Consort 1+4
Installation Instructions

British
TELECOM

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Introduction

CONSORT is designed to be connected to a direct exchange line and most types of Private Branch exchange (PBX) at an extension telephone socket. Where CONSORT is to be connected to a PBX extension, any reference to the exchange line in this booklet should be taken to mean the PBX extension.

A CONSORT module will sit alongside a telephone at each extension point. The telephone plugs into the module, the module plugs into a socket. The Main module connects to the exchange line, or PBX, socket.

Before installation, you will need to check you have all the parts for your system. Then you will need to plan out the way you will interconnect the Extension modules to the Main module.

Once you have a plan you can install the sockets and cables, terminate the wires, connect your telephones and test your CONSORT system.

READ THESE INSTRUCTIONS THROUGH CAREFULLY BEFORE STARTING YOUR CONSORT INSTALLATION AND FAMILIARISE YOURSELF WITH THE VARIOUS REQUIREMENTS.

Your CONSORT kit

CONSORT can be connected as a 1+2, 1+3 or 1+4 system. The '1' represents the exchange line and the second number '2', '3' or '4' signifies the number of extensions.

In the CONSORT Starter Kit (1+2) you will find:

One Main module with mains adaptor and connecting cords.
One Extension module with connecting cord.
Two wall sockets (including screws, wall plugs and locking bars).
One disposable IDC (Insulation Displacement Connector) tool.
One CONSORT Installation Instruction booklet.
Two CONSORT User Guides.

If you wish to have a CONSORT 1+3 or 1+4, you will need an extension kit for each addition you make. An extension kit box contains:

One CONSORT Extension module with connecting cord.
One wall socket (including screws and wall plugs).
One disposable IDC tool.
One Installation Instruction booklet.
One User Guide.

Not provided and obtainable separately are:

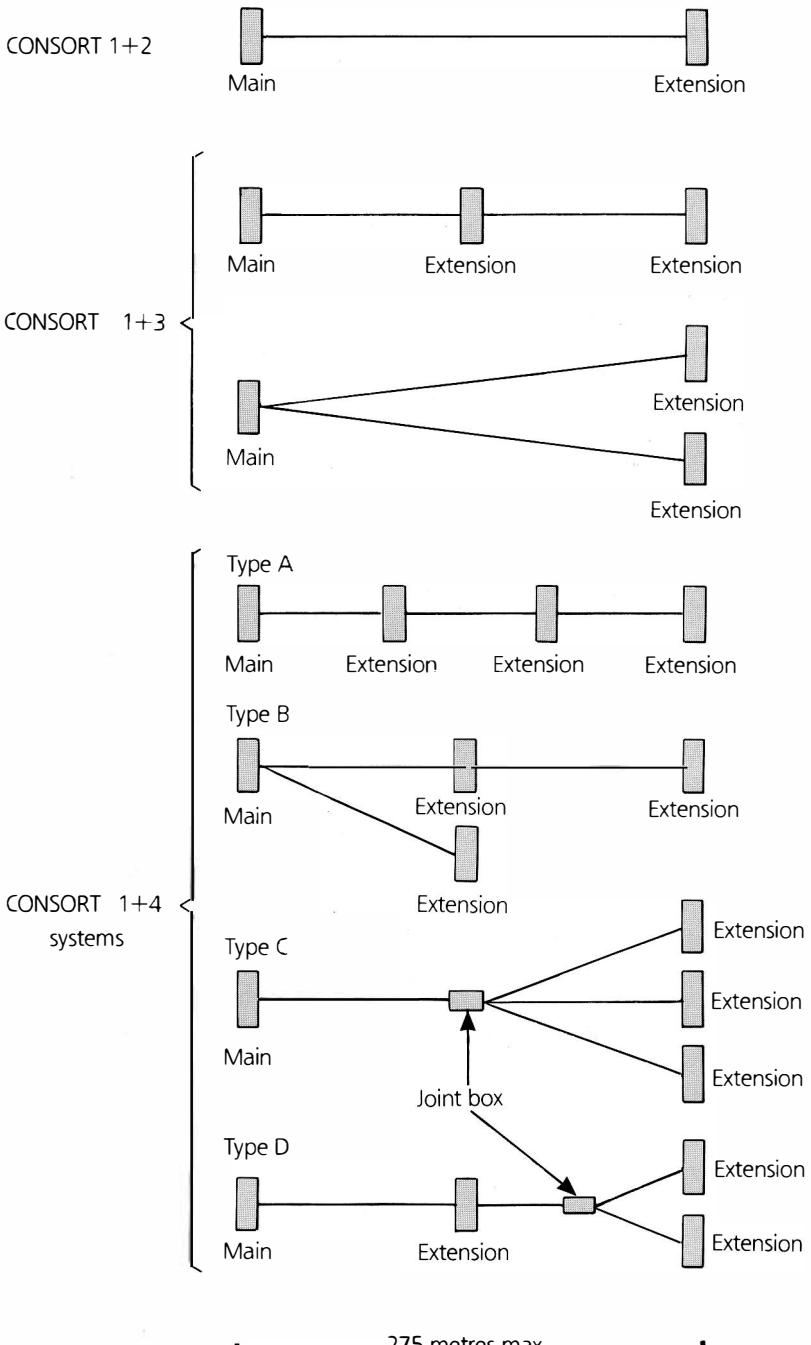
Cable and cleats (BT DIY Kit 4).
Joint Box (BT DIY Kit 6) if required. (This joint box is required for 'star wiring' 1+4 systems; see diagrams C and D on page 2. A joint box will also be required if two pieces of cable are to be connected to extend the length of the cable run.)
The Telephone that you will use at each extension. Any approved telephone can be connected to the CONSORT Main and Extension modules (all British Telecom telephones are suitable).

Planning your system

Decide where you want to use the CONSORT modules and their telephones. The CONSORT Main module will need to be sited near your telephone exchange line socket (within 3 metres) and a 240V, 13A socket outlet.

According to the kit you have, there are several options for making the connections. The diagram illustrates all combinations of systems possible with the CONSORT and can be used for guidance. The maximum series wiring length is 275 metres from the Main module socket to the furthest Extension module socket.

TYPICAL CONSORT SYSTEM LAYOUTS



When planning your cable layout of the CONSORT remember that only two cables can be accommodated and terminated at one socket box. If you want to wire your CONSORT sockets in the 'star' wiring pattern, as in connection diagrams C or D, then it is necessary to use a joint box (British Telecom Kit No. 6). Please see Appendix 2 for more information.

Although all extensions have access to most of the CONSORT system facilities, bear in mind that whoever will be using the Main module will have exclusive access to the CONSORT Night Service and will be able to override the other Extension modules' 'Bell off' facility. The Main module user will not be able to switch off the Main module tone caller, for example in Boss/Secretary situations where the secretary would normally use the Main module.

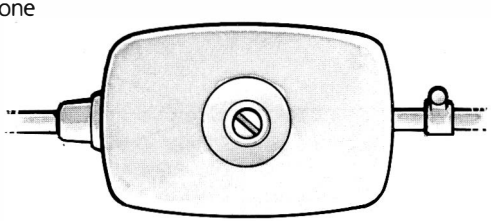
The CONSORT modules and their sockets are not designed to be used outdoors. The sockets must be sited away from any damp environments such as bathrooms, where moisture could cause faults.

Your cabling must be kept completely separate from any other electrical wiring. We recommend that CONSORT cables are not run parallel to electricity supply cables in order to minimise any possible mains pickup interference. The CONSORT sockets must be placed more than 50mm (2") from any 240V mains supply outlets and must never share wall fixings or back boxes with such outlets. This is a safety requirement.

The exchange line to which you intend to connect your CONSORT must be fitted with a telephone socket which has been installed by the telephone service provider. The CONSORT Main module is plugged into this socket. Your extension telephones are then plugged into the CONSORT modules. Typical wiring for a CONSORT 1+4 system, connection type B, is shown on page 8.

If at present your telephone is connected to an old type terminal block (see illustration) you will need to have it replaced with a socket installed by the telephone service provider. There may be a charge for this service. You must not tamper with the telephone exchange line socket at any time. It will only be necessary to use it to plug in your CONSORT Main module.

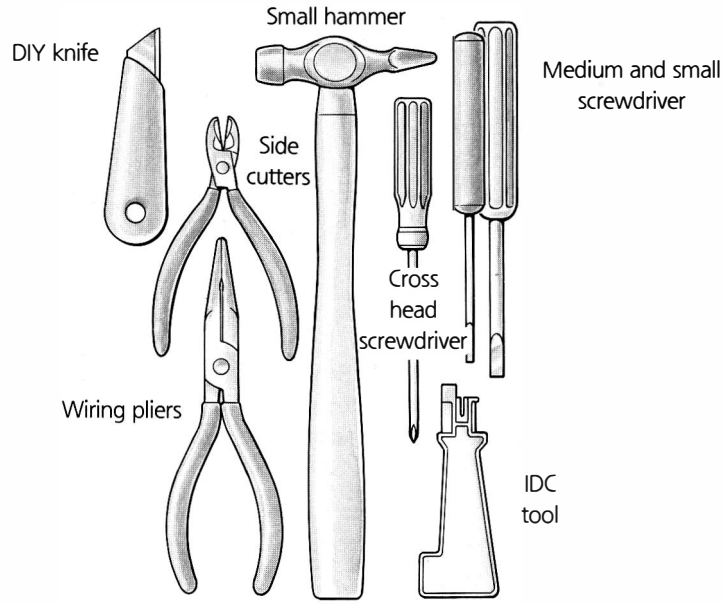
The old type telephone terminal block



Tools needed

You will need the following tools:

- wire sidecutters
- wiring pliers
- a small flat bladed screwdriver
- a medium sized flat bladed screwdriver
- a small crosshead screwdriver
- a small hammer
- a sharp DIY knife
- a disposable IDC (Insulation Displacement Connector) tool for terminating wires in sockets
  One IDC tool is supplied with each CONSORT kit. The IDC tool is designed to terminate one CONSORT system only and must be discarded when worn.



Installing the sockets

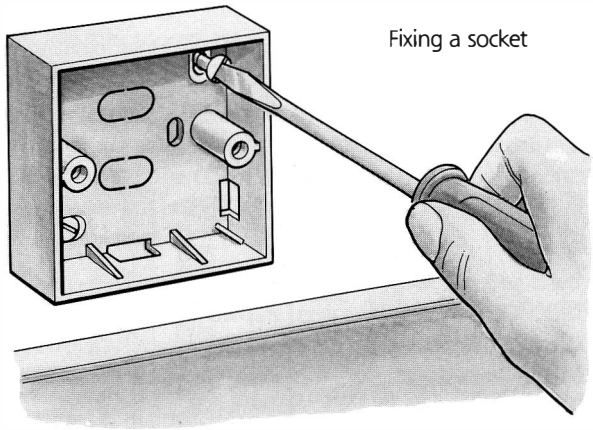
Each CONSORT socket should be wall mounted in a convenient position close to where the corresponding module will be used. The module is connected to the socket by a 3 metre cord.

Remember to keep the sockets well clear of the floor to avoid damage by floor cleaning equipment and to enable the cable to be brought neatly out of the socket box and on to the room skirting board.

When you have decided on the positions for the sockets, carefully cut out the appropriate cable entry hole in the side or base of each socket using a sharp knife.

Mount the sockets in position, using the two screws and plastic wall plugs supplied with each socket. The socket box mounting holes are slotted to allow horizontal and vertical adjustment before tightening the screws fully.

WARNING: Before attaching the socket to the wall, ensure that you have selected a position where you will not hit any concealed pipes or electrical cables.



Fixing a socket

Cabling

The CONSORT should be wired using standard British Telecom, DIY cable containing six 0.5mm diameter solid conductors. It is important that this size of wire is used or a good electrical connection cannot be guaranteed and there could be problems in the future with the system. Never use stranded wire for cabling the CONSORT.

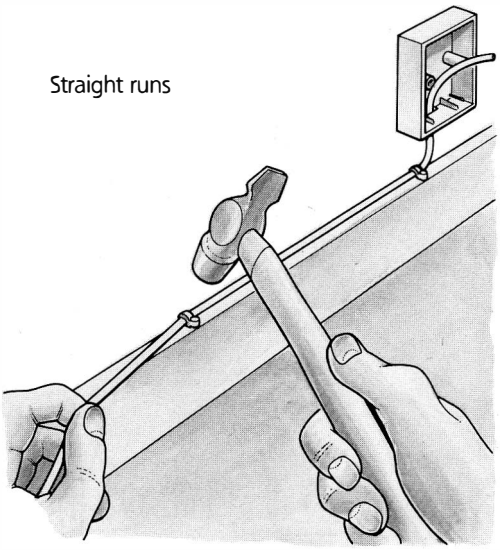
Run the cables to the Extension socket positions in accordance with your plan. Feed the cable through each socket box entry hole and leave about 200mm (8") of cable spare at the socket.

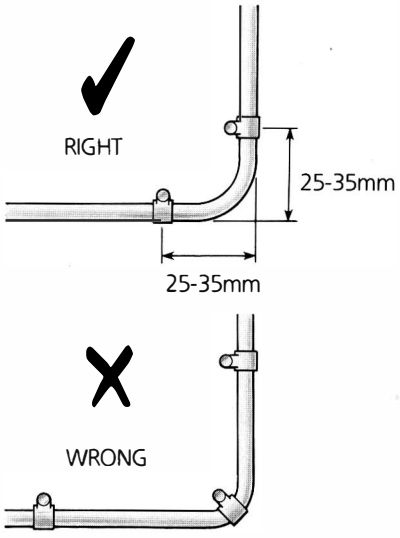
WARNING: When cleating the cable, take care not to puncture or damage it in any way. Damaged cable may cause faulty operation or damage to the system and must be replaced.

Two tips:

On straight runs it is easier to cleat the cable at one end of the cable run, pull the cable tight, cleat the other end and then insert intermediary cleats at approximately 300mm (12") intervals.

Use two cleats as shown to hold a cable bend neatly in place, not a single cleat on the bend.



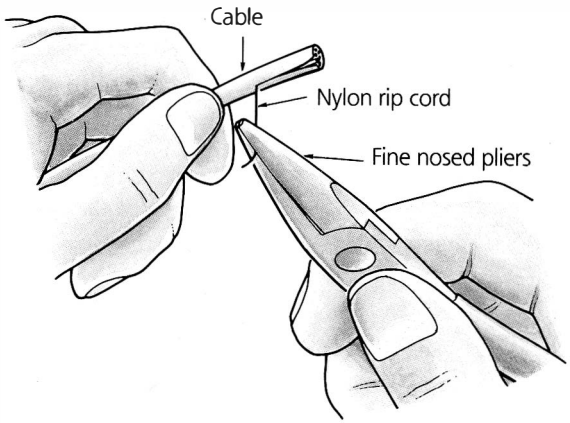


Cleating cables on corners

Exposing the wires ready for connection

For every cable at each socket, cut the sheath at the end of a cable about 13mm (½") with a pair of sidecutters and expose the white nylon ripcord.

Grip the rip cord with a pair of fine nosed pliers and pull firmly down, exposing the wires to about 50mm (2").

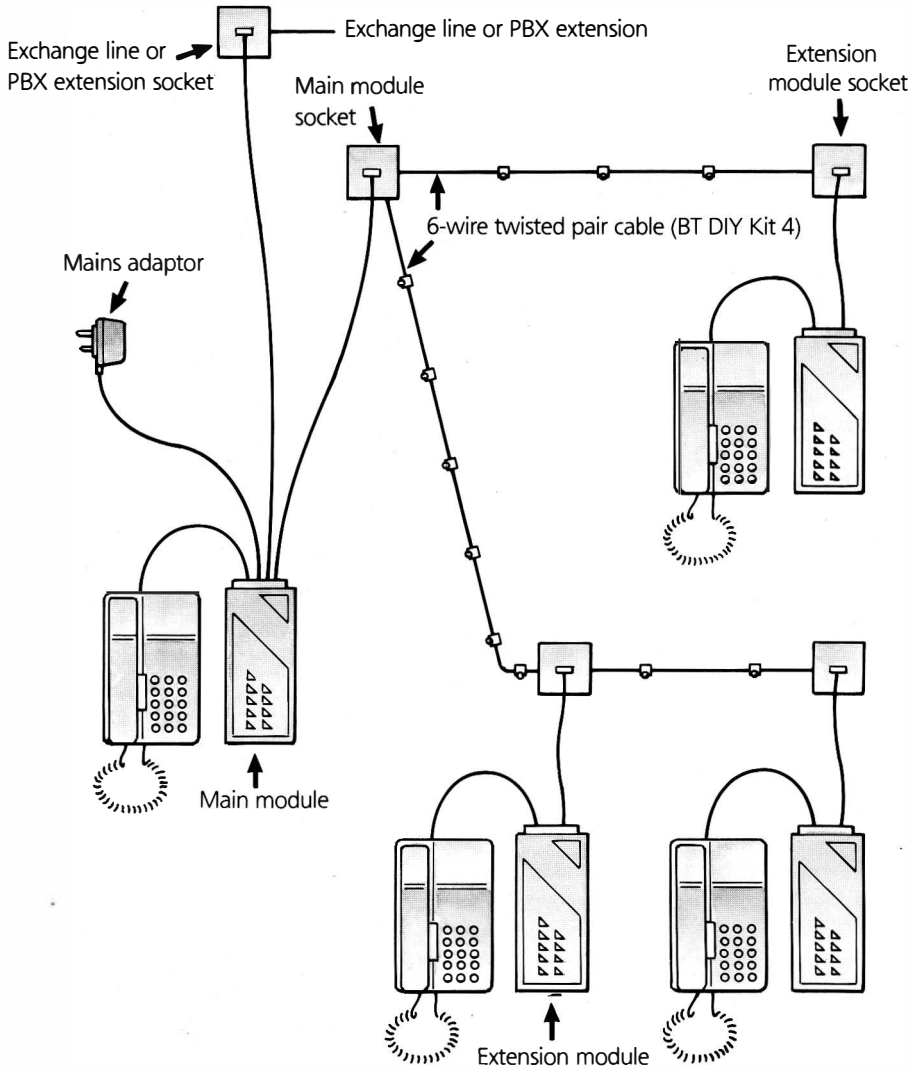


Removing sheath with rip cord

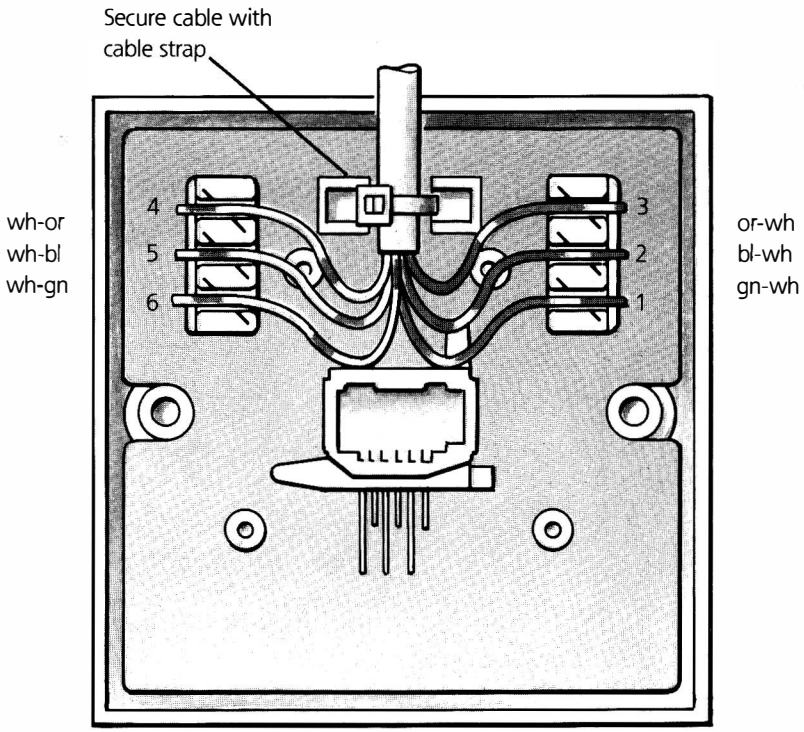
Cut away the unwanted sheath with the sidecutters. Do not remove the PVC insulation from the wires themselves.

Fix the cable sheath(s) neatly to the cable mount on the faceplate of the socket using the nylon tie provided with the socket. Thread the tie through the slot/hole in the back of the faceplate. Put the cable in place and tighten the tie (see diagram, page 9). N.B. Cable securing methods may differ on some socket faceplates.

CONSORT 1+4 (connection type B)
(to show cables)

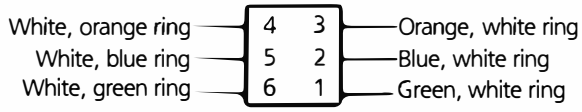


Wiring at the back of a module socket
(terminating 1 cable)



Spread out the individual wires so that you can identify the colours. Important—the first colour identified is the base colour of the plastic insulation, the second colour is printed over the first; for example, gn-wh means green base, white overprint, wh-gn means white base, green overprint.

In each socket the wires of the CONSORT have to be connected to the terminal numbers shown.



WARNING: Make sure that you follow the colour coding correctly. Incorrect wiring may cause faulty operation or damage to the system.

Terminating the wires

No wire stripping or soldering is necessary to make a good termination.

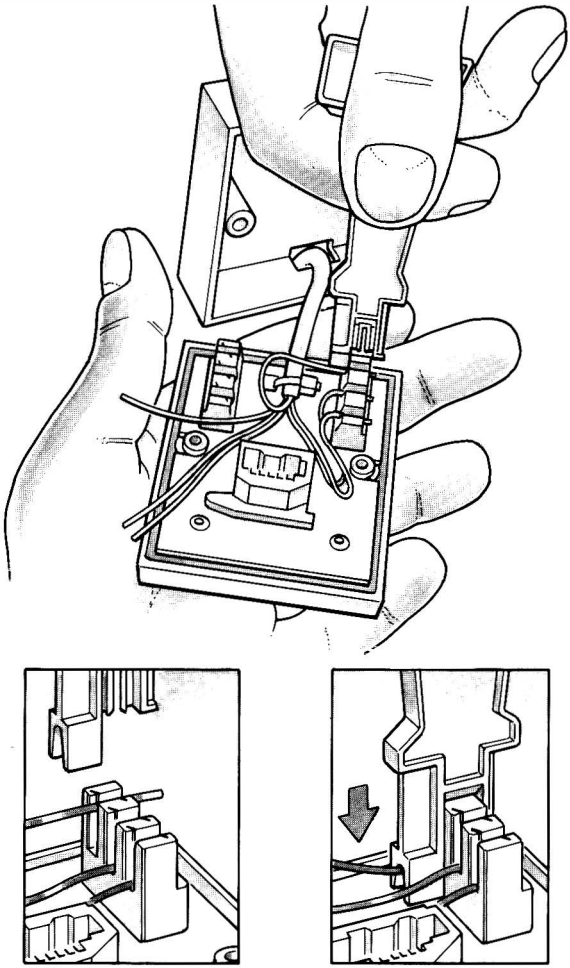
The special IDC (Insulation Displacement Connector) tool is used.

IMPORTANT: Do not attempt to insert the wires with anything other than the proper IDC tool.

Support the socket faceplate firmly and hold the tool vertically making sure that the 'blade' of the tool is the correct way round. This is essential, as not only will the tool be damaged but also the wire will not be terminated properly if the tool is incorrectly used. It is recommended that you practice first by placing the IDC tool over a terminal, without a wire in place. In the correct position the tool will easily slide as far as the chamfer of the plastic insulator on the terminal.

Place one wire to be terminated in the appropriate slot of the terminal. Put the tool into position. A firm vertically applied pressure to the tool will force the wire into the connector fork and the connection is made. You will hear it go into place. Then remove any excess wire beyond the connector with the wire side cutters.

If two cables are to be connected to the socket, a second wire will need to be inserted at the same terminal. Each wire must be inserted individually and not both at once. Ensure that wires are pushed into the connector fork fully, one on top of the other.



Using the IDC Tool

Where two wires are to be terminated at the same terminal, make sure that the colours of the wires from each cable match each other.

After you have made the three terminations on one side of the socket, eg. 1,2,3 as shown above, turn the tool around to make the terminations for 4,5,6 so that the 'blade' of the tool (longer edge), is again facing towards the middle of the socket.

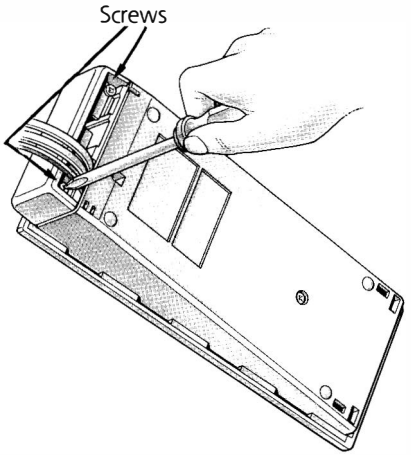
If you should make a mistake, a wire can be removed by pulling it upwards out of the connector fork. Do not attempt to reinsert the same wire until the damaged portion has been cut off. Leave each terminated socket out of its box for the moment.

Connecting up your CONSORT

Main module

Remove the CONSORT Main module from its packing. This is the module with the Night Service button and the mains adaptor.

Remove the two screws which attach the module rear cover to the case.

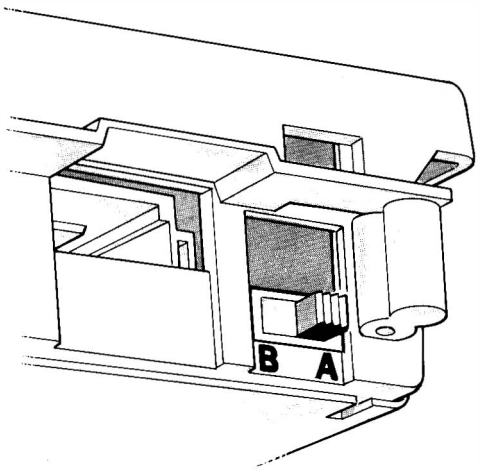


At the rear of the Main module is a switch with two positions marked A and B (see diagram). This is used to match CONSORT to the external line.

If you are connecting CONSORT to:

a direct exchange line—make sure the switch is in position A.

a PBX extension—refer to Appendix 1 for details of how to set the switch.



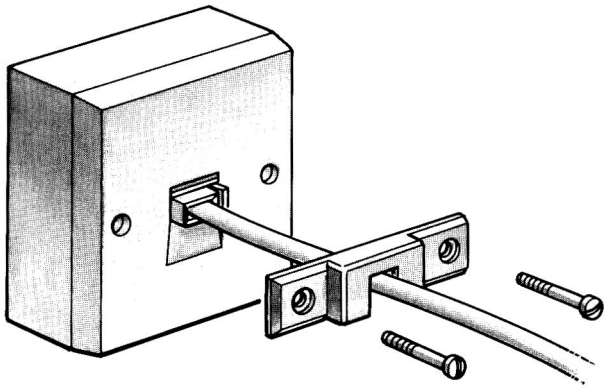
Plug a telephone into the exposed socket at the rear of the Main module.

Replace the cover and secure it with its screws, making sure the plastic lugs on the cover are properly engaged in their slots, and the telephone cable emerges from the back.

Of the two connecting cords, select the thinner, 'blue' cord. Plug this cord into your telephone exchange line or PBX socket. (It may be necessary to remove an existing telephone cord from the socket first). Take the other connecting cord and plug it into the CONSORT Main module socket that you have installed.

Coil any excess cable neatly inside the socket box. Position the faceplate of the socket on the box (tucking in the cable at the same time). Using the socket faceplate securing screws, fit the locking bar supplied over the faceplate, making the plug captive. Note that the bar has an offset slot for the cord and only fits one way round. (It is necessary to fit the locking bar to retain the 'approved system' status.)

DO NOT PLUG IN THE MAINS ADAPTOR AT THIS STAGE.



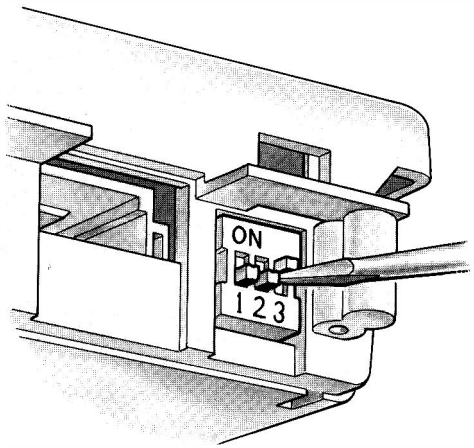
Fitting a locking bar

Extension module(s)

Remove an Extension module from its packing. Remove the rear cover and plug a telephone into the socket, in a similar way to the Main module. Do not replace the cover yet.

Each and every Extension module must have its own individual address (1 or 2 or 3) so that your CONSORT rings the right extension. The triple slide switch at the rear of the Extension module is used to set its address.

With the aid of a small screwdriver, carefully set one of the miniature slides to 'on'. The other two slides should be in the opposite position which sets them 'off'. The calling address for this particular module is now the number of the 'on' slide. (Note: The address of the Main module is always '4').



Connect a telephone to each of the other Extension modules and set each one's address. Remember that no two address switches should be set the same. Make a note of which Extension module is set to which number.

Replace and secure the rear cover(s). Plug each connecting cord into its Extension module socket. Fit a locking bar to each as for the Main module, and secure each socket in its box.

Testing your CONSORT

Before you test your CONSORT, ensure that all the modules and telephones have been installed and the locking bars fitted.

Plug the mains adaptor, which is connected to the Main module by a black and white cord, into a 13A socket outlet. Switch on the power. Your system should give a single beep indicating that your CONSORT is ready.

At the Main module, lift the handset from the telephone and press the Exchange button.

Dial tone should be heard and a normal outgoing call should be possible.

Replace the telephone handset. Arrange to have an incoming call made to your CONSORT. Your CONSORT tone caller, in the module, should respond to the incoming ring. (Note: Your telephone does not ring when connected to CONSORT - this is normal.)

Lift the telephone handset and press the Exchange button. Normal telephone two-way speech should be possible.

If dial tone is not returned, check:

a) That the thinner, 'blue' connecting cord from the Main module, has been plugged into the exchange line socket.

b) That power is 'on' to the CONSORT. This is indicated by the 'Intercom' lamp coming on when the telephone handset is lifted.

c) That the telephone is working correctly. Test the telephone on an exchange line that you know is working. If a telephone is found to be faulty it must be replaced.

d) That the exchange line is working. Plug a telephone into the exchange line socket. If you hear dial tone when you lift the handset, the line is working. If the exchange line is not working correctly, report the fault to your service provider.

e) That your system is wired correctly.

If after making these checks you are still unable to work a telephone from the CONSORT, contact your CONSORT supplier as the system may be faulty.

If you have been successful so far, you can test an Extension module at one of the other sockets.

Lift the telephone handset at the Main module and press the appropriate Extension calling button (ie the address number you set).

The tone callers of the Extension module and Main module should ring together.

On lifting the handset of the telephone connected to the Extension module, normal two way speech should be possible.

Test the other extension(s) in a similar way.

Providing all the modules can call each other correctly and incoming and outgoing calls can be made from all the modules, you are ready to check the full facilities of the CONSORT in accordance with the User Guide.

Labelling your modules

Modules can be labelled by writing each telephone user's name or department next to the [Extension] button used to call them. The button will correspond to the address that has been set for the user's Extension module. The Main module user is called by pressing button 4.

If you write in pencil the name can be altered; if you write in biro it will be permanent.

Appendix 1

Using CONSORT with a PBX

If your CONSORT is connected to a PBX extension, you may need to adjust the switch at the rear of your Main module. (The rear cover of the module must be removed to expose the switch.)

Consult the list below to see whether your PBX requires the switch to be in position 'A' or 'B'.

Switch in position 'A' for

BTeX	Ensign	Herald	MDX	Minimaster 3
Monarch	Pentara	Premiere	Regent	PABX 1
PABX 2	PABX 3	PABX 4	PABX 5	PABX 6
PMBX 2/	PMBX 3/	PMBX 4/	PMBX 11	

Switch in position 'B' for

Admiral	Kinsman	PMBX 1A	SX2000	TSX50
Viceroy				

If your PBX is not included in either of these lists or you are not sure which PBX your CONSORT is connected to, carry out the following test.

Testing the CONSORT PBX setting

Before you can test the PBX setting you must connect up the full system in accordance with the main instructions ('Connecting up your CONSORT'), but for the time being leave the rear cover off the Main module. Having connected up the full system, plug in the mains adaptor and switch on the power at the 13A socket.

With the Main module switch in position 'A', lift the telephone handset and press the Exchange button on the module. You should hear dial tone and the exchange line lamp should glow continuously.

Replace the handset.

If the exchange line lamp goes off, the switch is set correctly. If the lamp does **not** go off, set the switch to position 'B'.

Repeat this test to check that the exchange line lamp goes off when you replace the handset.

If you do not hear dial tone when you lift the handset and press the Exchange button, see 'Testing your CONSORT' on page 14.

When you have set the switch replace the rear cover and return to the main instructions ('Testing your CONSORT').

Recall

Check with your PBX controller what type of recall your PBX uses.

Earth Recall Use the Recall button on your CONSORT module.

Time Break Recall Use the recall button of a telephone which has time break recall connected to your CONSORT module. Do not use the Recall button on your module.

Compatibility

CONSORT is not compatible with 'C' wire signalling PBXs.

Appendix 2

Wiring up a 1+4 in 'star' layout

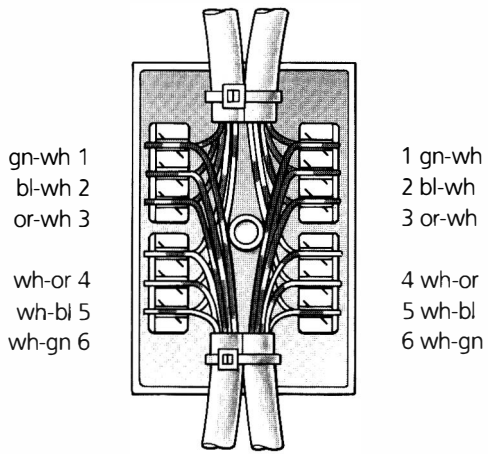
If you want to wire a CONSORT 1+4 in a 'Star' layout (types C & D on page 2), you will need to include a Joint Box in your CONSORT system wiring. The Joint Box can be obtained as 'Kit 6' from British Telecom Phone Shops and approved stockists as part of the DIY telephone range; it comes complete with screws, wall plugs and two cable securing straps.

The Joint Box has 2 pairs of IDC terminal strips inside it labelled 1 to 6. The two pairs of terminals are wired in parallel on the printed circuit mounting board and enable up to four 6-wire cables to be terminated, two on each IDC strip.

Connecting the Joint Box

Connect the wires to the Joint Box as shown. The Joint Box uses the same method of IDC termination of the wires, as already explained in these instructions, with the exception that it will only be necessary to leave about 75mm (3") of cable at the joint box for terminating the wires.

IMPORTANT: The DIY range of sockets and accessories are not fully compatible with CONSORT. You do NOT need to refer to the instructions which come packed with the Joint Box.



Appendix 3

User notes

The maximum series resistance in the line is 50 Ohms. This gives an approximate maximum series wiring length (from the Main module socket to the furthest Extension module socket) of 275 metres.

The maximum distance from the Main module to the exchange line socket is 3 metres.

Users should note that, under certain circumstances, difficulties may be experienced when making calls, or during a telephone conversation from other apparatus connected to the public telephone network via the CONSORT system. Please consult the supplier or maintainer of your system if such difficulties are experienced.

Only apparatus complying with BS6301 should be connected to the ports at the rear of the CONSORT modules.

The User is warned that interconnection directly or by way of other apparatus to ports marked 'WARNING Connect only to apparatus complying with BS6301 to this port' must be observed. Ports not so marked may produce hazardous conditions on the British Telecom Network so you should obtain advice from a competent engineer before such a connection is made.

British Telecom Guarantee

1. British Telecom plc guarantees this product for 12 months provided that:

The goods have only been used for their intended purpose and have not been subjected to misuse, or been wilfully or accidentally damaged.

The goods have not been tampered with or repaired by anyone other than British Telecom plc, its staff or agents.

2. If a fault should occur in this product within 12 months of purchase you should contact the place from which you purchased the goods and, provided you produce evidence of purchase, it will either be replaced or repaired free of charge.

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

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

S/3008/3/G/452439

CPE/MS 514