

GENERAL DESCRIPTION

608A PRIVATE BRANCH EXCHANGE

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1. INTRODUCTION

A. General

- 1.01 This section describes the 608A Private Branch Exchange which may be used as a single or two-position nonmultiple switchboard or a three- or four-panel multiple switchboard. It may be used as a manual PBX or as a dial auxiliary switchboard to 740E, 701A, and 701B PBX. It may also be used as a dial auxiliary on a special basis without a dial station line multiple when a No. 5 Crossbar Central Office is used as a PBX. It may also be used with direct in-dialing installations with or without a dial station multiple.
- 1.02 This switchboard has been designed so as to offer a greater amount of self-contained circuitry than is presently available in multiple boards.
- 1.03 It is of all metal construction and designed to blend with the style and color of modern office furniture.
- 1.04 This switchboard is provided with a jack-face opening 11-1/2 inches high. By the use of splice and extension framework details the jack-face opening may be increased to 19-1/2 inches high thereby increasing the capacity of the position.
- 1.05 The 608A PBX is available in packages for nonmultiple manual, multiple manual, and nonmultiple and small multiple dial auxiliary installations.
- 1.06 The package for the nonmultiple manual switchboard provides for 80 manual station lines, ten cord circuits and eight central office trunks. A plug-in feeder cable is used for the incoming trunk and station lines. This provides for simple installation and removal of the switchboard by plugging or unplugging the cable. The station line capacity may be increased in steps of ten to a maximum of 180 lines, and the trunk to 20. Additional cord circuits may be provided up to 16 cords.

1.07 The package for the multiple manual switchboard provides the basic section equipped with 12 cord circuits, a position circuit, an alarm and auxiliary circuit and a dial unit (less dial). A maximum of four additional cord circuits may be added to each section.

1.08 The package for the nonmultiple and small multiple dial auxiliary switchboard provides basic sections equipped with line and trunk jack and lamp equipment wired to terminal strips mounted in the switchboard. Each section is equipped with ten cord circuits, 100 station lines and 30 trunks.

B. Capacity

1.09 The maximum capacities of the 608A PBX are as follows.

MANUAL SWITCHBOARDS

<u>Type</u>	<u>Number of Station Lines</u>	<u>Number of Trunks</u>
Nonmultiple	360	40
Three-panel multiple (low capacity)	600	60
Three-panel multiple (high capacity)	900	90
Four-panel multiple (low capacity)	800	80
Four-panel multiple (high capacity)	1600	160

DIAL AUXILIARY SWITCHBOARDS

<u>Type</u>	<u>Number of Station Lines</u>	<u>Number of Trunks</u>
Nonmultiple	300	80
Three-panel multiple (low capacity)	900	180
Four-panel multiple (low capacity)	1200	240
Four-panel multiple (high capacity)	2400	480

1.10 The high capacities in so small a board are obtained through the use of combined line lamp and designation strips and of newly designed small jacks (for the 309 plugs used on the boards) and a jack mounting which is only $3/8$ inch high as compared with $1/2$ inch high jack mountings used with other two-panel switchboards.

C. Principal Features

1.11 Station Line Features:

(A) The 701A, 701B and 740E dial PBX have been arranged to connect to the jack on the 608A PBX. Because of the arrangement of the 608A dial station line jack only three wires per jack are required between the manual switchboard and the dial equipment.

(B) Manual station lines of the series cutoff jack type may be provided with or without line relays and are arranged for up to six line lamp appearances.

1.12 Cord Features: The cord circuit features of the 608A PBX are as follows.

(a) Machine ringing on the front cord - This is automatic when the TALK button is operated and the front cord is plugged into a station jack.

(b) Manual ringing on both cords - This is provided by operation of the RING BACK or RING FRONT buttons common to the position, a TALK button is operated.

(c) Audible flashing recall is provided on both front and rear cords on station to station, station to tie trunk and tie trunk to station calls. On Central Office trunk to station or tie trunk calls it is provided only on the front cord. It is provided only on the rear cord on station or tie trunk to Central Office calls. It is not provided on thru dial or night connections.

(d) A cord circuit which enables the attendant to answer all calls with the back cord and complete with the front cord.

- (e) Delayed through supervision which is obtained when a Central Office trunk is connected to either a tie trunk or station and the tie trunk or station disconnects. It provides for the release of the Central Office supervisory equipment in from two to six seconds after disconnect by the tie trunk or station without waiting for the attendant to take down the cord. Flashing by the local or remote station to request transfer of the call is provided by this means without reaction on the connection through the Central Office.
 - (f) Nonring-thru to station after station disconnect in the event of a recall from Central Office on attendant dialed out calls - This is not provided on thru dial calls.
 - (g) Locked in flashing cord supervisory lamp on recall from toll and after release of Central Office trunk, if Central Office trunk is selected for a new incoming call. It is released by the operation of the TALK button.
 - (h) Distinctive supervisory flashing signal, 30 ipm wink during machine ringing while awaiting station answer.
 - (i) Individual station thru dialing to Central Office by operation of THRU DIAL button common to the position.
 - (j) Dialing on front cord normally. Rear cord dialing controlled by position push-button key.
 - (k) Cord splitting on an optional basis.
- 1.13 Other features of the 608A PBX are:
- (a) Illuminated push-button nonlocking keys.
 - (b) Automatic disconnect of attendant from one cord circuit upon operation of another TALK button or the RLS button.
 - (c) Transfer of attendant's circuit to left or right positions by operation of the TRFR button.

- (d) Disabling TALK buttons and position buttons by removal of attendant's hand or headset from attendant's jacks.
- (e) Battery cutoff key.
- (f) Night connections without operation of buttons or relays in nonmultiple installations equipped with night jacks.
- (g) Adjustable tone buzzer and cutoff key - A tone buzzer provides an auxiliary audible signal which operates when any trunk or station line lamp lights or when any cord supervisory lamp lights or flashes except when the TALK button is operated. The buzzer does not sound when a supervisory lamp winks during machine ringing while awaiting station answers.
- (h) Busy tests on either front or back cord after TALK button is operated.
- (i) Combined station line lamp and designation strips.
- (j) Central Office trunks and tie trunks may be equipped with ac or dc busy lamps, or idle indicators as desired.

2. EQUIPMENT ELEMENTS

A. Front Equipment

2.01 The 608A PBX, Figure 1, has an over-all height of 48 inches with a jack-face opening 11-1/2 inches high. By the use of splice and extension details the overall height is increased to 56 inches and the jack opening to 19-1/2 inches.

2.02 The jack field is colored light grey beige and sloped away from the attendant at a five-degree angle from the vertical plane.

- 2.03 The nonmultiple position is 27-1/2 inches wide, including end panels, and is 36 inches deep. It occupies 3 feet by 2 feet 3-1/2 inches of floor space and weighs approximately 500 pounds. It is desirable to install the position at least 2-1/2 feet away from a wall to provide access to the rear of the switchboard for maintenance purposes. In a multiple line-up the positions are 25 inches center to center.
- 2.04 Each position contains two jack panels. Separating the panels and the positions is a metal stile strip with a transparent stile casing.
- 2.05 The lower portion of the jack field contains the jacks, lamps and designation strips for the Central Office trunks and tie trunks. These may be 10 or 20 per strip.
- 2.06 The upper portion of the jack field contains the jacks for the station lines.
- 2.07 Manual station line lamp sockets and designation are combined in one strip. The paper strip used is translucent to provide an adequate signal with a minimum lamp illumination of 200 end foot candles. The paper is protected by a transparent plastic strip similar to the 105 designation strip.
- 2.08 The jack mountings are located below the combined strip and may contain either 10 or 20 jacks per strip.
- 2.09 Jacks for dial station lines are either 10 or 20 per strip and may be used with or without designation strips.
- 2.10 Jacks are identified by removable number labels which are mounted on the stile strip under the transparent stile casing adjacent to the associated jack. The jack mountings are not engraved. Trunk jack and station line numbers are lined up with their associated jacks on the right edge of the stile casing. Trunk panel numbers are

centrally located on the stile casing. Switch-board position numbers are centrally located at the top of the center stile casing.

2.11 The keyshelf is made of die-case aluminum colored beige-gray and slopes downward towards the attendant at a five degree angle from the horizontal plane.

2.12 The keyshelf, Figure 2, contains provisions for 16 cord pairs located at the rear of the keyshelf. These cord pairs are mounted in a vertical position with the rear cord slightly to the right of the front cord. The cords provide adequate reach for multiple use without double pulley weights or platforms. Two rows of square supervisory lamp caps are located in front of the cords. One row of lamp caps is for the back cords and the other row of lamp caps is for the front cords. Illuminated, nonlocking, square push-button talk keys are located in front of the supervisory lamps, Figure 3. The talk keys and supervisory lamp caps are alternately red and white and the corresponding cords and plug sleeves are red and slate.

2.13 A RING BACK, RING FRONT, THRU DIAL, release (RLS), DIAL BACK and SPLIT buttons are provided on a position basis. The RING BACK and RING FRONT, SPLIT and THRU DIAL buttons are located to the left of the supervisory lamps and TALK buttons. A separate panel located at the right is mounted in the keyshelf for the dial mounting, PEG COUNT (PEG) button and TRANSFER (TRFR) button.

2.14 A synchronous 60-cycle, 20-volt direct reading numeral clock with push-in to turn reset knob is mounted in the piling rail behind the dial mounting.

2.15 The bulletin holder and ticket clip which fastens to the back edge of the bulletin holder are located on the front portion of the keyshelf. The use of visual records to be installed in the bulletin holder is provided for on an optional basis.

2.16 A roof panel, rear panel, kick panel and side panels are used to enclose the framework. Two sizes of end and rear panels are available for the normal and extended height switchboards. The panels are made of two sheets of aluminum around a core of corrugated cardboard which helps to deaden noises from within the switchboard and to deaden the metallic noises if it is tapped externally.

2.17 The panels are finished with a vinyl paint and colored either medium gray or beige-gray. They may also be obtained unfinished to be finished locally as required.

B. Rear Equipment

2.18 In the rear of the switchboard, Figures 4 and 5, are five shelves which are welded to the frame and upon which the circuit equipment is mounted on a plug-in basis.

2.19 There are provisions for mounting eight 2-circuit cord units, Figure 6, a position circuit, Figure 7, and the auxiliary signal and fuse alarm circuit, Figure 8, section fuses and miscellaneous terminal strips.

2.20 Cord weights, which have a plastic pulley wheel and nylon sleeve inserts which ride on steel rods and are mounted on an angle away from the attendant, allow for a cord long enough to provide adequate cord reach without ~~resorting~~ to platforms or double pulley weights.

2.21 In the nonmultiple manual switchboard eight 2-circuit Central Office trunks, Figure 9, may be mounted in the switchboard on an optional basis. Additional trunks may be mounted on relay racks or in a floor mounted cabinet.

2.22 In dial auxiliary switchboards and for all multiple installations the Central Office trunks, tie trunks, and other miscellaneous circuits will be mounted in an associated cabinet.

C. Head and Foot Positions

2.23 Head and foot positions are provided only with 4-panel multiple installations. The head position consists of the regular basic framework and panels. It is equipped with blanks in the keyshelf. One jack panel is equipped with multiple jacks and lamps and the other jack panel with alarm keys and lamps.

2.24 The foot position is a regular position without the plug-in equipment units. It is arranged with local cables to permit installation of plug-in equipment units at a future date in case of growth of the line-up.

2.25 Splice and extension framework details are available to increase the height of the head and foot positions where necessary.

D. Cable Turning Section

2.26 A cable turning section is available to be installed at the beginning of the line-up before the head position where required. It is constructed of sheet metal and contains a writing shelf to match the contour of the other positions. It is 12-1/2 inches wide. Splice and extension framework details are available to increase its height where necessary.

3. OPERATION

A. Cord Circuit

3.01 The cord circuit is used for completing calls between PBX station lines, between tie trunks and manual or dial station lines, between attendant's trunks and stations, tie trunks, or Central Office trunks, and between Central Office trunks and manual or dial station lines or tie trunks.

Station-to-Station Calls

3.02 For station-to-station calls when the plug of the rear cord is inserted into the jack associated with the lighted station lamp and the TALK button associated with that cord pair is depressed, the attendant's telephone is connected to the calling

station and the station lamp goes out. The TALK button lights after being depressed to indicate the cord pair to which the attendant is connected.

3.03 On multiple, manual or dial auxiliary switchboards when the attendant receives the order from the caller the usual busy test of the called line is made by touching the tip of the front cord to the sleeve of the jack.

3.04 If the called station is idle, the attendant completes the call by inserting the plug of the associated front cord into the requested station jack. Machine ringing will start automatically and the calling party will hear audible ringing until the called station answers.

3.05 The front supervisory lamp will wink at a 30 ipm rate (long lighted interval and short dark interval) until the called station answers. When the called station goes off-hook the lamp will be extinguished.

3.06 When either station goes on-hook the supervisory lamp associated with that cord will light as a signal for the attendant to disconnect.

3.07 If the switchhook at either station is depressed momentarily, audible flashing recall will occur. The supervisory lamp associated with the cord connected to that station will flash at the rate of 120 ipm and an audible recall signal will be heard.

3.08 The attendant answers the recall and extinguishes the flashing signal by reconnecting the position circuit to the cord pair by depressing the associated TALK button.

3.09 The attendant may disconnect from a cord pair at any time after both cords are plugged in by depressing the RLS button or the TALK button of another cord circuit. When the attendant disconnects from a cord pair the associated TALK button will go dark.

3.10 If a call is transferred by disconnecting and reconnecting the front cord, machine ringing will be obtained and the supervisory lamp will wink as on a normal connection.

3.11 If a call is transferred by disconnecting and reconnecting the back cord, manual ringing must be used and the wink signal will not be obtained. The back supervisory lamp will be lighted until the station answers and the buzzer, if on, will sound.

Station-to-Tie Trunk Calls

3.12 The calling station is answered in the usual manner by the attendant by inserting the plug of the rear cord into the jack associated with a lighted station lamp and by depressing the TALK button associated with that cord pair.

3.13 The call is completed to a tie trunk by inserting the plug of the front cord into an idle tie trunk jack.

3.14 With manual automatic tie trunks the front supervisory lamp will wink at the rate of 30 ipm and machine ringing will start and continue until the distant PBX answers. At this time the ringing will be tripped and the supervisory lamp will be extinguished.

3.15 With dial repeating tie trunks machine ringing will be tripped within the cord circuit when the dial is pulled off-normal and the front supervisory lamp will change to a steady light. When the distant PBX answers, the front supervisory lamp will go dark.

3.16 When the distant PBX disconnects the front supervisory lamp will light as a disconnect signal.

3.17 With manual ringdown tie trunks machine ringing will be immediately tripped by the

supervisory bridge in the tie trunk and the front supervisory lamp will be dark. The attendant rings on the tie trunk manually by means of the positional RING FRONT buttone and the front supervisory lamp will light while the button is depressed. The attendant must remain on the connection while manually ringing.

3.18 If the distant PBX rings toward this circuit to recall the attendant the front supervisory lamp will light during the application of ringing current and flashing recall will ensue.

Tie Trunk-to-Station Calls

3.19 On tie trunk-to-station calls the circuit functions in the same manner as described in station-to-station calls.

Station to Central Office - Attendant Dialing

3.20 The attendant answers the station signal with a back cord, selects an idle Central Office trunk and inserts the plug of the associated front cord. With the TALK button operated and after dial tone is heard the attendant moves the dial off-normal connecting the impulse springs of the dial to the front cord and battery and ground to the back cord for supervisory purposes. The dry bridge is maintained across the front cord for holding the Central Office between each train of dial pulses. After dialing the attendant may release from the connection.

3.21 When the station hangs up the rear supervisory lamp will light as a signal for the attendant to take down the cords. If the attendant is slow to disconnect, delayed through supervision occurs.

3.22 The station may recall the attendant by successively depressing and releasing the switchhook to flash the associated cord supervisory lamp.

Station to Central Office - Thru Dialing

3.23 Outgoing Central Office connections extended through the cords may be dialed from the calling station. Manual stations equipped with dials may contact the attendant by removing the receiver from the switchhook. The dial station may reach the attendant by dialing an attendant trunk. The attendant answers the station or attendant trunk with a rear cord, depresses the THRU DIAL button in the position, selects an idle Central Office trunk and inserts the plug of the front cord. The THRU DIAL button, operated, will connect the station dial to the Central Office trunk and releases the attendant from the connection. When the station or Central Office trunk releases the supervisory lamps will light signaling the attendant to disconnect.

3.24 Flashing recall and delayed through supervision are not effective on this type of connection.

Tie Trunks to Central Office

3.25 The cord circuit functions in the same manner as described in Paragraph 3.20, for repeating tie trunks. On manual ringdown tie trunks, if the distant PBX rings to recall the attendant the front supervisory lamp will light during the application of ringing current. In case of an incoming call on a dial selected tie trunk, an attempt by the calling station to flash the attendant will release the switchtrain at the distant PBX.

Central Office to Station

3.26 The attendant answers the Central Office trunk by operating the TALK button associated with an idle cord pair and inserting the plug of a back cord into the trunk jack with the lighted lamp.

3.27 When the cord sleeve circuit is established the cord circuit disconnects talking battery and connects a dry bridge towards the Central Office to trip Central Office machine ringing and return answering supervision to the Central Office.

- 3.28 When the attendant receives the order the call is completed to the desired station by inserting the plug of the associated front cord into the station jack. The attendant may at this time disconnect from the cord pair by operating the RLS button or another TALK button.
- 3.29 Machine ringing will start automatically when the front cord plug is inserted and will continue until the station answers.
- 3.30 The front supervisory lamp will flash at a 30 ipm rate and the calling party will hear ringing induction for the second time until ringing is tripped by the station answer. The lamp will then go dark.
- 3.31 When the ringing is tripped the cord circuit will be cut through from the front to the back cord so that talking battery is furnished to the station from the Central Office.
- 3.32 Should the station switchhook be depressed momentarily automatic flashing recall will take place and the front supervisory lamp will flash at a 120 ipm rate and an audible signal will be heard.
- 3.33 When the station releases the front supervisory lamp will light signalling a disconnect. If the attendant does not disconnect the cords within two to six seconds, a bridge holding the Central Office trunk will be removed causing the Central Office to release the trunk.
- 3.34 Should the Central Office then seize the Central Office trunk circuit on a new inward call before the attendant disconnects the back cord, the back cord supervisory lamp will flash at a 120 ipm rate when Central Office ringing is received. Central Office ringing will not be extended to the station still connected to the front cord. This ringing will be tripped and the flashing lamp extinguished when the attendant operates the TALK button to reconnect the cord pair.

Delayed Through Supervision

3.35 When a Central Office trunk is connected to either a tie trunk or station and the tie trunk or station disconnects and the talk key is normal, the cord circuit will open the Central Office holding bridge in from two to six seconds. Thus the trunk circuits become available for incoming calls over the connected Central Office trunk.

Night Connections

3.36 Night connections may be established between station jacks and Central Office trunk jacks or special night jacks. In addition night jacks are provided to establish emergency calls during power failure, especially with batteryless power supplies. They may also be used to conserve current drain at night with battery type power supplies. The attendant operates the talk key of an idle cord pair and connects the back cord to the extension requiring night service. The thru dial key is operated and the front cords are connected to an idle Central Office trunk or night jack. When a busy test must be made the front cord may be connected before operating the thru dial key. Supervisory signals will appear only when the battery (BAT) cutoff key is turned to the on position.

B. Position Circuit

3.37 The position circuit is connected to any of the cord circuits by the operation of the associated TALK buttons for the purpose of testing the sleeve resistance of the circuit connected to the back and front cords. The sleeve resistance of a Central Office trunk is high and that of a station or tie trunk is low. The position circuit uses this information to set up the proper conditions in the cord circuit. When the position circuit is released from the cord circuit the cord circuit maintains the connection set up by the position circuit.

3.38 A telephone and dial circuit are provided as part of the position circuit for the attendant. The attendant connects this circuit to a cord circuit by operation of the associated TALK button. The dial is normally connected to the front cord but it may be transferred to the back cord by operation of the DIAL BACK button.

3.39 The removal of the attendant's telephone set plug from the attendant's jack in the position disables the TALK, SPLIT and DIAL BACK buttons, thereby preventing interference with night connections, and removes battery from the position circuit disabling the circuit.

Manual Ringing

3.40 The RING FRONT and RING BACK buttons are provided for ringing a station or ringdown tie trunk connected to either the front or back cords when the associated TALK button is operated. AC-DC ringing is supplied during the operated time of the button. The RING FRONT button is not used when completing a connection to a station with a front cord because the cord circuit provides automatic machine ringing.

Transfer

3.41 The attendant's position circuit may be transferred to right or left position of a multiple switchboard by the operation of the TRFR button.

Dialing

3.42 The position dial is normally connected to the front cord when the TALK button is operated. It may be transferred to the back cord by the operation of the DIAL BACK button. This button will become illuminated upon operation and will remain so until the RLS button or another TALK button is operated, or until the DIAL BACK button is re-operated.

Splitting

3.43 Cord splitting on an optional basis is achieved by the operation of the SPLIT button while the TALK button is on. This opens the transmission path for the back cord and enables the attendant to converse privately with the station connected to the front cord. The SPLIT button is illuminated during the split condition. To release the split condition the SPLIT button is reoperated, or the RLS button, or another TALK button, is operated.

C. Conference Circuits

3.44 Standard conference circuits can be adapted for use with 608A PBX's.

D. Miscellaneous Circuits

3.45 When any trunk, station, or cord lamp is lighted, and the signal (SIG) and battery (BAT) keys are operated, the auxiliary circuit, by means of a transistor oscillator and a small loudspeaker, operates to sound an audible tone of 450-510 cps interrupted at the rate of 120 ipm to alert the attendant. The volume of this tone can be adjusted by the attendant. Release of the SIG key will cut-off the audible tone and provide for a distinctive click like sound in the speaker when the flashing recall circuit is operating.

3.46 The BAT key is provided to cut-off the battery, ringing machine and interrupter of the power supply circuit. The BAT key is turned to off position when the attendant leaves the switchboard after setting up the night connections.

Clock

3.47 A synchronous electric clock powered from a 20-volt, 60-cycle source in the power plant is provided for use by the PBX attendant. This clock is a direct number reading clock reading in hours, minutes and tenths of minutes and is provided with a push and turn button to reset the time.

4. MAINTENANCE

A. Fuse Alarm

4.01 When a fuse operates in any of the PBX or power distribution circuits an indicating lamp in the PBX lights. The cabinet fuse (CF) lamp lights for a fuse that operates in the power supply circuit and the fuse alarm (FA) lamp lights for a fuse that operates for any of the other circuits in the PBX switchboard.

4.02 The fuse alarm (FA) key is provided to silence the auxiliary tone whenever a fuse operates. The FA key should be released when the fuse failure is corrected to permit the tone signal to operate on successive fuse failures.

B. Cord or Position Circuit Removal

4.03 When a cord circuit unit is removed for off-premises repair, a KS-14159 connector with pins 12 and 13 strapped should be plugged into the cord unit socket in the PBX to maintain continuity of the chain circuit. A 614 A key space connector should be fitted onto the plug when a 614 A key is removed.

4.04 When a position or cord unit is removed from the switchboard for on-premises inspection an extension cord with three KS-13895, L2 connectors on one end and three KS-13875, L2 connectors on the other end should be used to permit the PBX and the removed unit to function.

5. POWER SUPPLY

A. Batteryless Power Plant

5.01 The batteryless power supply designed for use with the 608A PBX is capable of supplying needed power for up to three positions. It has a 48-volt power plant and contains a semiconductor rectifier and is automatically regulated. Its voltage range is from 44 volts to 52 volts. It provides 8 volts a-c for idle or busy lamps and 20

volts a-c for the electric clock. The ringing machine used in this power plant provides 86 volts a-c superimposed on 48 volts d-c for audible machine ringing supply over a four-second cycle. This same ac-dc audible ringing supply is also provided for manual ringing. The power plant also provides for interruptions at a 120 and a 30 ipm rate.

B. Battery Reserve Power Plant

5.02 The battery reserve power plant may be used for all 608A PBX installations and is required for those of more than three positions. It consists of a 48-volt semiconductor rectifier, a 48-volt battery, a charge and discharge circuit and is automatically regulated. It provides 8 volts a-c for idle or busy lamps and 20 volts a-c for the electric clock. The ringing machine used with this power plant provides 86 volts a-c superimposed on 48 volts d-c for audible machine ringing over a four-second cycle. This same ac-dc audible ringing supply is also provided for manual ringing. The power plant also provides interruptions at a 120 ipm rate.

5.03 When the switchboard is used as a dial auxiliary for 740E and 701-type PBX or No. 5 Crossbar dial equipment, power is supplied from this equipment when in same location. A relay circuit mounted in an auxiliary cabinet is used to convert 120 ipm to 30 ipm.



Fig. 1 - 608A PBX

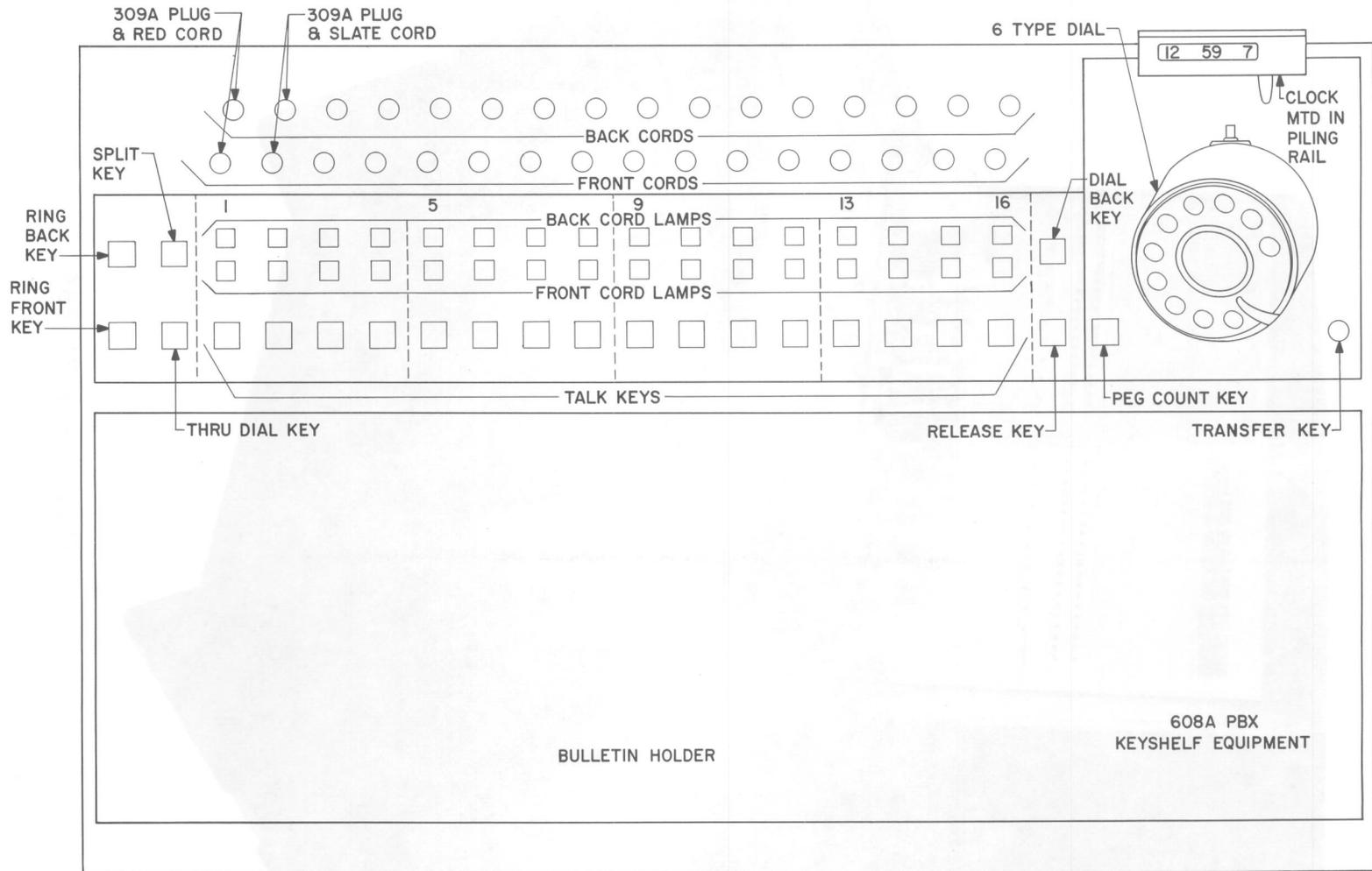


Fig. 2 - 608A PBX Keyshelf Equipment

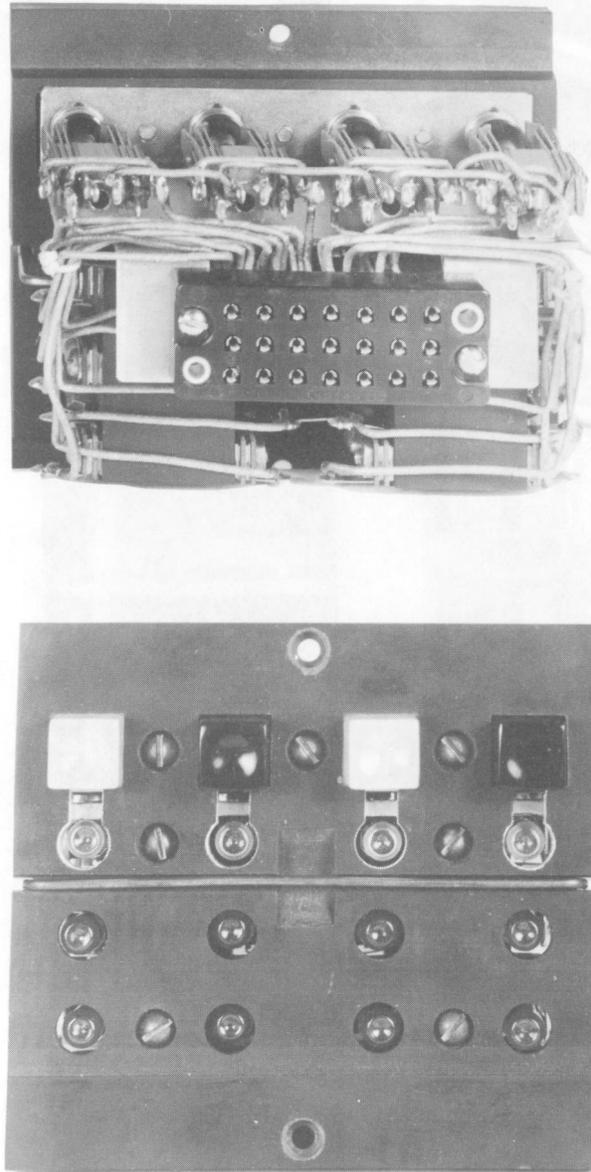


Fig. 3 - Talk Key and Supervisory Lamp Unit

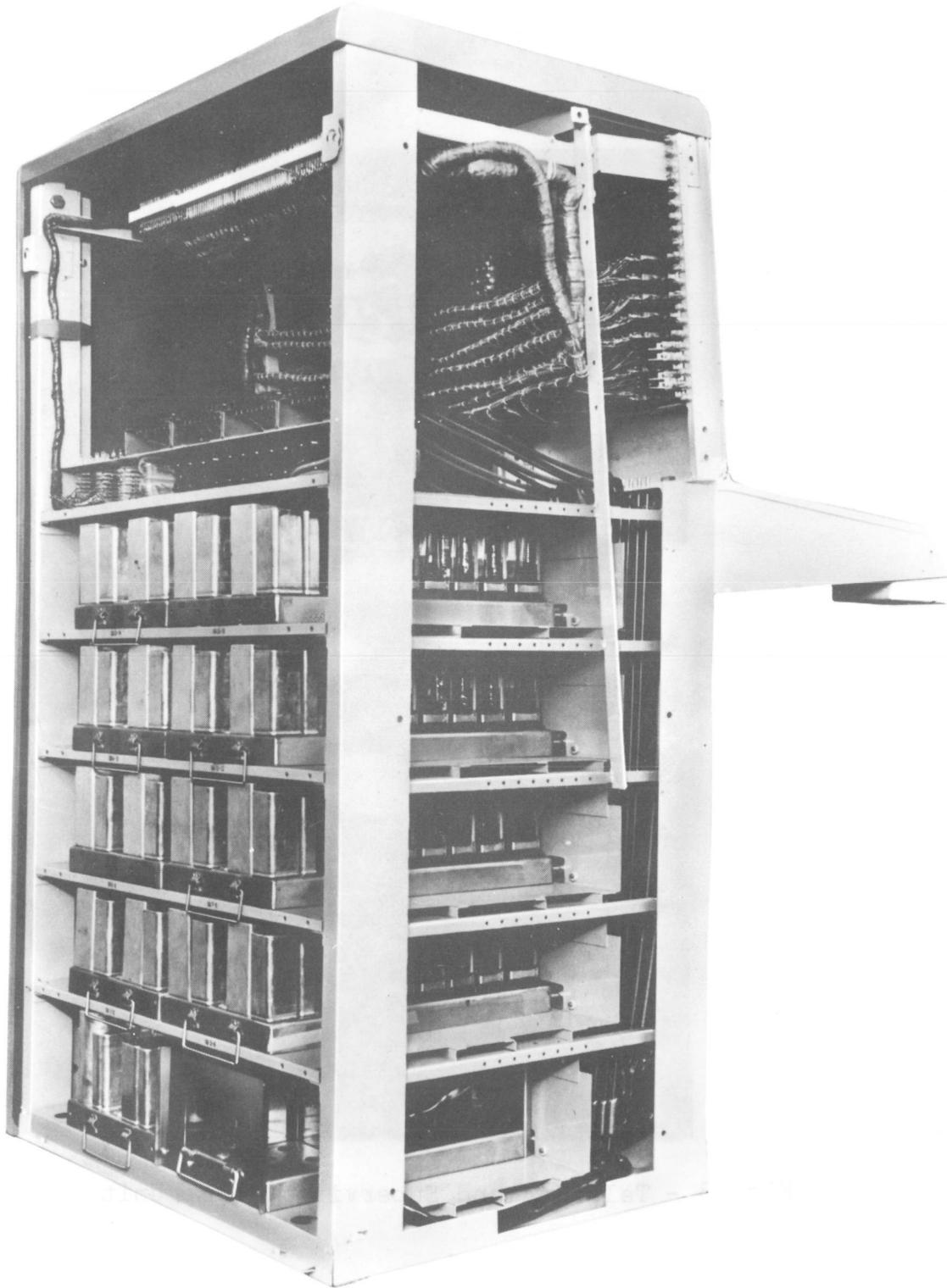


Fig. 4 - 608A PBX - Side and Rear View

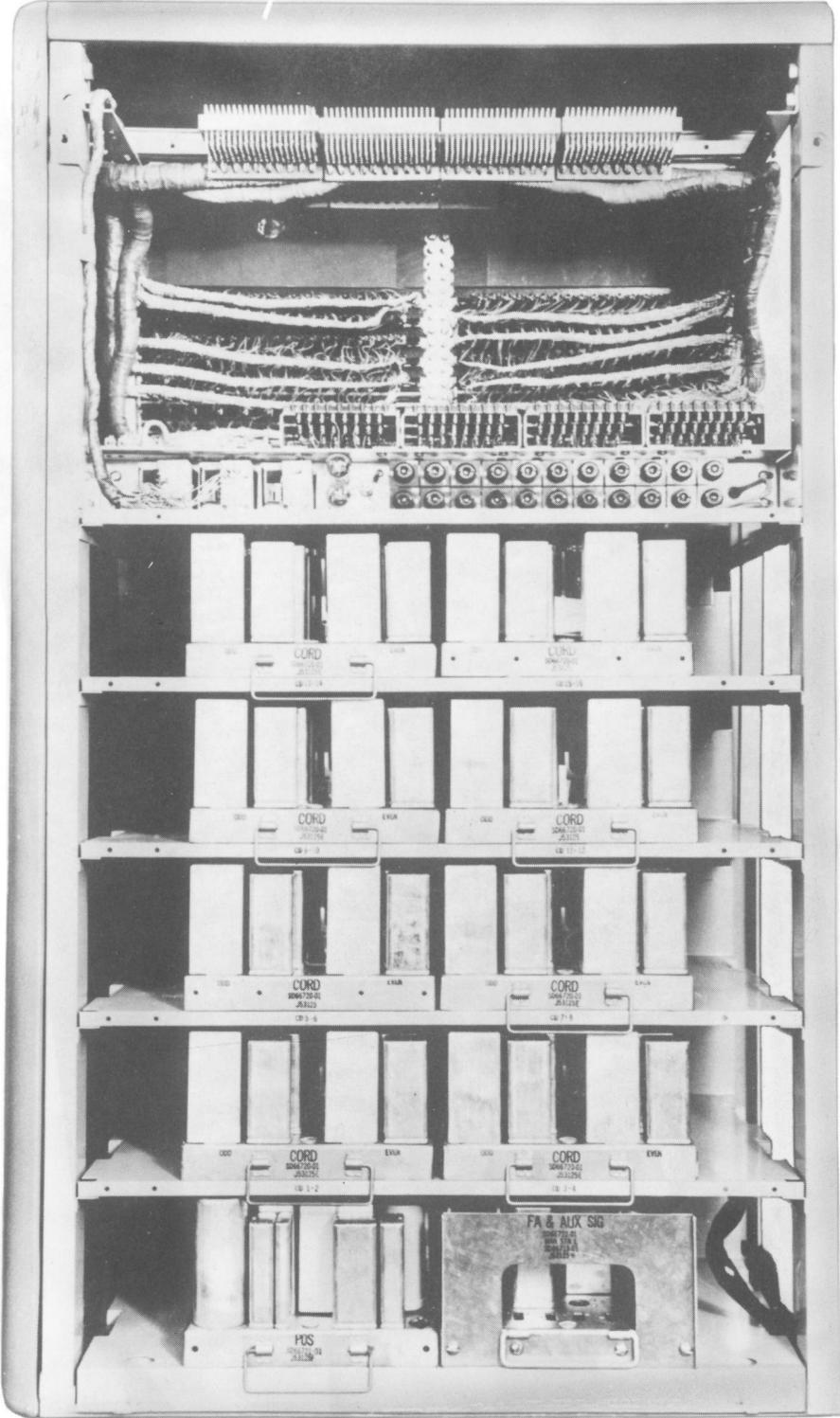


Fig. 5 - 608A PBX - Rear View



Fig. 7 - Position Circuit

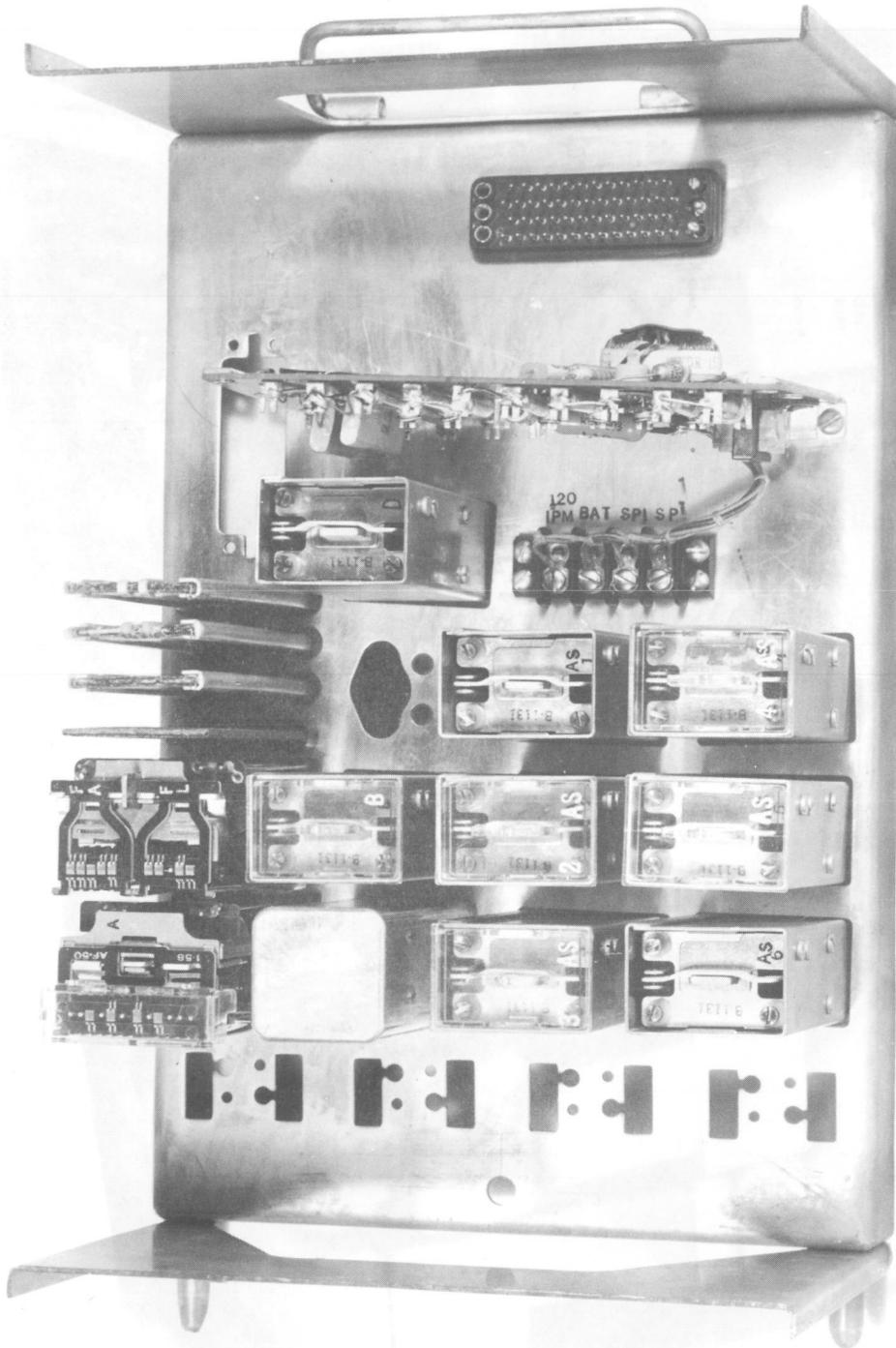


Fig. 8 - Auxiliary Signal and Fuse Alarm Circuit

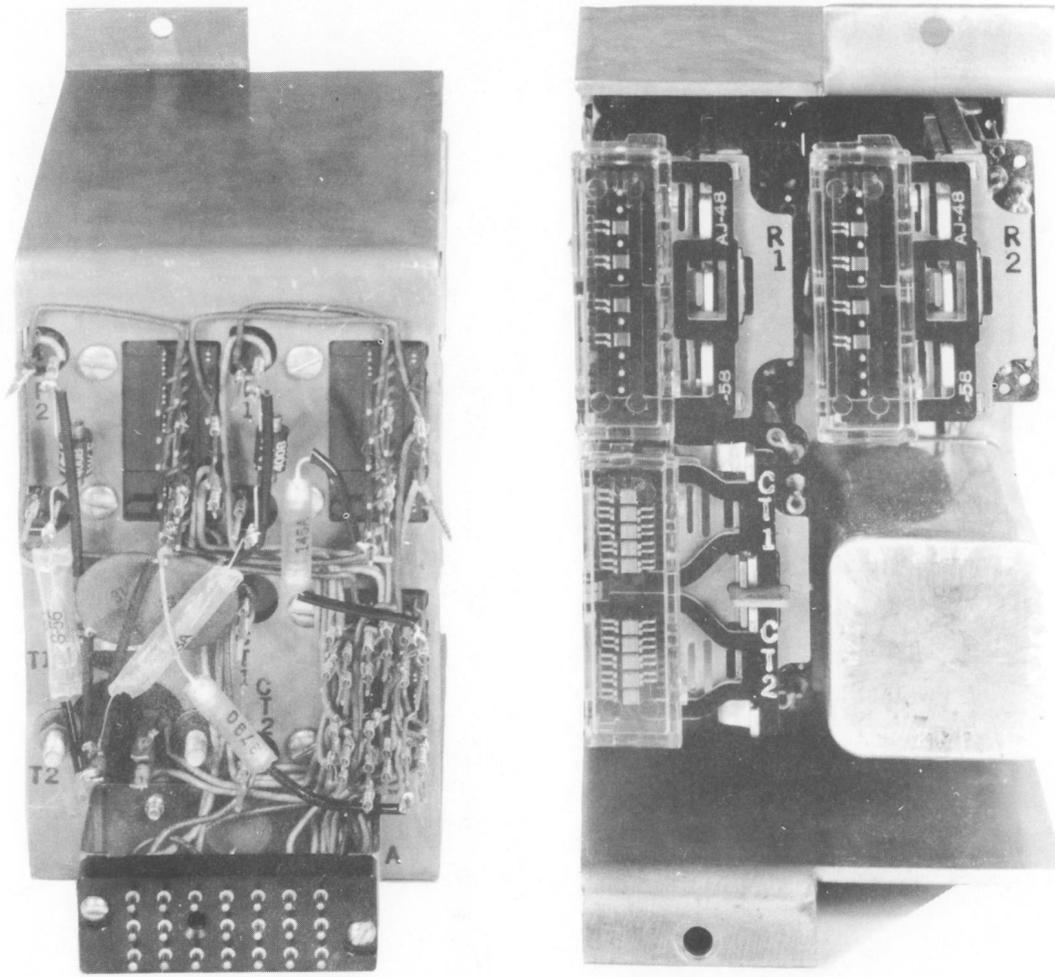


Fig. 9 - Central Office Trunk Unit