

COMDIAL

Solo II Attendant Position INSTALLATION AND PROGRAMMING INSTRUCTIONS

This manual is applicable for the following Solo II
Attendant Position models;
5300X-xx Rev A and Later

IMI 66-071.02
3/90

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CHAPTER 1

GENERAL INFORMATION

SECTION 1

INTRODUCTION

GENERAL INFORMATION

The Solo II Attendant Position provides three direct Centrex/Private Branch Exchange (CTX/PBX) line pick-up appearances plus an intercom line which can be interfaced with other Solo II Attendant Positions or regular Solo II telephones. Status indicators for ringing, hold, and busy are provided on each of these lines. Ringing and busy are also available on the intercom line. In addition, the Solo II Attendant Position provides a 20-station busy lamp field (BLF) and circuitry for interfacing with a Station Status Monitor.

The Solo II Attendant Position is used in conjunction with the Station Status Monitor (SSMON) to provide status monitoring of up to 20 lines connected to the SSMON equipment. The SSMON is discussed in publication IMI 89-026, Station Status Monitor Installation

Manual, included with it. With this equipment combination, the attendant can observe the status and provide call coverage and personalized answering for telephones connected to the twenty monitored lines.

The memory dialing feature of the Solo II Attendant Position can be programmed to provide one-key access to host system call pick-up and call transfer features. The three lines that are directly connected to the Solo II Attendant Position are used to access these host system features and apply them to the monitored lines.

MODEL DESCRIPTION

- Three lines plus intercom
- 90 volt message waiting on line 1, 2, or 3 (programmable)
- Includes connections to SSMON equipment.

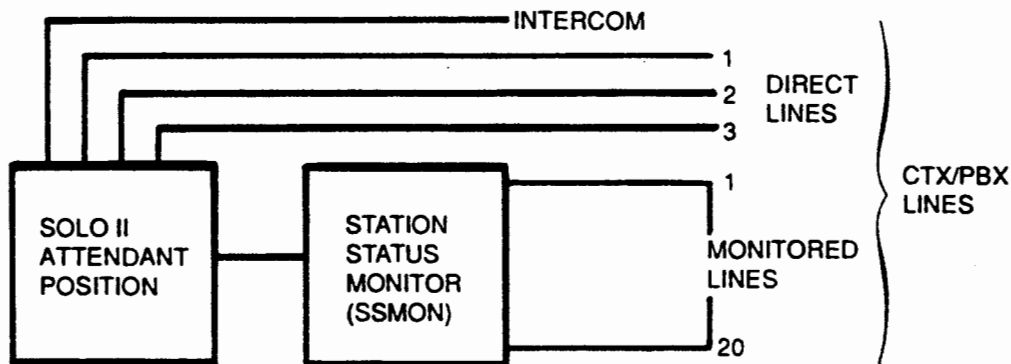


Figure 1-1. Solo II Attendant Position

AUXILIARY JACK

Every Solo II Attendant Position is equipped with an auxiliary jack. This jack is connected across tip and ring of the directly connected line 2, and is not controlled by the hookswitch of the Solo II Attendant Position. The auxiliary jack allows the connection of adjunct devices such as modems, FAX machines, data terminals, etc. to the line along with the Solo II Attendant Position.

Some adjunct devices can be operated on the line while the Solo II Attendant Position is off-hook while others cannot. Refer to the manual associated with the device for complete details.

POWER FAILURE

Should commercial power fail, the Solo II Attendant Position can be easily equipped to provide emergency access to an outside line.

Every Solo II Attendant Position is equipped with an auxiliary jack. This jack is wired per the standard RJ-11 configuration and is connected in parallel with line 2 of the system. This auxiliary jack can be used to provide emergency outside line access when the system is properly prepared.

Prepare the Solo II Attendant Position for power failure operation as follows:

- Determine which outside line that the central office chooses first for ringing.
- Arrange the system wiring so that this first choice ringing line is connected as line 2.

Connect an industry-standard telephone, such as a Comdial model 2500-xx, to the Solo II telephone auxiliary jack to provide power failure operation when required.

SECTION 2

SPECIFICATIONS

SYSTEM CAPACITY

- Lines (CTX/PBX): 3
- Stations (Intercom Signalling Capacity): 20
- Intercom Links: 1

NOTE: If heavy intercom traffic is expected, a maximum of eight stations should share the intercom link unless installed behind a host system.

- Maximum Solo II Attendant Positions Per SSMON Equipment 2

DIMENSIONS AND WEIGHTS (Approx.)

- Width (inches): 7 3/4
- Height (inches): 4 1/4
- Depth (inches): 8
- Footprint (inches): 6 3/4 x 6 3/4
- Weight (lb.-oz.): 2-10

OPERATING ENVIRONMENT

- Temperature: 32-122F (0-50C)
- Humidity: 90% relative non-condensing

POWER REQUIREMENTS

- Remote Power (Supplied by SSMON equip.) 23.5-26.0 VDC @ 220 ma

MESSAGE WAITING VOLTAGE

- PBX (Supplied On Available Line): 90 VDC
- Low Voltage (Supplied On Spare Pair of Power Jack, 40 VDC)

SYSTEM ACCESS TIMING

(programmable and mutually exclusive)

- Timed hookswitch flash: 750 msec.
- Timed dial tone recall: approx. 2 sec

SIGNALLING (CTX/PBX):

- DTMF Tone Only

SYSTEM CABLE REQUIREMENTS:

(Solo-To-Solo and Solo-To-SSMON)

- 4-pair, twisted, non-shielded, 24 AWG, 1500 VAC breakdown

TERMINATION FOR STATION

- Line Jack: Industry Standard, 8-conductor Minijack, USOC RJ61X Configured
- Aux Jack: Industry Standard, 4-conductor Minijack, USOC RJ11 Configured (available on line 2)
- SSMON Jack: Industry Standard, 6-conductor Minijack, USOC RJ14C Configured.

TERMINATION FOR TELCO LINES

LINES	USOC JACK
1 Line	RJ11C
1-2 Lines	RJ14C
1-3 Lines	RJ25C
1-25 Lines	RJ21X

OPERATING LIMITS CTX/PBX

- Loop voltage (open line):
48 volt models 42.0-56.5 VDC
- CTX/PBX loop resistance from distribution frame: 1450 ohms maximum (Approx. 20,000 feet with #24 AWG wire).
- Distance between telephone and distribution frame: 850 feet maximum (Approx. 42.5 ohm loop resistance with #24 AWG wire).
- Distance between Solo II Attendant Position and SSMON equipment - Dependent upon AC voltage level supplied to SSMON:
 - With 90 VAC, loop limit is 300 feet max. using #24 AWG wire
 - With 115 VAC, loop limit is 700 feet max. with #24 AWG wire.

INDUSTRY/REGULATORY STANDARDS

- FCC certified, part 15 class A
- FCC registered, part 68 subpart C (68.213)
- FCC Registration Number: CVW7WC-15193-KH-T
- Ringer Equivalence: 0.3B
- Service Order Code: 9.0Y
- Facility Interface Code: 02LS2
- UL listed
- Hearing aid compatible handset

MEMORY RETENTION AFTER POWER LOSS:

- Minimum 65 hours, typically greater than 200 hours

SECTION 3

COMPLIANCE INFORMATION

COMPLIANCE

The Solo II Attendant Position fully complies with FCC rules and regulations Part 68, Subpart C. Installation is per the specifications set forth in FCC rule part 68.213 for other than "fully-protected" non-system premises wiring.

NOTIFICATION

When the Solo II Attendant Position is being connected directly to the TELCO network, the telephone operating company can request that they be provided with the following information: (1) The location of the jack to which the premises wiring will be connected. (2) A statement that all applicable rules, building codes and electrical codes will be complied with. (3) The manufacturer's name, the brand name, and the model number of the wire used to interconnect the site. In addition, they can request that they be provided with the brand name, model number, FCC registration number, and the ringer equivalence number of the station as shown on the FCC registration label attached to the base of the station.

COMPATIBILITY WITH THE TELCO NETWORK

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.

RINGER EQUIVALENCE NUMBER

The ringer equivalence number (REN) is a measure of the load a telephone device will place on the ringing generator of a central office TELCO 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 5.

PREMISE WIRING

Site wiring is the responsibility of the telephone equipment owner. The equipment owner is responsible for consequences resulting from erroneous wiring procedures done by him or her or under their direction. Per FCC requirement, the insulation on the wire used to connect the station must have a 1500 VAC breakdown rating. (Most cable is labeled as to breakdown rating.) The installed station and the site wiring must pass the installation checkout test detailed in Chapter 2.

RADIO FREQUENCY INTERFERENCE

The Solo II Attendant Position contains incidental radio frequency generating circuitry and, if not installed and used properly, may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules. These limits are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area may cause interference to radio and television reception; in which case, the equipment owner is encouraged to take whatever measures may be required to correct the interference.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or both of the following measures: Reorient the television or radio receiving antenna. Relocate the stations and the radio or TV with respect to each other.

If necessary, consult the manufacturer's technical assistance department or an experienced radio/television technician for additional suggestions. The following booklet prepared by the Federal Communications Commission may be helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the Government Printing Office, Washington D.C. 20402. Stock No. 004-000-00345-4.

CHAPTER 2

INSTALLATION

INSTALLATION PROCEDURE

The system interconnection and station wiring is illustrated by Figure 2-4 at the end of this chapter. Refer to it before and during the installation procedure.

1. Install central connection block and SSMON connection block within 25 feet of PBX/TELCO demarcation point.
2. Locate Solo II Attendant Position(s) as required.
3. Install premise wiring for Solo II Attendant Position line and SSMON jacks. Refer to Figures 2-1 and 2-4 as needed.

NOTE: Adhere to all applicable local electrical and building codes when installing the wiring. Consult with applicable local authorities as necessary. The wire used must have a breakdown rating of at least 1500 VAC per FCC requirement.

CAUTION

If several Solo II Attendant Positions or regular Solo II Telephones are interconnected over an Intercom network, it is important to remember that the intercom pair is polarity sensitive. Do not reverse tip and ring when parallel wiring several stations.

- a. Each Solo II Attendant Position line jack can be wired separately to central connection block ("home run" wiring) or parallel wired to common run from it. However, SSMON jack should always be home-run to SSMON connection block.
- b. Connect premise wiring to central connection and SSMON connection blocks.
4. Install premise wiring for monitored stations.
5. Refer to instructions supplied with SSMON equipment. Install SSMON per those instructions, and cable connect it to SSMON connection block per Figure 2-4.

CAUTION

Correct TIP AND RING polarity must be maintained when connecting lines to the monitored stations and to the SSMON connector block. Incorrect polarity will cause a corresponding BLF light to remain on whether the line is on-hook or off-hook.

6. Disable BLF light for any unused lines. At SSMON connection block, connect unused "RINGS" to either terminal 49 or 50 (-60 VDC provided by SSMON equipment).
7. Install up to three directly connected lines between the Solo II Attendant Position and the central connection block.
6. Install line connections between the central connection point and the PBX/TELCO demarcation point.
9. Connect Solo II Attendant Position to premise wiring. Refer to Figure 2-2 for line cord details if needed.

SOLO LINE CORD COMPATIBILITY

The Solo II Attendant Position is equipped with a standard 8-conductor modular line jack and is supplied with a standard 8-conductor line cord assembly. The modular jack and the plugs on the line cord are wired according to USOC RJ61X specifications as shown in ATT NWTJ supplement to Subpart F of Part 68 of the FCC Rules and Regulations. This wiring arrangement agrees with industry standard pin assignments for all customer premises equipment except certain types that have pin assignments similar to CCITT ISDN Recommendations.

An optional line cord is available that will adapt the Solo II Attendant Position to the ISDN wiring arrangement. This optional line cord is available through normal distribution channels (Comdial part number 703509-535). Contact a local Comdial distributor for price and availability of this option.

The two end connectors of this adapter line cord are color coded. The end connector that is to be plugged into the telephone jack is clear. The end connector that is to be plugged into the CCITT ISDN arranged wall jack is colored. It is important that the correct end connectors are plugged into the proper jack locations; otherwise, the pairing will be incorrect.

The industry-standard line cord and the optional line cord are both illustrated in Figure 2-2.

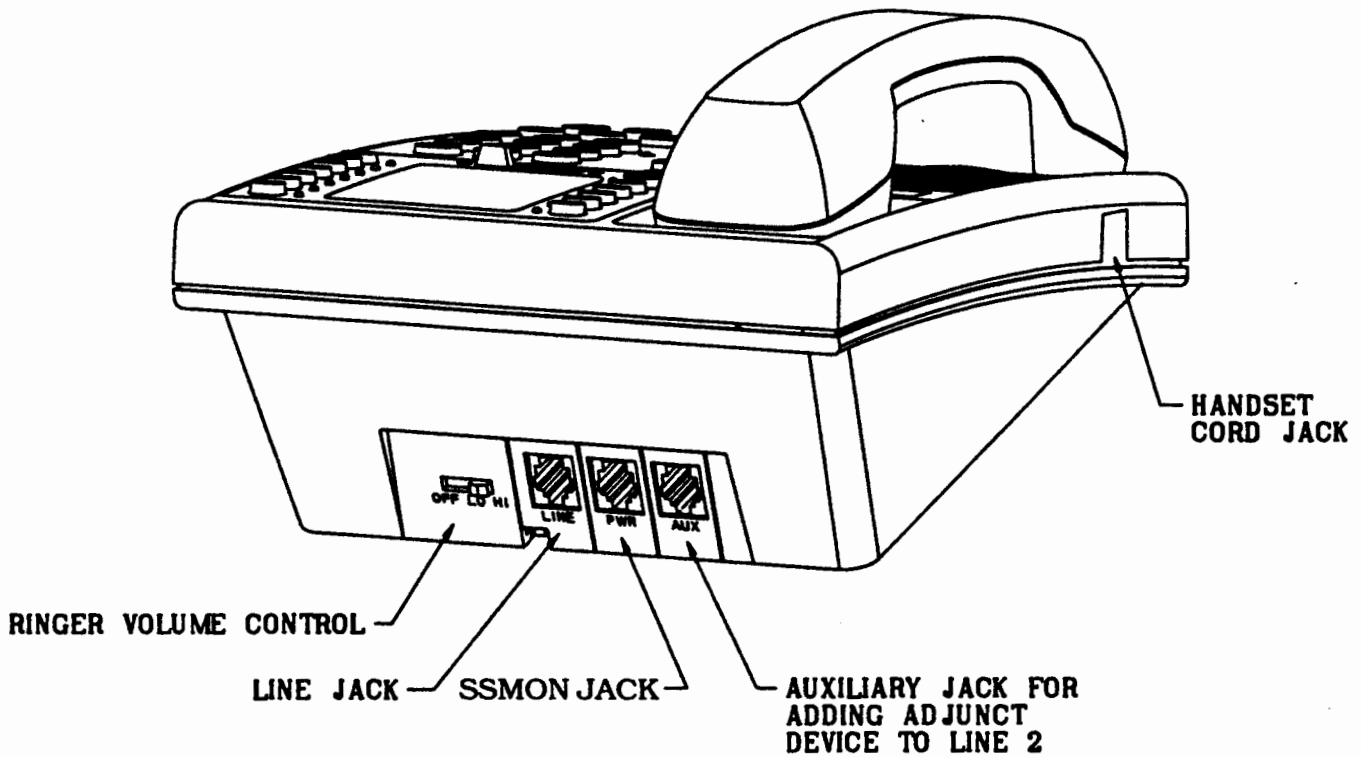


Figure 2-1. Solo II Attendant Position Connections

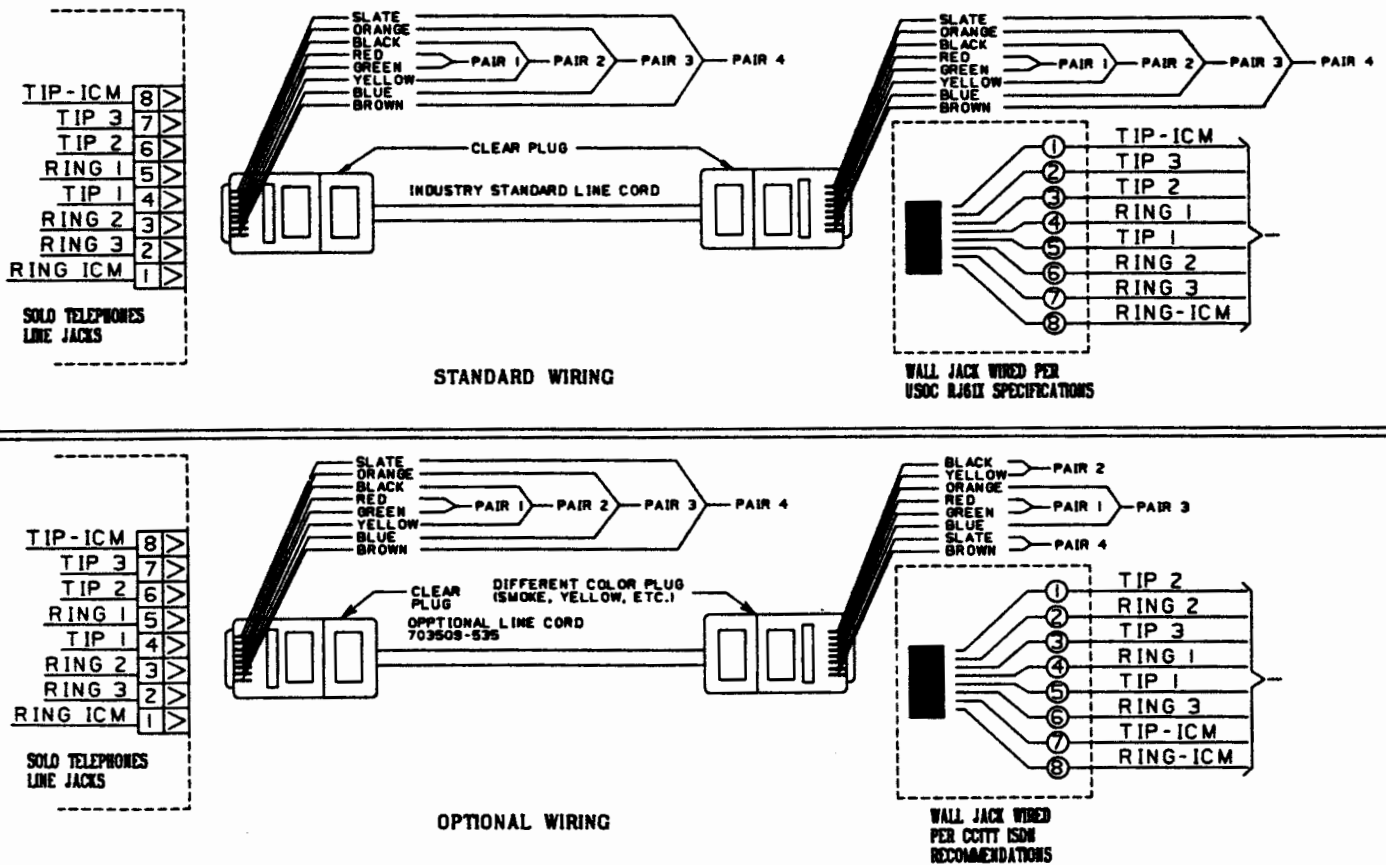


Figure 2-2. Line Cord Compatibility

DESK/WALL REVERSAL AND WALL MOUNTING

CONVERSION

To convert a Solo II Attendant Position from a standard desk model to one which can be hung on the wall, follow the procedure outlined below.

1. Remove and discard the pull out directory.
2. Remove the lower housing, and rotate it 180 degrees.

CAUTION

The printed wiring board (PWB) contains circuitry which is sensitive to static electricity discharge. Be sure that your body and the workplace are properly grounded to avoid any static electricity discharge while performing the desk/wall reversal.

3. Remove the knockouts from the desired mounting holes as illustrated in Figure 2-3.

4. Replace lower housing. Make sure that all wires are clear.

WALL MOUNTING

Mount the wall-mount converted Solo II Attendant Position directly on the wall using two, #10, panhead screws (not provided--obtain locally), or mount it on a wall jack cover plate.

1. Thread #10 screws into wall within 1/8-inch of surface. Refer to Figure 2-3 for spacing dimensions.
2. Insure that housing is converted properly for wall mounting installation (see above instructions).
3. Connect all wiring.
4. Position keyhole shaped holes in bottom of housing over #10 screws or cover plate studs. Slide housing down until slight click is felt.
5. To remove station, lift up to unsnap both screws or studs from bottom housing, and lift housing away from wall.

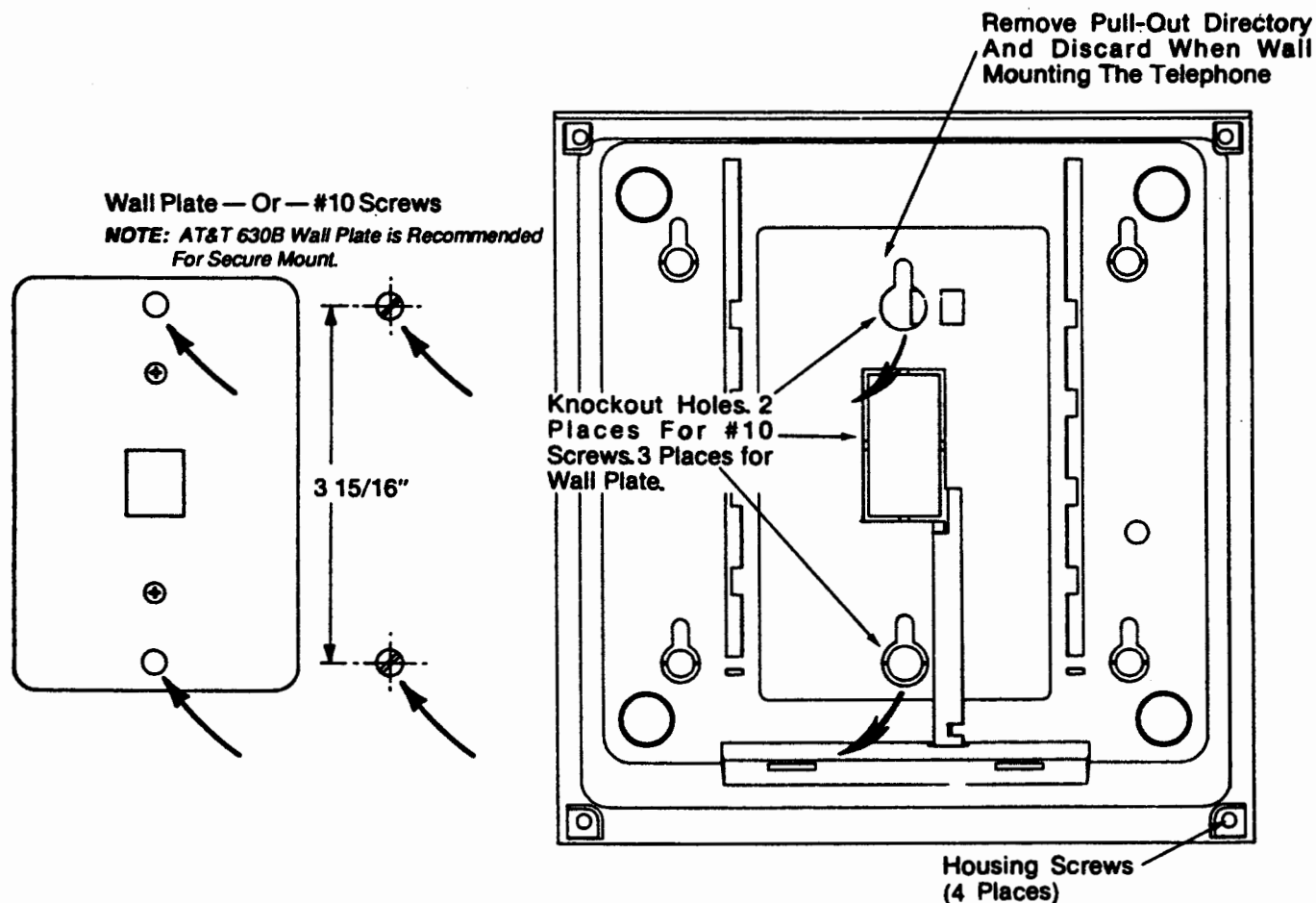


Figure 2-3. Wall Mounting

INSTALLATION CHECKOUT

Perform the following acceptance test on the Solo II Attendant Position.

1. Lift handset, and check direct-connected lines.
 - a. Select line, and listen to idle line sounds.
 - b. Confirm there is neither audible hum nor excessive noise on line.
 - c. Confirm dial tone is present.
2. Dial number.
 - a. Confirm dial tone is broken.
 - b. Confirm there is neither audible hum nor excessive noise on line.
3. Perform "ringback" test.
 - a. Make Solo II Attendant Position ring. (Use procedure obtained from telephone operating company or arrange for someone to dial number to cause ringing.)
 - b. Permit one minute of ringing.
 - c. Lift handset to stop ringing.
 - d. Keep off hook for at least 5 seconds.
 - e. Hang up handset for at least 5 seconds.
 - f. Lift again, and confirm dial tone is present.
4. Repeat steps 1 through 3 for each line.
5. Test operation of telephones connected to monitored lines by listening for dial tone then making and receiving a call from each one.
6. Lift handset of telephone connected to monitored line. Verify that corresponding BLF light on Solo II Attendant Position turns on.
7. Repeat for each monitored line.

If BLF lights remain on constantly or fail to turn on properly when performing steps 6 and 7, check the following:

1. When all monitored stations are on-hook, all BLF lights on Solo II Attendant Position should be off.
2. If any BLF lights are on, check the polarity of the monitored lines. Incorrect polarity will cause corresponding BLF light to remain on whether line is on-hook or off-hook. Same is true for open line.
3. Check to make sure unused lines have been disabled at the SSMON connection block (see Figure

2-4). Verify the -60 VDC on terminals 49 and 50 (-35 VDC minimum).

4. If problems still exist, perform BLF lamp test. This test verifies the data channel between the SSMON equipment and the Solo II Attendant Position and each LED. On power-up, the SSMON ignores the monitored lines and transmits data to turn the BLF LEDs on in sequence (1 - 20). After all the LEDs have been turned on, the SSMON will revert to its normal operation.

SELF TEST

The Solo II Attendant Position can be placed in a self test mode per the following instructions. Although this self test is not a comprehensive test of every component, failure of any portion of it is indicative of a defect.

1. Disconnect the power plug from the rear of the set.
2. Press and hold **MUTE**, and reconnect the power plug.
3. Observe the indicator light above the **HOLD** key. When it turns on, release the **MUTE** key. The station will execute the indicator light test sequence.
 - a. **LINE 1** indicator turns on.
 - b. **LINE 2** indicator turns on.
 - c. **LINE 3** indicator turns on.
 - d. **MONITOR** indicator turns on.
 - e. **ITCM** indicator turns on.
 - d. Above indicators turn off in reverse sequence.
4. The tone ringer will then sound for 4 seconds.
 - a. Be sure ringer loudness control is set to HI position.
 - b. Ringer tone must be constant without distortion.
 - c. Verify loudness control adjustment range during ringer test.
5. A 4-second DTMF generator test will then be performed.
 - a. DTMF tone must be constant without distortion
 - b. Lift handset and listen for tone in receiver
6. The Solo II Attendant Position will revert to normal operation after performing the DTMF generator test.

RESET

In some cases, a Solo II Attendant Position may appear to ring and/or dial in an improper manner when the self test is performed or it may not accept class of service programming. This condition may exist because the circuitry which maintains the memory has discharged during transportation and storage. Should it fail self test or fail to accept programming, perform the following reset procedure

CAUTION

Do not arbitrarily perform the reset on an installed, operational unit because it forces a default in the class of service programming conditions and in any stored memory dialing numbers.

1. Perform the self test procedure.
2. When the line indicators begin sequencing as described in step 3 of that procedure, press and release the **SAVE** key.
3. The self test procedure will finish as described above. The indicator directly above the HOLD key will remain on until the self test completes to indicate that the reset and a memory test are being performed.

If a memory error is detected, the Solo II Attendant Position will remain in the self test mode. If this occurs, repeat the reset procedure. If a memory error is still indicated, return the Solo II Attendant Position for repair.



CHAPTER 3

OPERATION AND PROGRAMMING

SECTION 1

OPERATIONAL PROGRAMMING

INTRODUCTION

Class-of-service (COS) programming determines the operating features of the Solo II Attendant Position. The operating features are as defined in the Glossary found at the end of this manual.

If several Solo II Attendant Positions, or regular Solo II telephones, are combined together to form a system, each station in the system must be programmed individually.

PUTTING THE SOLO II ATTENDANT POSITION INTO SERVICE

The Solo II Attendant Position can be easily put into service in a fully operational condition per the steps given below. The provided features can be customized if required by the detailed procedures beginning on page 3-3.

PREPARING FOR OUTSIDE LINES

1. Refer to information provided in Chapter 2, Installation, and perform following actions:
 - a. Verify that site wiring is correct (see Figure 2-4).
 - b. Connect Solo II Attendant Position to line and SSMON jacks with provided line cords (see Figures 2-2 and 2-4).
2. A maximum of three outside lines may be connected directly to the Solo II Attendant Position. The indicator light for each connected line will be off. The indicator light for each unused line position will be on. Turn off indicator for each unused line as follows:
 - Handset on-hook.
 - Dial # * 7 4 6 *.
 - Dial 15.
 - Press key associated with unused line position. LED will turn off. Press key again to enable if required. LED will turn on.
 - Repeat previous step for each unused line indicator.

- Press MNTR to end procedure.
3. Test each connected line as follows:
 - Press line key. Indicator will turn on, and dial tone will sound.
 - Dial a number.
 - When party answers, lift handset and ask them to wait.
 - Press HOLD. Indicator will flash.
 - Press line key and ask holding party to hang up and call you back.
 - Hang up. Indicator will turn off.
 - Hear ringing, lift handset, and answer call.
 - Hang up, and repeat procedure for next line.
 4. If all lines test properly, the Solo II Attendant Position is basically operational.
 5. If a mistake was made during the above procedure, it may be erased by repeating step 2.
 6. Press MNTR to end procedure.

PREPARING FOR FLASH OR RECALL

If the installed lines are CENTREX or other special featured lines from the telephone company or from a host system that provides access to calling features via hookswitch action, the TAP key should provide a timed hookflash when pressed. If the installed lines are standard central office (CO) lines, the TAP key should provide a dial tone recall when pressed.

Currently produced Solo II Attendant Positions provide timed hookflash as a station default. To re-program the TAP key to provide dial tone recall, perform the following steps.

1. Dial # * 7 4 6 *.
2. Dial 24.
3. Press HOLD key for dial tone recall action. (HOLD LED will turn on.)
4. Press HOLD again for hookswitch action. (HOLD LED will turn off.)

PREPARING FOR INTERCOM LINES (OPTIONAL)

If several Solo II Attendant Positions, or Solo II telephones, are to be installed and linked together over an intercom line, the following steps must be performed to prepare the intercom for use. If no intercom operation is planned, ignore the following procedure.

1. Dial # * 7 4 6 *.
2. Dial 18.
3. Press a memory key. This key becomes the intercom selection key for this station. The memory keys are located on the upper portion of the faceplate as shown in Figure 3-1.
 - This action returns the Solo II Attendant Position to factory set operational conditions (known as default).

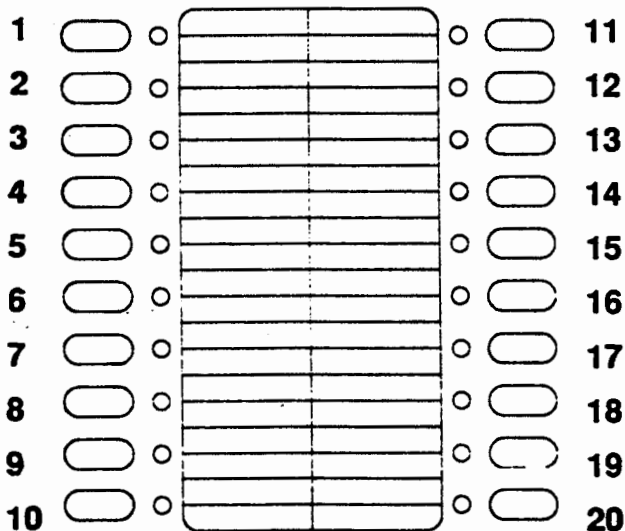


Figure 3-1. Memory Key Field

4. Press MNTR to end procedure.
5. Go to another Solo II Attendant Position, and test the intercom.
 - Lift the handset.
 - From this telephone, press the same memory key number that was pressed in step 3 on the programmed telephone. Some sounds will be heard in the handset receiver to indicate that dialing is taking place.
 - Speak into the handset. Your voice will be heard through the speaker at the

called Solo II Attendant Position (the one programmed in Step 3).

6. Steps 1 through 5 must be performed at every installed station.
7. If a mistake was made during the above procedure, it may be erased by repeating steps 1 - 5.

The Solo II Attendant Position is now fully operational and interconnected with other Solo II Attendant Positions over an intercom link (if required). It can be customized by following the detailed programming procedures provided in Section 2 or operated as is.

The automatic and speed dial features of the Solo II Attendant Position can be programmed for use by following the instructions provided in the Solo II Attendant Position User's Guide.

DEFAULT CONDITIONS

At initial installation and whenever the memory backup power is exhausted, a default class-of-service is set. Remember, the default conditions provide basic operating features without any further programming. The default conditions are as follows:

PASSWORD DEFAULT

- Program entry pass-code = 746

LINE DEFAULTS

- Toll restriction for all lines = disabled
- Status indicators for all lines = enabled
- Ringing on all line = enabled
- Idle line preference = disabled
- Origination denied = disabled
- Executive override = disabled
- Message waiting = disabled
- Delayed ring = disabled

STATION INTERCOM NUMBER

- None assigned

STATION DEFAULTS

- BLF ring delay = 16 seconds
- Ring warble rate = 8 Hz
- Ring frequencies = 625/521 Hz
- Hold release time = 50 milliseconds
- Hold recall time = 30 seconds
- Intercom status indicator = enabled
- Intercom executive override = disabled

- Toll restriction parameters = disabled
- Ringing line preference = disabled
- Originate message waiting = disabled
- Hookswitch flash = 750 msec.

Default conditions can be reset, if desired, whenever the intercom line is idle. All default conditions are set at

once per the following procedure.

- Dial # * 7 4 6 * (or current pass-code digits).
- Dial 18.
- Press LINE keys 1, 2, and 3.
- Press any memory key (see Figure 3-1)
- Press MNTR to end procedure.

SECTION 2

CLASS OF SERVICE PROGRAMMING

Class of service programming allows the Solo II Attendant Position features to be customized to meet special system requirements. Figure 3-3 on page 3-11 provides an overview of the programming features.

Perform class of service programming as follow:

- Mark the desired selections in the right hand column of the following charts to record the programming needs.
- Enter the base level programming mode # * 7 4 6 *).

- Dial a feature code.

NOTE: A current program setting is indicated by a lighted LED next to the applicable programming key. When a toggle (on/off) action is provided by the same programming key, the lighted LED indicates when the feature is active.

- Dial * at any time to return to the base level mode.
- Press MNTR to end the programming procedure.

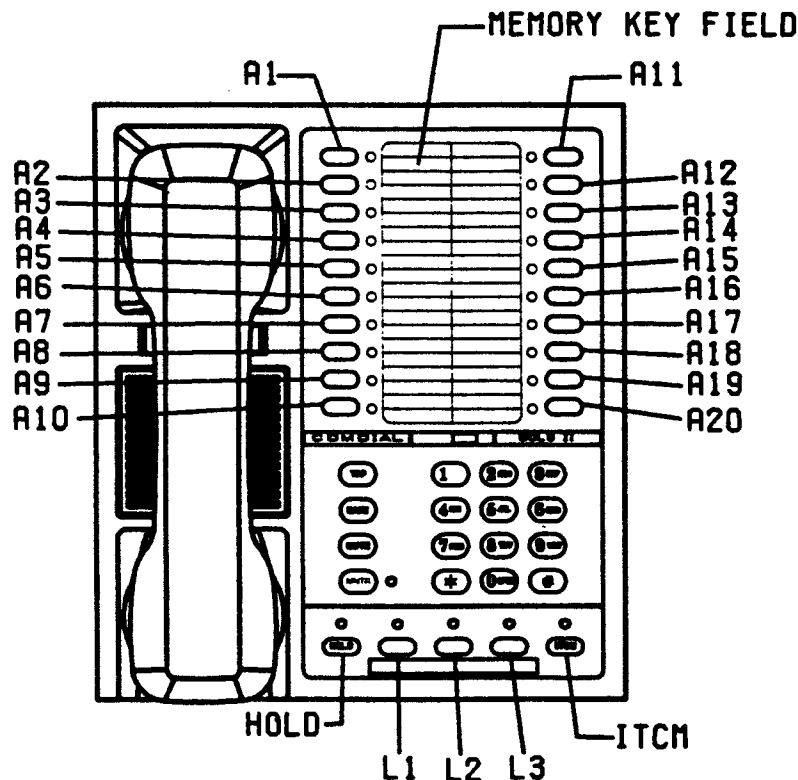


Figure 3-2. Program Key Locations

DETAILED PROGRAMMING PROCEDURE FOR SOLO II ATTENDANT POSITION

- Mark the desired selections in the charts to record programming needs.
- Dial the feature code and then press the proper programming key (HOLD, L1, L2, L3, ITCM from left to right along bottom of Solo II Attendant Position telephone) to program the selection. The memory keys are located in the upper right area of the telephone and are designated A1 through A10 on the left and A11 through A20 on the right.

NOTE: A current program setting is indicated by a lighted LED next to the programming key for that selection.
When a toggle (on/off) action is provided by a single key, the lighted LED indicates when the feature is active.

FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD																																																
Base Level: The first step in the programming sequence is to enter the base level mode. Once in this mode, any desired configuration can be set.	Dial # * 7 4 6 *.																																																	
Default: The programmable features, described in the following procedures, can be defaulted to a standard set of values. These values will provide satisfactory performance in a broad range of site applications.	<p>Dial 18. Press program keys L1, L2, and L3 to default lines 1-3.</p> <p>Press any memory key (A1 - A20) to default station features.</p> <p>(This action also assigns that memory key to this station for intercom purposes.)</p> <p>Dial * for next feature.</p> <p>NOTE: If several Solo II Attendant Positions or regular Solo II telephones are linked by the intercom line, press a different memory key at each telephone to establish the intercom calling number for each station.</p>	<table><tr><th>MEM KEY</th><th>STATION ID</th><th>MEM KEY</th><th>STATION ID</th></tr><tr><td>A1</td><td></td><td>A11</td><td></td></tr><tr><td>A2</td><td></td><td>A12</td><td></td></tr><tr><td>A3</td><td></td><td>A13</td><td></td></tr><tr><td>A4</td><td></td><td>A14</td><td></td></tr><tr><td>A5</td><td></td><td>A15</td><td></td></tr><tr><td>A6</td><td></td><td>A16</td><td></td></tr><tr><td>A7</td><td></td><td>A17</td><td></td></tr><tr><td>A8</td><td></td><td>A18</td><td></td></tr><tr><td>A9</td><td></td><td>A19</td><td></td></tr><tr><td>A10</td><td></td><td>A20</td><td></td></tr><tr><td colspan="4">DEFAULT = NONE ASSIGNED</td></tr></table>	MEM KEY	STATION ID	MEM KEY	STATION ID	A1		A11		A2		A12		A3		A13		A4		A14		A5		A15		A6		A16		A7		A17		A8		A18		A9		A19		A10		A20		DEFAULT = NONE ASSIGNED			
MEM KEY	STATION ID	MEM KEY	STATION ID																																															
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A9		A19																																																
A10		A20																																																
DEFAULT = NONE ASSIGNED																																																		

FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD																									
Flexible Ringing Assignment: Ringing assignments are programmable on a per line basis. Direct, or immediate, ringing can be enabled for some lines while delayed ringing can be enabled for other lines.																											
Direct Ringing: Delayed Ringing:	Dial 10. Select desired lines. - Press L1 - L3 to select lines 1-3. LED on = direct ringing enabled. Dial * for next feature. Dial 11. Select desired lines. - Press L1 - L3 to select lines 1-3. LED on = delayed ring enabled. Dial * for next feature.	<table><tr><td></td><td>L1</td><td>L2</td><td>L3</td></tr><tr><td></td><td>LINE 1</td><td>LINE 2</td><td>LINE 3</td></tr><tr><td>DIRECT</td><td></td><td></td><td></td></tr><tr><td>DELAYED</td><td></td><td></td><td></td></tr><tr><td colspan="4">DEFAULT = ALL LINES DIRECT RINGING</td></tr></table>		L1	L2	L3		LINE 1	LINE 2	LINE 3	DIRECT				DELAYED				DEFAULT = ALL LINES DIRECT RINGING								
	L1	L2	L3																								
	LINE 1	LINE 2	LINE 3																								
DIRECT																											
DELAYED																											
DEFAULT = ALL LINES DIRECT RINGING																											
Originating Denied: The ability to originate calls on a line can be denied. This feature is programmed for each desired line.	Dial 12. Select desired lines. - Press L1 - L3 to select lines 1-3. LED on = outside calls cannot be made. Dial * for next feature.	<table><tr><td></td><td>L1</td><td>L2</td><td>L3</td></tr><tr><td></td><td>LINE 1</td><td>LINE 2</td><td>LINE 3</td></tr><tr><td>DIRECT</td><td></td><td></td><td></td></tr><tr><td>DELAYED</td><td></td><td></td><td></td></tr><tr><td colspan="4">DEFAULT = DISABLED</td></tr></table>		L1	L2	L3		LINE 1	LINE 2	LINE 3	DIRECT				DELAYED				DEFAULT = DISABLED								
	L1	L2	L3																								
	LINE 1	LINE 2	LINE 3																								
DIRECT																											
DELAYED																											
DEFAULT = DISABLED																											
Idle Line Preference: Going off-hook automatically selects an idle line for use. Lines available to be selected are assigned by programming.	Dial 14. Select desired lines. - Press L1 - L3 to select line 1-3. LED on = feature enabled. Dial * for next feature.	<table><tr><td></td><td>L1</td><td>L2</td><td>L3</td></tr><tr><td></td><td>LINE 1</td><td>LINE 2</td><td>LINE 3</td></tr><tr><td>DIRECT</td><td></td><td></td><td></td></tr><tr><td>DELAYED</td><td></td><td></td><td></td></tr><tr><td colspan="4">DEFAULT = DISABLED</td></tr></table>		L1	L2	L3		LINE 1	LINE 2	LINE 3	DIRECT				DELAYED				DEFAULT = DISABLED								
	L1	L2	L3																								
	LINE 1	LINE 2	LINE 3																								
DIRECT																											
DELAYED																											
DEFAULT = DISABLED																											
Line Status Indicator: A maximum of three outside lines and one intercom line may be connected to a station. The indicator light for each connected line will be off. The indicator light for each unused line will be on. The indicator for each unused line can be turned off.	Dial 15. Press program key for unused line (B1, B2, B3 or ITCM). LED next to key will turn off. Dial * for next feature.	<table><tr><td></td><td>L1</td><td>L2</td><td>L3</td><td>ITCM</td></tr><tr><td></td><td>LINE 1</td><td>LINE 2</td><td>LINE 3</td><td>ITCM</td></tr><tr><td>ENABLED</td><td></td><td></td><td></td><td></td></tr><tr><td>DISABLED</td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5">DEFAULT = ALL INDICATORS ENABLED</td></tr></table>		L1	L2	L3	ITCM		LINE 1	LINE 2	LINE 3	ITCM	ENABLED					DISABLED					DEFAULT = ALL INDICATORS ENABLED				
	L1	L2	L3	ITCM																							
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ENABLED																											
DISABLED																											
DEFAULT = ALL INDICATORS ENABLED																											

3-6

FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD																									
Personal Ringing Tones: A Solo II Attendant Position can be programmed to ring in one of four distinctive tone pairs presented at one of two different warble rates.	Dial 22. Press HOLD to toggle between warble rates of 8 or 16 Hz. LED on = 16 Hz. Press program key to choose ring tone pair. LED on = selected pair. - L1 = 781/625 Hz. - L2 = 625/521 Hz. - L3 = 521/447 Hz. - ITCM = 447/391 Hz. Dial * for next feature.	<table><tr><td>HOLD</td><td>L1</td><td>L2</td><td>L3</td><td>ITCM</td></tr><tr><td></td><td>TONE 1</td><td>TONE 2</td><td>TONE 3</td><td></td></tr><tr><td>RING TYPE 1 (8 HZ)</td><td></td><td></td><td></td><td></td></tr><tr><td>RING TYPE 2 (16 HZ)</td><td></td><td></td><td></td><td></td></tr><tr><td>DEFAULT = 8 HZ & 625/521 HZ PAIR</td><td></td><td></td><td></td><td></td></tr></table>	HOLD	L1	L2	L3	ITCM		TONE 1	TONE 2	TONE 3		RING TYPE 1 (8 HZ)					RING TYPE 2 (16 HZ)					DEFAULT = 8 HZ & 625/521 HZ PAIR				
HOLD	L1	L2	L3	ITCM																							
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RING TYPE 1 (8 HZ)																											
RING TYPE 2 (16 HZ)																											
DEFAULT = 8 HZ & 625/521 HZ PAIR																											
Recall/TAP: A 2 sec. line disconnect (recall) or a 750 msec. PBX/CENTREX feature select signal (TAP) can be generated by a Solo II Attendant Position depending upon the programmed time.	Dial 24. Press HOLD to toggle between 2 sec (Recall) and 750 msec. (TAP). LED on = recall time of 2 sec. Dial * for next feature.	<table><tr><td>HOLD</td><td>L1</td><td>L2</td><td>L3</td><td>ITCM</td></tr><tr><td>TAP (750 MSEC)</td><td>RECALL (2 SEC)</td><td></td><td></td><td></td></tr><tr><td>DEFAULT = TAP, LED ON = RECALL</td><td></td><td></td><td></td><td></td></tr></table>	HOLD	L1	L2	L3	ITCM	TAP (750 MSEC)	RECALL (2 SEC)				DEFAULT = TAP, LED ON = RECALL														
HOLD	L1	L2	L3	ITCM																							
TAP (750 MSEC)	RECALL (2 SEC)																										
DEFAULT = TAP, LED ON = RECALL																											
Abandoned Hold Release: When a distant party abandons a hold condition and disconnects, the central office will send a forward disconnect signal to the Solo II telephone. The forward disconnect signal may be either 50 msec. or 350 msec. in length. Program the Solo II telephone to match the central office time.	Dial 24. Press L1 to toggle between 50 msec. and 350 msec. LED on = 350 msec. Dial * for next feature.	<table><tr><td>HOLD</td><td>L1</td><td>L2</td><td>L3</td><td>ITCM</td></tr><tr><td></td><td>SHORT (50MSEC)</td><td>LONG (350 MSEC)</td><td></td><td></td></tr><tr><td>DEFAULT = SHORT LED ON = LONG</td><td></td><td></td><td></td><td></td></tr></table>	HOLD	L1	L2	L3	ITCM		SHORT (50MSEC)	LONG (350 MSEC)			DEFAULT = SHORT LED ON = LONG														
HOLD	L1	L2	L3	ITCM																							
	SHORT (50MSEC)	LONG (350 MSEC)																									
DEFAULT = SHORT LED ON = LONG																											
Ringing Line Preference: A ringing line will automatically be answered when a Solo II Attendant Position is taken off-hook.	Dial 24. Press program key L3 to toggle between enable and disable. LED on = feature enabled. Dial * for next feature.	<table><tr><td>HOLD</td><td>L1</td><td>L2</td><td>L3</td><td>ITCM</td></tr><tr><td></td><td></td><td></td><td>ENABLED</td><td>DISABLED</td></tr><tr><td></td><td></td><td></td><td>DEFAULT = DISABLED LED ON = ENABLED</td><td></td></tr></table>	HOLD	L1	L2	L3	ITCM				ENABLED	DISABLED				DEFAULT = DISABLED LED ON = ENABLED											
HOLD	L1	L2	L3	ITCM																							
			ENABLED	DISABLED																							
			DEFAULT = DISABLED LED ON = ENABLED																								

FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD																																																				
<p>Flexible Toll Restriction: This feature restricts the Solo II Attendant Position from dialing a range of number combinations while allowing specific exceptions. The restrictions are specified by entries on a deny table while the exceptions are specified by entries on an allow table. Allow entries always override deny entries when these tables are used to restrict calls. A maximum of four digits per line entry with five entries per table are allowed. The following number combinations can always be dialed regardless of any restrictions which may be in effect: 1+800, 911, and 1+911.</p> <ul style="list-style-type: none">- Deny tables provide five specific four-digit dialing code restrictions. Examples of such restrictions are: 957, 1957, 011, etc.- Allow tables provide five specific four-digit dialing code restriction overrides. Examples of such overrides are: 1900, 1555, etc. <p>Dialing can also be restricted with 1/0 + digits toll restriction as well as with the deny and allow tables. Also, 1 + 7-digit dialing and 411 dialing can be enabled along with the other toll restriction assignments. Allow and deny tables are automatically assigned to the Solo II telephone if they are programmed, while the other toll restriction assignments must be enabled independently. Regardless of the toll restriction assigned to a telephone, a line must be programmed to be a toll restricted line before any assigned toll restriction programming will apply to calls made over that line.</p> <p>NOTE: Toll Restriction may be defeated if telephone is misused.</p>																																																						
0/1 Toll Restriction Programming	<p>Dial 23.</p> <p>Press program key to toggle desired toll restriction features on or off.</p> <ul style="list-style-type: none">- L1 = 0/1 restriction. LED on = feature enabled.- L2 = 1+7-digit dialing allowed. LED on = feature enabled.- L3 = 411 dialing allowed. LED on = feature enabled. <p>Dial * for next feature.</p>	<table><tr><td>1/0 TOLL REST.</td><td>ENABLED</td><td>DISABLED</td></tr><tr><td>1+7-DIGIT DIAL</td><td></td><td></td></tr><tr><td>ALLOWED</td><td>ENABLED</td><td>DISABLED</td></tr><tr><td>411 DIALING</td><td></td><td></td></tr><tr><td>ALLOWED</td><td>ENABLED</td><td>DISABLED</td></tr><tr><td colspan="3">DEFAULT = ALL TOLL REST. FEATURES</td></tr><tr><td colspan="3">DISABLED</td></tr></table>	1/0 TOLL REST.	ENABLED	DISABLED	1+7-DIGIT DIAL			ALLOWED	ENABLED	DISABLED	411 DIALING			ALLOWED	ENABLED	DISABLED	DEFAULT = ALL TOLL REST. FEATURES			DISABLED																																	
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DISABLED																																																						
Allow Table Programming	<p>Dial 25.</p> <p>Press program key to select entry.</p> <p>Pressing programming key will clear current restriction number for that entry. LED for program key indicates current entry condition.</p> <p>Steady-On = entry is programmed</p> <p>Flashing = entry being programmed</p> <ul style="list-style-type: none">- HOLD = entry 1- L1 = entry 2- L2 = entry 3- L3 = entry 4- ITCM = entry 5 <p>Continued on next page.</p>	<table><tr><th colspan="6">ALLOW TABLE</th></tr><tr><th rowspan="2">KEY</th><th rowspan="2">ENTRY</th><th colspan="4">DIGITS</th></tr><tr><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><td>HOLD</td><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>L1</td><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>L2</td><td>3</td><td></td><td></td><td></td><td></td></tr><tr><td>L3</td><td>4</td><td></td><td></td><td></td><td></td></tr><tr><td>ITCM</td><td>5</td><td></td><td></td><td></td><td></td></tr><tr><td colspan="6">DEFAULT = NO ENTRIES</td></tr></table>	ALLOW TABLE						KEY	ENTRY	DIGITS				1	2	3	4	HOLD	1					L1	2					L2	3					L3	4					ITCM	5					DEFAULT = NO ENTRIES					
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FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD																																																				
	Dial allowed number (4 digit limit). Select next entry and dial that allowed number. Repeat this last step until all allow entries are programmed. Dial * for next feature.																																																					
Deny Table Programming	Dial 26. Press program key to select entry. Pressing programming key will clear current restriction number for that entry. LED for program key indicates current entry condition. Steady-On = entry is programmed Flashing = entry being programmed - HOLD = entry 1 - L1 = entry 2 - L2 = entry 3 - L3 = entry 4 - ITCM = entry 5 Dial restriction number (4 digit limit). Select next entry and dial that restriction number. Repeat this last step until all deny entries are programmed. Dial * for next feature.	<table><tr><th colspan="6">DENY TABLE</th></tr><tr><th rowspan="2">KEY</th><th rowspan="2">ENTRY</th><th colspan="4">DIGITS</th></tr><tr><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><td>HOLD</td><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>L1</td><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>L2</td><td>3</td><td></td><td></td><td></td><td></td></tr><tr><td>L3</td><td>4</td><td></td><td></td><td></td><td></td></tr><tr><td>ITCM</td><td>5</td><td></td><td></td><td></td><td></td></tr><tr><td colspan="6">DEFAULT = NO ENTRIES</td></tr></table>	DENY TABLE						KEY	ENTRY	DIGITS				1	2	3	4	HOLD	1					L1	2					L2	3					L3	4					ITCM	5					DEFAULT = NO ENTRIES					
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Flexible Toll Restriction
Programming - continued on next page

FEATURE DESCRIPTION	ENTRY CODE	REFERENCE RECORD															
Flexible Toll Restriction - continued Enable Toll Restriction On Line	Dial 13. Select all desired lines. - Press L1 - L3 to select lines 1-3. LED on = toll restriction assigned. Dial * for next feature.	<table><tr><th>LINE</th><th>ENABLED</th><th>DISABLED</th></tr><tr><td>L1</td><td></td><td></td></tr><tr><td>L2</td><td></td><td></td></tr><tr><td>L3</td><td></td><td></td></tr><tr><td colspan="3">DEFAULT = DISABLED</td></tr></table>	LINE	ENABLED	DISABLED	L1			L2			L3			DEFAULT = DISABLED		
LINE	ENABLED	DISABLED															
L1																	
L2																	
L3																	
DEFAULT = DISABLED																	
Password Programming: Password programming is an option, and in many cases is not required. Changing the programming password away from 746 means that all future programming effort must be entered via the newly created code. If the new code is unknown, programming is prohibited. It is a good practice to permanently record the new code somewhere for future reference.	Dial # * 7 4 6 * if not already in Base Level mode. From Base Level mode, Dial 27. Dial 647. Dial #. Dial new three-digit code. Dial * to return to base level. Press MNTR to end programming.	<table><tr><th>PASSWORD DIGITS</th></tr><tr><td>DEFAULT = 746</td></tr></table>	PASSWORD DIGITS	DEFAULT = 746													
PASSWORD DIGITS																	
DEFAULT = 746																	
BLF Ring Delay: The monitored lines can be programmed to ring with a delay at the attendant position.	Dial 21. Press key to select BLF ring delay time LED on = programmed delay time. - Hold = 0 sec. - L1 = 8 sec. - L2 = 16 sec. - L3 = 24 sec. - ITCM = Never Dial * for next feature.	<table><tr><th>HOLD</th><th>L1</th><th>L2</th><th>L3</th><th>ITCM</th></tr><tr><td>0</td><td>8</td><td>16</td><td>24</td><td>NEVER</td></tr><tr><td colspan="5">DEFAULT - 16 sec.</td></tr></table>	HOLD	L1	L2	L3	ITCM	0	8	16	24	NEVER	DEFAULT - 16 sec.				
HOLD	L1	L2	L3	ITCM													
0	8	16	24	NEVER													
DEFAULT - 16 sec.																	

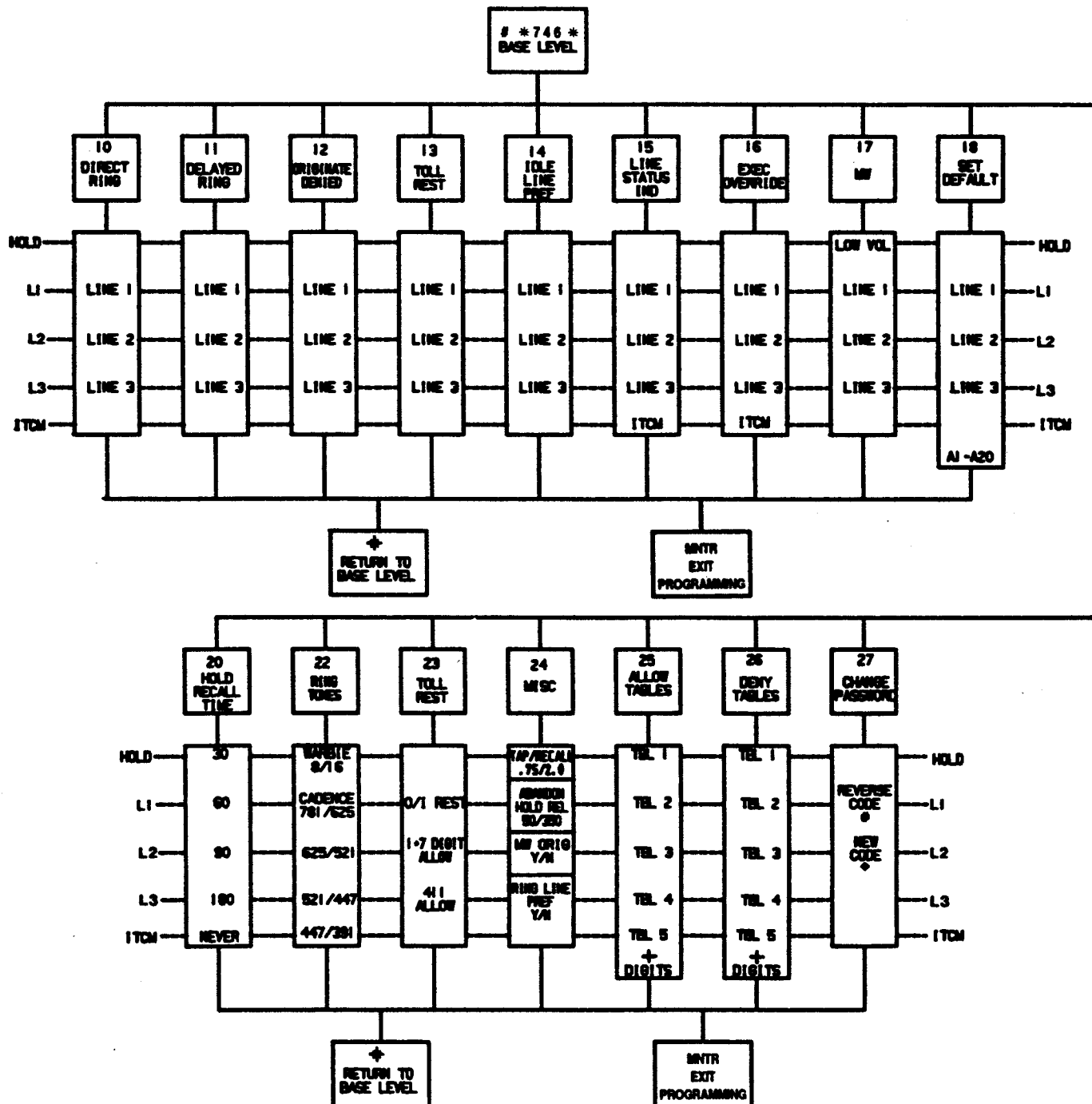


Figure 3-3. Class Of Service Programming Overview

SECTION 3 OPERATION

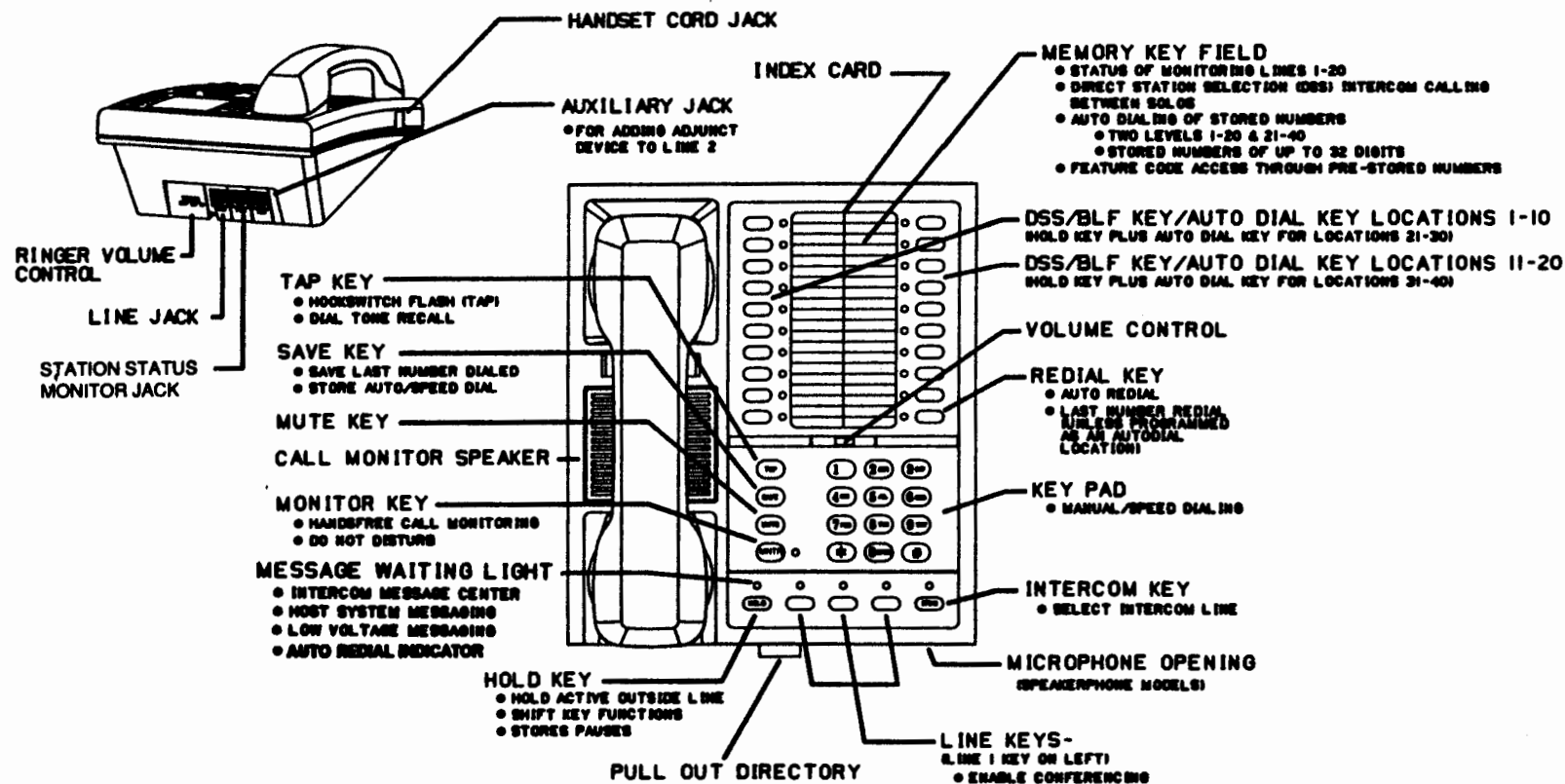


Figure 3-4. Control and Indicator Locations

OPERATING INSTRUCTIONS

Operating instructions for the Solo II Attendant Position are provided in the Solo II Attendant Position User's Guide.

AUDIBLE SIGNALS

RINGING PATTERNS

- **CTX/CO/PBX Ring:** The ring pattern provided by the host system.
- **Intercom Tone Signalling:** The tone signalling ring pattern is two tone bursts sounded every four seconds.
- **Intercom Voice Signalling:** A voice signalling ring pattern is one tone burst sounded once, followed by a voice announcement.

- **Timed Hold Recall:** The timed hold recall ring pattern is three tone bursts sounded at the end of each recall period at the station that put the call on hold.
- **Subdued Ringing:** Subdued ringing (reduced volume ringing) is supplied when an outside line rings at a station that is busy on the intercom line or when the intercom line rings at a station that is busy on an outside line.

DISTINCTIVE RINGING

The ringing cadence and warble rate of the station lines can be changed by COS programming.

RINGER CONTROL


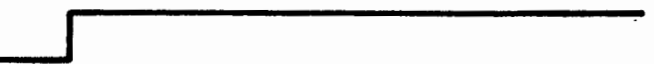

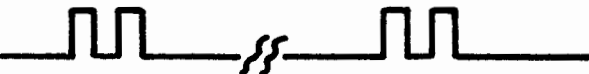





The loudness of the station ringer is controlled by a switch located at the rear edge of the station housing. The appropriate settings are marked on the housing.

VISUAL INDICATORS

INDICATOR	CALL STATUS	INDICATION
STATION LINES	Idle	Dark
	Busy - your station	On with short wink off every 2 sec.
	Busy - other station	On steady
	On hold - your station	Fast flash with wink off every 2 sec.
	On hold - other station	Fast flash
	Ringing	Flashing
	Recall (held call timeout)	Flutter
INTERCOM	Idle	Dark
	Busy - your station	On with short wink off every 2 sec.
	Busy - other station	On steady
	Ringing	Flashing
CALL MONITOR	Idle	Dark
	On line and speaker on (microphone also on if not muted)	On steady
	Mute active	Flutter
	Mute active in monitor mode	Flutter will wink on every second.
MESSAGE WAITING	Message is waiting	On
	Auto redial is active	Flutter (overrides message waiting indication if active)

CALL PROGRESS TONES
(Heard Through Handset Receiver Or Over
Monitor Speaker)

These tones are shown for reference only and may vary somewhat from telephone to telephone.

Busy Tone	553 msec. tone burst sounded continuously	
Dial Tone	Continuous on	
Base level program entry		
Memory key storage entry mode		
Class of service program entry mode		
Called station ring-back	553 msec. tone burst sounded twice every 4 sec.	
Calling station in do-not-disturb mode	123 msec. tone burst sounded twice every 1.2 sec.	
Voice signalling alert - not busy	One 184 msec. tone burst	
Voice signalling alert - busy	Two 184 msec. tone bursts	
Memory key storage dial entry confirmation	One 61 msec. tone burst	
Memory key storage exit	Two 123 msec. tone bursts	
Class of service programming exit		
Class of service programming error tone	Three 61 msec. tone bursts	

GLOSSARY OF TERMS FOR SOLO II ATTENDANT POSITION

ALL-CALL PAGING: Solo II Attendant Positions can receive voice announcements from another Solo II Attendant Position or Solo II telephone through the telephone speaker.

AUTOMATIC DIALING: Memory keys can be programmed to store numbers for automatic dialing purposes.

AUTOMATIC REDIAL: The last number previously dialed can be automatically redialed by a Solo II Attendant Position. Redial occurs once a minute for ten minutes or until answered.

DATAPORT/AUXILIARY JACK: A standard RJ11 configured modular jack is connected directly across the number 2 line. It is used to connect adjunct devices such as autodialers, modems, and data terminals to the telephone line. The dataport is not controlled by the telephone hookswitch.

DIRECT AND DELAYED RINGING: Ringing assignments are programmable. A station can be programmed to provide immediate ringing on some lines while providing delayed ringing on other lines.

DO NOT DISTURB: Incoming call ringing and intercom calling are disabled.

EXECUTIVE OVERRIDE: A calling Solo II Attendant Position can break into a conversation at another Solo II Attendant Position or Solo II telephone that is busy.

HOLD RECALL: A held call will automatically sound three tone bursts at the station which placed it on hold after a programmed period of time.

HOLD RELEASE: If the host system provides disconnect supervision, when a held party abandons a call the line automatically returns to an idle state after a preprogrammed length of time.

IDLE LINE PREFERENCE: Taking the handset off-hook will automatically connect the station to any assigned line that is idle.

LAST NUMBER REDIAL: The last number previously dialed can be automatically redialed.

LINE MONITORING: Monitoring of dialing and call progress with the handset on-hook.

LVMW: Low voltage message waiting signal from a messaging source supplied on a special pair of wires.

MESSAGE CENTER: One Solo II Attendant Position can be arranged for exclusive messaging waiting control. This station can then control message waiting lights and deliver messages to and from all other Solo II Attendant Positions and regular Solo II telephones in an intercom network.

MESSAGE WAITING: A light to indicate that a message awaits pick-up can be activated at a Solo II Attendant Position or regular Solo II telephone by another such station serving as a message center for the intercom network.

MUTE: A user's voice can be blocked to the distant party during a call.

ORIGINATION DENIED: The ability of the Solo II Attendant Position to originate calls on certain lines can be denied through programming. Origination denied does not prevent a user from answering a ringing line, retrieving a held call or receiving a transferred call.

RECALL/FLASH: Either a recall (line disconnect or hang-up) or flash (PBX feature select signal) can be generated.

RINGING TONES: A Solo II Attendant Position can be arranged to ring in one of four distinctive tones and with one of two different warble rates.

SAVED NUMBER REDIAL: The last number previously dialed can be saved and automatically redialed later.

SCREENED TRANSFER: Transferred call is identified before transfer is made.

STATION SPEED DIALING: A personal list of numbers can be programmed for automatic dialing by a user.

TOLL RESTRICTION: Programming can be performed which will prohibit the Solo II Attendant Position from calling any number prefixed with a 1 or a 0. Additionally, 1+7-digit and 411 dialing as well as certain individual number exceptions can be allowed or denied by programming action.

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