



# **Type 120C Coin Telephone**

## **Description, Installation, and Programming Manual**

C.I.473522

Issue 2

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## **Type 120C Coin Telephone**

### **Description and Installation**

**General:** This section describes and provides operational information for the Type 120C Coin Telephone. Installation, field maintenance, and test procedures are also included.

The Type 120C Coin Telephone replaces the Type 120B model. The coin telephone is furnished equipped and wired for Emergency Prepay operation.

### **120C Features**

**with**

### **Microprocessor Technology**

- User adjustable receiver volume from keyboard.
- Simplified keyboard programmability for payphone servicing.
- Convenient keyboard credit card entry.
- Up to ten (10) coin free speed calls for frequently dialed numbers.
- 911 free call options.
- Local call timer from 1-99 minutes.
- Transmitter ground detect circuit to eliminate fraudulent transmitter grounded calls.
- Western style hearing aid compatible handset with armored cord and lanyard.
- Transmitter and/or receiver mute.

#### **Housing includes...**

- Rust-inhibitive durable powder-coated finish with underplating.
- Tongue and groove joints for strength and pry resistance.
- 15 gauge double-walled construction in critical areas.
- Upper and lower housings latched together with six heavy gauge steel latch points.
- Heavy gauge vault door with pry-resistant beveled edges.
- Four (4) positive action slide bolts on vault door.
- Patented tamper-resistant coin slot.
- Anti-stuffing coin return mechanism.
- High security upper and lower locks.

## **Operating Modes**

The 120C Payphone is factory set for emergency prepay and 25 cent base rate. For normal installation no reprogramming is required. To program special features refer to programming section pages 23 - 28.

The 120C payphone is designed to operate in one of three basic operating modes. These are the same modes which were available on the 120B payphone. The two prepay modes (normal prepay and emergency prepay) and the semi-postpay mode operate differently in that the prepay modes use the coin relay and collect or refund coins while the semi-postpay mode cannot refund coins.

## **Feature Changes**

Several features in the 120C payphone operate differently, are not programmable, or may be different from those that were available on the 120B. Those feature changes are listed as follows:

### **Ground Isolation**

The coin ground isolation option available on the Model 120B payphone is non-programmable on the Model 120C. This option was provided on the Model 120B for the emergency prepay mode only if non-simplex coin battery was supplied by the central office. The Model 120C can operate in the emergency prepay mode and provide ground isolation with simplex coin battery (coin battery supplied on both tip and ring leads) or coin battery supplied on the tip lead. Therefore, ground isolation is provided in the emergency prepay mode and is not programmable.

### **Rotary Dial**

The Model 120C Payphone is manufactured in the touch call version only. There is no option for a rotary or pulse dial.

### **Touch Call Polarity Guard**

The Model 120C Payphone provides a polarity guard for the touch call unit in all modes of operation. A programmable option is provided to disable the touch call on reverse polarity. The Model 120B did not allow reverse polarity operation of the touch call unit in the prepay or emergency prepay mode. This prevented entry of credit card information via the keypad when reverse polarity was extended to the station.

### **Single Tone/Dual Tone**

The Model 120B payphone provided a strap option for dual or single tone operation of the coin tone oscillator which generates tones sent to the central office when coins are deposited. The Model 120C does not provide the single tone capability. Only dual tones will be generated.

### **On-Hook DC Resistance**

The Model 120B required approximately 200uA of DC current when in the on-hook mode. This presented some problems with central office maintenance features and therefore was changed in the Model 120C. When in the on-hook mode, the Model 120C requires no operating current.

### **On-Hook RESET**

The Model 120B payphone electronics were designed to reset upon going off-hook. The Model 120C is reset immediately upon an on-hook condition.

### Special Options

#### Factory Settings

The factory default settings listed above for the various options were selected to meet the needs of the majority of current customers. The default settings are programmed at final test and may be changed if the majority of the users require other options.

Major customers may desire to have special factory settings made prior to shipment. All programming options listed above are programmable at final test and can be supplied on a per order basis to major customers.

### Feature Additions

Several features have been added to the Model 120C payphone that were not available on the Model 120B. While some of the features are programmable, others are standard and cannot be either enabled or disabled. New features are described as follows:

#### Call Timer

A programmable local call timer is provided. The call timer can be programmed from 1 to 99 minutes and only operates on outgoing calls. The timer begins timing when base rate is deposited.

#### Free Call

An option is provided on the Model 120C to allow calling 911 and 0 without depositing base rate. This option is provided for the prepay and emergency prepay mode of operation where the central office does not have the capability of providing free calling of emergency numbers.

#### Speed Call

The Model 120C provides the capability of storing ten (10) speed calling numbers which can be dialed by the user without depositing base rate. The speed dial numbers can be 1 to 16 digits each. Speed call numbers can be dialed by depressing "\*" followed by the keypad location (0 through 9). Speed call numbers are not timed if the local timer option has been enabled.

#### Volume Control

A volume control is provided on the Model 120C payphone for users with hearing deficiencies. The volume can be increased in 2 dB steps from nominal to +12 dB by depressing the \* and # keys simultaneously. The receiver volume is set to nominal each time the handset is placed on-hook.

#### Transmitter Ground

The Model 120C Payphone is equipped with a transmitter ground detect circuit which will detect if the user attempts to fraud the operating company by grounding the transmitter to simulate of base rate. If transmitter a ground is detected, the keypad is disabled and an option is provided to disable the receiver. The handset must be placed on-hook for approximately ten (10) seconds to enable normal operation.

## **FEATURES**

### **Mechanical Features**

- 1) All-steel housing construction, except for the majority of the appearance items.
- 2) Extra heavy gauge steel vault door.
- 3) Tongue and groove construction for mating surfaces of the upper and lower housing, and a lower housing cash vault door.
- 4) Protection of critical security areas, such as the rim around the cash vault door which has hardened steel bars.
- 5) High security latching mechanism and lock for the upper housing and cash vault door.
- 6) Provisions for mounting alarm switches.

### **Circuit Features**

The payphone is shipped from the factory with all subassemblies mounted and equipped. The payphone can be mounted and connected to the line and ground wires without removing any of the subassemblies.

In either mode of prepay service (prepay or emergency prepay), collection or refunding of coins can be made at any time, even though the coin relay may be held open by the rate relay. Application of coin battery to the line causes the control circuit of the rate relay to release the relay immediately and connect the coin relay to the transmission network.

The payphone will operate with offices that send coin battery over one side of the line only or both sides simultaneously. This feature allows the payphone to be used with offices that still serve conventional three-slot payphones (with older than two-coil relay) that require the higher current available from paralleling the loop conductors. It also allows use of the telephone in offices that serve other manufacturer's payphones requiring coin battery to be sent over one side of the line only for proper coin relay operation.

### **Mechanical and Electronic Chassis Assembly Features**

The payphone has the following mechanical chassis assembly features:

- 1) Single printed wiring card.
- 2) Easier wiring.
- 3) More reliable connectors.
- 4) Compact size.

The electronic features are as follows:

- 1) Precise frequency dual tones capability.
- 2) Long-loop capability.
- 3) Longitudinal voltage immunity.
- 4) Loop compensating coin tone signal levels.
- 5) Transmitter disabling during coin tone signaling.
- 6) Expandable initial rate to \$9.95.

## Coin Relay-Hopper and Coin Chute Assembly Features

The payphone has the following coin relay-hopper and coin chute assembly features:

- 1) Grab-all tool protection.
- 2) Removable coin chute trigger switch.
- 3) Transparent switch covers.
- 4) Guaranteed passage of light dimes.

The payphone is equipped with metal hookswitch acuator and metal TCU pushbuttons. These features provide:

- 1) Resistance to burning.
- 2) Resistance to damage caused by striking the handset against the telephone housing.
- 3) A TCU with small buttons and protective adapter plate is also available.

### **DESCRIPTION**

#### Housing

The housing of the payphone is made of all steel construction, except for the majority of the appearance items and is 21 inches high, 7-5/8 inches wide, and 6 inches deep. The upper and lower housing are formed of deep-drawn steel and contain reinforcing members welded in place. Extra-heavy-gauge steel is used for the cash vault door that also uses reinforcing members. To reduce the possibility that an unauthorized person will gain access to the interior of the payphone, tongue-and-groove type construction is used at the mating surfaces of the upper and lower housings, and the lower housing cash vault door. The housing and door are protected further by hardened steel liners that retard attempts to drill into the housing at these points.

Retention of the upper housing to the lower housing is effected by two slide-bars that secure at six points which are actuated by a T-wrench (SMC-579246), part no. HD-580044-A. The T-wrench is a one piece unit of hardened stamped steel. An opening at the upper right side of the upper housing permits entry of the tool to engage the latch.

The cash vault door is secured in place by a similar four-point latching mechanism that is engaged by inserting the T-wrench into an opening in the center of the door's surface. In this case, the latch is secured by a four-tumbler cylinder lock, located on the left side of the lower housing.

The pattern of mounting holes in the lower housing (and the relationship of the wire entry opening to the mounting holes) is the same as the 120B, including a pattern of mounting holes behind the vault area that may be used when mounting to a metal backboard (HD-470004-C). For wire entry in surface-wired installations and other installation requirements, a metal backboard is available and can be ordered from the Table 1 replacement parts list. Provision is made for use of four security studs in mounting.

The cash vault of the payphone is equipped at the factory to accept the large coin receptacle.

The standard finish for the upper and lower housings is black powder-coated painting that is highly resistant to abrasion and chemical attack. Light texturing of the finishing conceals welding marks where internal parts are anchored to the housings. The coin return receptacle and faceplate are matte chrome finished. The handset cradle, pushbuttons on the TCU, and hookswitch tongue have a bright chrome finish.

The coin return receptacle has a top hinged door at the right front of the lower housing. Returned coins enter the receptacle from a passage behind the door and collect just below the bottom of the door. The floor of the receptacle extends to the rear and upward to form a trough for holding coins. When the door is opened, coins are accessible to the Customer while the passage by which coins enter the receptacle is blocked off. The rearward extension of the trough appears to be the passage from which coins enter, but it may be stuffed to no avail because the actual passage is protected from stuffing by the opened door.

The payphone is equipped with a weather-protected TCU and arranged to prevent generation of single tones by simultaneous operation of two pushbuttons in the same row or column.

The upper housing contains a dial housing to which are mounted the TCU and hookswitch, a 16 pin connector and cable assembly. Leads from the various components and the plug are interconnected at the TCU board. The upper housing makes electrical connections to the lower housing through the 16 pin connector and cable assembly that require manual insertion. This allows the upper housing to be removed without disabling the payphone. The design achieves on-axis pullout of the connector in the event the upper housing is completely removed without first disconnecting the plug.

A stationary handset hanger is mounted on the front of the upper housing. The hookswitch tongue is a two-part assembly that snaps together. The outside portion is made of chrome die-cast material, and the hookswitch spring actuator cam is made of plastic. The hookswitch tongue is actuated by a lever that projects through an opening in the housing between the support points of the hanger. An armored handset cord with lanyard is furnished as standard equipment and is arranged for entry on the left side of the housing to minimize tangling. The handset is hearing aid compatible.

## **Subassemblies**

The lower housing of the payphone consists of the following three major subassemblies:

- 1) Rejector mechanism.
- 2) Coin relay-hopper and coin chute assembly.
- 3) Chassis assembly.

The rejector mechanism is fastened to a mounting plate that is held in place by a tab and one screw. A rejection chute (connecting the rejector mechanism and coin relay return outlets to the coin receptacle) is held in place by one captive screw.

The rejector mechanism is a sophisticated coin-testing device for accepting a very high percentage of genuine coins and rejecting the majority of slugs encountered in the field. As coins enter the rejector, they are sorted into the three general size categories of a quarter, nickel, or dime. Thereafter, coins are tested in their own individual channel. Each coin is first checked for proper diameter and weight. If it meets these requirements, it is checked for a perforation (such as that in a washer) and is released down an inclined rail. As the coin rolls down the rail, it is tested for proper thickness. Serration detectors are used to determine the speed at which a coin should exit the rail. The material composition of the coin or slug determines the speed with which it leaves the inclined rail. If the coin travels too rapidly or too slowly, it strikes certain deflectors that cause it to be diverted to the rejection outlet. In addition, the nickel is tested for hardness and elasticity to determine whether it will be accepted or rejected.



Most rejected coins are diverted directly into the reject chute assembly and dropped into the coin return receptacle of the payphone. Ferrous slugs (oversized coins) and washers become trapped in the rejector but can be released by operation of the coin release lever. As this lever is operated, it causes a separation of the hinged sides of the lead-in chute and rejector. This allows several fingers to extend into the coin channels and dislodge trapped coins. At the same time, wiper blades sweep past the magnets to clear the coin channels, directing the trapped coins to the coin return receptacle.

The coin entry chute, located on top on the rejector, is equipped with an anti-stuffing device. Stuffing material introduced into the coin chute causes a metal plate to block the coin slot, preventing the insertion of coins.

The coin relay-hopper and coin chute assembly located below the rejector mechanism is retained near the top by a tab that drops over an opening in the reinforcing plate at the rear of the lower housing. The collect opening of the hopper extends through the floor above the coin box and is held in place by a movable rail that is locked in place with three screws.

Genuine coins leaving the rejector mechanism have been sorted into three channels. As a coin travels through the succeeding chute section, it operates the trigger switch associated with the coin denomination. Each trigger switch provides an input to the totalizer. When the first coin passes through any of the trigger switches, it also causes the coin relay trigger lever to operate and lock until collect or refund operation occurs. After passing through the coin chute, coins fall into the relay-hopper and are channeled into the coin box in semi-postpay service or come to rest on a double trapdoor in prepay or emergency prepay service. Coin chute trigger switch serviceability is provided by making the coin chute removeable without first requiring that the entire coin relay-hopper and coin chute assembly be removed.

The coin relay-hopper and coin chute assembly serve to dispose of the coins held suspended on the trapdoors of the hopper. The hopper design accepts coins from an off-center entry point and retains them in random fashion. The relay also features a polarized selector mechanism. During operation of the relay, the selector card is influenced by the polarity of the voltage applied to the relay. This causes the card to tilt as it moves downward and opens up the proper trapdoor to collect or refund coins. Application of coin battery with (+) to L2 and (-) to ground initiates the collect function, and reversal of the coin battery polarity initiates the refund function. Release of the relay resets the trigger lever and returns the trapdoor to the closed position in readiness for another deposit. As the relay operates, it short circuits its own coil and substitutes a resistor in the circuit. The coil-shortening feature allows the relay to operate completely on a 200 millisecond pulse. A long release time is provided by the shorted coil to ensure complete disposal of coins. The resistor is a current-limiting device that protects the operator's coin lamp.

The chassis assembly is mounted to the left side of the lower housing and is retained by a tab and one captive screw. Type 48 ringer is mounted to the chassis. Electrical interconnection to other assemblies is made by connectors mounted on the chassis assembly. A 16-pin connector provides circuit access to the components in the dial housing. A 4-pin connector offers connection to the coin chute trigger switch. A 3-pin connector provides connection to the coin relay, and another 3-pin connector provides connection to the line wire terminal block located on the lower housing below and in the front of the chassis location.

The one-way amplifier circuit serves to prevent the use of the handset receiver as a microphone in semi-postpay service.

The burst through circuit provides the capability to collect and refund less than initial rate coin deposits for prepay and emergency prepay services. For semi-postpay service, the coin relay must be disconnected.

## Modification

A directory bracket kit (HH-880035-1) consisting of a bracket and six (6) mounting screws is available for use on the revised metal backboard (HD-470004-C) with predrilled mounting holes. The directory bracket is for use in locations where the surface is not substantial enough to withstand the weight of heavy directories.

Both the alarm switch assemblies (HD-720001-A and HD-720002-A) are available for mounting to the upper right side and lower left side of the lower housing.

A modification kit is available for converting a 120B to a 120C:

HH-880307-1 --For 120B with plastic hookswitch housings.

HH-880307-2 --For 120B with metal hookswitch housings.

HH-880307-3 --Provides a completely assembled hookswitch/TCU assembly with small buttons.

HH-880307-4 --Provides a completely assembled hookswitch/TCU assembly with large buttons.

The L-9099 handset is hearing aid compatible and is furnished as standard equipment on the payphone. This handset is designed for use by persons hard of hearing. The handset receiver capsule is also of special design to provide immunity to damage from impact shock. The transmitter and receiver caps are permanently bonded to the handset shell. The hearing aid coupled handset can be identified by the blue grommet located at the point where the armored handset cord enters the receiver.

## **ORDERING INFORMATION**

To order the payphone or replacement parts for the payphone, refer to TABLE 1 for the required part number.

## **INSTALLATION**

The payphone is furnished equipped and wired for emergency prepay operation but can be modified for prepay or semi-postpay operation.

The shipping container will include the completely assembled payphone, coin vault door, payphone number card, customer instruction cards, and plastic inserts that protect the cards. Locks, keys coin boxes are not included and must be ordered separately.

**NOTE:** Hearing aid compatible handset assemblies contain transmitter and receiver caps which are permanently bonded to the handset shell. These handset assemblies are identified by a 1-1/2 by 3 inch card placed inside the protective plastic bag surrounding the handset. This card is to be placed inside the payphone housing by the installer to alert repairmen that the handset caps cannot be removed on site. Any attempts to repair or salvage the receiver and transmitter units require the destruction of the handset shell and caps.

## Location

The location at which the payphone is to be installed is specified on the service order. The location should meet the following criteria.

- 1) Have sufficient light.
- 2) Be free of excessive noise, vibration, and dirt.
- 3) Be free of pedestrian and vehicular traffic.
- 4) Be clear of glass counters, showcases, or other fragile objects.
- 5) Have a 6 inch clearance from fluorescent lights, transformers, and similar apparatus to avoid inductive interference.

## Mounting

The payphone is shipped with all subassemblies mounted and wired. Before mounting the payphone the upper housing must be removed from the lower housing by performing the following steps:

- 1) Insert the key into the upper housing lock and rotate it one-fourth turn in a counter-clockwise direction.
- 2) Insert the T-wrench into the opening in the upper housing and turn it one-eighth turn in a clockwise direction.
- 3) Grasp both sides of the upper housing and slide it forward. At the same time that the upper housing is being removed, reach around it on the left side and disconnect the jack-ended cable that connects the upper housing to the chassis card.

When installing the payphone, a perfectly vertical mounting surface is very desirable. A tilt greater than 1.5 degrees in any direction will cause malfunction of the coin rejector mechanism. A vertical surface may be determined by proceeding with the following steps:

- 1) Place a spirit level vertically against the mounting surface with the top end of the level at the required height of the payphone.
- 2) Move the top or bottom end of the level away from the mounting surface as required to obtain a vertical reading.
- 3) Ensure that a vertical position is obtained in both directions.
- 4) If mounting surface deviation from a vertical plane exceeds 1.5 degrees, level the booth or other mounting surface to bring the payphone to a perfectly vertical position.

The mounting surface for the backboard (HD-470004-C)(SML 55045) must be strong enough to support the backboard and payphone. In addition, the surface must be flat and devoid of any peaks or valleys which may create gaps large enough to allow the backboard to be pried loose. The backboard is used where a predrilled mounting surface is not available.

To mount the payphone in an aluminum booth, refer to company procedures.

Mounting height of the backboard, as measured from the floor to top of the backboard, is as follows:

- 1) Without a seat, 63 inches.
- 2) With a seat, 52 inches.
- 3) If the installation site is in a barrier free environment or the payphone will be accessed by the wheelchair physically handicapped, 54 inches. If a shelf is installed, the shelf must be 30 inches from the floor. A payphone at such a location must never be installed in a corner and must not have any obstacles within 3 feet of its front or sides.

There are 10 mounting holes (5 on each side) in the backboard. The mounting screws used must be of the proper size and type for the mounting surface. Guidelines for mounting the payphone are as follows:

- 1) If wiring is run on the surface, position the wire such that it will lay in the channels and grooves of the backboard and emerge from the backboard entrance hole. If the wire is run

through the wall, ensure that the backboard entrance hole aligns with the final position of the wire.

- 2) Mount the backboard with the mounting screws when it is level in all directions.
- 3) Install and tighten the four security studs (SML 557487) in the threaded holes on the back of the payphone.
- 4) Align the payphone with the backboard and run the wires from the backboard into the telephone's wire entrance hole. Position the payphone's security studs over the backboard's key slots. Allow the payphone to slide into place.
- 5) Install and tighten mounting screws (SML 557057) as follows:
  - a) One directly below the chassis.
  - b) One through the chassis clearance hole.
  - c) One behind the rejector mechanism. For better access, disconnect the rejector chute at the bottom of the rejector and tilt the chute forward. Loosen the rejector mounting screw at the top of the rejector mounting plate. Tilt the top of the rejector to the right to expose the mounting hole. (The rejector may be removed at this point without removing its top mounting screw by lifting it up and out.) Install and tighten the mounting screw and reassemble the rejector mechanism.
  - d) Two in the vault area behind the anti-stuffing device. If screws are to be installed behind the anti-stuffing device, loosen the anti-stuffing device screw and remove the anti-stuffing device.
- 6) Connect the line wires and the ground to the terminal block at the base of the lower housing. The payphone ground is connected for direct grounding to the payphone set housing; no additional ground wire strap assembly is required.
- 7) The payphone is furnished wired and equipped for emergency prepay operation.

## **Lock Installation**

If the locks of the upper and lower housings are in place, disregard these instructions. If, however, the locks are not installed, use the following procedure:

To install the upper housing lock, proceed as follows:

- 1) Remove the upper housing.
- 2) Manipulate (from the outside) the locking bar and cam portion of the lock assembly through the cutout in the upper housing.
- 3) Manipulate the mounting nut over the locking bar with the cutout facing toward the inside of the upper housing.
- 4) Lock the cylinder by rotating the key one-eighth of an inch clockwise. The locking bar may be adjusted by loosening the locking bar mounting screw, locking the cylinder, and retightening the screw.
- 5) Tighten the mounting nut.
- 6) Replace the upper housing by plugging connector J4 on the chassis card and, at the same time, sliding the housing into position.

To install the lower housing lock, proceed as follows:

- 1) Insert the lock assembly through the inside of the vault compartment through the opening in the left side of the lower housing.
- 2) Secure the lock assembly with the six captive screws furnished and by using a T-wrench (HD-580044-A). Make certain even pressure is given to each screw.

**NOTE:** Do not tighten any screw until all mounting screws have been started.

## INSTALLATION TESTS

Standard installation test for ringing, dial speed, and line noise level must be performed. In addition to these tests, various coin mechanism tests must be performed. Tests for prepay service differ from those for semi-postpay service. Each test should be performed at least five times.

### Prepay Service

To check the coin mechanism operation, use the following procedures:

- 1) For a payphone set for 25-cent service, deposit twenty cents and check that a call CANNOT be made. Deposit a nickel and dial the number assigned to the payphone. When busy tone is heard, hang up and check for correct coin refund.
- 2) Deposit a quarter and dial the number assigned to the payphone. When busy tone is heard, hang up and check for correct coin refund.
- 3) Remove the cash vault door.
- 4) Deposit a quarter, dial the test line and hang up when connection is made. Verify that the quarter falls into the cash vault.
- 5) Deposit a quarter and dial the local test desk or operator. Deposit a dime, nickel, and quarter. Have the test-deskman or operator identify the coins.
- 6) Deposit various coins and have the test-deskman or operator identify each coin.
- 7) Have the test-deskman apply refund current. Verify that the coins drop into the coin return receptacle.
- 8) Redeposit the coins and have the test-deskman apply collect current. Verify that coins drop into the vault door.
- 9) Replace and lock the cash vault door.

### Semi-postpay

To check operation, use the following procedures:

- 1) Dial the payphone number and wait for a busy tone. Hang up.
- 2) Unlock the cash vault door.
- 3) Dial a predetermined number for assistance in checking the payphone's operation. Do not call the operator.
- 4) When the called party answers, deposit one dime. The transmission block should remain; therefore, deposit an additional 15 cents. This should remove the transmission block. Hang up.
- 5) Call the same party for further assistance and, when the called party answers, deposit a quarter. Transmission block should be removed. Hang up.
- 6) Call the operator for assistance with coin signal testing.
- 7) Deposit a coin of each denomination and have the operator identify each coin. Hang up. Lock the cash vault door.

## OPERATION

The three main operations of the payphone are the two prepay modes (prepay and emergency prepay) and the semi-postpay.

The two prepay modes and the semi-postpay mode differ in that the payphone programmed for prepay operation uses the coin relay, and coins are refunded or collected. The payphone programmed for semi-postpay operation uses no coin relay, and coins cannot be refunded.

The remaining paragraphs of this section describe prepay and semi-postpay operation with a central office, and the operational sequence for the prepay and semi-postpay modes.

### Prepay Operation with a CO

The automatic exchange associated with a coin telephone strapped for prepay operation must be equipped with coin-control repeaters, sources of +110-Vdc collect and refund battery, and a interrupter that produces intermittent coin-control current by application to the line. If a payphone is arranged for emergency coin-free service, a repeater or adapter and associated digit-analyzing equipment designed for this type of service must be installed at the CO to prevent fraudulent calls (e.g. in the absence of digit analyzers on emergency coin-free service, hookswitch dialing is possible).

Upon lifting the handset, the calling party is connected to the CO and the dial tone can be heard. The calling party now deposits the initial rate deposit, which is 25 cents in most localities, and may dial the call in the usual manner.

Upon termination of a call, the CO sends either collect or refund battery to the payphone, depending upon whether the call was completed or was incomplete. If the call was completed, operation of the coin relay directs the coins into the cash vault. If the call was incomplete, the coins are directed into the coin return receptacle. After the coins have been collected or refunded, the payphone is returned to its normal condition (ready for another call).

On operator assisted calls, the initial rate amount is refunded upon connection to the operator. Toll operators supervise collection of coins by audible signals generated by an audio oscillator located within the payphone. The operator controls the application of coin collect and refund signals on toll calls.

### Prepay Operational Sequence

The calling party, upon initiating a call, lifts the handset and dial tone can be heard. The calling party now deposits the initial rate as described and the coins are then directed into the rejector mechanism where they are gauged and tested as described earlier. After the coins clear the rejector mechanism, they pass through a coin chute that contains 3 trigger switches, one for each of the three denominations of coins used in the payphone.

When the coin actuates the trigger switches in the coin chute, the trigger switches close a path to the chassis. The first coin in its path to the coin hopper also actuates the trigger switches in the coin relay. The triggering of the coin relay operates a set of contacts that prepare a ground path on the coin relay. This action has no effect upon the loop unless the initial rate has been deposited. When the initial rate has been deposited, the totalizer enables the TCU. At this time, the CO is prepared to receive DTMF tones.



## Semi-postpay Operation with a CO

In semi-postpay operation, the station user receives a dial tone without deposit of coins and can dial the number of digits required to place a local call or reach the Toll or Extended Area Service (EAS) operator.

Should the call not be completed for any reason, the payphone will not refund coins because no coins have been deposited. When the called party answers, the switching equipment reverses the polarity of battery feed to the calling party which disables the handset transmitter. When the initial rate deposit is made, the transmission impairment is removed and the parties can converse.

## Semi-postpay Operational Sequence

The calling party, upon initiating a call, lifts the handset and dial tone is extended. The user dials the desired number of digits and the calling party can hear the called party answer the call, but conversation cannot take place because the transmission is inhibited by the payphone totalizer circuitry until the initial rate has been deposited.

The calling party, upon hearing the called party, inserts the correct amount of coins into the coin slot. The coins are directed into the rejector mechanism where they are gauged and tested as described above. After they clear the rejector mechanism, they pass through coin chute that contains three trigger switches, one for each denomination of coins used in the payphone. The trigger switched close a path to the chassis. After the coins leave the coin chute, they are diverted directly into the cash vault.

After the initial rate is deposited, the totalizer reestablishes transmission and allows the calling and called parties to converse. When the call is terminated and the handset is placed on-hook, the totalizer is reset in preparation for the placement of the next call.

## Emergency Prepay Operation with a CO

The exchange, handling emergency calling service, must be capable of analyzing the digits being received to ensure that the correct ones will be allowed to go through free of charge.

A typical exchange can provide coin-free access to any or all of the following codes:

- 1) X11
- 2) 11X
- 3) 0
- 4) 0 + 7 digits
- 5) 0 + 10 digits
- 6) 1 + 7 digits
- 7) 1 + 10 digits

The X11 and 11X are special service codes. When these codes are properly identified in the office, any detection of coin ground will immediately refund any coins that may have been deposited.

For the 0+ and 1+ codes, any coins that may have been deposited will be refunded when the toll operator comes onto the line. The No. 1 TSPS trunks will provide reverse battery that may disable the TCU (see programming instructions).

All types of calls other than described in the two paragraphs above will be processed the same as for prepay operation. However, if no coin deposits have been made to satisfy the initial rate, the caller will be diverted to an automatic recording that will give the following message: "The number you have dialed requires a deposit of X cents, please try again". Upon disconnect, any coins insufficient to satisfy the initial rate will be refunded.

## **Emergency Prepay Operational Sequence**

The calling party, upon initiating a call, lifts the handset dial and tone is extended. The user can dial a code (numbers listed above; 1 through 7) without coin deposit. If, however, the user dials a code not in the required list of codes, the intercept message will come onto the line and request the user to try again. When the initial rate is reached, the call will be processed the same as for prepay operation.

## **FIELD MAINTENANCE**

Field maintenance is normally limited to cleaning and replacing defective components.

## **Chassis Assembly**

Perform the following routine inspection of the chassis assembly before proceeding with the specific troubleshooting procedure described in TABLE 2:

- 1) Check L1, L2, and GND on the line wire terminal block for loose connections and/or bad crimping of the wires. If bad crimping exists, replace the connector cable assembly that connects to the chassis assembly.
- 2) Check for damaged components. If damage exists, replace entire chassis assembly.
- 3) Verify that the line is in operating condition.
- 4) Check for broken wire in the connectors. If broken wire exists, replace the defective assembly or subassembly.
- 5) Check for wiring connections on the hookswitch dial housing assembly.
- 6) Ensure that the entire chassis assembly is installed properly and is fully seated.

## **Coin Relay-Hopper and Coin Chute Assembly**

Perform the following routine inspection for the coin relay-hopper and coin chute assembly before proceeding with the specific troubleshooting in TABLE 3:

- 1) Perform a routine inspection of the chassis assembly as described under "Chassis Assembly".
- 2) Check for jammed coins in the coin chute assembly. If coins are found, remove them by removing the coin chute assembly and turn it upside down. If this does not clear the coins, replace the entire assembly.
- 3) Check for coins jammed in the hopper. If coins are found, dislodge them by using an orange stick or similar object, taking care not to damage the door, latch, or latch springs.
- 4) Ensure that the assembly locking tab in the back of the coin chute is properly seated in its groove.
- 5) Check for foreign particles between the relay armature and the pole piece. If particles are found, remove them.



- 6) Inspect the trigger switches for obvious damage. If necessary, replace the coin chute assembly.
- 7) Verify that the coin relay contact springs operate fully on the coin drop and are fully restored when the relay operates. Verify that no interface with the covers exists. If necessary, replace the entire coin relay-hopper assembly.

## **Rejector Assembly**

Perform the following routine inspection of the rejector assembly before proceeding with the specific troubleshooting procedure in TABLE 4:

- 1) Ensure that the rejector is vertical within 1-1/2 degrees. If it is not vertical, correct the angle by adjusting the backboard or booth.
- 2) Ensure that the rejector is clean and free of foreign matter. If not, clean it with a lint-free rag. Also clean the nickel bounce tester using a rag wrapped around an orange stick or screwdriver. Do not allow the gate to slam shut.
- 3) Verify that the parts have not been damaged or have not fallen off (cradles, counterweights, etc.). If any have fallen off, replace the entire assembly.
- 4) Ensure that the nickel bounce tester mounting screw is tightened. If not, tighten it but do not over-torque.
- 5) Check for free operation of the linkage. If binding is detected, clean the unit or replace the entire assembly.
- 6) Check the coin release lever on the upper housing assembly for proper operation. If a problem is detected, replace the entire upper housing.

## **Hookswitch and Dial Housing Assembly**

Perform the following routine inspection of the hookswitch and dial housing assembly before proceeding with the specific troubleshooting procedure as outlined in TABLE 5:

- 1) Check for a damaged handset. If handset is damaged, replace entire assembly.
- 2) Check for sticky TCU buttons. If necessary, replace the entire hookswitch and dial housing or TCU.
- 3) Verify that the hookswitch cam is not damaged. If it is, replace the entire assembly.
- 4) Check for poor or broken connections. If any are found, repair the connections or replace the entire assembly.
- 5) Verify that the hookswitch contacts are operating properly. If not, replace the entire assembly.

## **Armored Cord, Handset Assembly, and Housing Assemblies**

For specific troubleshooting information for the armored cord and handset assembly, refer to TABLE 6. For specific troubleshooting information for the housing assembly, refer to TABLE 7.

TABLE 1

## Ordering Information for Type 120C Coin Telephone and Replacement Parts

Description	Part No.
Model 120C Payphone w/ accessories** small buttons	HC-120006-QWD
Model 120C Payphone w/ accessories** large buttons	HC-120006-GWD
Upper Housing	* HD-480106-AGD, HD-480106-AQD
Hookswitch/Touch Call Assembly	* HD-500030-DR, HD-500030-CR
Touch Call Unit	* HD-840204-AR, HD-840204-BR
Adapter Plate, Touch Call	* HD-780019-D, HD-781033-A
Coin Relay	HD-550001-BR
Coin Hopper	HD-780044-CR
Coin Chute and Trigger Switch	HD-780034-CR
Totalizer Chassis	HD-731416-AR
Cable, Hookswitch Housing to Chassis	HD-910101-A
Coin Rejector, complete	HD-500018-CP
Handset Assembly (standard)	L-009099-AAR
T-wrench	HD-580044-A
Backboard	HD-470004-C
Card, Upper semi post pay	HD-530291-AR
Card, Upper prepay	HD-530290-AR
Card, Lower	HD-530287-BR
Cover, Plastic, Relay	HD-490011-B
Cover, Plastic, Trigger	HD-490012-A
<b>* Large TCU buttons are standard, second Part No. listed provides for small buttons</b>	
<b>** Accessories include upper and lower housing locks, keys, coin box, and T-wrench.</b>	

TABLE 2

## Troubleshooting Chassis Assembly

Step	Specific Trouble	Field Action
1	Cannot break dial tone. Cannot talk on semi-postpay. Free calls.	a) Check line polarity. b) Check for loose connections. c) Check programming options. d) Replace chassis, then hookswitch dial assembly, coin relay-hopper and coin chute assembly.
2	Calls on less than initial rate deposit.	a) Check initial rate. b) Check trigger switches and replace coin relay- hopper and coin chute assembly.
3	Dead telephone. No dial tone.	a) Check to see if the line is shorted or open. b) Check for loose connections. c) Replace handset assembly.
4	Coin relay will not collect or refund less than initial rate deposit.	a) Replace entire chassis assembly. b) Problem at central office. c) Coin telephone, central office interface problem.
5	Coin-tone or coin-pulsing problem.	a) Check coin chute operation and replace if necessary. b) Replace entire chassis assembly.
6	Coin tones heard in receiver.	a) Replace entire chassis assembly.
7	No coin tone.	a) Check for defect carefully; quite often, Customers feign coin deposits. b) Check rejector operation. c) Check carefully for trigger switch damage. If found, replace coin chute. Do not adjust. d) Check line polarity. e) Check chassis for loose connections. f) Replace chassis assembly.
8	TCU not disabled by totalizer before initial rate is reached (prepay option).	a) Replace entire chassis assembly.
9	Transmitter not disabled on reverse battery before rate is reached (semi-postpay option).	a) Replace entire chassis assembly.
10	No ring or bad ring.	a) Replace ringer or entire chassis assembly.
11	Base rate reached on 5 and 10 cent combination but not on 25 cents, or vice versa.	a) Replace coin relay-hopper and coin chute assembly.
12	Noisy line.	a) Loose connections at line terminal. b) Check handset.
13	Reaches initial rate, but no tones generated thereafter.	a) Replace entire chassis assembly.

**TABLE 3**  
**Troubleshooting Coin-Relay and Coin Chute Assembly**

Step	Specific Trouble	Field Action
1	Refund or collect door hangs open.	a) Replace entire coin-relay and hopper assembly.
2	Doors do not operate freely.	a) Replace entire coin-relay and hopper assembly.
3	Relay does not operate.	a) Check ground, L1 and L2 plug. b) Replace entire coin-relay and hopper assembly.
4	Relay operates too fast.	a) Replace coin relay.
5	Wrong number of coin pulses.	a) Replace coin chute assembly. b) Replace chassis assembly.
6	Coins jammed in hopper.	a) Dislodge with probe, taking care not to damage assembly.
7	Single coin jamming in door.	a) If frequent, replace entire assembly.
8	Coin stuck in coin chute.	a) If constant, replace coin chute assembly.
9	Relay operates too slowly.	a) Replace entire assembly.
10	Coin relay ground is not present after initial rate has been reached or during coin test.	a) Check for proper operation of coin relay trigger. If defective, replace entire assembly. b) Perform a routine inspection of chassis assembly. c) Replace chassis assembly.
11	No coin tone produced for one denomination of coin, but alright for other coins.	a) Check for trigger switch spring damage. If damaged, replace coin chute assembly. b) Perform a routine inspection of chassis assembly. c) Replace chassis assembly.
12	No indication of coin deposit.	a) Check for trigger switch spring damage. If defective, replace coin chute assembly. b) Perform a routine inspection of chassis assembly. c) Replace chassis assembly.
13	Refund/collect door opens upon coin deposit.	a) Replace coin-relay and hopper assembly.
14	Coin relay will not operate on long loop.	a) Check for good ground connections. b) Replace entire assembly.
15	Coin relay pulses or chatters.	a) Check for stuck coins and clear if found. b) Check for hopper door hanging open. If found, replace coin-relay and hopper assembly. c) Check for proper operation of trigger switch. If defective, replace entire assembly. d) Check selector card for improper biasing on pin. If found, replace entire assembly.
16	Cannot mount replacement.	a) Check to make certain the relay tab and coin chute tab are in their respective slots. b) Check for burrs on hopper. If found, use different replacement relay. c) Check to make sure rail is not defective.
17	Card selector does not operate properly (hits pin).	a) Replace entire assembly.
18	Latch not welded properly.	a) Replace entire assembly..
19	Iron filings on armature or core.	a) Clean and check. b) Replace entire assembly.
20	Switch card bottoms on pile-up during pile-in.	a) Replace entire assembly.
21	Trigger switch springs bent.	a) Replace entire assembly.

**TABLE 4**  
**Troubleshooting Rejector Assembly**

<b>Step</b>	<b>Specific Trouble</b>	<b>Field Action</b>
1	Rejects more than approximately one-fifth good coins, or accepts copper or zinc slugs.	a) Level booth or backboard. b) Clean rejector assembly (Note 1 or 2). c) Replace rejector assembly if necessary.
2	Will not clear Canadian coins.	a) Clean rejector assembly (Note 1 or 2). b) Replace entire assembly.
3	American rejector will not accept Canadian coins.	a) Normal; do not adjust.
4	Accepts certain type of slug.	a) Refer problem to repair shop.
5	Cradle fell off.	a) Replace rejector.
6	Washer catcher fell off.	a) Unless a problem with slugs exists, do not replace.
7	Linkage binds.	a) Clean rejector assembly (Note 1 or 2). b) Replace rejector assembly.
8	Does not always accept good coins.	a) Normal if approximately four-fifths are accepted. Do not adjust.
9	Does not reject all slugs.	a) Normal; only rejects the majority of common slugs. Do not adjust.
10	Coins sticking.	a) Clean rejector assembly (Note 1 or 2). b) Replace rejector assembly.
11	Will not scavenge an American quarter.	a) Clean rejector assembly (Note 1 or 2). b) Replace rejector assembly.
12	Rejector stays open after coin release.	a) Check the lower lead-in chute mounting screw for interface with the rejector gate assembly. If necessary, insert washer under the screw. b) Clean rejector assembly (Note 1 or 2). c) Replace rejector.
13	Foreign matter in rejector.	a) Clean rejector assembly (Note 1 or 2).
14	Scavenger assembly jammed; will not return to normal.	a) Clean rejector assembly (Note 1 or 2). b) Replace rejector assembly.
15	Washer will not catch on washer catcher.	a) If accepting slugs, replace rejector. If not, do not adjust.
16	Rejects nickels.	a) Clean nickel bounce tester and make certain the nickel bounce tester screw is tight.

**NOTES: (1) Clean rejector assembly as follows:**

- A. Clean unit with an oil-free rag, or for a very thorough job of cleaning, refer to NOTE 2. Clean out all dirt, even smaller amounts of dirt. Metal particles, particularly, can cause rejector to malfunction.
- B. Do not lubricate unit. Lubricants attract dust. Graphite may be used at dam gate if it is sticking.

**(2) To give rejector mechanism a thorough cleaning, proceed as follows:**

- A. Place rejector in boiling water and allow to soak for 10 minutes.
- B. Use toothbrush and kitchen cleanser to clean foreign matter from rejector.
- C. Rinse in boiling water.
- D. Dry thoroughly with compressed air.

**TABLE 5**  
**Troubleshooting for Hookswitch and Dial Assembly**

Step	Specific Trouble	Field Action
1	Hookswitch out of adjustment.	a) Adjust springs (if possible) or replace hookswitch and dial assembly.
2	TCU pushbuttons sticking.	a) Remove entire assembly, then replace TCU.

**TABLE 6**  
**Troubleshooting Armored Cord and Handset Assembly**

Step	Specific Trouble	Field Action
1	Receiver or transmitter weak or dead.	a) Routinely inspect chassis. b) Replace handset assembly.
2	Cannot remove handset caps with tool.	a) Normal; handset caps are bonded to handset shell and cannot be removed.
3	Hard of hearing coil not working .	a) Replace handset assembly.

**TABLE 7**  
**Troubleshooting Housing Assembly**

Step	Specific Trouble	Field Action
1	Paint peeled off or scratched.	a) Touch up finish.
2	Key breaks (upper housing or vault).	a) Pull key out, obtain a second key. b) Push key to unlock position with stub and unlock if possible).
3	Foreign matter in keyway (upper or lower housing).	a) Push foreign matter through with a small wooden stick or key.

## **Type 120C Coin Telephone Programming Instructions**

<b>General :</b>	<b>This manual provides feature programming and installation information for the Type 120C Coin Telephone. Your payphone is programmed and wired for Emergency Prepay Service from the factory.</b>
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### **120C Features with Microprocessor Technology**

- User adjustable receiver volume from keyboard.
- Simplified keyboard programmability for payphone servicing.
- Convenient keyboard credit card entry.
- Up to ten (10) coin free speed calls for frequently dialed numbers.
- 911 free call options.
- Local call timer from 1-99 minutes.
- Transmitter ground detect circuit to eliminate fraudulent transmitter grounded calls.
- Western style hearing aid compatible handset with armored cord and lanyard.
- Transmitter and/or receiver mute.
  
- Rust-inhibitive durable powder-coated finish with underplating.
- Tongue and groove joints for strength and pry resistance.
- 15 gauge double-walled construction in critical areas.
- Upper and lower housings latched together with six heavy gauge steel latch points.
- Heavy gauge vault door with pry-resistant beveled edges.
- Four (4) positive action slide bolts on vault door.
- Patented tamper-resistant coin slot.
- Anti-stuffing coin return mechanism.
- High security upper and lower locks.



## 120C Payphone Factory Setting

The 120C payphone is factory set for emergency prepay, 25 cent base rate. For normal installation, no reprogramming is required.

## 120C Programming Options

Below is a summary of all programmable options along with the factory default settings. To enter programming mode, go off-hook, remove the upper housing (leaving the cable connected between the upper and lower housing) and depress program switch (S1) on the main chassis card. Replace the upper housing for easy programming. All programming starts by pressing the asterick (\*) key and ends with the pound (#) key. The Acceptance Tone is one 400 mS tone burst. The Error Tone is four 200 mS tone bursts. Any time an Error Tone is received, the programming for that option must start over by pressing the (\*) key. Any programming that has been completed with an Acceptance Tone is not affected. The phone will remain in the programming mode until placed on-hook for a minimum of five (5) seconds.

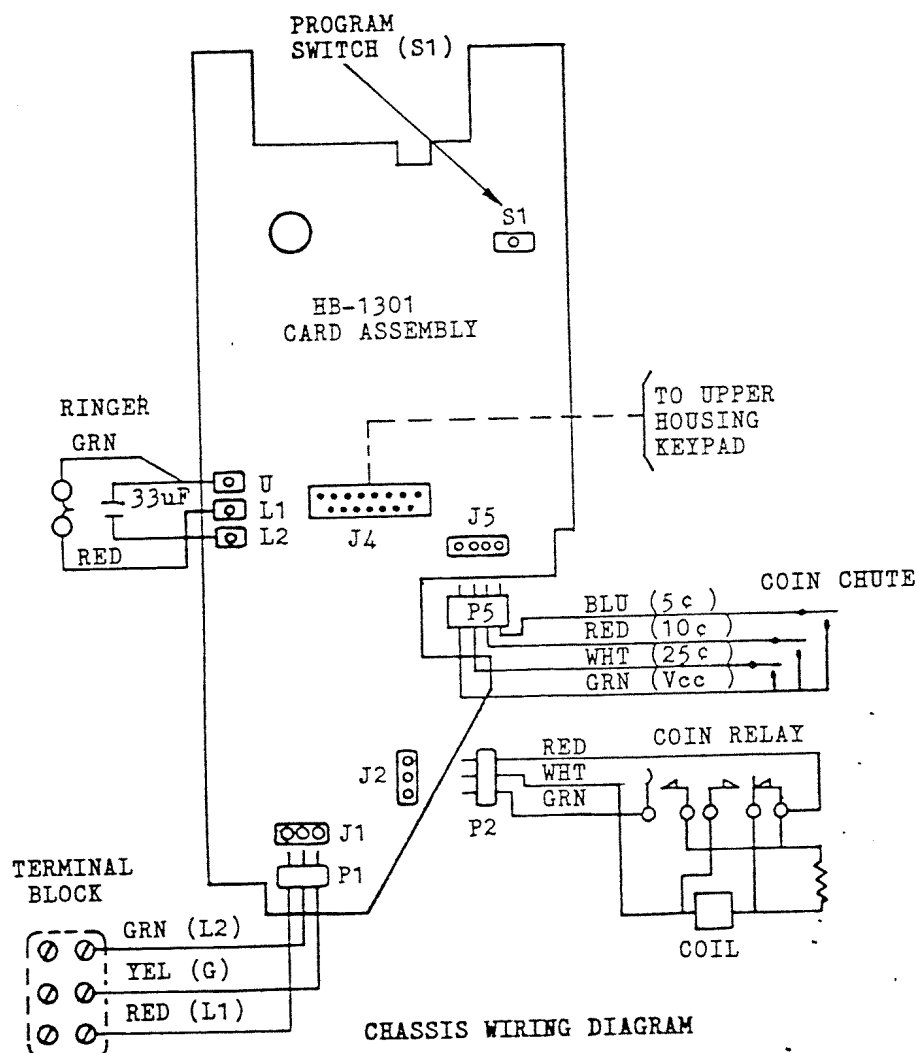
		<u>Example</u>	<u>Factory Settings</u>
MODE.....	M D ( 6 3 )	Key sequence for:	Emergency Prepay
Semi-Post Pay.....	S P ( 7 7 )	Prepay mode is * 6 3 2 3 #.	
Coin First (prepay).....	C F ( 2 3 )		
Emergency Prepay.....	E P ( 3 7 )		
BASE RATE.....	B R ( 2 7 )	\$0.35 Base Rate is * 2 7 3 5 #.	25 cent
Amount.....	5 - 995		
CALL TIMER.....	C T ( 2 8 )	5 minute is * 2 8 5 #.	Disabled
Time in minutes.....	1 - 99		
	<i>If 0 entered, calls will not be timed.</i>		
COIN GROUND			
on first coin.....	C G ( 2 4 )	Ground on first coin is	Disabled
No.....	N ( 6 )	* 2 4 9 #.	
Yes.....	Y ( 9 )		
MUTE TRANSMITTER			
on call timeout.....	M T ( 6 8 )	Active transmitter	Disabled
No.....	N ( 6 )	is * 6 8 6 #.	
Yes.....	Y ( 9 )		
MUTE RECEIVER			
on call timeout or transmitter ground...	M R ( 6 7 )	Muted receiver is * 6 7 9 #.	Enabled
No.....	N ( 6 )		
Yes.....	Y ( 9 )		
ENABLE DIAL			
on reverse battery.....	E D ( 3 3 )	Enable dial on reverse battery	Enabled
No.....	N ( 6 )	is * 3 3 9 #.	
Yes.....	Y ( 9 )		
FREE CALL, 911 COIN FREE.....	F C ( 3 2 )	Allow 911 or 0 is * 3 2 9 #.	Disabled
No.....	N ( 6 )		
Yes.....	Y ( 9 )		
NEW LINE			
on-hook time required for a new line...	N L ( 6 5 )	Select 1.5 seconds is	1 Second
100 mS increments.....	1 - 99	* 6 5 1 5 #.	
PROGRAM NUMBERS (Speed Call).....	P N ( 7 6 )	555 5555 in location 2 is	None programmed
Location (0 through 9)		* 7 6 2 5 5 5 5 5 5 #.	
1 through 16 digits			
Number deleted if no digits entered.			
ELECTRONIC TRIGGER SWITCH.....	E T ( 3 8 )	Enable electronic trigger	Disabled
No.....	N ( 6 )	switch is * 3 8 9 #.	
Yes.....	Y ( 9 )		
ALTERNATE COIN TONE.....	A C ( 2 2 )	Enable alternate coin tones	Disabled
No.....	N ( 6 )	is * 2 2 9 #.	
Yes.....	Y ( 9 )		



## Type 120C Coin Telephone

**Please Note:** This payphone is programmed for Emergency Prepay service with a 25 cent base rate. The Call Timer, Coin Ground, Mute Transmitter and Free Call features have been disabled. There are no Speed Call programmed numbers. Mute Receiver and Enable Dial on reverse battery have been enabled.

**General:** This sheet provides installation information for the Type 120C Coin Telephone. The payphone is programmed and wired for Emergency Prepay service as supplied from the factory.



**NOTE:** For semi-postpay service, fasten coin chute open to collect side using 4 - 40 by 1/8 inch screw (D-762044-A) and disconnect coin relay connector P2.

## Change Operating Mode

The Model 120C is designed to operate in one of three basic operating modes. These are the same modes which were available on the Model 120B payphone. The two (2) prepay modes (normal prepay and emergency prepay) and the semi-post pay mode operate differently in that the prepay modes use the coin relay and collect or refund coins while the semi-post pay mode cannot refund coins.

Select Mode by pressing " \* M D (6, 3) "

for Semi-Post Pay pres " S P (7, 7) "  
for Prepay press " C F (2, 3) "  
for Emergency Prepay " E P (3, 7) "  
press "\*" and listen for acceptance tone.

*Example:* Key sequence for Prepay mode is \* 6 3 2 3 #.

**NOTE:** For semi-postpay service, fasten coin chute open to the collect side using 4 - 40 by 1/8 inch screw (D-762044-A), and disconnect coin relay connector J3.

## Change Base Rate

Select Base Rate by pressing " \* B R (2, 7) "

Enter 1 to 3 digits (5 cent to \$9.95 in 5 cent increments)  
press "\*" and listen for acceptance tone.

*Example:* Key sequence for \$0.35 Base Rate is \* 2 7 3 5 #.

**NOTE:** Last digit entered must be a zero (0) or five (5).

## Change Local Call Timer

Select Call Timer by pressing " \* C T (2, 8) "

enter zero (0) if calls are not to be timed.  
enter 1 to 99 (minutes) time for each base rate deposited.  
enter " # " and listen for the acceptance tone.

*Example:* Key sequence for 5 minutes for each base rate is \* 2 8 5 #.

**NOTE:** Any free calls, speed calls, and calls with first digit of 0 or 1 will not be timed. The timer operates only on outgoing calls. The timer can be programmed from 1 to 99 minutes. When a call times out, the key pad is disabled, the transmitter and or receiver are muted (see Transmitter Mute and Receiver Mute options below). When a new base rate is deposited, the phone returns to normal operation. If a call is being timed, the phone must remain on-hook for a minimum of the time programmed on On-Hook Timer option to obtain a reset condition. Any shorter on-hook time will result in the key pad being disabled and the call in progress will continue to be timed. The timer starts timing when base rate is reached. Pre-deposit of additional base rate to extend the length of the timer is allowed. Thirty seconds before the call times out, a warning tone is sent to the receiver. Five seconds before the timer times out,

another tone is sent to the receiver. Once the timer has timed out, the key pad is disabled and a program option allows the receiver and/or the transmitter to be disabled. The new line time is also associated with this option. The new line on-hook time should be set slightly longer than the time required for the central office to extend dial tone to the user. This will prevent the user from obtaining a new line without making the initial base rate deposit.

### First Coin Ground Option

Select Coin Ground by pressing " \*C G (2, 4) "  
to obtain coin ground when first coin is deposited, press " Y (9) "  
to prevent coin ground, press " N (6) "  
press " # " and listen for acceptance tone.

*Example:* Key sequence for ground on first coin is \* 2 4 9 #.

NOTE: This option applies in Prepay Mode only.

### Mute Transmitter

Select Mute Transmitter by pressing " \*M T (6, 8) "  
to have transmitter muted press " Y (9) "  
to have transmitter active press " N (6) "  
press " # " and listen for acceptance tone.

*Example:* Key sequence for active transmitter is \* 6 8 6 #.

NOTE: Transmitter mute applies for call timeout.

### Mute Receiver

Select Mute Receiver by pressing " \* M R (6, 7) "  
to have receiver muted press " Y (9) "  
to have receiver active press " N (6) "  
press " # " and listen for acceptance tone.

*Example:* Key sequence for muted receiver is \* 6 7 9 #.

NOTE: Receiver mute here applies after call timeout or when ground is detected on the transmitter.

### Enable Dial on reverse battery

Select Enable Dial by pressing " \* E D (3, 3) "  
to enable dial on reverse battery press " Y (9) "  
to disable dial on reverse battery press " N (6) "  
press " # " and listen for acceptance tone.

**Example:**            *Key sequence to enable dial on reverse battery is \* 3 3 9 #.*

**NOTE:**            The enable dial option applies in Prepay and Emergency Prepay only.

### **Enable Coin Free 911/0**

Select Free Call by pressing " \* F C (3, 2) "  
to allow 911 or 0 coin free press " Y (9) "  
to prevent 911 or 0 coin free press " N (6) "  
press " # " and listen for acceptance tone.

**Example:**            *Key sequence to allow 911 or 0 is \* 3 2 9 #.*

**NOTE:**            This option is valid for Prepay and Emergency Prepay. If this option is enabled, and the Central Office is not equipped to handle 911 or 0 calls, the phone will make the necessary connections so the Central Office will register that base rate has been deposited. If the call timer has been enabled, these calls will not be timed.

### **On-Hook Timer**

Select On-Hook Timer by pressing " \* N L (6, 5) "  
enter 1 or 2 digits representing time central office requires phone to be on hook before a new line is seized. Time is in 100 millisecond increments. Press " # " and listen for acceptance tone.

**Example:**            *Key sequence to select 1.5 seconds is \* 6 5 1 5 #.*

**NOTE:**            This parameter is used when calls are being timed to prevent the user from flashing the hook switch and getting a reset condition thereby disabling the call timer. This parameter should be set 100 milliseconds greater than the maximum time the central office requires the phone to be on hook to obtain a new line.

### **Alternate Coin Tone**

Select alternate coin tones by pressing " \* A C (2, 2) "  
to enable alternate coin tones press " Y (9) "  
to disable alternate coin tones press " N (6) "  
press " # " and listen for acceptance tone.

**Example:**            *Key sequence to enable alternate coin tones is \* 2 2 9 #.*

## Program Coin Free Numbers (Speed Call)

Select Program Number by pressing " \* P N (7, 6) "  
enter location ( 0 - 9 )  
enter telephone number ( 1 to 8 digits )  
press " # " and listen for acceptance tone.

*Example: Key sequence to program 555 5555 in location 2 is \* 7 6 2 5 5 5 5 5 5 #.*

*Example: Key sequence to delete the number programmed in location 2 is \* 7 6 2 #.*

**NOTE:** The user may call these preprogrammed numbers by pressing " \* " followed by the location ( 0 - 9 ). The " \* " must be the first key pressed after going off-hook, and the next digit must be a location that has a programmed number. The \* and location are not toned to the central office. If no number is programmed, pressing \* and that location results in no action. No coin deposit is required for these programmed numbers and these calls are not timed.

## Volume Control

The receiver volume is user adjustable and may be increased by depressing the \* and # keys simultaneously. After the two buttons are held down for one second the volume will increase by 2 db. The volume will continue to increase in 2 db increments for each second the \* and # keys are held down. When the volume reaches maximum (12 db), the receiver level will return to minimum volume. If the two buttons are continually held down, the volume control sequence will be repeated. The receiver volume is set to nominal each time the handset is placed on-hook.

## Electronic Trigger Switch

Select electronic trigger switch by pressing " \* E T (3, 8)  
to enable electronic trigger switch press " Y (9) "  
to disable electronic trigger switch press " N (6) "  
press " # " and listen for acceptance tone.

*Example: Key sequence to enable electronic trigger switch is \* 3 8 9 #.*

**NOTE:**

- (1) For semi-postpay service, fasten coin chute open to collect side using D-762044-A screw and disconnect coin relay connector P2.
- (2) For HB-1301 card schematic see HW-21301.