to video operation

The videophone has been designed to reduce the effect of variable lighting (such as daylight) on the quality of the picture. However, there are a number of actions you can take to ensure a better picture:

- Always use **SELF VIEW** before you switch to video operation (see *Additional video facilities*). This enables you to see yourself as you will appear to the person on the other videophone, so you can adjust the contrast and brightness to get the best possible image.
- Position Relate 2000 in an environment which:
  - provides equal and ample light that illuminates your face
  - does not have light shining from behind you
  - avoids direct bright light on to the camera
  - is not too dark
  - avoids bright light from one side
  - avoids a background that is patterned or cluttered.
- If you move around vigorously the image will blur, so the stiller you are, the better the picture will be. Small movements such as smiling, nodding or shaking your head are fine as they will not have much effect on the picture.

**Help**

*To help you, there is a diagram at the back of this user guide which shows all the product's features. This can be unfolded so that you can refer to it while you are reading the guide.*





## Adjusting the video picture

The Relate 2000 is designed to cope with normal lighting conditions. It is left to you to select your preference for contrast and brightness. You are also able to set the colour; however, the videophone automatically selects the best colour. If you choose the colour then the automatic colour control does not work for the duration of that call.

The camera compensates for most levels of lighting but if the room is too light or too dark, you are informed by messages on the display:

- If the room is too light (for example if the sun is shining directly onto the camera) the display shows `TOO LIGHT`. Turn the Relate 2000 away from the strong light source.
- If the room is too dark the display shows `TOO DARK`. Switch on lights near you so that your face is well illuminated. This message is also displayed if the person/object is silhouetted by a bright light or bright wall. Even when the `TOO DARK` message is being displayed, you will often be sending reasonable pictures.

### Altering contrast

During video operation, you can press **CONTRAST +** to increase the picture contrast or **CONTRAST -** to reduce contrast. The message `CONT`, together with a number indicating the setting (from 1 to 7, least to most contrast) appears briefly on the video screen, and the new setting remains until you alter it again. The Relate 2000 has seven contrast settings.

Increasing the contrast makes dark colours appear darker and light colours appear lighter; decreasing the contrast has the opposite effect.

### Altering brightness

During video operation, you can press **BRIGHTNESS +** to increase the brightness of the picture to suit surrounding lighting conditions, or **BRIGHTNESS -** to reduce brightness. The message `BRIGHT`, together with a number indicating the setting, appears briefly on the video screen, and the new setting remains until you alter it again. The Relate 2000 has seven brightness settings.

### Altering colour

This function does not alter the colour of the picture you see; it alters the colour of the picture seen by the person you are talking to, which you can see by using full screen self view.

During video operation the camera automatically adjusts for changing light intensity and colour, usually within a few seconds. If, however, the picture colour is poor, for example it is too red, ask the other party to press **SHIFT** and then press **COLOUR+**, which makes the picture bluer. If the picture is too blue ask them to press **SHIFT** and then press **COLOUR-** , which makes it redder. The message `COLOUR`, together with a number indicating the setting, appears briefly on the video screen, and the new setting remains until you alter it again. The Relate 2000 has eight colour settings.

The optimum setting is usually 3 or 4 with the lower numbers designed to be used with daylight and the higher numbers with artificial lighting, such as electric light bulbs, which is far redder than normal daylight.





## Additional video facilities

### Self view

The self view facility allows you to check your picture before or during transmission. It enables you to see yourself as you will appear to the person on the other videophone, so you can decide whether you need to alter the lighting or adjust your position relative to the camera.

There are four ways of using this facility:

- There is no call in progress and you do not wish to make a call at this time.
- There is no call in progress but you wish to make a call having used the self view facility.
- There is a voice-only call in progress.
- There is a video call in progress.

**No call in progress, no call to be made**

1 Lift the hinged video unit.

2 Press **SHIFT**, wait at least two seconds and then press **SELF VIEW.**

You are now in self view. Relate 2000 displays a mirror image of whatever is seen by the camera.

*Note – If you press* **SELF VIEW** *now the image is frozen. Pressing it again unfreezes the image.*

Self view turns off automatically one minute after the last keystroke.

**No call in progress, start call**

1 Lift the hinged video unit.

2 Press **SHIFT**, wait at least two seconds and then press **SELF VIEW.**

You are now in self view. Relate 2000 displays a mirror image of whatever is seen by the camera.

*Note – If you press* **SELF VIEW** *now the image is frozen. Pressing it again unfreezes the image.*

If you lift the handset or press **LOUDSPEAKING**, you will remain in self view (there is no one-minute time-out). Relate 2000 remains in self view until you either:

- Replace the handset or press **LOUDSPEAKING**, as appropriate
- Make a call and press **VIDEO ON/OFF** to start a video call. You now have a picture within a picture on the screen. To remove this second picture, press **SELF VIEW**. To restore the picture within a picture, press **SELF VIEW** again.

### Voice-only call in progress

1 Lift the hinged video unit.

2 Press **SELF VIEW**.

You are now in self view. Relate 2000 displays a mirror image of whatever is seen by the camera.

*Note – If you press* **SELF VIEW** *now the image is frozen. Pressing it again unfreezes the image.*

Relate 2000 remains in self view until you either:

- Replace the handset or press **LOUDSPEAKING**, as appropriate
- Press **VIDEO ON/OFF** to start a video call. You now have a picture within a picture on the screen. To remove this second picture, press **SELF VIEW**. To restore the picture within a picture, press **SELF VIEW** again.

### Video call in progress

At the start of a video call, the Relate 2000 display shows a picture within a picture. To use the self view facility:

1 Press and hold **SHIFT** and then press **MONITOR**. This enlarges the picture within a picture so that it fills the whole screen. Relate 2000 displays a mirror image of whatever is seen by the camera and the person at the other end of the line.





2 To reduce the self view back to a picture within a picture, press **SELF VIEW**.

3 To remove the picture within a picture, press **SELF VIEW**. To restore the picture within a picture, press **SELF VIEW** again.

## Examining the outgoing picture

The Relate 2000 is set so that it always displays a picture within a picture when a video call is first established. This picture within a picture is a small picture of yourself and appears in black and white in the top left hand corner of the screen. It can be turned off by pressing the **SELF VIEW** key and restored by pressing the **SELF VIEW** key again.

Self view can also be used during a video call to check the outgoing picture, which is useful when you want to position an object so that the person at the other end can see it.

1 To enlarge the outgoing image so that it fills the whole screen, press and hold **SHIFT** and then press **MONITOR**.

2 Press **SELF VIEW** to return to the picture within a picture.

## Freeze frame

The Relate 2000 can provide a still or 'freeze frame' image of the incoming picture, which is of a higher quality than the moving picture. It is particularly useful when you wish to see something that the person at the other end of the line is showing you, as the object is held steady so greater detail can be seen.

Pressing **VIDEO REFRESH** can also be used when the picture is moving to clear faults, such as solid blocks of colour, which have occurred due to noise on the line.

1 Press **FREEZE FRAME**. The image takes a few seconds to build up. `WAIT` is displayed until the process is complete.

2 To take a new still picture, press **VIDEO REFRESH**.

3 To restore a moving picture, press **FREEZE FRAME** again.

*Note – If the person at the other end of the line selects freeze frame your picture within a picture is frozen and vice-versa.* You cannot freeze your outgoing picture.

## Temporary tone dialling

If you are using pulse dialling it may be necessary to change the type of dialling you are using for the duration of one call. For example, certain facilities which are available via the telephone network, such as home banking, require tone (known as DTMF) dialling. This means you need temporarily to change dialling type.

To change from pulse dialling to tone dialling for one call:

1 Dial the number you require.

2 Press * on the dialling pad. If you were using pulse dialling, Relate 2000 changes to tone dialling.

The Relate 2000 automatically reverts to pulse dialling when you replace the handset or press the **LOUDSPEAKING** key as appropriate.

## Using the secrecy facility

The secrecy or 'mute' facility allows you to switch off the outgoing sound (and picture, if you are using the video facility) but still hear (and see) the other person. This means that you can have a private conversation with someone in the same room as you, without the person on the other phone seeing you or hearing what you are saying. You can, however, still hear and see them.

The secrecy facility can be used with or without the handset.





1 Press the **SECRECY** key. The indicator lights up to show that secrecy is in operation. To the person at the other end of the line, if you are using voice-only mode, the line appears dead. If you are using video mode, the line appears dead and their video screen turns blue. As a further reminder that you are using secrecy, your picture within a picture display also goes blank.

2 To restore normal operation, press the **SECRECY** key again. The indicator will go out.

Secrecy is automatically switched off when you hang up, but is not affected if you change from video to voice-only operation.

## Checking the length of your call

The call timer facility allows you to monitor the length of your current call in hours and minutes (if used whilst the handset is off the hook, or the loudspeaking facility is switched on) or check the length of your previous call (if used when the handset is in place and the loudspeaking facility is switched off). This facility is not available if mains power is lost.

1 If necessary, lift the hinged video unit, so you can see the video screen.

2 During a call, press **TIMER ON/OFF**. Otherwise press **SHIFT**, wait at least two seconds and then press **TIMER ON/OFF**.

3 If you are in the middle of a call, the length of time from the moment you lifted the handset (or pressed **LOUDSPEAKING**) is displayed along the bottom of the video screen in hours and minutes.

If the phone is not in use, the total length of your last call from the moment you lifted the handset (or pressed **LOUDSPEAKING**) to the moment you hung up is displayed.

4 To switch the timer display off, press **TIMER ON/OFF** again. If you are using the video facility, the characters are erased. Otherwise, after one minute the screen turns blue then switches off.

## Using the memories

The Relate 2000 has ten memories (one for each number key 0 – 9) so you can store the numbers you call most frequently. Each memory can store any number up to 20 digits, including pauses, recall, # and ✱. The ✱ can be used to change from pulse to tone dialling as described in the paragraph entitled *Temporary tone dialling*.

Details of the numbers you have stored should be written in pencil (so you can erase them) on the card located beneath the hinged video unit.

The Relate 2000's memories are protected against power failure. Stored numbers will remain in memory for at least five years if the Relate 2000 is disconnected from both the mains and the telephone socket.

### Storing a phone number

1 Either lift the handset or press **LOUDSPEAKING**.

2 Press **MEMORY STORE**. The SECRECY indicator lights.

3 Press the appropriate number key for the memory store you wish to use (0 to 9). The SECRECY indicator flashes off and on each time you press a key.

4 Key in the telephone number you wish to store (up to 20 digits). The SECRECY indicator flashes after each keystroke.

*Note – If you try to store more than 20 digits nothing is stored. Any number stored there previously is erased.*

You hear dial tone at first, followed by network messages when the dial tone ceases. Ignore these messages, your Relate 2000 will continue to store your number until you have finished.

continue at 5 next page





A PABX is a business exchange or switchboard. This information is not relevant to the majority of users outside larger companies.

You can use a store button as a Mercury button by storing in it :- 131, pause, pin number (starts one out of two. (the phone must be set to tone dialing)

If you are dialling via a business exchange (PABX), this number may include one or more digits to gain an outside line (typically 9 or 11), which may then need a pause before the main number is dialled. Press **PAUSE** to include a pause in the dialling sequence (a pause counts as one digit).

*Note – One pause gives a delay of 3.6 seconds, which is normally sufficient. If you require a longer delay, press* **PAUSE** *again. The maximum allowed together is three pauses (10.8 seconds).*

The **PAUSE** key is also used to separate telephone numbers from bank PINs and in this case is used as a spacer.

5 Press **MEMORY STORE** again to store the number. The SECRECY indicator goes out.

6 Either replace the handset or press **LOUDSPEAKING**.

7 Make a note **in pencil** of the stored number next to the appropriate number on the card. See the paragraph entitled *Removing and refitting the stored number card.*

If you make a mistake while keying in the number, replace the handset or press **LOUDSPEAKING** to cancel the process, and then start again from step 1.

If you wish to store a new number in a memory that has already been used, or if you stored an incorrect number by mistake, follow the above procedure. The old number is automatically overwritten by the new number. **Remember to change the label!**

*Note – You cannot dial out while you are storing a number. If you wish to make a call, either finish storing the number or replace the handset to cancel the process before dialling out.*

## Storing the last number dialled

A useful facility exists which enables you to store the last number you dialled in one of the memories, without the need to redial the number.

1 Either lift the handset or press **LOUDSPEAKING**.

2 Press **MEMORY STORE**. The SECRECY indicator lights.

3 Press the appropriate number key for the memory store you wish to use (0 to 9). The SECRECY indicator flashes.

4 Press **REDIAL**. The last number you dialled is automatically recalled. The SECRECY indicator flashes.

*Note – Although the redial facility can store a number up to 32 digits long, the memory facility allows storage of the first 20 digits only. If you try to save a number longer than 20 digits it will not be stored.*

5 Press **MEMORY STORE** again to store the number. The SECRECY indicator goes out.

6 Either replace the handset or press **LOUDSPEAKING**.

7 Make a note in pencil of the stored number next to the appropriate number on the card.

You hear dial tone at first, followed by network messages when the dial tone ceases. Ignore these messages, your Relate 2000 will continue to store your number until you have finished.

## Dialling a stored number

1 Either lift the handset or press **LOUDSPEAKING**.

2 Press **MEMORY RECALL**.

3 Press the appropriate number key for the memory store you wish to recall. The stored telephone number is dialled automatically, including any pauses.

It is possible to combine stored number dialling and manual dialling in any order and in any combination. For example you may have an STD code stored in the memory location and various numbers for that code stored in other locations. To dial a number press **MEMORY RECALL** followed by the appropriate number key, press **MEMORY RECALL** again and then the next appropriate number key.





## Network services

Certain special facilities are available, some by subscription, some free of charge, from BT.

These facilities are supplied by the newer digital exchanges and are controlled with the * and # keys. Their use is explained in the documentation provided by BT when you subscribe to the service. For further information on these services please phone your local BT Sales Office.

These facilities include:

- Alarm call
- Call barring
- Three-way calling
- Call waiting
- Call diversion
- Call charge
- Reminder call
- Code calling.

## Call waiting and three-way calling

Call waiting and three-way calling cannot be used when the Relate 2000 is operating in video mode.

If you use the call waiting service and a call waiting signal occurs while you are in video mode, the video is lost and you revert to a voice-only call. You will hear further beeps indicating that you have a call waiting. You may attend to that call and then return to your original caller. The call will be voice-only unless you reselect video mode.

### Dialling mode

If you subscribe to Network services **you must set the mode switch** on your Relate 2000 to tone dialling (T-TB) as detailed in the paragraph entitled *Tone and pulse dialling.*

The ✱ and # keys are also used for certain services provided by other organisations, for example in home banking.

## International calls

The Relate 2000 has been designed to send pictures over the international telephone network, irrespective of the various types of link between the videophones and the local or international exchanges.

However, some (mainly older) links are not able to send pictures at a fast rate. If this happens the Relate 2000 displays `BAD LINK` when you try to make a video call.

You can often establish a video call by switching the videophone to a slow picture rate.

*Note – If you are making an international call via the operator, you are sent beeps every three minutes which causes the video contact to stop.*

1 Lift the handset or press **LOUDSPEAKING**.

2 Dial the number you require, either manually or by using the memory keys.

3 When the telephone is answered press and hold **SHIFT** and then press **FAST/SLOW**. A message appears on the screen indicating the speed at which pictures will be sent (either **FAST** or **SLOW**).

4 Pressing and holding **SHIFT** and then pressing **FAST/SLOW** now changes the picture rate between fast and slow. Make sure that it is set to slow.

5 Press **VIDEO ON/OFF** to establish the video link as normal.





This will work in most cases, although a slow picture rate will make the picture appear more jerky than usual.

If `BAD LINK` still appears even after several attempts, it is worth trying again later, but you may find that you never get a very good picture as some links do not have the capacity at present to carry video pictures. You should also check that any attached extension phones are not causing the interference. Refer to the section entitled *Help*.

## Transferring a call

A PABX is a business exchange or switchboard.

*Note – For PABX (Private Automatic Branch eXchange) operation (switchboards/business exchanges), please refer to* Transferring a call on a PABX.

If you have **received** a call on a standard voice-only telephone and you wish to transfer it to the Relate 2000 in order to use the video facility, then use the procedures detailed in *Transferring an incoming call.* Alternatively you may find it easier to ask the caller to call you back and pick up the call on the videophone.

If, however, you have made a call from a standard (voice-only) telephone and you wish to change to the Relate 2000 in order to use the video facility, then use the procedures detailed in *Transferring an outgoing call.*

### Transferring an incoming call

1 If you have more than one telephone connected to a single incoming line, the telephone system allows you to answer an incoming call on one telephone, hang up, then – because the line is held by the caller – pick up another phone and carry on the conversation. In effect, you are transferring the call to the second phone.

2 On the Relate 2000, either lift the handset or press the **LOUDSPEAKING** key. You will be able to talk to the caller.

3 You may now switch to video operation.

*Note – When using the Relate 2000 in video mode all other extension phones must be on hook. If another extension is picked up during a call, video mode is lost.*

### Transferring an outgoing call

*Note – If you press* **SHIFT** *and* **CALL/ANSWER** *by mistake on an outgoing call the status will be displayed but not changed. If the videophones are in the same status the message* NO REPLY *appears on the screen if a video link is attempted.*

1 Leave the phone from which you made the call. **Do not hang up.**

2 Take the call on the videophone by either lifting the handset or pressing **LOUDSPEAKING**.

3 Hang up the original phone. **If you do not hang up you will be unable to enter video mode.**

4 Press and hold **SHIFT** and then press **CALL/ANSWER**. The status of the Relate 2000 is displayed (ANSWER or CALL). For an incoming call this should be ANSWER.

5 By pressing and holding **SHIFT** and pressing **CALL/ANSWER** twice the status of the phone can be changed from CALL to ANSWER if necessary (the two videophones must be in opposite modes for a video call to be established).

6 Set the call status. The video facilities can now be used as normal.

Alternatively you may find it easier to hang up and redial on the videophone.





A PABX is a business exchange or switchboard. This information is not relevant to the majority of users outside larger companies.

For the best performance, the videophone should be connected to a direct exchange line rather than to a PABX line.

### Transferring a call on a business exchange (PABX)

1 If you are using the video facility, press **VIDEO OFF (you cannot transfer a call in video mode)**.

2 Press **RECALL** and any extension digits required by the PABX.

3 Dial the extension number.

4 When the person answers, explain that you are transferring a call, then replace the handset or, if you are using the handsfree facility, press the **LOUDSPEAKING** key.

### Receiving a transferred call on a PABX and using the video facility

The Relate 2000 detects whether it is the receiving phone (that is, the phone which rang) or whether it is the calling phone. However, when a call is transferred to a videophone via a PABX, the videophone will always think it is the receiving phone when in fact the call may have been initiated at your end of the line.

For the video facility to function correctly the two videophones must be in opposite modes: one in answer and one in call. This is not a requirement for voice-only calls.

Having agreed with the other person to use the video facility, check the mode as follows:

1 Press and hold **SHIFT** and then press **CALL/ANSWER**. The status of the Relate 2000 is displayed (ANSWER or CALL). Check that you and the other person are in opposite call modes.

2 By pressing and holding **SHIFT** and pressing **CALL/ANSWER** twice the status of the phone can be changed from CALL to ANSWER. Set the call status if necessary.

3 The video facilities can now be used as normal.

## Tone/pulse dialling when connected to a PABX

A PABX is a business exchange or switchboard. This information is not relevant to the majority of users outside larger companies.

Some business networks (PABX systems) cannot operate with fast tone dialling. The Relate 2000 allows you to select pulse (Loop Disconnect or LD) or tone (Dial Tone Multi Frequency or DTMF) dialling. For DTMF you can select either earth (T-E) or timed break recall (T-TB) operation to suit your PABX.

At manufacture the Relate 2000 is set to DTMF dialling, timed break recall (T-TB).

Contact the person who is responsible for your company telephone system to find out which setting is suitable for your PABX before adjusting the Relate 2000. The switches are located on the underside of the phone.

## Repeated dialling and video calls on a PABX

If the number you are ringing is engaged, you can set the Relate 2000 to redial it repeatedly, using **RECALL**, if this facility is available on your PABX. Please note that if you use the recall facility you will need to change the video status of the Relate 2000 to establish a video call.

1 Lift the handset or press **LOUDSPEAKING** and dial as normal. If the phone is engaged press **RECALL** and supporting digits if required. (Call your operator who can tell you which of these functions are available.)

2 When the phone rings back, pick up the handset. When the call is answered talk as normal.

3 For a video call, press and hold **SHIFT** and then press **CALL/ANSWER**. The status of the Relate 2000 is displayed. This will be ANSWER.





4 By pressing and holding **SHIFT** and then pressing **CALL/ANSWER** twice the status of the phone can be changed from ANSWER to CALL or vice versa. (The two videophones must be in opposite modes for a video call to be established.) Set the call status.

*Note – If you press* **SHIFT** *and* **CALL/ANSWER** *by mistake on an outgoing call the status is displayed but not changed. If the videophones are in the same status the message* NO REPLY *will appear on the screen if a video link is attempted.*

5 Once the status is correctly set the video facilities can be used as normal.

Alternatively you may find it easier to hang up and redial your call, having agreed this with the other party.

## Changing the ringer tone

Your Relate 2000 allows you to select a different ringing tone to that supplied as standard. A total of four tones are available:

- Discreet – tone 1
- Raucous – tone 2
- Sophisticated – tone 3
- Insistent – tone 4.

The default tone set at the factory is tone 1.

To change the tone:

1 Lift the handset and press **MEMORY STORE.**

2 Press ✱.

3 Select the desired tone by keying **1** for tone 1, **2** for tone 2 and so on.

4 Press **MEMORY STORE** and replace the handset.

# Help

## Help

You can contact the BT Helpline on 0800 252599. All these calls are free.

CAUTION
The videophone has been designed to give years of trouble-free service. However, should the videophone not function correctly and you are unable to resolve your problems using this section of the guide you should disconnect your videophone from both the mains and the telephone socket and return it for repair as detailed in the section entitled *Guarantee and service*.

The fault finding is divided into several headings:

- No dial tone
- No incoming calls
- Voice and video absent
- Video absent, voice present
- Video poor quality (many `BAD LINKS`)
- Other problems.

Before proceeding further you must establish which category of fault you have and then refer to the correct paragraph.

### No dial tone

- Check that the line cord is correctly fitted in the wall socket.
- Check that the handsets of other extensions around the house are properly on hook.
- If the line cord is correctly fitted and you still do not have dial tone, disconnect the videophone and substitute another telephone. If you still do not have dial tone the line is faulty and you should contact your network provider (usually BT) to report the fault. If, however, you hear dial tone on the substitute telephone, your videophone is faulty and you should proceed to the *Guarantee and service* section of this guide.

### No incoming calls

**Dial tone not present**

- Check the handset is properly on hook. If so, check other extensions around the house.

**Dial tone present**

- Check the ringer volume switch is not set to off.





- Check that you do not have too many extensions or other telephone equipment on the line. See the paragraph entitled *Ringer Equivalence Number* in the *Technical information* section of this guide.

### Voice and video absent

The following checks assume that dial tone is present.

- Check that the transformer is correctly plugged into a **working** mains supply that is switched on, and that the transformer is plugged into the phone.
- Check the fuse in the plug.

  *Note – The videophone does not require the mains supply for voice-only calls.*
- Check that the mode switch described in the paragraph entitled *Tone and pulse dialling* has not been altered.

  *Note – The mode switch only affects outgoing calls.*
- Check whether the screen is blue **(not blank)**. A blue screen is caused if the other person is in 'secrecy'. The audio (voice) is also absent.

  *Note – If you press* `SECRECY`, *your picture within a picture appears blank, while the other person's display goes blue.*

## Video absent, voice present

- Check that the transformer is correctly plugged into a **working** mains supply that is switched on, and that the transformer is plugged into the phone.
- Check the fuse in the plug.

  *Note – The videophone does not require the mains supply for voice only calls.*

If when you press VIDEO ON/OFF the screen does not light, you have a power fault. If the screen lights, check the following:

- There may not be a video link because one person has not pressed the VIDEO ON/OFF key.
- No video link will be possible if the other person does not have a compatible (MVTS) videophone.
- Some extension telephones may cause interference even when on hook. This may be checked by unplugging extensions one at a time, and trying to establish a video link. If you are now able to establish a video link the extension is the cause of the problem. A cure for this is to purchase a privacy doubler which prevents other people listening to your conversations on an extension telephone.
- If there is a high-pitched whistle, the other party has pressed VIDEO ON/OFF.

## Loss of video link during a call, bad link

Before a video link is lost and the call reverts to voice only, the message `BAD LINK` appears briefly on the screen. Possible causes and solutions are:

- **Temporary interference** – you should both press **VIDEO ON/OFF** to resume the video call. If this happens frequently when calling a particular number, try a slow picture rate (see the paragraph entitled *Video poor quality*).





- **One of you has a call waiting service in operation and another caller is trying to get through** – in this case the video is lost and you revert to a voice-only call. The person with the call waiting will hear several beeps. They may attend to that call and then return to the original call. The call will be voice-only unless you reselect video mode by both pressing VIDEO ON/OFF.
- **An extension telephone may be causing interference** – unplug any extension telephones to identify whether they are causing interference. If this resolves the problem you may purchase a Pressac™ privacy adaptor which should cure the problem with the extension telephones connected.

## Video poor quality

*Note – If the video image freezes for a short time, then resumes as normal, this is an automatic response to temporary interference on the line (see the previous paragraph).*

- If the video image you receive is very poor, the other end may have poor lighting conditions.
- If the video image received at the other end is poor, you may have poor lighting conditions.
- You may have a line or switchboard which are unsuitable for video telephony. Check with the BT Helpline.
- Check the brightness and contrast levels. If these are both low the screen may appear dark; if they are too high it may appear very bright.

During a conversation, you will notice a slight pause before the person at the other end speaks – this is because the Relate 2000 synchronises sound to picture by delaying the voice slightly.

### Help

You can contact the BT Helpline on 0800 252599. All these calls are free.

It is possible in certain instances that the telephone line or exchange to your house is unable to support the fast picture rate. In this case you should change to a slow picture rate.

If you have been unable to make a video call (BAD LINK always appears) then select a slow picture rate.

This is selected by pressing and holding **SHIFT** and then pressing **FAST/SLOW**. A message will appear on the display indicating the current setting (FAST or SLOW). Pressing and holding **SHIFT** and pressing **FAST/SLOW** twice will change the picture rate between fast and slow. If one videophone is set to slow then both the videophones will automatically transfer pictures at the slow rate.

If the picture freezes, this may be due to a poor line, or the freeze frame facility being selected. The audio (voice) still works. If, however, both video and voice are lost, then the line has been dropped and you must redial to continue.

Poor quality video and/or voice may be caused if you connect the videophone to long telephone line extension leads. Ideally you should keep the line cord as short as possible.

When you switch a light on near the videophone, the transmitted picture may turn yellow. This is because the camera takes time to adjust to the increased lighting (up to half a minute). If this effect persists, switch the video facility off by one of you pressing **VIDEO ON/OFF** and then back on again by both of you pressing **VIDEO ON/OFF** together (within five seconds of each other). This resets the video screen.

## Picture distortion

If the picture looks abnormal, you can press **VIDEO REFRESH** to request the Relate 2000 to start the pictures again.





## Colour distortion (business only)

Occasionally, a difference in phase between the local lighting supply and the mains can dull the colour of the picture and cause flickering.

This will only affect offices with main supplies where the power phase differs from the lighting phase – first check with your office/company electrician whether the lighting and power supplies are on different phases.

To minimise the effect:

1. Lift the hinged video unit.
2. Make sure that the handset is in place and **LOUDSPEAKING** is switched off (the indicator should be unlit).
3. Press **SHIFT**, wait at least two seconds and then press and hold **SHIFT** and then press **MONITOR**.
4. The Relate 2000 displays a mirror image of whatever its camera can see.
5. First select the best brightness and contrast settings (see *Adjusting the video picture*).
6. Press and hold **SHIFT** and **BRIGHTNESS +** or press and hold **SHIFT** and then press **BRIGHTNESS -**.
7. The current mains phase setting appears, as a number from 0 to 7, along the bottom of the screen.
8. Press and hold **SHIFT** and **BRIGHTNESS +** or **SHIFT** and **BRIGHTNESS -**, pausing between presses to allow the picture to settle, until you obtain the best picture. For UK home use, a setting of 4 usually gives the best results.
9. The Relate 2000 turns off after one minute.

## Other problems

- **Shift does not always work first time** – during calls this should not occur; however, when your Relate 2000 is idle, pressing the **SHIFT** key 'wakes it up', which takes about two seconds. Where this is the case the instructions suggest you should wait at least two seconds before pressing any further keys.
- **Part of face burnt out, part in shadow** – see the paragraph entitled *Setting up and lighting.*
- **Sky blue patches on the picture** – this is caused by too much light, for example fluorescent tubes often show up as blue bars. If this problem persists ask the other party to move their videophone so that the light is reduced or hidden.
- **The other party appears very red or blue** – see the paragraph entitled *Setting up and lighting.*
- **(Too dark) message appears occasionally yet picture is satisfactory at other end** – ignore the message. Technically it is too dark, but this may only mean that movement will cause the picture to be a bit slow in recovering to a good quality.
- **If you wish to avoid the voice delay** – set your videophone to the slow rate. Speech delay is minimised in this setting; however, there will be no synchronisation between video and voice. To change the picture rate to slow before you begin a call, press and hold **SHIFT** and then press **FAST/SLOW**. A message will appear on the display indicating the current setting (`FAST` or `SLOW`). Pressing and holding **SHIFT** and then pressing **FAST/SLOW** again will change the picture rate between fast and slow. If one videophone is set to slow then both the videophones will automatically transfer pictures at the slow rate.





## Setup facility

This is a facility for the use of service engineers to aid fault finding on the videophone. It may be viewed by:

1 With the handset in place (or loudspeaking off – the indicator should be unlit), press **SHIFT** and then **VIDEO REFRESH**. The Relate 2000 displays its first screen of information.

2 Press **VIDEO REFRESH** again and the Relate 2000 displays the next screen of information and so on.

To leave this facility, you can either:

- Leave the Relate 2000 for 60 seconds without pressing a key; or
- Lift the handset.

# Guarantee and service

## Guarantee (warranty)

BT guarantees this product for ~~one~~ two years. During this period it will be repaired free of charge provided that:

- The goods have been used only for their intended purpose, and have not been subjected to misuse or been wilfully or accidentally damaged
- The goods have not been tampered with, modified or repaired by anyone other than BT staff or agents.

If a fault occurs during this period, you should:

1 Attempt to solve the problem using the *Help* section of this guide.

2 Call the Helpline who will attempt to solve your problem. The Helpline will give you a reference number which you should record.

3 If the problem is still not resolved you should return your Relate 2000 to the place of purchase accompanied by:

- the Helpline reference number
- the receipt (showing the date of purchase).

Alternatively, if you are unable to return it to the place of purchase or the local branch of that shop, you may return it to your local BT shop. If this is impractical, you may send it in its original packaging, using registered post, direct to the warranty repair service, the address of which is available from the Helpline.

**Help**

You can contact the BT Helpline on 0800 252599. All these calls are free.





When posting your videophone it is essential to send:

- The Helpline reference number
- Your name and address for return
- Proof of purchase (receipt)
- A description of the problem.

The terms of this guarantee do not affect your statutory rights.

## Out of warranty

If a fault occurs during this period, you should:

1 Attempt to solve the problem using the *Help* section of this guide.

2 Call the Helpline who will attempt to solve your problem. The Helpline will give you a reference number which you should record.

3 If the problem is still not resolved you should either:

- send it to the videophone repair service, the address of which is available from the Helpline
- return it the place of purchase who will send it for you and charge a handling fee.

Your Relate 2000 must be repaired so as to remain compliant with the approval requirements for connection to the phone network.

**Help**

You can contact the BT Helpline on 0800 252599. All these calls are free.

### Return address (out of warranty)

This is available from the Helpline on 0800 252599.

Any returned videophones must be sent either in the original or in equally robust, alternative packaging. BT recommend sending your videophone by registered post. Your local BT shop or the helpline may be able to advise you of the cost.

When posting your videophone send:

- The Helpline reference number
- Your name and address for return
- A cheque/postal order for the correct amount payable to the repairer, as advised by the Helpline or your local BT shop.
- A description of the problem.





# *Maintenance*

CAUTION
Do not open, dismantle, or in any way modify the videophone. It has no user-serviceable parts.

CAUTION
Do not use domestic cleaning agents as these could damage the surface of the unit.

CAUTION
**Never** oil the hinge.

The Relate 2000 has requires no maintenance other than cleaning periodically. For this you should use a soft cloth. If this is not sufficient for stubborn dirt use a damp cloth with a **mild** detergent and dry with a clean absorbent cloth. The video window may be cleaned using a camera lens cloth or similar. Do not use solvents as these will permanently damage the protective cover.

# Technical information

## Specifications

| | |
|---|---|
| Dimensions | 220mm x 240mm x 210mm (with screen up) |
| Weight | 1.5 Kg (phone),<br>1.2 Kg (transformer) |
| Power | 220/240V ac into transformer,<br>17.5V ac 1.7A out to phone |
| Modem rate | 14.4 kBits/s (fast),<br>9.6 kBits/s (slow) |
| REN | 1 |
| Display | Passive colour LCD (72mm diagonal) |
| Camera | CCD solid state |

## Approval

The Relate 2000 videophone is approved for use as a videophone with the following facilities:

- Loudspeaking, full handsfree
- Simple telephone
- LD (pulse)/MF (tone) dialling
- Time break recall and earth break recall
- Secrecy
- Memory store/recall 10 memory
- 14.4 and 9.6 Kbit modems (used for the video call)
- Last number redial.

Any other usage will invalidate the approval of the apparatus if as a result it then ceases to conform to the standards against which approval was granted.





## Use with other equipment

You may connect the Relate 2000 to:

- Direct exchange lines
- Extensions with new plug and socket arrangements provided with these direct lines
- Compatible switchboards (PABXs) including those that return secondary proceed indication (dial tone)
- BABT approved private payphones that do not require meter pulses (as an extension).

You may **not** connect it to:

- Shared lines
- One + one (1+1) carrier systems
- Payphones that require meter pulses.

**Help**

You can contact the BT Helpline on 0800 252599. All these calls are free.

*Note – If you would like advice on suitable switchboards, contact the BT Helpline. If you do not have a compatible switchboard it cannot be guaranteed that the telephone will operate correctly under all possible conditions of connection. If you have difficulties, please contact the Helpline.*

## Ringer Equivalence Number (REN)

All items of telephone equipment have a Ringer Equivalence Number (REN). The REN is used to calculate the number of items that may be connected to any one telephone line.

The Relate 2000 has a REN of 1. Any other instrument provided by BT may be assumed to have a REN of 1 unless stated otherwise. Products with up to a total REN of 4 may be connected to a normal telephone line.

(For example: the Relate 2000 and three extension telephones each with a REN of 1 connected to the same line have a total REN of 4.)

## Summary of display messages

| | Key pressed | Meaning |
|---|---|---|
| CALL | **SHIFT** and **CALL/ANSWER** | Relate 2000 is in call mode. |
| ANSWER | **SHIFT** and **CALL/ANSWER** | Relate 2000 is in answer mode. |
| FAST | **SHIFT** and **FAST/SLOW** | Send fast picture rate (default) |
| SLOW | **SHIFT** and **FAST/SLOW** | Send slow picture rate |
| CONT ( ) | **CONTRAST** | Change contrast of display (shows setting) |
| BRIGHT ( ) | **BRIGHTNESS** | Change brightness setting |
| COLOUR ( ) | **SHIFT** and **COLOUR** | Change colour of your picture to other end |
| TOO LIGHT | – | Indicates too much light |
| TOO DARK | – | Indicates not enough light, or backlit |
| WAIT... | **VIDEO ON/OFF** | Starting to send pictures |
| WAIT... | **VIDEO REFRESH** | Videophone is building a new picture |
| WAIT... | **FREEZE FRAME** | Videophone is building up freeze frame picture |
| LINK OK | – | Indicates that video link is established |
| SLOW LINK | – | Picture rate has been selected as slow |
| BAD LINK | – | Not able to continue sending pictures (action: both press **VIDEO ON/OFF** again, or change to slow speed and try again) |





| | Key pressed | Meaning |
|---|---|---|
| NO REPLY | – | One videophone in the wrong mode, or other party did not press **VIDEO ON/OFF**, or the other end is not a compatible (MVTS) videophone (action: ensure that you both press **VIDEO ON/OFF** together, or change the mode of one videophone so that one is CALL and one is ANSWER). |
| MSYNC | **SHIFT** and **BRIGHTNESS** | Change setting to remove colour distortion (see *Colour distortion*). Page 45 |

## Additional notes

The Relate 2000 is not able to send TV pictures as there is no synchronisation between the TV and the Relate 2000. There is, however, nothing to stop you using a camcorder to film the screen.

Continuous exposure of the optics unit (camera and display) to direct sunlight will gradually degrade the performance; as the effect of fading is slow, it will take some time before the effects of poor performance will be noticed. This degradation is permanent.

## If the power fails

The Relate 2000 is mains powered. However, if the mains power is not available or fails, the Relate 2000 continues to work as a normal (voice-only) phone. The only facilities that are lost in the event of a power failure are loudspeaking, timer and video.

If, while using Relate 2000 in loudspeaking mode, a power cut occurs, the line may be lost and you have to redial the number of the person to whom you were talking. If, however, you are using the handset, the line is not lost and the only effect may be a slight pause whilst the Relate 2000 at the other end attempts unsuccessfully to re-establish the picture.

The Relate 2000 is designed for continuous use; it may be left plugged in, and switched on, all the time. However, if you are not going to use the phone for an extended period of time, it is recommended that you switch the mains power off. The programmed memories will be retained for at least five years even if Relate 2000 is disconnected from the telephone network.

## Software rights

This telephone contains computer software all rights in which are owned by GEC-Marconi Limited. The owner and/or user of this telephone has a licence under such rights limited to the use of the instrument. No warranty whatsoever is given by GEC-Marconi Limited to such owner and/or user.





# *Index*


*** key** *33*

**# key** *33*

**A**

**Additional facilities** *25*

**Additional notes** *55*

**Adjusting the video picture** *23 – 24*
brightness *24*
colour *24*
contrast *23*

**Adjusting the volume**
of the ringing tone *14*
of the speaker *14*

**Altering brightness** *24*

**Altering colour** *24*

**Altering contrast** *23*

**Approval** *52*

**Artificial light** *11*

**Automatic redial**
on a PABX *38*

**B**

**Background noise** *8*

**Brightness** *24*

BRIGHTNESS **keys** *24, 45*

**C**

**Call timer facility** *29 – 30*

**Call waiting** *33*

CALL/ANSWER **key** *36 – 39*

**Changing dialling modes** *28*

**Changing from handsfree to handset** *21*

**Changing the ringer tone** *39*

**Checking the length of a call**
*see* Call timer facility

**Cleaning Relate 2000** *51*

**Colour** *11, 24*
too red or too blue *46*
too yellow *44*

**Connecting Relate 2000** *13*

**Contrast** *23*

CONTRAST **keys** *23*

**D**

**Dialling a stored number** *32*

**Dialling methods** *13*

**Dialling mode** *34*

**Dialling modes** *28*
on a PABX *38*

**Display messages** *54*

**E**

**Emergency services** *7*

**Ending a call** *19*

**Examining the outgoing picture** *27*

**Exposure to sunlight** *55*

**F**

**Fast picture rate**
*see* Picture rates

FAST/SLOW **key** *19, 34, 44, 46*

**Fault finding**
*see* Help

**Fitting the plinth** *15*

**Freeze frame** *27*

FREEZE FRAME **key** *27*

**G**

**Guarantee** *48 – 50*

## H

**Handsfree**
*see* Loudspeaking

**Hearing impaired users** *7*

**Help** *40 – 47*
blue patches on picture *46*
colour distortion *45*
colour problems *46*
high pitched whistle *42*
loss of video link *42*
no dial tone *40*
no incoming calls *40*
part of face burnt out *46*
picture distortion *44*
picture turns yellow *44*
SHIFT does not work *46*
too dark message appears *46*
video operation absent *42*
video poor quality *43*
voice and video operation absent *41*

## I

**Interference in video operation**
loss of video link *42*
picture distortion *44*

**International calls** *34 – 35*

## L

**Last number redial** *21*
maximum digits stored *21*

**Lighting** *8 – 11*
artificial *11*
background *10*
direction *10*
summary *10*
too dark *23*
too light *23*

**Loss of video link** *42*

**Loudspeaking facility** *8, 20 – 21*
adjusting speaker volume *14*
switching on during a call *21*

LOUDSPEAKING **key** *17, 19 – 21, 26*

## M

**Mains power fails** *13*

**Maintenance** *51*

**Making a call** *17*
using the memory *32*

**Memory facility** *30 – 32*
maximum digits stored *32*

MEMORY RECALL **key** *32*

MEMORY STORE **key** *30, 32*

**Mode switch** *13*

MONITOR **key** *26 – 27, 45*

**Mute facility**
*see* Secrecy

## N

**Network services** *33*

**No dial tone** *40*

**No incoming calls** *40*
dial tone not present *40*
dial tone present *40*

**No video link** *19, 42*

## O

**Office use**
colour distortion *45*

**Out of warranty** *49*

**Outgoing picture** *27*

## P

**PABX operation** *37*
dialling modes *38*
receiving a transferred call *37*
repeated dialling *38*
storing numbers in memory *31*
transferring a call *37*
video calls *38*

PAUSE **key** *31*

**Phone socket** *7*

**Picture distortion** *44*

**Picture quality** *8*
in video operation *22*

**Picture rates** *19, 34 – 35, 44*

**Picture within a picture** *18, 27*





**Plinth** *15*

**Plug** *16*

**Poor quality video image** *43*

**Positioning Relate 2000**
*see* Siting

**Power failure** *55*
loudspeaking facility *55*
memory retention *56*

**Power supply** *13*

**Pulse dialling** *13, 28*

## R

**Receiving a call** *20*

**Receiving a transferred call** *37*

REDIAL **key** *21*

**Redialling the last number** *21*

**Repeated dialling**
on a PABX *38*

**Retention of memories** *13*

**Return address** *50*

**Ringer equivalence number** *53*

**Ringer tone** *39*

## S

**Secrecy facility** *28 – 29*

SECRECY **key** *29*

**Self view facility** *22, 25 – 27*
no call in progress, no call to be made *25*
no call in progress, start call *25*
video call in progress *26*
voice-only call in progress *26*

SELF VIEW **key** *18, 22, 25 – 27*

**Sending units back** *50*

**Service** *48 – 50*

**Setting up** *8 – 16*

**Setup facility** *47*

SHIFT **key** *6, 17, 22*

**Silhouetting** *11*

**Siting Relate 2000** *8, 22*

**Slow picture rate**
*see* Picture rates

**Software rights** *56*

**Special facilities** *33*

**Specifications** *52*

**Stored number card** *16*

**Storing a number in the memory** *30*
if you make a mistake *31*
last number dialled *32*
new number *31*
on a PABX *31*

**Switchboard operation**
*see* PABX

**Switching to video operation** *17*

## T

**Technical information** *52 – 56*
additional notes *55*
approval *52*
display messages *54*
power failure *55*
ringer equivalence number *53*
specifications *52*
use with other equipment *53*

**Temperature range** *8*

**Temporary tone/pulse dialling** *28*

**Three-way calling** *33*

TIMER ON/OFF **key** *29*

**Tone dialling** *13, 28*

**Transferring a call** *35 – 37*
incoming calls *35*
on a PABX *37*
outgoing calls *36*

**TV pictures** *55*

## U

**Using Relate 2000**
basic instructions *17 – 21*
detailed instructions *22 – 39*
with other equipment *53*

**Using the memories** *30 – 32*

## V

VIDEO ON/OFF **key** *18 – 19, 34, 42*

**Video operation** *17, 19*
absent *41 – 42*
colour distortion *45*
examining the outgoing picture *27*
freeze frame *27*
initial setup *22*
loss of video link *42*
on a PABX *38*
pause in sound *43*
picture distortion *44*
picture quality *22*
poor image *43*
receiving a transferred call on a PABX *37*
switching on *17*

**Video picture**
adjusting *23*

VIDEO REFRESH **key** *27, 44*

**Voice and video operation absent** *41*

**Voice delay** *46*

## W

**Wall mounting** *15*





Received 20.3.93 2 year gaurantee

20.5.96 I ordered a new label - didn't arrive - don't supply.