SPEC. SHEET
FOR
8810-TT

BELL® Equipment
SONECOR

Model BE-5200

ADVANCED HOME / OFFICE TELEPHONE

User Instruction Manual

PLEASE READ THIS MANUAL CAREFULLY PRIOR TO INSTALLING THE BE-5200

TABLE OF CONTENTS

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BE-5200 Features

Advanced Telephone Station features:

- Connect from One to Four Telephone Lines
- Install One to Twelve Telephones
- Automatic Line Selection for incoming and outgoing calls
- Dual level Volume control for handset receiver
- Electronic Volume controls for handsfree Speakerphone
- Three way Call Conferencing
- Automatic reduced ringer volume when a call is in progress
- Hi / Lo / Off master volume control
- Individual line ringer On / Off controls
- Selectable line privacy with manual override
- Electronic Call On Hold with LED indicator
- Hearing Aid Compatible

Advanced In-Use Indications:

- Four Line-Status indicators (Ringing, In-Use, and Call on Hold) to indicate the status of each line

Advanced Dialing Features:

- Handsfree dialing with speakerphone capability
- Twelve One Touch Speed Dialer memories
- Sixteen digit capacity in each memory location
- Automatic Call Busy Redial up to 15 times
- Last Number Redial
- Tone / Pulse switchable dialing
- Flash key to momentary hang-up the line or insert flash in memory

Advanced Intercom Features:

- Intercom and all station Paging features use existing telephone wiring
- Full multiplexing allows intercom, all station page, and telephone lines to be active at the same time
- Handsfree answer back in intercom mode
- Simple, one button Intercom Station selection
- Intercom In Use LED indicator

No Special Installation:

- User installable - No key systems unit or master set required
- Plugs into two standard RJ14 modular jacks
- UL/CSA AC adaptor included
- Fully modular line and handset cords
- Desk or Wall Mountable
- Memory back-up provided by two 1.5 volt batteries (included)

FCC Requirements

Equipment Notes

Your BE-5200 telephone is registered with the Federal Communications Commission and is in compliance with part 15J and part 68 of the FCC Rules and Regulations. On the bottom of this equipment is a label indicating among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for the equipment. You must, upon request, provide this information to your telephone company. The REN is useful to determine the number of devices you may connect to your telephone line and still have all devices ring when your telephone number is called. In most cases (but not all) areas, the sum of the REN's of all the devices connected to one line should not exceed (5) five. The BE-5200 telephone utilizes high sensitivity ringer circuits which will function reliably with up to twelve telephones installed.

- The BE-5200 telephone cannot be used with coin service pay service telephones.
- The BE-5200 telephone cannot be connected to party line service.
- The BE-5200 telephone is Hearing Aid Compatible.

The telephone company may discontinue service if the telephone is determined to cause harm to the telephone network. In this case, the telephone company will:

- Notify the customer that the service is being discontinued.
- Provide the customer with the opportunity to correct the situation.
- Inform the customer of his rights to bring the complaint to the FCC.

Interference Information

The BE-5200 generates, uses and can radiate low level radio frequency energy. It has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications set forth in Subpart J of Part 15 of the FCC rules. If the BE-5200 is suspected of interfering with radio or television reception, verify that it is the source of the interference. Disconnect the BE-5200 from the telephone line and unplug the AC power adaptor. If the interference is still present, the BE-5200 is not the source of the problem. If the problem is caused by the BE-5200, proceed as follows.

- Reorient the receiving antenna on the unit experiencing interference.
- Move the telephone away from the unit experiencing interference.
- Plug the unit experiencing interference into a different AC wall outlet.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. The following booklet, prepared by the Federal Communications Commission, may be helpful. This booklet is available from the U.S. Government Printing Office.

"How to Identify and Resolve Radio-TV Interference Problems"
U.S. Government Printing Office
Washington, D.C. 20402
Stock Number 004-000-0345-4

System Wiring Information

Connecting to the Network Interface

The installation of BE-5200 telephones in a system is simple and flexible. If the telephone jacks required to connect to the telephone network do not already exist, they can be installed by your local telephone company, by a telephone contractor, or by yourself.

- A two-line USOC RJ14C, four conductor modular jack used to connect the first and second telephone lines at each BE-5200 station. If the BE-5200 is to be used with four telephone lines, a second RJ14C jack must be installed for telephone lines three and four.

* **IMPORTANT:** The intercom and data multiplexing operate using radio frequency transmitted on the wiring for line one. For the BE-5200 system to function correctly, line one must be common at all stations.

System Wiring Installation

Follow industry accepted guidelines and procedures when installing system wiring. Be sure to follow all applicable local electrical and building codes when wiring the system. Do not run telephone wiring in the same conduit or electrical boxes with the AC power service. Installation of system wiring usually is done in three basic steps:

- Routing the required wiring to the individual telephone locations.
- Connecting the wiring to the modular telephone jacks at each station.
- Connecting the wiring to the network interface.

Connection to the network interface, sometimes referred to as the demarcation point, will depend on the individual installation and service provided by the telephone company. Some installations have a central connection block that the telephone company uses to terminate their wiring at the customer's premises. The connection block uses bridging clips to connect the telephone company side to the customer side. Punch-down connections are generally provided for the customer's wiring. Other installations use a connection block with screw terminals and modular plugs.

- Route the wiring from the network interface connection to the individual stations as appropriate for the installation. Connections to each telephone installation can be home run or loop wired or a combination of both depending on the installation requirements or whichever is more convenient for the installation.

- Twisted pair wiring must be used for all wiring or crosstalk may occur between telephone lines. Connections to individual BE-5200 telephones should be made using #22 to #26 gauge twisted pair wire.for each telephone line. A detailed system wiring diagram for the BE-5200 can be found in the technical appendix located in the rear of this manual.

Installation Information

This manual has been designed to take you step-by-step through the installation, programming, and use of the BE-5200 telephone. Please read each applicable section of this instruction manual. Careful attention should be given to avoid unnecessary problems during the installation and use of the telephone.

- Check that the system wiring is correct before installing the telephones.

- Telephones should be installed one at a time. Verify that each telephone operates correctly as it is installed prior to installing the next telephone.

Installing the BE-5200 Telephone

Installation of the BE-5200 is both quick and simple if the correct jacks are present at each telephone location. Carefully unpack the telephone and locate the modular telephone cords and the AC power adaptor.

- Connect one end of the 7 foot coiled cord to the handset. Plug the remaining end into the small modular jack located on the side of the telephone base.

- Connect one end of the four conductor modular telephone line cord into the modular jack marked line 1 and 2 on the BE-5200 telephone. Plug the remaining end into the RJ14C wall jack containing lines 1 and 2. See Figure 6

- If you have a third or fourth telephone line, connect one end of the four conductor modular telephone line cord into the modular jack marked line 3 and 4 on the BE-5200 telephone. Plug the remaining end into the modular RJ14C wall jack containing lines 3 and 4.

- Plug the AC power adaptor supplied with the BE-5200 into an AC outlet nearest to the telephone location. Plug the power cord from the AC adaptor into the **DC 9V** jack located at the rear of the telephone. See Figure 6

Testing Telephone Line Assignments

It is important to verify that each of the telephone lines appear at the same line location on all BE-5200 telephones in the system. Lift the handset, press the **LINE SELECT** button for line one, and listen for dial tone. Place a call to one of the other telephone lines connected to the BE-5200. If you get a busy signal, the number you called is assigned to the **LINE SELECT** button you pressed to make the call.

- If the telephone rings, the number you called is assigned to the **LINE SELECT** button with the flashing **LINE STATUS** LED indicator. Repeat this procedure until all of the phone lines have been checked for correct telephone line assignment.

Installation Information - continued

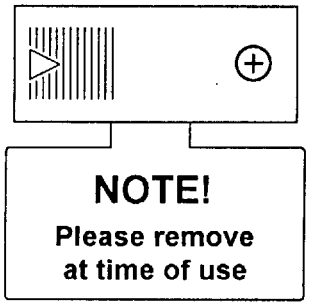
Installing Memory Back-up Batteries

Two button type batteries are used to back-up the memory in the telephone and save the programmed phone numbers and intercom address information in the event of loss of AC power. Normally, these batteries provide memory back-up for up to one year.

- When the BE-5200 is first unpacked, remove the battery insulator located on the bottom of the telephone to activate the memory back-up batteries. See Figure 1

Figure 1

Battery Cover with Battery Insulator Installed

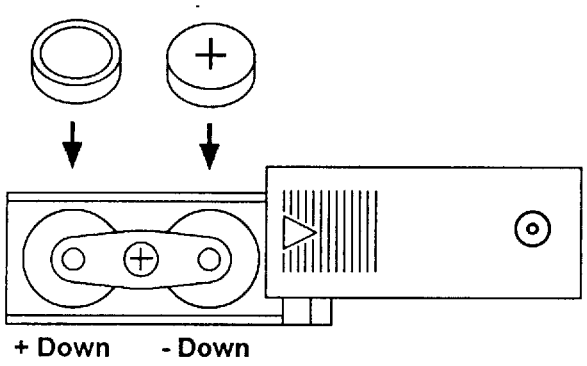


There is normally no drain on the memory back-up batteries as long as there is AC power available to the telephone. Replace the batteries every year to ensure that adequate back-up power is available when needed. Follow the procedure outlined below to replace and / or install new batteries.

- Change the batteries with AC power connected, this will maintain the telephone numbers previously programmed into memory and eliminate the need to re-program.

Figure 2

Battery Compartment



CAUTION: ALWAYS DISCONNECT THE TELEPHONE CORDS FROM THE WALL JACKS BEFORE SERVICING OR DISASSEMBLING THIS EQUIPMENT, OR REPLACING BATTERIES.

Installation Information - continued

Remove the battery compartment cover from the underside of the telephone. Use a small Philips head screwdriver to remove the battery cover safety screw as well as the battery retaining screw and clip.

- For replacement batteries, use either EverReady LR44 or Radio Shack 357A or equivalent alkaline type to ensure correct operation of the memory back-up circuit.

* **IMPORTANT:** Observe the correct polarity when installing the batteries, install as shown in Figure 2.

- Replace the battery retaining clip and tighten the screw snugly. Caution, do not over tighten, as this may strip the screw threads.

- Replace the battery compartment cover.

Important Battery Information

- Use only 1.5 Volt type LR44 or 357A or equivalent batteries.

- Do not dispose of the batteries in a fire as the cell may explode. Check with local codes or possible special disposal instructions.

- Do not open or mutilate the batteries. Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.

- Exercise care in handling batteries in order not to short the battery with conductors such as rings, bracelets, keys. The battery or conductor may overheat and cause burns.

- Do not attempt to recharge the batteries provided with or identified for use with this product. The batteries may leak corrosive electrolyte or explode.

- Do not attempt to rejuvenate the batteries provided with or identified for use with this product by heating them. Sudden release of the battery electrolyte may occur causing burns or irritation to eyes or skin.

- When replacing batteries, all batteries should be replaced at the same time. Mixing fresh and discharged batteries could increase internal cell pressure and rupture the discharged batteries.

- When inserting batteries into this product, the proper polarity or direction must be observed. Reverse insertion of batteries can cause charging, and that may result in leakage or explosion.

- Remove the batteries from this product if the product will not be used for a long period of time (several months or more) since during this time the battery could leak in the product.

- Discard dead batteries as soon as possible since dead batteries are more likely to leak in a product.

Installation Information - continued

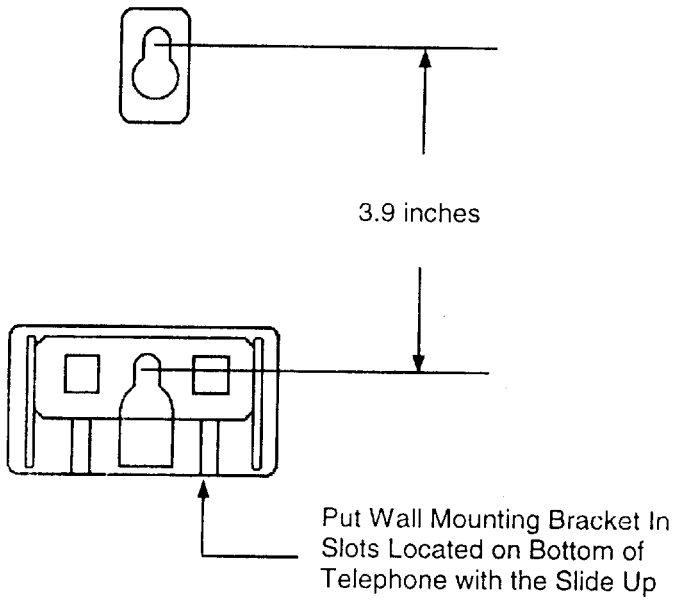
Wall Mounting

The BE-5200 telephone can be wall mounted to a standard telephone wall mount jack face plate or it can be wall mounted to any flat surface using two self-tapping screws.

- Move the wall mounting bracket from the desk position to the wall position on the bottom of the telephone.
- Turn the handset hanger tab to the wall mounting position by sliding the tab out and rotating it 180 degrees.
- If a standard telephone wall mount jack faceplate is not used, install two self tapping screws (not included) to the surface the telephone will be mounted on. See Figure 3
- Slide the wall mount slots down over the screw heads or on the faceplate to mount the telephone.

Figure 3

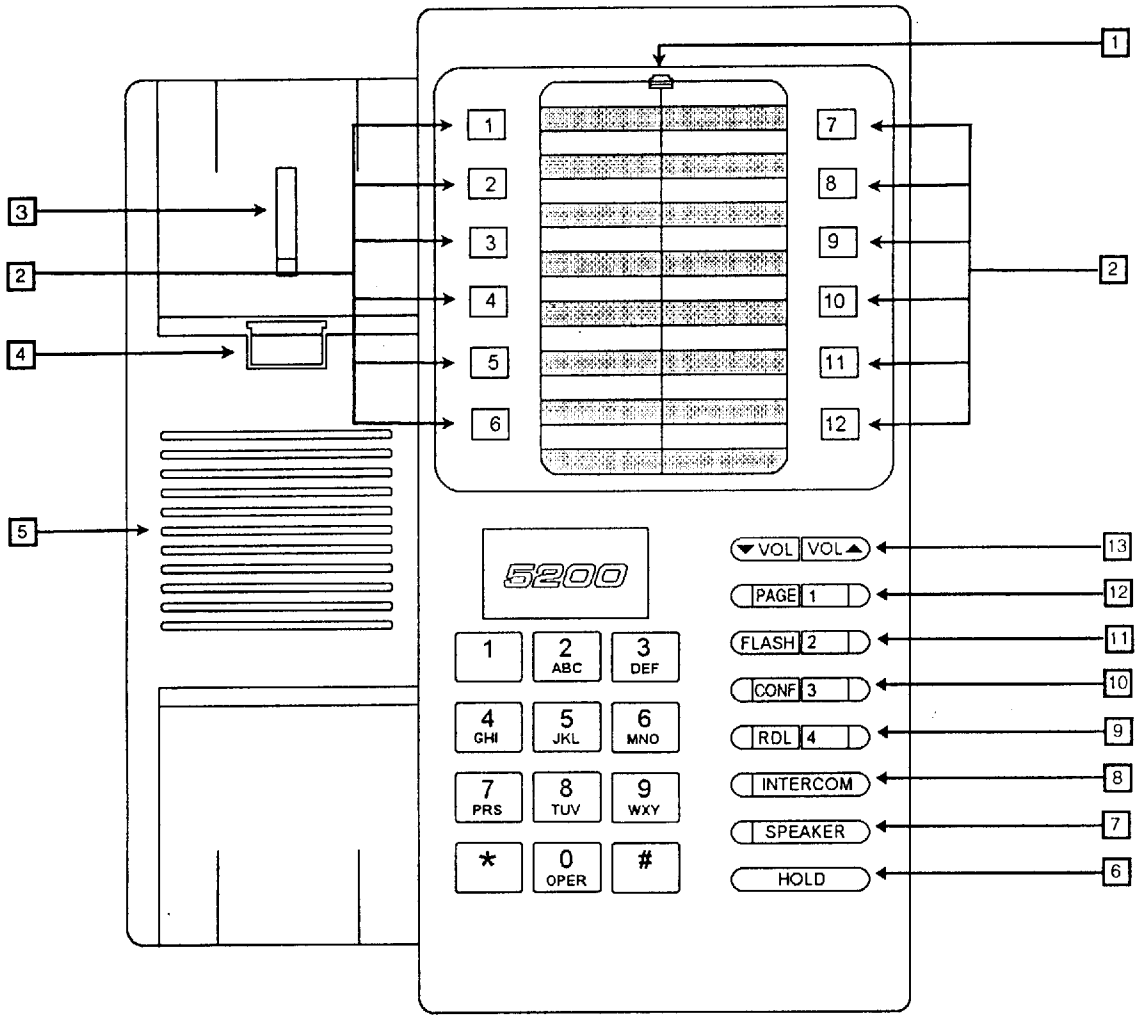
Wall Mounting Dimensions



Control Locations

Figure 4

Top Surface Controls



1. Index Paper Cover Release
2. Speed Dial / Intercom Buttons and LED Indicators
3. Hook Switch
4. Handset Hanger Tab
5. Speaker
6. HOLD Button
7. SPEAKER Button and LED Indicators
8. INTERCOM Button and LED Indicator
9. RDL / LINE 4 Buttons and LED Indicators
10. CONF / LINE 3 Buttons and LED Indicators
11. FLASH / LINE 2 Buttons and LED Indicators
12. PAGE / LINE 1 Buttons and LED Indicators
13. VOL UP / DOWN Volume Level Controls

Control Locations - continued

Figure 5

Right Side Controls

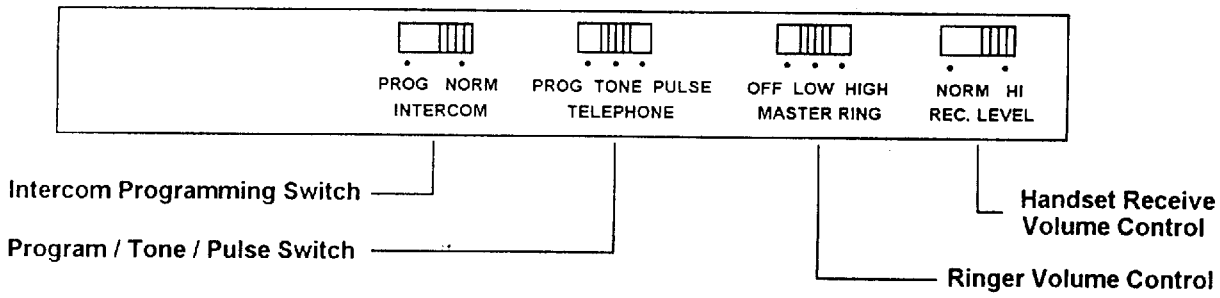


Figure 6

Rear Surface Controls

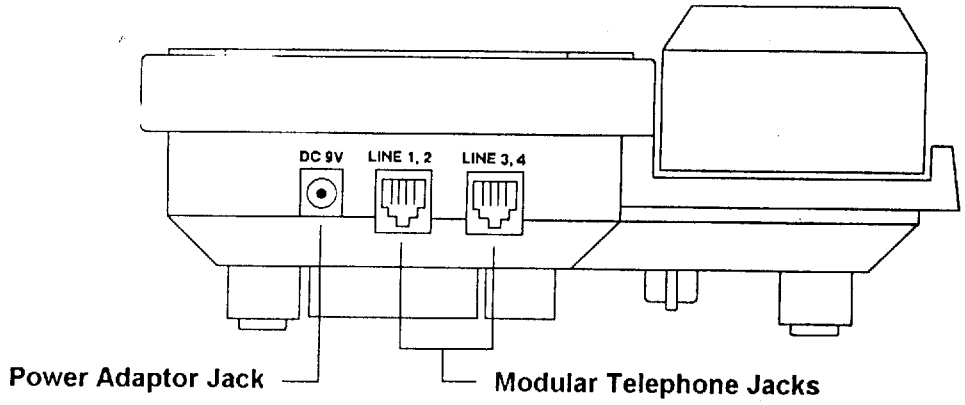
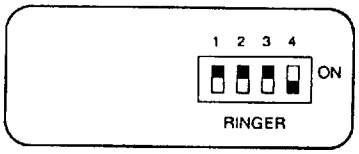


Figure 7

Bottom Surface Controls



Operation

Line Status Indication

The BE-5200 uses a LED indicator built into each of the four **LINE SELECT** buttons to visually report the display the line status of each telephone line when used with other BE-5200 telephones. The BE-5200 does not indicate the line status of non-system telephones. See Figure 4

There are four line status indications:

- **LED OFF**: The line is not in use (on-hook).
- **LED ON**: The line is currently in use (off-hook).
- **SLOW FLASH**: There is a call on hold on the line.
- **FAST FLASH**: There is an incoming call on the line (ringing).

Automatic Incoming Line Selection

The Automatic Incoming Call Line Select feature allows a incoming call to be answered by simply picking up the handset or by pressing the handsfree speakerphone **SPEAKER** button. There is no need to press a **LINE SELECT** button to answer a call unless the Automatic Incoming Call Line Select feature is disabled.

- The Automatic Incoming Line Select feature can be individually disabled for each line by setting the corresponding **RINGER** switch located underneath the telephone to the **OFF** position. See Figure 7

* **NOTE**: Disabling the Automatic Incoming Line Select feature will turn off the ringer for that line.

Automatic Outgoing Call Line Selection

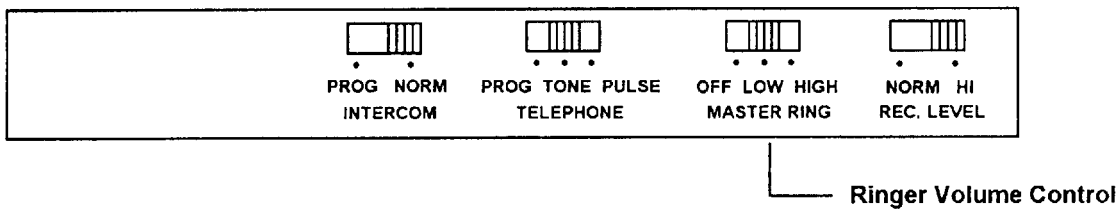
The Automatic Outgoing Call Line Select feature allows a outgoing call to be made by simply picking up the handset or by pressing the handsfree speakerphone **SPEAKER** button. The next available telephone line will be automatically selected for you. There is no need to press a **LINE SELECT** button to make a call unless you desire to do so.

Ringer Volume Adjustment

The volume of the telephone's ringer can be set by using the switch on the right side of the telephone. The master ringer switch has **OFF**, **LOW**, and **HIGH** positions. See Figure 8

Figure 8

Master Ringer Off / Low / Hi Ring Control



- The BE-5200 contains an automatic ringer volume control will reduce the sound level of the ringer when the telephone is in use. Whenever the telephone is being used, the ringer sound level will be automatically reduced to the **LOW** setting if the master ring control switch is set to the **HI** position.

Ringer On / Off Switches

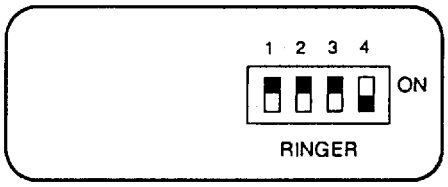
The audible ring signal for individual telephone lines of the BE-5200 can be turned off by setting the corresponding **RINGER** switch to the **OFF** position. The **LINE STATUS** LED indicators for each of the telephone lines will still function normally even if the audible ringer is disabled.

- When a ringer switch is set to the **OFF** position, the Automatic Incoming Line Select feature is disabled for that line.
- For example, to turn off line 4 ringer, set the ringer switch for line 4 to the **OFF** position. See Figure 9

* **NOTE**: Turning off the ringer will disable the Automatic Incoming Line Select feature for that line.

Figure 9

Switches on Bottom of Telephone



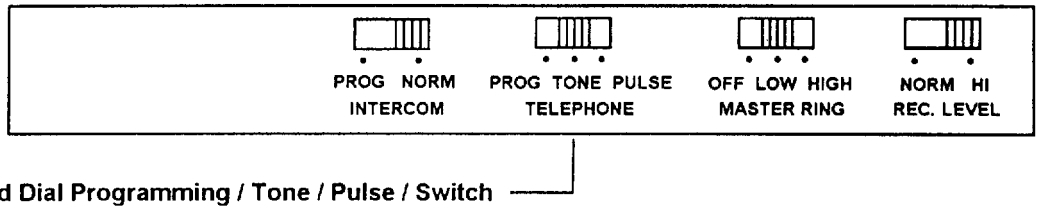
Tone / Pulse Switch

The BE-5200 telephone will operate in tone or pulse mode. Select **TONE** or **PULSE** mode by setting the **PROG / TONE / PULSE** switch located on the right side of the telephone to the correct position. See Figure 10

- If the BE-5200 is used with pulse dialing service, it can be switched to tone mode during dialing by pressing the ✱ (asterisk) key on the keypad. This feature is useful for using long distance services and tele-banking services. The BE-5200 will automatically return to pulse dialing mode when the call is completed.

Figure 10

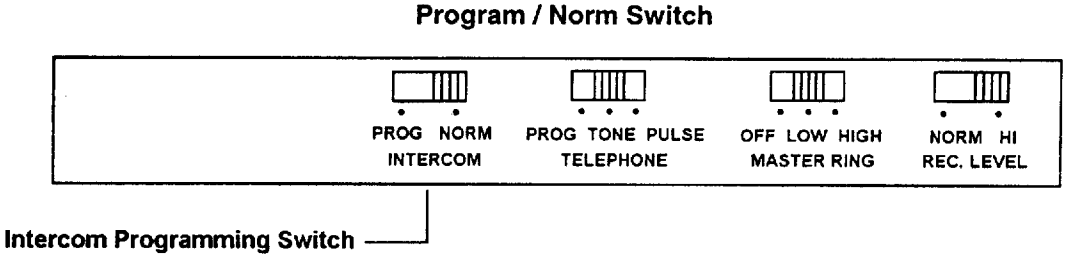
Program / Tone / Pulse Switch



Setting the Intercom Station Number

Each BE-5200 telephone in the system must have its own intercom station number. Set the **PROG / NORM** switch to **PROG** position. The **INTERCOM** LED indicator will flash continuously whenever the **PROG / NORM** switch is in the **PROG** position. See Figure 11

Figure 11



- Press the **SPEED DIAL / INTERCOM SELECT** button that corresponds to the intercom station number to be assigned to your station. The **INTERCOM** LED indicator will stop flashing and light constantly. Do not use intercom station numbers assigned to other BE-5200 telephones.

- After programming the intercom station number, the **PROG / NORM** switch must be returned to the **NORM** position and the flashing **INTERCOM** LED indicator will go out.

Programming the Speed Dialer

The BE-5200 telephone has twelve (12) speed dial memory locations with up to 16 digits per location. Set the **PROG / TONE / PULSE** switch to **PROG** position. See Figure 5

* **NOTE:** The BE-5200 will not accept telephone numbers into storage if the handset is out of the cradle or the handsfree speakerphone is activated during programming.

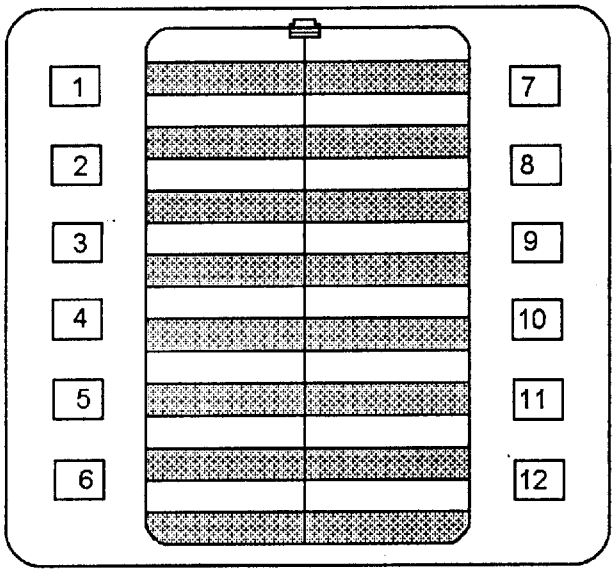
- Enter the telephone number to be stored using the dialing keypad. Up to 16 digits including **FLASH** may be programmed into each memory location. If you require more than 16 digits for accessing long distance services or computer banking, split the dialing string into two speed dial memory locations. Two or more speed dial memories can be recalled one after the other to form complex dialing strings.

- Press the **SPEED DIAL / INTERCOM SELECT** button that you wish to store the number.

- Repeat this procedure to store additional numbers. When programming the speed dialer memories is completed, set the **PROG / TONE / PULSE** switch to the position required for your type of telephone service.

Figure 12

Speed Dialer / Intercom Select buttons



- Lift the **SPEED DIAL / INTERCOM SELECT** index cover to write telephone numbers or intercom station names on the index card. Carefully press down and in on the retaining tab, then lift up to release the cover. See Figure 12

Programming a Flash

The **FLASH** button can be programmed anywhere in a speed dial memory dialing string as required to access the features of a PABX or the telephone network. Please refer to the documentation provided with your PABX telephone system for correct feature access procedures.

Pulse to Tone Dialing

The BE-5200 allows the user to switch from pulse to tone mode during dialing for accessing long distance services and computer banking. When in pulse dialing mode, pressing the * (asterisk) key will cause all subsequent dialing to be done in tone mode.

- The BE-5200 will automatically reset to **PULSE** dialing mode after you have completed your call.
- Tone switching may be stored as part of a speed dial memory dialing string.

Answering a Call using the Handset

When the telephone rings, lift the handset and you will automatically be connected to the telephone line that corresponds to the rapidly flashing **LINE STATUS** LED indicator. If the Automatic Incoming Call Line Select feature is disabled, lift the handset and momentarily depress the **LINE STATUS** button with the rapidly flashing LED indicator.

- Hang up the handset when the call has been completed. The **LINE STATUS** LED for the line you were using will go out.

Making a Call using the Handset

Confirm that **TONE / PULSE** select switch located on the right side of the telephone is set to the correct dialing mode.

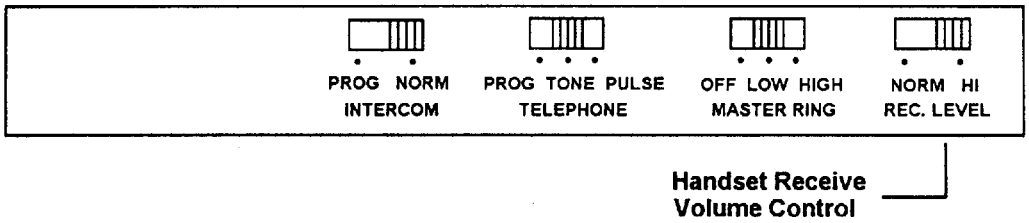
- Lift the handset, and the BE-5200 will automatically select the next available telephone line. If you wish, you can manually select a line by depressing the **LINE SELECT** button for any unused line. See Figure 4
- The **LINE STATUS** LED indicator for the telephone line selected will light. Listen for dial tone, then dial the telephone number.
- When you finish your call, hang up the handset and the **LINE STATUS** LED indicator for the line selected will go out.

Handset Receiver Level Control

The **REC. LEVEL** slide switch is used to increase the receive level of the handset. Set the **REC. LEVEL** slide switch to the **NORM** position for standard handset receiver audio level. See Figure 13

Figure 13

Handset Receive Volume Norm / Hi Level Control



- Set the **REC. LEVEL** slide switch to the **HI** position to increase the receive audio level for persons who may have difficulty hearing the incoming portion of a telephone conversation.

- Setting the **REC. LEVEL** slide switch to the **HI** position does not increase the transmit level of your speech into the telephone line.

Using the Handsfree Speakerphone

Following a few simple guidelines will ensure the best possible performance for the handsfree speakerphone. Use only enough volume to hear comfortably, too much volume may cause distortion. The receive volume level will depend on room acoustics and phone line conditions.

- Locate the BE-5200 telephone so that the handsfree microphone located in the front of the telephone is facing the user.

- Any vibration or noise in or near the surface on which the BE-5200 is placed can be picked up by the microphone and may cause unusual sound effects and degraded speakerphone operation. Avoid using the handsfree speakerphone in locations with high background noise levels.

Answering a Call using the Handsfree Speakerphone

The Automatic Incoming Call Line Select feature allows you press one button to answer the incoming call indicated by the fast flashing **LINE STATUS** LED indicator.

- Press the **SPEAKER** button and talk in a normal tone of voice towards the front of the telephone. The handsfree speakerphone will engage and the **SPEAKER** LED indicator will light.

- At the conclusion of the call, press the **SPEAKER** button to hang-up the line and the **SPEAKER** LED indicator will go out.

Making a Call using the Handsfree Speakerphone

Press the **SPEAKER** button to automatically select the next available line which are numbered 1, 2, 3, and 4. The handsfree speakerphone **SPEAKER** LED indicator and the **LINE STATUS** LED indicator for the telephone line selected will light. See Figure 4

- If the Automatic Outgoing Call Line Select function has been disabled, or if desired, the telephone line can be manually selected by depressing any unlit **LINE SELECT** button.

- Listen for dial tone prior to dialing the number. When your party answers, talk in a normal tone of voice towards the front of the telephone.

- Press the **SPEAKER** button to hang up, the **LINE STATUS** and **SPEAKER** LED indicators will go out.

Speakerphone Receive Volume Level Adjustment

The receive volume for the handsfree speakerphone can be adjusted by using the either of the two electronic volume control buttons located on the right side of the top of the telephone. Set the volume to a comfortable listening level. See Figure 4

- Press the **VOL ▲** button with the triangle pointing up to increase the sound level.
- Press the **VOL ▼** button with the triangle pointing down to decrease the sound level.

Handset to Speakerphone

Momentarily depress the **SPEAKER** button, and the **SPEAKER** LED indicator will light. Hang up the handset, and continue the conversation through the handsfree speakerphone.

- When you have finished your call, press the **SPEAKER** button and the **SPEAKER** LED indicator will go out.

Speakerphone to Handset

Lift the handset and continue the conversation using the handset. The handsfree speakerphone mode will be canceled automatically.

- Replace the handset in the cradle at the conclusion of the call.

Placing a Call on Hold using the Handset

A telephone call can be placed on hold at any time, but a intercom call cannot be put on hold. Press the **HOLD** button, the **LINE STATUS** LED indicator for the telephone line you are using will begin to flash slowly, indicating the call is on hold. The handset may be hung up without disconnecting the call.

While a call is on hold, another call can be answered or made using any of the other lines. More than one phone call can be put on hold at a time.

- A call placed on hold can be retrieved from the same telephone or at any telephone in the system by selecting the corresponding **LINE SELECT** button and lifting the handset.
- If the calling party hangs up while the line is on hold, the BE-5200 may respond to the line interrupt (CPC) signal which is sometimes generated by the telephone company central office. This will result in the BE-5200 canceling the hold and causing the line to hang up making the line available to receive another call.
- Call waiting service offered by the telephone company can cause a call placed on hold by the BE-5200 to be released by the call waiting signal. Normally, call waiting is not utilized when more than one telephone line is installed.

Placing a Call on Hold using the Handsfree Speakerphone

A call can be placed on hold while using the handsfree speakerphone. Press the **HOLD** button, the **LINE STATUS** LED indicator for that line will flash slowly to indicate that there is a call on hold.

- A call placed on hold can be retrieved from the same telephone or any telephone in the system by pressing the corresponding **LINE SELECT** button.

Making an Intercom Call

The BE-5200 intercom allows the user to call all individual telephones in the system. When in the intercom mode, the function of the twelve one touch **SPEED DIAL / INTERCOM SELECT** buttons is automatically changed from speed dial memory select to intercom station select.

- Lift the handset and momentarily press the **INTERCOM** button. The **INTERCOM** and **EXTENSION-IN-USE** LED indicators for your station will light at all stations.

- If the handset is not removed from the cradle, the BE-5200 will automatically engage the built in handsfree speakerphone when the **INTERCOM** button is pressed. The **SPEAKER** LED indicator will light, confirming the handsfree speakerphone is engaged.

- Press the desired **SPEED DIAL / INTERCOM SELECT** button or as indicated by the telephone index card if you have filled in the station identification information.

* **CAUTION:** Do not press more than one **INTERCOM** button within a two second period or may than one intercom station may be erroneously selected.

* **NOTE:** One of the **SPEED DIAL / INTERCOM SELECT** buttons must be pressed within ten (10) seconds of engaging the intercom function or it will automatically cancel.

- Speak into the handset or into the front of the telephone in a normal tone of voice when using the handsfree speakerphone

- Hang up the handset or press the **SPEAKER** button at the conclusion of the intercom call. The **SPEAKER** and **EXTENSION-IN-USE** LED indicators will go out.

Answering a Intercom Call using Handsfree Answerback

An incoming intercom announcement is preceded by a short tone. Handsfree answer back is automatically engaged during an intercom call.

- To respond to a intercom call, talk in a normal tone of voice in the direction of the telephone. When the conversation is complete and the calling party hangs up, the handsfree intercom will automatically be terminated.

Handsfree Intercom to Handset

An incoming intercom call can be answered privately by lifting the handset to cancel the handsfree speakerphone.

- If the station being called via the intercom is already on a call and is using handsfree speakerphone mode, a short tone at a reduced audio level will alert the called party of the incoming intercom call.
- Hang up the handset at the conclusion of the intercom call.

Flash

Accessing special services provided by the telephone company, or to access PABX system functions (transfer, conference, call pick-up, etc.) is often done by momentarily depressing the hook switch. The **FLASH** button provides the electronic equivalent of a precisely timed hookswitch flash.

- To activate the hookswitch flash, momentarily press and release the **FLASH** button.
- The **FLASH** button is functional in **TONE** or **PULSE** modes, handset or handsfree speakerphone modes, but does not function in the intercom mode.
- The BE-5200 flash timing is preset to 700 milliseconds and is not adjustable.

Call Conferencing

To use the BE-5200 to conference two outside calls at the same time, place the telephone line with the first person on hold by pressing the **HOLD** button.

- Place the second call on any available telephone line or press the **LINE SELECT** button for the second person to be conferenced is on hold.
- Do not place the second person on hold or the BE-5200 will remember this as the last call placed on hold for conferencing.
- Press the **CONF** button and the **CONF** LED indicator will flash, indicating that the conference mode is engaged.
- A slight decrease in the sound level on the lines will be experienced when using the conference function. This is normal when two lines are combined for conferencing.
- To remove a party from the conference, press the **LINE SELECT** button corresponding to the line with the caller you wish to continue the conversation. The flashing **CONF** LED indicator will go out, indicating that the conference is terminated. Select the line for the second party and hang up.

All Station Paging

The BE-5200 paging function allows a one-way paging announcement to be made to all intercom stations. A paging announcement to all stations can be made using the handset only.

- Lift the handset and momentarily depress the **PAGE** button. The **PAGE** LED indicator will flash at the originating station and will light at all other stations while a paging announcement is in process.
- While making the paging announcement, all telephone stations, except the originating station will hear the page via the built-in handsfree speakerphone.
- If a handsfree speakerphone conversation is in progress at other stations, the all station page will not be heard at that station. Instead, a short tone will be heard at a reduced audio level in the background by the user through the speaker.
- Hang up the receiver at the conclusion of the paging announcement and the flashing **PAGE** LED will extinguish

Last Number Redial

Any time a number is dialed manually or from one of the sixteen memory locations, it is automatically stored in the BE-5200 last number redial memory. To redial the last number dialed using the handset, lift the handset and the BE-5200 will automatically select the next available telephone line if Automatic Outgoing Line Select feature is enabled.

- Listen for dial tone, then press the **RDL** button. The last number dialed will be automatically redialed. See Figure 4
- Hang up the handset at the conclusion of the call.

Auto Call Busy Redial

The BE-5200 telephone allows the user to repeatedly redial a busy telephone number. The Auto Call Busy Redial feature can only be used if the handsfree speakerphone mode.

- Momentarily depress the **SPEAKER** button and the **SPEAKER** LED indicator will light to engage the handsfree speakerphone. This will select the next available line if the Automatic Outgoing Call Line Select feature is activated. If the Automatic Outgoing Call Line Select feature is not activated, press any unused **LINE SELECT** button.
- Press the **RDL** button and the **RDL** LED indicator will flash. Dial tone will be heard and after a second or two, the BE-5200 will automatically redial the last number dialed.

- During each Automatic Call Busy Redial attempt, the telephone line will stay off hook for thirty (30) seconds during each line busy redialing cycle, and release the line for fifteen (15) seconds prior to starting the next dialing attempt.

- The BE-5200 will attempt to redial the busy number fifteen (15) consecutive times before terminating redialing.

- If you wish to cancel the Auto Call Busy Redial feature prior to fifteen dialing attempts, press the **SPEAKER** button once.

- If the call goes through, you will be automatically in handsfree speakerphone mode but you must press the **RDL** button once to cancel further redialing attempts.

- If desired, the handset may be lifted to continue the call which will result in automatically canceling the Automatic Call Busy Redial feature. The **RDL** LED indicator will go out and you may continue with your call.

- Hang up the handset or press **SPEAKER** button at the conclusion of the call.

Compatibility

The BE-5200 is designed to work with other BE-5200 telephones. The design utilizes proprietary circuitry that allows each station to communicate only with other BE-5200 units without the need of a KSU (Key Service Unit) or central controller.

- The BE-5200 is compatible with the Bell South Supremacy 4300, TT Systems 4300 , TT Systems 5300bBLFas well as the Northwest Bell Techline 420 for line status indication and intercom functions.

- If a standard single line telephone is connected to any line used by the BE-5200 telephone, the line status of the single line telephone will not be displayed.

- Connecting several single line telephone devices such as a TAD and a FAX machine to line one may cause the BE-5200 line status indication to malfunction. Since line one is used to exchange data with other BE-5200 units, avoid connecting these devices to line one. It is recommended to use line two for connecting single line telephone devices when ever possible.

- Multiplex or skinny-wire multi-line KSU type telephone systems are not compatible with the BE-5200. Do not attempt to use the BE-5200 with this type of telephone system.

Using with CENTREX Telephone Service

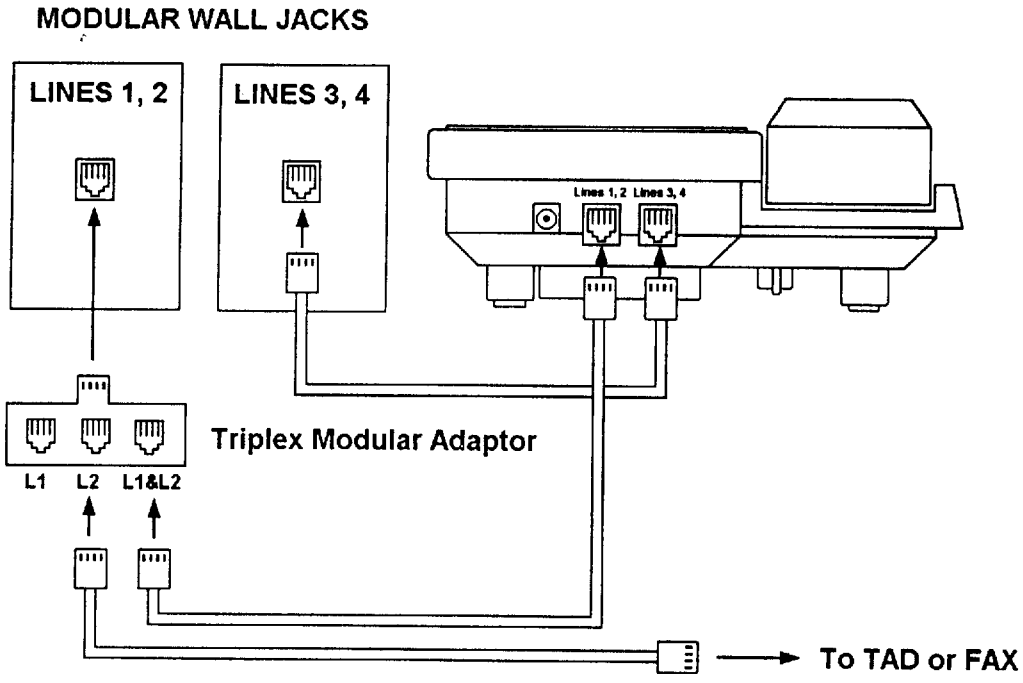
The BE-5200 telephone is compatible with CENTREX telephone systems as long as the following procedures are followed.

- A maximum of four (4) telephone lines can be connected to a group of BE-5200 telephones. This means a maximum of four (4) telephone numbers.
- Each telephone number (line) must be connected in the same line sequence assignment at each telephone within the same group. Failure to observe this rule will result in no intercommunication and or false line status indication.
- It is not possible to have intercom or line status indication between groups of BE-5200 telephones that do not have common telephone number (line) sequence assignment.

Connecting Fax Machines and Tad's

For single line telephone devices such as an telephone answering device, cordless phone, or fax machine, use a Triplex Modular Adaptor (not included) to connect these devices directly to the telephone line as shown in Figure 14.

Figure 14



- The Triplex Modular Adapter is available at most electronic stores including Radio Shack. The Radio Shack catalog number is **279-402**.
- If you wish to connect a single line telephone device to line 3 or 4, connect the Triplex Modular Adapter to the line 3 and 4 modular jack and refer to the BE-5200 **L3, L4** jack.
- Connect a modular telecord from **L1 / L2** on the Triplex Modular Adapter to the BE-5200 **L1, L2** jack.

Operation - continued

- Connect the modular telecord from your telephone answering device, fax machine, or other accessory to **L2** of the Triplex Modular Adapter.

- If possible, single line telephone devices should be connected to line two **L2** of the Triplex Modular Adapter instead of using line one.

Care and Maintenance

Maintenance

Your BE-5200 telephone has been designed to give years of trouble free service. It is a sensitive electromechanical instrument. To help insure its longevity, please read the following maintenance instructions:

- Keep the telephone dry, if it gets wet, first unplug the AC adaptor. Then wipe the telephone dry immediately, since liquids can contain minerals that can corrode electronic circuits.

- Use only mild detergents on a damp cloth to clean the BE-5200 telephone.

- Use and store the telephone only in normal temperature environments. High temperatures can shorten the life of electronic components and distort or melt its plastic parts.

- Keep your telephone away from dust and dirt, which can cause premature product failure.

- Handle your telephone gently and carefully. Dropping it can cause serious damage to the circuitry, or plastic case, which may result in causing it to malfunction.

- The BE-5200 telephone has built-in surge protection circuits that meet or exceed FCC requirements. However, an incident such as a lightning strike at or near the telephone or on the phone lines, could cause serious damage.

- If the BE-5200 is installed in an area with frequent and / or severe electrical storms, it is suggested that the telephone be disconnected during these storms or that additional surge suppression equipment be added to the installation.

- In case of trouble with the telephone, do not attempt to repair the telephone yourself. It is the responsibility of users requiring service to report the need for service to our Service Department. They will make the necessary arrangements for repair or replacement.

- Should you have any questions about the operation of your BE-5200 telephone, please call our Service Department at **914-968-2100**, between the hours of **9:00 A.M.** and **4:30 P.M.** eastern time.

Care and Maintenance - continued

Important Safety Instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, or injury to persons including the following:

1. Read and understand all instructions in this manual. Follow all warnings and instructions marked on the product.

2. Unplug the telephone from the wall outlet before cleaning. Do not use liquid cleaners, or aerosol cleaners. Use a damp cloth for cleaning.

3. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

4. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to the product.

5. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product in the bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register.

6. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.

7. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.

8. Do not overload wall outlets and extension cords as this can result in the risk of fire or electrical shock.

9. Never push objects of any kind into this product through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock. Never spill liquid of any kind on the product.

10. Do not disassemble this product, take it to a qualified serviceman when service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electrical shock when the appliance is subsequently used.

11. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.
    B. If liquid has been spilled into the product.
    C. If the product has been exposed to rain or water.

Technical Appendix

Power Supply Information

The BE-5200 telephone requires a source of AC power to function. The following power sources may be used.

- Each BE-5200 telephone comes supplied with an individual 120 volt AC to 9 volt DC @ 300 ma UL/CSA approved power adaptor as a power source.

- In the event of a power failure, loss of telephone service will occur due to the constant power requirements of the BE-5200 microprocessor and line status indicators. All memory data is retained by battery back-up and will not be lost in the event of a temporary AC power loss.

- Be sure to check and replace the memory back-up batteries every year.

- The BE-5200 telephone system can be used with a common power supply with battery back-up to allow system operation in the event of an AC power failure.

Common Power Supply Option

A system of up to twelve (12) telephones may be operated from a single common (not included) 9 volt DC power supply. Each BE-5200 must have two conductor power supply wiring home run from each telephone station to the common power supply.

- It is not recommended to run station to station (loop) or star configuration wiring to the common power supply. Each telephone station added to the system increases the total current requirements, so a much larger wire size must be used to assure proper operation.

- A minimum wire size of 22 gauge, 2 conductor (insulated) wire is recommended for each home run station to common power supply path.

- The common power supply must be rated by multiplying the number of telephones by the individual telephone current requirement of 300 ma.

- For example, if there are ten (10) telephone stations installed, the common power supply must be rated at 9 volts DC, at least three (3.0) amperes minimum.

System Wiring Installation Diagram

Telephone Jack Wiring

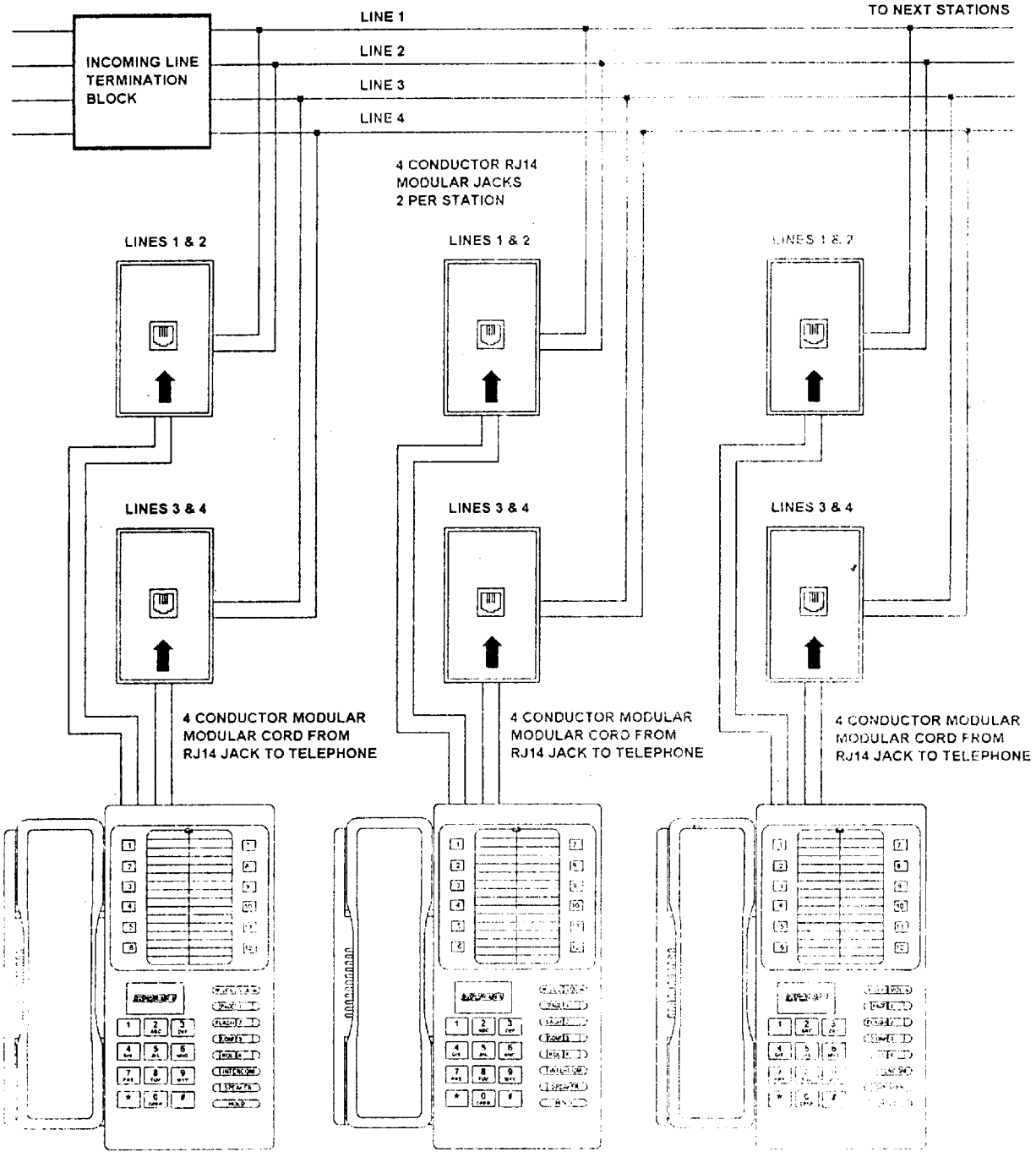
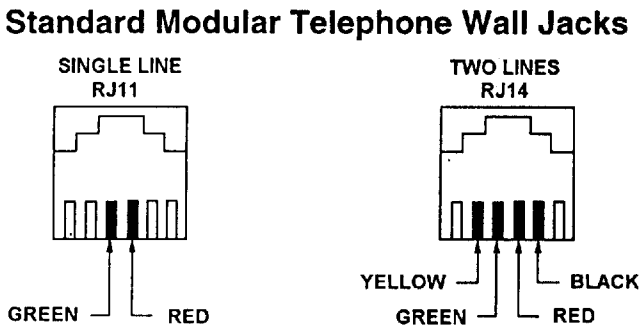


Figure 15

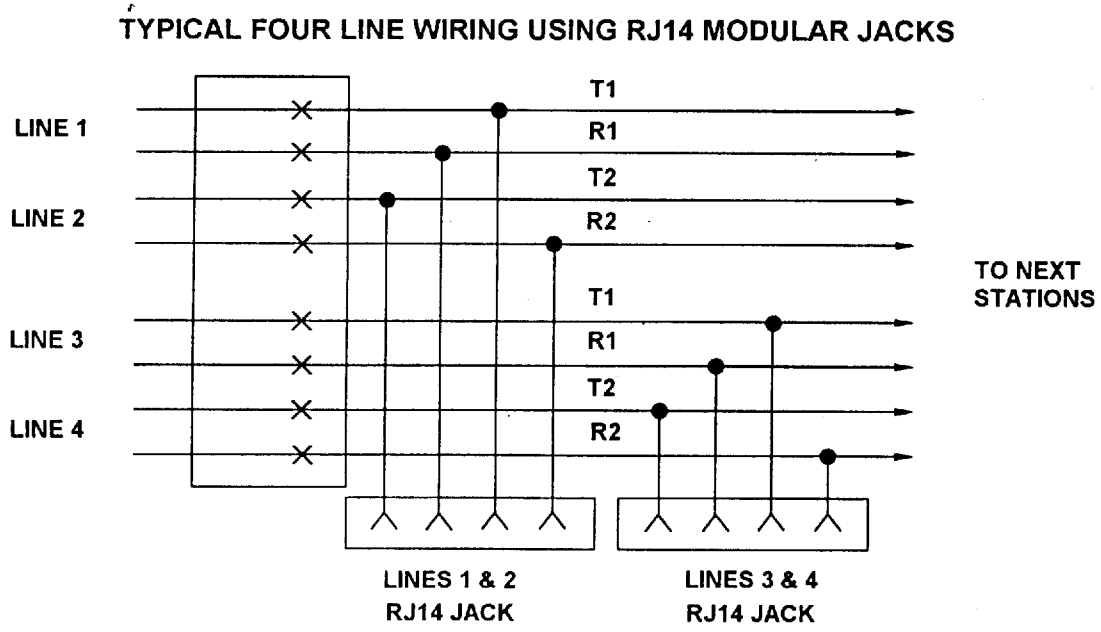
Jack Wiring Diagram

Figure 16



IMPORTANT: USE 24 GAUGE / 4 CONDUCTOR TWISTED PAIR TELEPHONE CABLE

Figure 17



Trouble-Shooting Guide

Non-KSU technology uses no central controller or master telephone. Every telephone in the system operates independently of the other telephones in the system. Should one of the telephones fail, it will normally not effect the other stations in the installation. If the failed telephone should effect the other stations, remove the defective telephone and the rest of the system will continue to operate.

If your BE-5200 is not operating properly, check the following list.

SYMPTOM	POSSIBLE CAUSE
No Dial Tone	-Is the handset plugged in? -Are the phone lines connected? -Is a line select key pressed? -Is the AC adaptor plugged in?
Cannot Dial a Phone Number	-Is there dial tone? -Is the Program/Tone/Pulse switch set correctly? -Is a line select key pressed? -Is the phone connected to a working telephone jack?
No Line Status Indicators	-Is there AC power?
Ringer Does Not Work	-Is the master ringer switch set to the "OFF" position? -Is the individual ringer DIP switch in the "ON" position for the selected lines?
Speed Dialer Will Not Store Numbers	-Were the numbers stored? -Are the memory back-up batteries installed? -Are the memory back-up batteries good?
Losing Calls On Hold	-Do you have call waiting?
Intercom Does Not Work	-Is the intercom key pressed? -Are the intercom station ID numbers properly programmed? -Do all telephones share line one?
Line Status Indicators Do Not Change Indication	If the BE-5200 is unplugged from the telephone line or the AC power while in use, it will display the last line status. It can be re-set by removing and re-applying power

Technical Appendix - continued

Specifications

Mechanical Specifications

Size:	9.0" L X 7.0" W X 4.0" H
Weight:	2.5 pounds
Operating Temperature:	0 to 110 º F
Storage Temperature:	-40º to +160º F

Electrical Specifications

Line Characteristics	nominal	limits	units
Line Voltage	48	19 - 105	VDC
Loop Resistance	200	300 max	Ohms
Loop Current in use	40	20 min - 80 max	DC ma
Loop Current on hold	40	20 min - 80 max	DC ma
Ring Detectors			
Sensitivity	40	35 min	VAC
Frequency	20	16 -66	Hz
Sound Pressure Level	82	80 min	dB@1 meter
Speech Network			
Transmission Level	-20	-22 to -18	dbV@ 1078 Hz
Receive Level (Normal)	86.5	84.5 to 89.5	dB / 20 uPa
Receive Level (Amplified)	92.5	90.5 to 95.5	dB / 20 uPa
Sidetone Level	85.5	80 - 90	dB / 20 uPa
Intercom Circuit			
Intercom Frequency / Originate	284	282 - 286	KHz
Intercom Frequency / Answer	303	301- 305	KHz
Intercom Frequency / Page	75	74 - 76	KHz
Power Output	-66	-64 to -68	mW
Signal to Noise Ratio	52	50 min	dB

Technical Appendix - continued

Specifications - continued

Audio Amplifier	nominal	limits	units
Power Output	275	225-325	mV
Sound Pressure Level	82	80 min dB	@ 1 meter
Frequency Response	1 kHz	350 - 3,100 Hz	+/- 3 dB
Distortion		less than 5% THD	

Status Indication Circuitry

Flash Rate (Hold)	1	.6 - 1.75	Hz
Flash Rate (Ring)	20	15 - 25	Hz

Speakerphone Circuit

Fast switching voice operated simplex with built-in transmit and receive AGC and automatic compensation for background noise levels.

Memory Dialer	nominal	limits	units
Memory Locations	20 max	-	-
Digits Per Location	16 max	-	-

Tone Dialing

Row 1	697	691 - 703	Hz
Row 2	770	763 - 777	Hz
Row 3	852	844 - 860	Hz
Row 4	941	933 - 949	Hz
Column 1	1209	1198 - 1220	Hz
Column 2	1336	1324 - 1348	Hz
Column 3	1477	1464 - 1490	Hz

Pulse Dialing

Dialing Rate	10	8 - 11	PPS
Make: Break Ratio	40:60	36:64 - 42:58	%

Specifications - continued

Automatic Dialing Timing	nominal	limits	units
Dialing Speed (Tone)	8	7 - 9	TPS
Interdigit Pause (Tone)	80	75 - 85	mSec
Interdigit Pause (Pulse)	820	720 - 1000	mSec
Flash			
Flash Time	700	670 - 730	mSec
Auto Busy Redial			
Auto Redial Delay between Attempts	30	28 - 32	sec
Maximum Auto Redial Attempts	15	-	-
AC Adaptor			
Input Voltage	120	104.5 - 130	VAC - RMS
Input Frequency	48 min	48 Hz min	Hz
Output Voltage (full load)	7.5 - 10	7.5 - 10	VDC
Output Current	300 max	300 max	maDC

Memory Backup Batteries

Two (2) type EverReady LR44 or Radio Shack 357A button size batteries, alkaline type are recommended.

Specifications subject to change without notice.