

COMDIAL

Installation and Operating Instructions For The Voice Express 41C Telephone

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COMDIAL

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This User's Guide is applicable to following
Voice Express 41C telephone: VX41C-xx
Rev F and later

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No Comdial dealer nor any other person or entity other than Comdial may extend or modify this warranty, and no such modification or extension shall be effective unless it is in writing.

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INTRODUCTION

The Voice Express 41C telephone is an electronic, full-featured speaker- phone and automatic dialer all in one unit. It can operate on either central office (CO) or private branch exchange (PBX) telephone lines. The optional Voice Express multiline keystrip provides multiline access to the Voice Express 41C telephone.

Some of the features which the Voice Express 41C provides are:

FORTY-ONE MEMORY LOCATIONS - Includes eight primary, thirty-two secondary, and one security location. You can store 23 digits per location.

CHAIN DIALING - Allows dialing of more than one memory location in succession for extended dialing requirements. You can store one memory location selection ahead. You can freely intermix manual and automatic dialing.

TWELVE-DIGIT VACUUM FLUORESCENT DISPLAY - Displays time of day, timer, and scrolls across all twenty-three digits of a dialed number. The information display is soft green.

LND (LAST NUMBER DIALED) - Automatically dials the last number manually dialed from the telephone keypad.

AUTO REDIAL - Automatically redials a busy or unanswered number up to ten times.

TWO-WAY SPEAKERPHONE - Provides handsfree communications ability.

MIC MUTE - When enabled, prevents distant party from hearing. Can be used as a "hold" feature.

PULSE TO TONE CHANGE - Allows user to access DTMF tone services from a telephone configured to operate in the pulse mode.

PROGRAMMABLE AUTOMATIC PAUSE - Stored number can include a pause to allow the telephone time to detect automatically dial tone and computer generated control tones.

PROGRAMMABLE TIMED PAUSE - Stored numbers can include a timed two second pause wherever it is needed.

TIMED HOOK FLASH - A hookswitch flash interval of 600 msec. is provided. Manually enable it or program it as part of a stored number.

ELECTRONIC LOCK - Prevents unauthorized use of the keypad and security code location display or dialing and disallows all number storage.

CLOCK - Shows time of day in 12-hour format with an AM or PM sign, or in a 24-hour format (mode is user programmable).

ALARM - Programmable timed alarm.

TIMER - Shows elapsed time with minutes and seconds indication.

POWER FAIL OPERATION - During AC power failure, user can operate the Voice Express 41C telephone as an industry-standard tone-dial telephone. Memory dialing is not possible during a power failure unless the optional batteries are installed. Internal circuitry retains the stored numbers during a power failure for about 24 hours.

OPTIONAL BATTERIES - You can install four AA-type batteries in the Voice Express 41C telephone. During an AC power failure, the batteries will provide power for the pulse (rotary) dialing mode and for automatic dialing capability. Power will be provided for about five minutes. (Speakerphone operation is not provided for.) Provide an additional five minutes of operating time each time the reset switch is pressed. Additionally, these batteries will keep stored numbers for about one year without AC power.

LOW BATTERY INDICATION - The display will show when the optional batteries require replacement.

REPAIR SERVICE

FCC regulations do not permit repair of this telephone by anyone except the manufacturer or their authorized agent. Return a defective telephone to the place of purchase or send it prepaid to the address shown below.

Comdial will, at its option, either repair a defective telephone or replace it with a remanufactured unit. Out of warranty repairs will be done at a fixed charge to the purchaser. For information on this charge, please call or write Comdial at the address listed below.

When returning the telephone for repair or exchange, please be sure to pack it carefully to prevent damage. Any damage to the telephone during shipment will be the responsibility of the purchaser. Ship the telephone freight or postage prepaid.

Comdial
1180 Seminole Trail
Charlottesville, VA 22901
Attention: Repair Department
Telephone: (804) 978-2400

Matrix ringing allows a 1A2 system to provide line appearance to a telephone but deny ringing for the line. With this feature, system telephones can share the same lines yet have different lines ring at different telephones.

If matrix ringing is provided to the Voice Express 41C telephone, set the configuration switch to ON. If it is not provided, set the configuration switch to OFF. Refer to Figure 5 and Table 1 for switch setting details. Also, when matrix ringing is enabled, set the MULTI/STD switch to MULTI. Failure to do this may allow the telephone to ring continuously.

Selected Ringing

With a six-key or ten-key keystrip installed and the MULTI/STD switch set to the STD position, the only line that will ring is the one preselected by a latched-down line key. While this is not the normal mode of operation, it does provide a simple "prime line only" ringing assignment for a preselected line. You can provide a "do not disturb" mode by setting all of the keystrip keys in the unlatched position (no ringing will occur). The MULTI/STD switch setting does not affect the visual indication of incoming ringing. Incoming ringing always causes the line key light of the ringing line to flash.

KEYSTRIP OPERATION

To answer a call with a multiline keystrip, press the line key of the ringing line to select it. Answer the call using the available Voice Express 41C telephone features. To make a call, select a line with a keystrip key. Use the available Voice Express 41C telephone features to place the call.

Conferencing

If the conferencing option is arranged on the six-key or ten-key keystrip (per the keystrip instruction sheet), press two line keys simultaneously to join the lines in a simple conference call. Since this is a simple mechanical conference connection, only two lines can be conferenced at one time using this method. Transmission levels on the conferenced lines may not always be completely adequate because of line conditions. When the conference call is complete, unlatch one or both line keys to prevent possible line interference at this telephone or at any other telephone connected to the same line.

Conferencing using a three-key keystrip is not recommended.

Signalling

You can arrange on one or more of the keys on a six-key or ten-key keystrip for switching or signalling action instead of line selection (according to the keystrip instructions). If this is done, press and release the arranged key to activate the arranged action. If a buzzer is included in the keystrip for signalling purposes, adjust it for required volume.

Switching and signalling options are not available with the three-key keystrip.

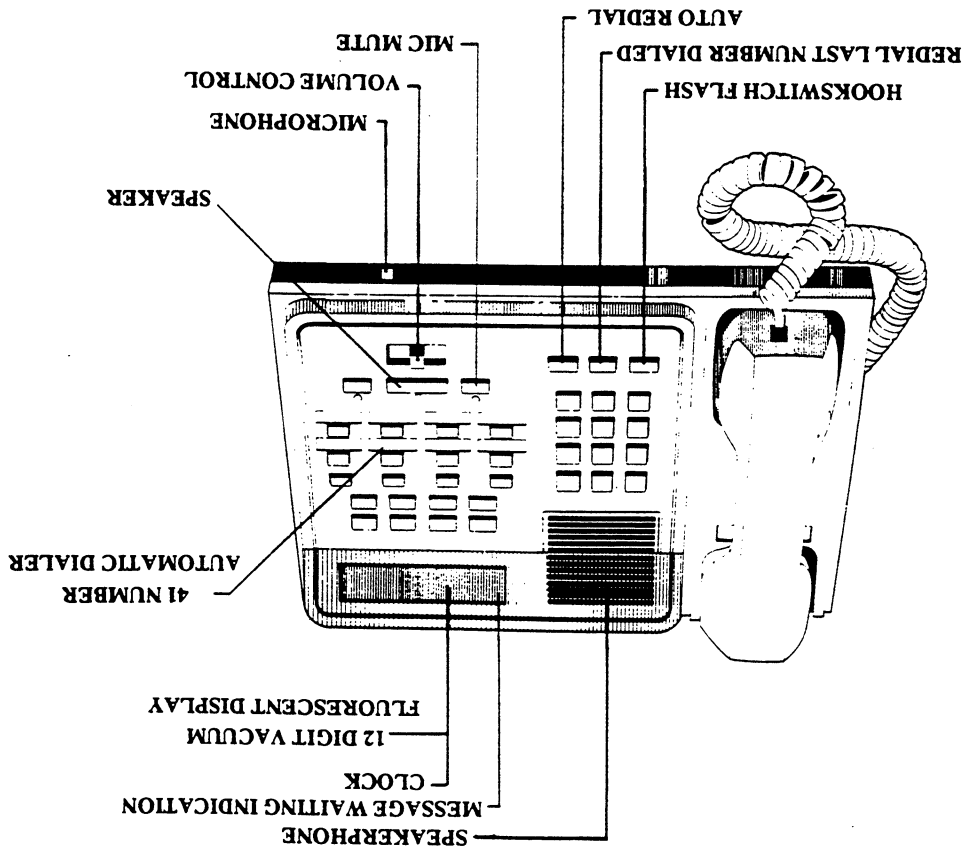


Figure 1. Voice Express 41C Telephone Controls And Indicators

MULTILINE KEYSTRIP INFORMATION

INTRODUCTION

Combine the Voice Express 41C telephone with matching multiline keystrips for either direct connection to two CO/PBX lines or connection to 1A2-type key systems. The addition of a multiline keystrip does not affect the operating features of the Voice Express 41C telephone. It does, however, add enhancements such as: multiline pickup, call hold, and line termination operations common to key systems. The 1A2 key system operation is not affected by the connection of a Voice Express 41C telephone and multiline keystrip.

Voice Express keystrips are available in three-key (two-line), six-key (five-line), and ten-key (nine-line) models. Each keystrip is shipped with thorough, easy-to-use installation and operating instructions.

TYPE	PRODUCT CODE
Three-Key Model (Two Lines With Hold)	KBA2-xx
Six-Key Model (Five Lines With Hold)	KBA5-xx
Ten-Key Model (Nine Lines With Hold)	KBA9-xx

xx=color

You can combine up to four Voice Express 41C telephones each equipped with three-key keystrips to form a two-line, non-private system configuration. Such a system does not require a key service unit. The three-key keystrips will provide line status indication to the equipped stations.

KEYSTRIP INSTALLATION

Refer to the keystrip installation instructions, included in the keystrip carton, for complete installation details.

During installation, modify the six-key and ten-key, 1A2-type keystrips to allow conference line capability (if needed). Additionally, modify unused line keys so they can be used for signaling and switching functions (if needed). A signalling buzzer can be mounted inside the keystrip housing if desired. See the keystrip instructions for complete information for using these options.

RINGING SELECTION

Common Audible

When installing a multiline keystrip, set the MULTI/STD switch on the rear housing of the telephone to the MULTI position. This setting insures that the lines will ring at the station according to the common audible ringing arrangement of the system. An incoming ring causes the line key light of the ringing line to flash.

Matrix Ringing

While the normal ringing choice of 1A2 systems is common audible ringing, the system wiring can be configured for matrix ringing if required.

Table 1. Function Switch Configuration

CONFIGURATIONS	SWITCH SETTINGS	RINGER EQUIV. NO.
MESSAGE WAITING ON SPARE PAIR WITHOUT A-LEAD CONTROL AND WITHOUT MATRIX RINGING (FACTORY SETTING)		0.9B
MESSAGE WAITING ON SPARE PAIR WITH A-LEAD CONTROL AND WITHOUT MATRIX RINGING (6-WIRE LINE CORD REQUIRED)		0.9B
MESSAGE WAITING ON TIP AND RING PAIR WITHOUT A-LEAD CONTROL AND WITHOUT MATRIX RINGING		Z
MESSAGE WAITING ON A-LEAD PAIR WITHOUT A-LEAD CONTROL AND WITHOUT MATRIX RINGING		0.9B
MESSAGE WAITING ON A-LEAD PAIR WITHOUT A-LEAD CONTROL AND WITH MATRIX RINGING		0.9B
MESSAGE WAITING ON A-LEAD PAIR WITH A-LEAD CONTROL AND WITH MATRIX RINGING		0.9B
MESSAGE WAITING ON SPARE PAIR WITH A-LEAD CONTROL AND WITH MATRIX RINGING (6-WIRE LINE CORD REQUIRED)		0.9B
MESSAGE WAITING ON SPARE PAIR WITHOUT A-LEAD CONTROL AND WITH MATRIX RINGING		0.9B
MESSAGE WAITING ON TIP AND RING PAIR WITH A-LEAD CONTROL AND WITHOUT MATRIX RINGING		Z

High voltage M/W = 130 VDC nominal
 Low voltage M/W = 5.0 to 50.0 volts AC or DC

OPERATION

The Voice Express 41C telephone is working as soon as installation is successfully completed and a dial tone is heard. Calls can be received and originated and the automatic dialer keys can be programmed.

BASIC OPERATION

To make basic handset call,

1. Lift handset. Hear dial tone.
2. Dial desired number on keypad.

-or-

Press the desired redial or automatic dialer key(s).

3. Hang up handset to end call.

To answer call using handset,

Hear ringing and lift handset.

SPEAKERPHONE OPERATION

To make speakerphone call,

1. Press **SPEAKER**. The light above the key will turn on.
2. Adjust volume with slide control located below the key.
3. Dial numbers from keypad, redial, or automatic dialer keys.
4. When party answers, begin conversation.

To answer speakerphone call,

- Hear ringing, press **SPEAKER**, begin conversation.

To disconnect speakerphone call,

- Press **OFF**. Light will turn off.

To use handset during speakerphone call,

- Lift handset and continue call.

To return to speakerphone from handset use,

1. Press **SPEAKER**. Speaker light will turn on.
2. Hang up handset.

MUTE

The microphone in both the handset and the speakerphone can be muted to prevent the distant party from overhearing a local conversation.

To mute the microphone,

- Press **MIC MUTE**. The light above the key will flash.

NOTE: If on handset call, do not hang up handset in cradle during mute condition. To do so will disconnect call.

To un-mute microphone,

- Press MIC MUTE. The light will turn off.

FEATURES OPERATION

DISPLAY

The Voice Express 41C telephone can store and use numbers of up to 23 digits in length. The display will only show 12 digits at a time (normally the last 12). The remaining digits scroll to the left.

To view scrolled digits or to recall number to display after showing another feature,

- Press DISPLAY.

REDIALING

LND (Last Number Dialed)

To redial the last manually dialed number,

- Press LND. The number will be redialed automatically.

Auto Redial

This feature will redial the last busy or unanswered number dialed (either manually or automatically). If the redialed number is busy or unanswered, the telephone will hang up and try again in 60 seconds. It will repeat this action ten times.

To engage auto redial,

1. Dial number, hear busy or no answer.
2. Hang up (Press OFF if on speakerphone).
3. Press AUTO REDIAL. Display will show number dialed. During periods between dialing, display will show Auto rdl, alternating with time display. The feature will cause the telephone to,
 - Turn on the speaker.
 - Automatically dial number. The MIC MUTE light will turn on to show muted condition.
4. If called party answers within 60 seconds, pick up handset (press MIC MUTE if on speakerphone). If you do not pick up the redialed call within 60 seconds, it is cancelled.

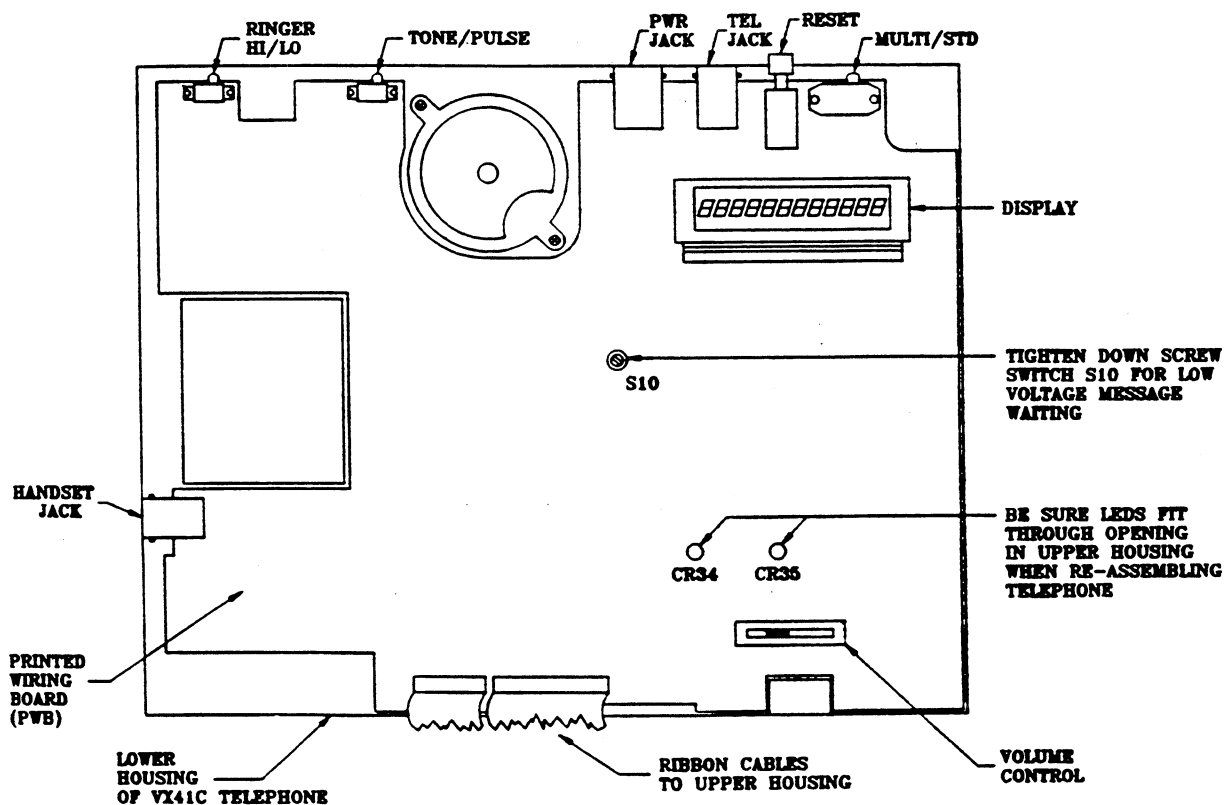


Figure 6. Low Voltage Message Waiting Switch Location

To cancel auto redial,

- With telephone idle, press OFF.

NOTE: Other station usage will cause auto redial to wait for that action to be completed before it resumes. Any last number dialed (LND) action is disabled during an auto redial sequence.

AUTOMATIC DIALING

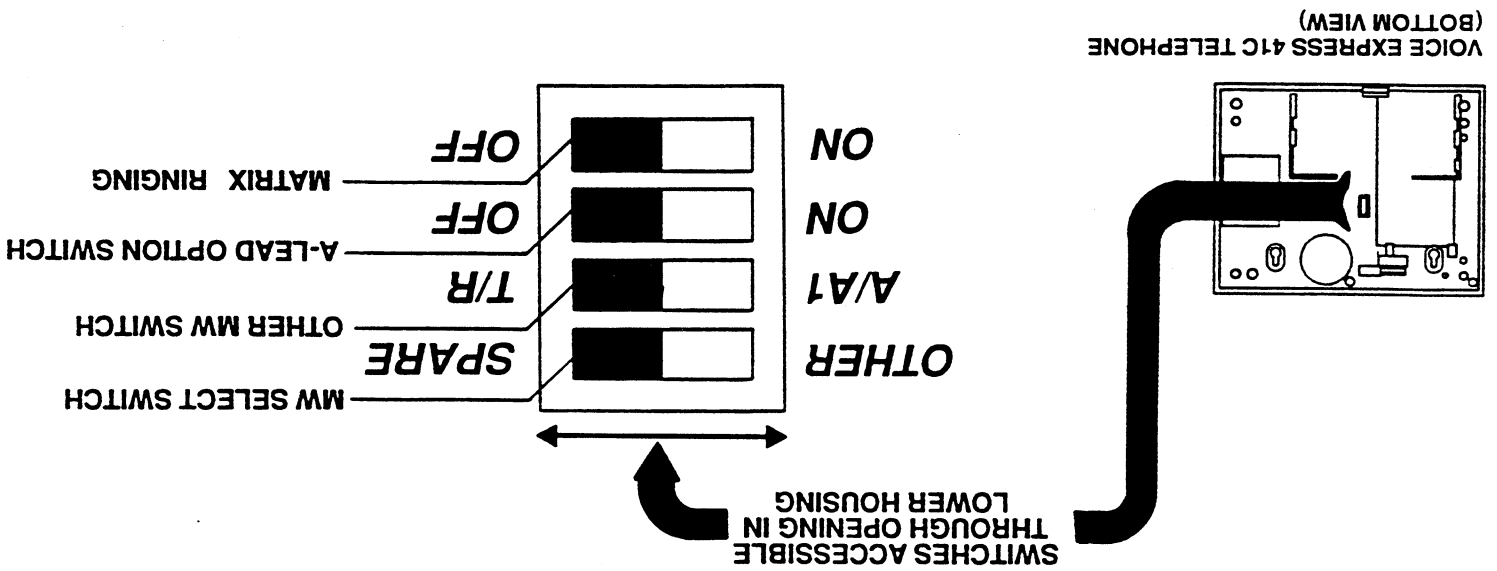
Introduction

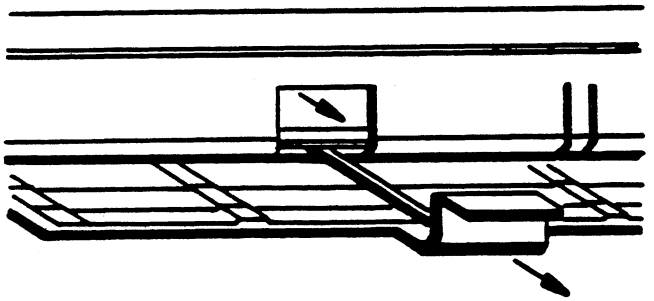
The Voice Express 41C telephone supports the storage of up to 41 numbers for automatic dialing. Each stored number can be up to 23 digits in length. There are eight primary locations (numbered 1 through 8), 32 secondary locations (number keys prefixed with color keys), and one security code location.

Store a number that is longer than 23 digits in two parts at adjacent memory locations. Chain-dialed it from these two locations.

Record the numbers to be programmed on the chart shown in Figure 2. The telephone has a pull-out directory. Fill it out to provide a convenient reference for the stored auto dial numbers. The directory location is illustrated Figure 2.

Figure 5. Message Waiting And A-Lead Switches





	1	2	3	4
1				
2				
3				
4				
5				
6				
7				
8				

Figure 2. Pull-Out Directory

2. Turn the telephone up side down to expose the hardware that attaches the top housing to the bottom housing. Remove these four screws.
3. Hold the top and bottom housings together while turning the telephone right side up. Set the telephone on the work area.
4. Carefully lift the upper housing away from the lower housing to expose the internal circuitry. You do not need to disconnect any internal cables.
5. Refer to the sketch shown in Figure 6, and locate the screw switch labeled S10.
6. Tighten the switch down with a flat-blade screw driver to enable low voltage message waiting detection.
7. Replace the upper housing on the lower housing.

CAUTION

Do not pinch or crimp any wiring. Be sure that the light emitting diodes (LEDs CR34 and CR35) (protruding up from the circuit board) fit properly into their respective openings in the upper housing. Also, be sure that all conductors, including the keypad membrane, are properly seated.

8. Hold the top and bottom housings together, then turn the telephone up side down, and set it on the work area.
9. Replace the hardware removed in step 2.
10. Test the Voice Express Telephone for proper operation.

A-Lead Control

A-lead control leads are available at the line jack on pins 2 and 5. Enable or disable them as the site needs dictate. Set the configuration switches to allow the Voice Express 41C telephone to provide A-lead control. Refer to Figure 4 and Table 1 for details.

Matrix Ringing

This switch is used when the Voice Express telephone is configured with a six- or ten-key keypad. Refer to page 25 for complete details.

FUNCTION SWITCH SETTINGS

Ringer Control

To control the loudness of the tone ringer, set the RINGER switch (located on the rear of the housing) to the desired LO or HI setting.

Tone/Pulse Dialing

The Voice Express 41C telephone can operate in environments which require DTMF or PULSE (rotary) dialing modes. To match the telephone to the local dialing needs, set the TONE/PULSE switch (located on the rear of the housing) as needed.

Message Waiting

The Voice Express 41C telephone can receive either high voltage or low voltage message waiting at a host system. Apply the host system message waiting at the telephone line jack. Apply it at either the tip and ring pair (pins 3 and 4), the A and A1 pair (pins 2 and 5), or the spare pair (pins 1 and 6).

To enable the Voice Express 41C telephone for message waiting, set the configuration switches for the required message waiting parameters. Refer to Figure 5 and Table 1 for details.

NOTE: When the message waiting pair is connected to the tip and ring pair of the line jack, the FCC registration code of the telephone will be KX and the REN will be Z. The telephone will be so marked on the registration label attached to the bottom housing. This KX registered device is intended to be connected behind a host PBX only. Direct connection to the CO line may not be compatible and is not permitted without the prior approval of the telephone company office supplying the line.

Low Voltage Message Waiting Reception

The Voice Express 41C telephone is arranged at the factory to receive high voltage message waiting signals. To arrange the telephone to receive low voltage message waiting signals, adjust the internal switch, that is available for this purpose, to a different setting.

Since this procedure requires that the telephone housing be opened, it should only be performed by qualified personnel.

CAUTION

The Voice Express 41C telephone is sensitive to static electricity discharge. To avoid electrostatic discharge damage, be sure that your body and the workplace are properly grounded.

To adjust the internal message waiting switch, proceed as follows:

1. Disconnect the wall transformer cable from the telephone power jack.

Programming The Automatic Dialer

To store a number (while the telephone is idle or active on a call),

1. Press STORE. The display will show a period at the bottom of each digit location.
 2. Press memory key 1 - 8 for primary location.
- or-
- For secondary location, press color key plus memory key 1 - 8.
 3. A number that is stored now will show on the display. If correct, select next location.
 4. Dial new number for storage if desired. Number will scroll across display from right to left as dialed.

NOTE: Press the AUTO PAUSE key to store a wait for dial tone detection. Press the TIMED PAUSE key to store a timed two-second pause. Each auto pause or timed pause occupies one digit of storage space. The auto pause is shown as a P on the display and the timed pause is shown as a . . . Refer to separate discussion on page 12 for complete details.

If the telephone is being operated in the pulse (rotary) dialing mode, the # and * keys can be stored as part of a number. When stored, they will cause a switch to DTMF tone dialing to occur at the point in the number where the # or * is met.

4. Repeat steps 1-3 to program all desired locations.
5. Press STORE to end procedure.

Programming The Security Code

NOTE: Use this location to keep a dialing sequence private.

To store a number at the SECURITY CODE location,

1. Press STORE
2. Press SCTY CODE to select location.
3. Dial number
4. Press STORE again

Any number that is stored there now will not show on the display. A newly stored number will show on the display for proof but cannot be recalled for later viewing.

Using The Automatic Dialer

To dial a number from one of the memory locations,

1. Press memory key 1 - 8.

-or-

2. Press color key plus memory key 1 - 8.

-or-

Press SCTV CODE.

NOTE: If the electronic lock feature is active, the security code is blocked from use until unlocked.

The Voice Express 41C telephone will,

- Turn on the speakerphone (if the handset is on hook).
- Automatically dial number. Hear the dialing sequence see the number show on the display (except the security code number).
- 3. When called party answers, continue with speakerphone conversation or lift handset for private conversation.

To dial a second number as part of same dialing code (chain dialing),

- Press second memory location key immediately after pressing first one.

-or-

- Wait until first number has finished then manually dial second number from keypad.

HOOKFLASH

Many host systems use a hookflash signal for custom calling features.

To send a 600 msec. (+/- 10 msec.) hookflash signal on the line,

- Press HOOK FLASH

AUTOMATIC PULSE TO TONE SWITCHING

When the Voice Express 41C telephone is operating in a pulse (rotary) dial mode, you can make an automatic shift to DTMF tone dialing. To do this for the current number being pulse dialed, press the # or * key at the point in a number where you want the shift to take place. The remainder of that number is dialed using DTMF tones. The telephone will remain in the DTMF tone dialing mode until hang-up occurs.

To store a pulse-to-tone shift as part of an auto dial, LND, or auto redial number,

- Press # or *

To make an automatic shift to tone dialing while manually dialing a number,

1. Begin dialing number (in pulse mode).

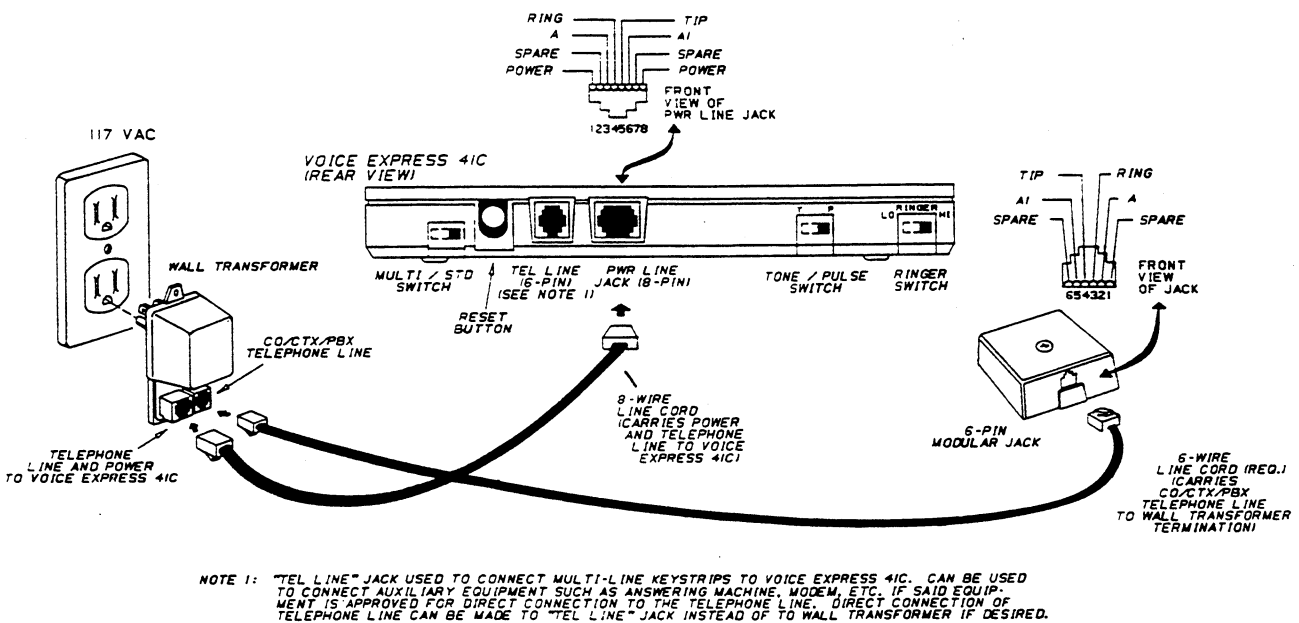


Figure 4b. Voice Express 41C Telephone Installation with Optional Wall Transformer Accessory Kit (provides single cord wiring to telephone for electrical power and telephone line)

Elapsed time will remain showing on the display for 15 seconds. To remove it sooner,

- Press **CLOCK** or **ALARM**

-or-

- Engage manual or automatic dialing.

NOTE: Answering a call during a timer operation will not stop the timer.

ALARM

The Voice Express 41C telephone has a 24-hour appointment alarm with a distinct tone sound.

To set the alarm,

1. Press **STORE ALARM**. The current setting is set to 0-00.
2. Dial the alarm setting. A 12-hour or 24-hour format is determined by the current clock format.
3. Press **STORE**. A stored alarm is shown by an "A" next to the time display.

To view an alarm,

- Press and hold **ALARM**. The display will show the current alarm time.

To clear an alarm time,

- When idle, press **STORE ALARM STORE**.

- While sounding, press **ALARM**

To allow alarm to remain set,

- Allow tone to sound for full 20 seconds. Alarm then turns off and resets for same period 24 hours later.

AUTO PAUSE

Use the **AUTO PAUSE** key to store an automatic pause into a memory dial location or as part of an LND or auto redial number. Each pause occupies one digit of storage and shows as a "P" in the display. When stored as part of a number, an auto pause causes a wait for dial tone detection to occur. When it occurs, the automatic dialing continues. This is useful when storing host system access numbers that require a dialed code to get outside dial tone before a number is dialed. Normally, dialing continues automatically after the tone detection occurs. If line conditions prevent reliable dial tone detection by the auto pause digit, you can force continued dialing after the auto pause.

To store an automatic pause as part of a stored number,

- Press **AUTO PAUSE** during number programming.

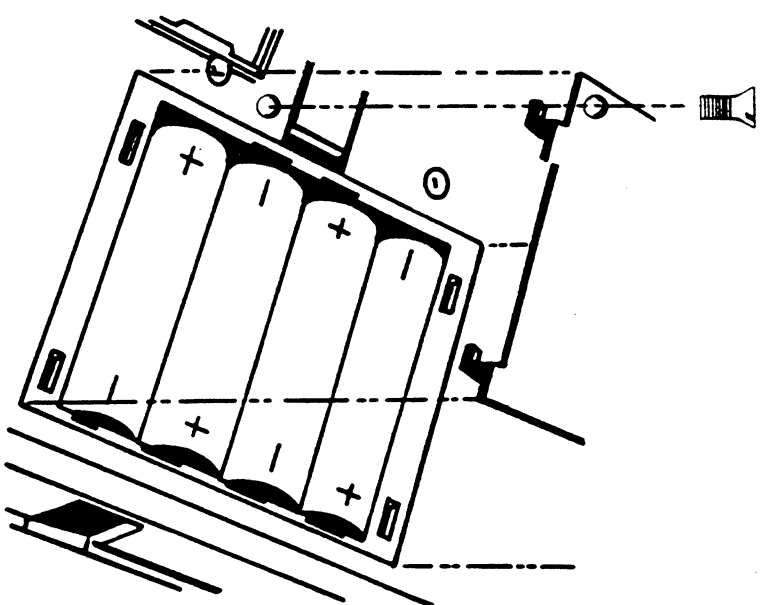


Figure 3. Battery Installation

INSTALLATION DETAILS

1. Locate the Voice Express 41C telephone within six feet of a standard 117 VAC electrical outlet and make the installation shown in Figure 4.
2. The Voice Express 41C telephone includes two line cords, a 6-conductor and an 8-conductor, and a wall plug power transformer.
3. Suppliers sell keystrips that support two-line and multiline operation.
4. Get batteries locally if they are needed.

POWER CONSIDERATIONS

POWER-FAIL OPERATION

The Voice Express 41C telephone provides basic telephone service (manual DTMF dialing and incoming call answering with ringing) during a power-fail condition.

EXTERNAL POWER TRANSFORMER

The Voice Express 41C telephone includes an external AC transformer. Connect it to the telephone and plug it into the AC outlet to make all operating features available for use.

MEMORY RETENTION

Circuitry in the Voice Express 41C telephone maintains the stored contents of the memory dialing features while the telephone is un-powered. The memory contents are retained by this circuitry for about 24 hours.

OPTIONAL BATTERIES

Install four AA-size batteries in the Voice Express 41C telephone as an option. These optional batteries supply power to the telephone during a power-fail condition. They power the automatic dialing features and provide for pulse (rotary) dialing where needed. Power is not provided for the speakerphone operation or for the display but the other operating features are maintained for a full five minutes by these batteries. Get an additional five minutes of operation by pressing the RESET button on the rear of the housing. When this five minute operating period ends, the operating conditions described in the paragraph headed Power-Fail Operation are then provided.

To install the batteries, remove the flathead screw and slide open the compartment door on the bottom housing. Place the cells as shown in Figure 3.

CAUTION

To insure proper operation of the Voice Express 41C telephone, always connect the power transformer to the AC outlet, and then connect the line cord between the transformer and the telephone first. Then install the batteries in the battery compartment.

During normal operation, the display panel shows when the batteries becomes weak by displaying "LO BATT".

To force a continued dialing after an auto pause,

Press memory location key again.

TIMED PAUSE

Use the TIMED PAUSE key to store a timed two-second pause into a memory dial location or as part of an LND or auto redial number. Each pause occupies one digit of storage and shows as a - in the display. You can store than one timed pause if needed. When stored as part of a number, a timed pause will cause a two second wait to occur before dialing is resumed automatically.

To store a timed pause as part of a stored number,

- Press TIMED PAUSE during number programming.
- ### ELECTRONIC LOCK

The Voice Express 41C telephone has an electronic lock which provides the following protection:

- Prevents manual dialing
- Prevents security code dialing
- Disables display during auto dialing
- Prevents auto dial storage

To lock the telephone,

1. Press STORE DISPLAY.
2. Dial any three-digit code

3. Press STORE. Lock combination is stored and shown on display for reference.

4. Press DISPLAY DISPLAY. Reference is erased.

To unlock the telephone,

1. Press STORE DISPLAY.
2. Dial three-digit code (lock combination).
3. Press STORE DISPLAY

CAUTION

You cannot retrieve a forgotten lock combination. To unlock a unit under these conditions, default per the instructions below.

DEFAULT

A default condition will erase the clock time and ALL memory dial locations and unlock a telephone for use.

To default a Voice Express 41C telephone,

Remove optional batteries.

Disconnect power transformer from AC outlet.

Press and hold TIMER DISPLAY CLOCK ALARM keys simultaneously.

Plug transformer back into AC outlet.

Release held keys.

INSTALLATION

INSTALLER/USER INFORMATION REGARDING FCC RULES AND REGULATIONS

This telephone complies with Federal Communications Commission (FCC) Rules Part 68.

The FCC registration label attached to the bottom housing contains the FCC registration number, the ringer equivalence number, the model number, and the serial number or production date. The telephone operating company can request that they be provided with the telephone number of the telephone line involved, the FCC registration number, and the ringer equivalence number of this telephone.

The ringer equivalence number (REN) is a measure of the load a telephone device will place on the ringing generator of a central office telephone company line. In general, a REN of 1 is equivalent to the load provided by one standard telephone ringer. FCC rules state that the total REN load on a line shall not exceed five (5.0). When contacted, the telephone company will provide information on the maximum number of telephones or ringers that can be connected to one line, as well as any other applicable technical information.

Any problem with this equipment that causes improper operation of the telephone network may require the telephone company to discontinue service to the trouble site. If possible, advance notice of the disconnect will be given. If advance notice is not practical, notice will be given as soon as possible. The telephone company will inform the user of the right to file a complaint with the FCC.

The telephone company can temporarily discontinue service and make changes which could affect the operation of this equipment; however, they must provide advance notice of any change to give the user the opportunity to maintain uninterrupted telephone service.

FCC regulations do not permit repair of this telephone by anyone except the manufacturer or its authorized agent. Return a defective telephone to the place of purchase or send it prepaid to the address shown at the end of this publication.

Connection of this equipment to a telephone company line must be through a universal service order code (USOC) outlet jack. The USOC jack code number for a single line desk telephone is RJ11C. When A-leads are provided, the USOC jack code number is RJ13C. If the installation site does not have the proper jack(s) and inside wiring, it is the responsibility of the user/installer to arrange for the installation of it. The correct outlet jack for this equipment is an industry standard type 625A2-6 jack wired per the USOC jack code number RJ11C or RJ13C.

Local telephone company regulations may not permit connections to party lines and coin lines by anyone except the telephone operating company.

RADIO FREQUENCY INTERFERENCE

It is possible for a telephone employing a tone dial to generate radio frequency (RF) energy while it is being dialed. This action may cause interference to radio and TV reception. This telephone has been tested and found to comply with radiation limits for a class B computing device, pursuant to FCC Rules and Regulations, Part 15 Subpart J. These regulations are designed to provide reasonable protection against RF interference.

There is no guarantee that interference will not occur in a particular installation. If a telephone does cause interference to radio or TV reception (which can be determined by unplugging the telephone), the user should try to correct the interference as follows:

- Reorient the receiving antenna.
- Relocate the receiver or the telephone.
- Plug the receiver into a different outlet.

If necessary, consult an experienced radio/telephone technician or the manufacturer of the telephone for additional suggestions. You may find the following booklet prepared by the Federal Communications Commission helpful: "How To Identify And Resolve Radio-TV Interference Problems". This booklet is available from the Government Printing Office, Washington D.C. 20402. Stock number 004-000-00345-4.