35 EDGE PUNCHED CARD TYPING REPERFORATOR SET

(1A KEYBOARD PUNCH)

DESCRIPTION AND PRINCIPLES OF OPERATION

CONTENTS PAGE

1. GENERAL

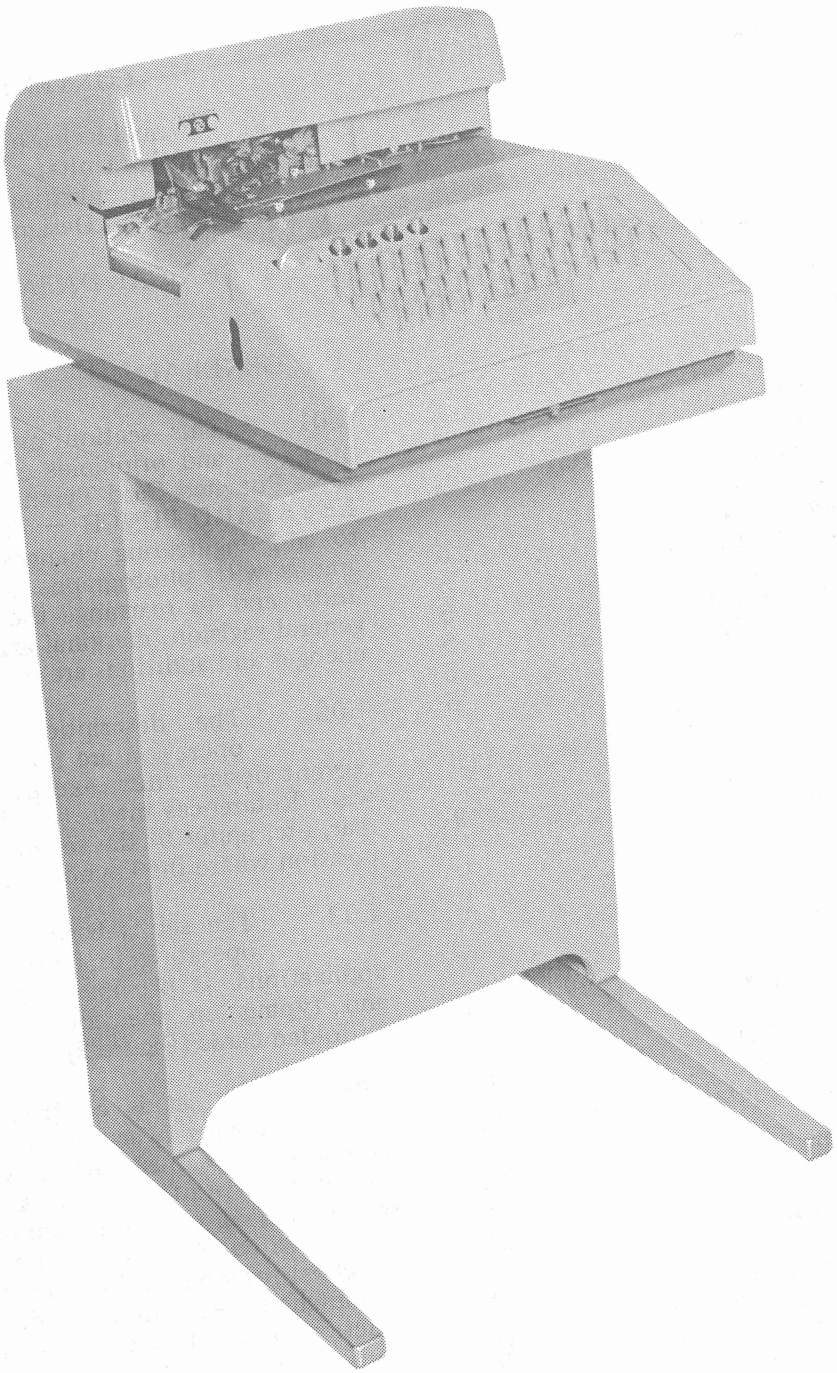
1.01 This section provides the description and principles of operation for the 35 Edge Punched Card Typing Reperforator Set (1A KEYBOARD PUNCH — Figure 1). It is reissued to add engineering changes, replace the photographs with photographs of current production units, and to rearrange the text. Since this is a general revision, marginal arrows used to indicate changes and additions are omitted.

1.02 The description and principles of operation are for both early design and current design units, except where stated otherwise. References made to left or right, front or rear, etc, apply to the set in its normal operating position where the keyboard faces the viewer.

1.03 The set is basically a send-receive set operating in either on-line or off-line applications. It provides a means of perforating and typing on the edge of a single card or fanfolded cards (Figure 2).

1.04 The set is controlled manually by a main power switch, a thumb wheel for card advance, a pushbutton backspace switch, a pushbutton print switch, a pushbutton eject switch, and on current design units, a pushbutton release switch. Automated controls (three sensing switches) respond to the reference hole located in prepunched feed hole cards for the specific function of burst, card eject, and print suppression. The unit is supplied with a universal function lever to be coded per customer requirement for the special performance of a coded card eject feature.

Prepared for American Telephone and Telegraph Company by Teletype Corporation



(Left Front View)

Figure 1 - 35 Edge Punched Card Typing Reperforator Set Typical Installation

(Front View)

Figure 2 - 35 Edge Punched Card Typing Reperforator Set With Fanfolded Cards

CAUTION: APPARATUS SHOULD NOT BE SEPARATED FROM ITS PROTECTIVE HOUSING UNLESS POWER IS DISCONNECTED. WHERE OPERATION OF THE EQUIPMENT IS REQUIRED AFTER IT HAS BEEN SEPARATED FROM ITS PROTECTIVE HOUSING, APPROPRIATE PRECAUTIONARY MEASURES SHOULD BE TAKEN TO PREVENT ACCIDENTS.

2. DESCRIPTION

A. Edge Punched Card Typing Reperforator Set

2.01 The Edge Punched Card Typing Reperforator Set includes a keyboard, distributor, typing reperforator, base, motor, and cover and is considered to be a table top model.

2.02 The set uses an 8-level, 11-unit code signal, and operates at 100 words per minute (110 baud). Current design units are controlled by a single mode switch located on the left side of the set. It places the set in the LOCAL or ON LINE mode, and turns the set off. Early design units have two switches; one turns the set on and off, and the other places the set in either ON LINE or LOCAL.

B. Keyboard

2.03 The keyboard (Figure 3) used is a Model 33 type four-row keyboard incorporating ASCII (American National Standard Code for Information Interchange) with even parity. A specially designated control character is adapted to the typing reperforator for the specific function of a coded card eject when related to the card reader. Output from the keyboard code contacts employs the multiwire system generating its signal by means of a disc and brush type distributor. Signals generated by the keyboard are distributed to the card punch and to an external signal line. The punch unit is isolated from the signal line by a 0.500 ampere selector magnet driver. The set is normally intended for 0.020 ampere service on its external signal line.

C. Distributor

2.04 The distributor (Figure 3) is a modified mounting of the 33 type driven through a gear train and powered from an extension shaft at the forward end of the motor. The electrical interconnection transfers the signal into an 8-level neutral start-stop code output signal.

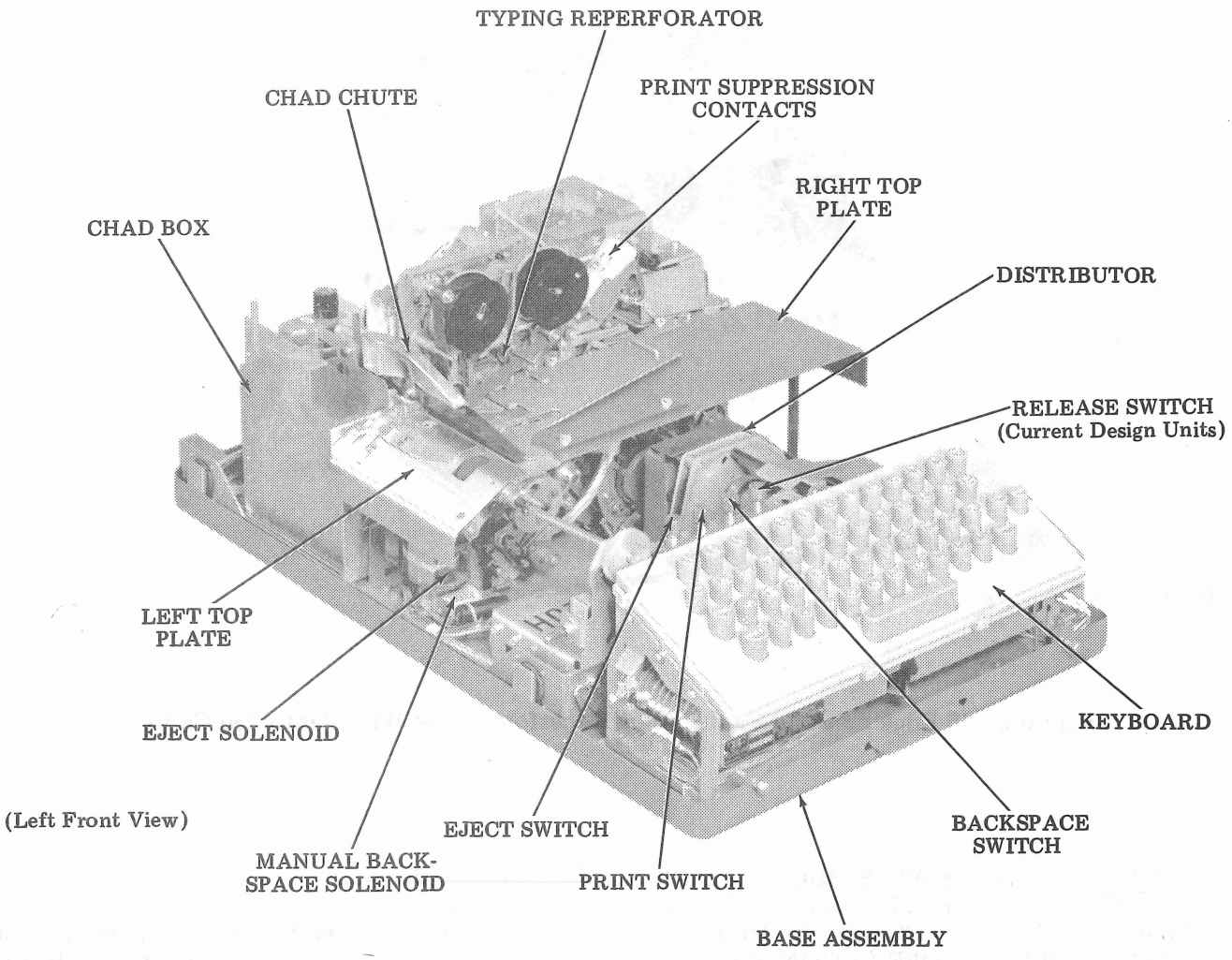


Figure 3 - 35 Edge Punched Card Typing Reperforator Set Without Cover Assembly

D. Base

2.05 The base (Figure 4) contains the motor unit, gear and pulley assembly, distributor assembly, selector magnet driver assembly, relays, rectifier, switches, etc, associated with set operation. The base (Figures 3 and 5) provides a foundation for the associated units, keyboard, typing reperforator, and cover. The main base construction is of sheet metal design with a mounting plate suspended by vibration and shock mounts located in a vertical plane. The outer base pan encompasses the mounting plate for suspension purposes and provides an oil pan to prevent lubricants from contaminating any surface on which the unit is mounted.

Note: Refer to wiring diagrams 6997WD and 6999WD for location and designation identification.

E. Manual Eject

2.06 The manual eject switch H requires momentary closure of the pushbutton switch. Operation of this switch will result in the rapid ejection of a card. If held in the operated position, this switch will cause rapid feeding to continue until it is released.

F. Manual Print

2.07 Printing of characters which are normally suppressed in any area of the card occurs when holding the manual print switch Y depressed.

G. Manual Backspace

2.08 The card may be positioned in either direction by means of the manual backspace switch Z and the thumb wheel. When

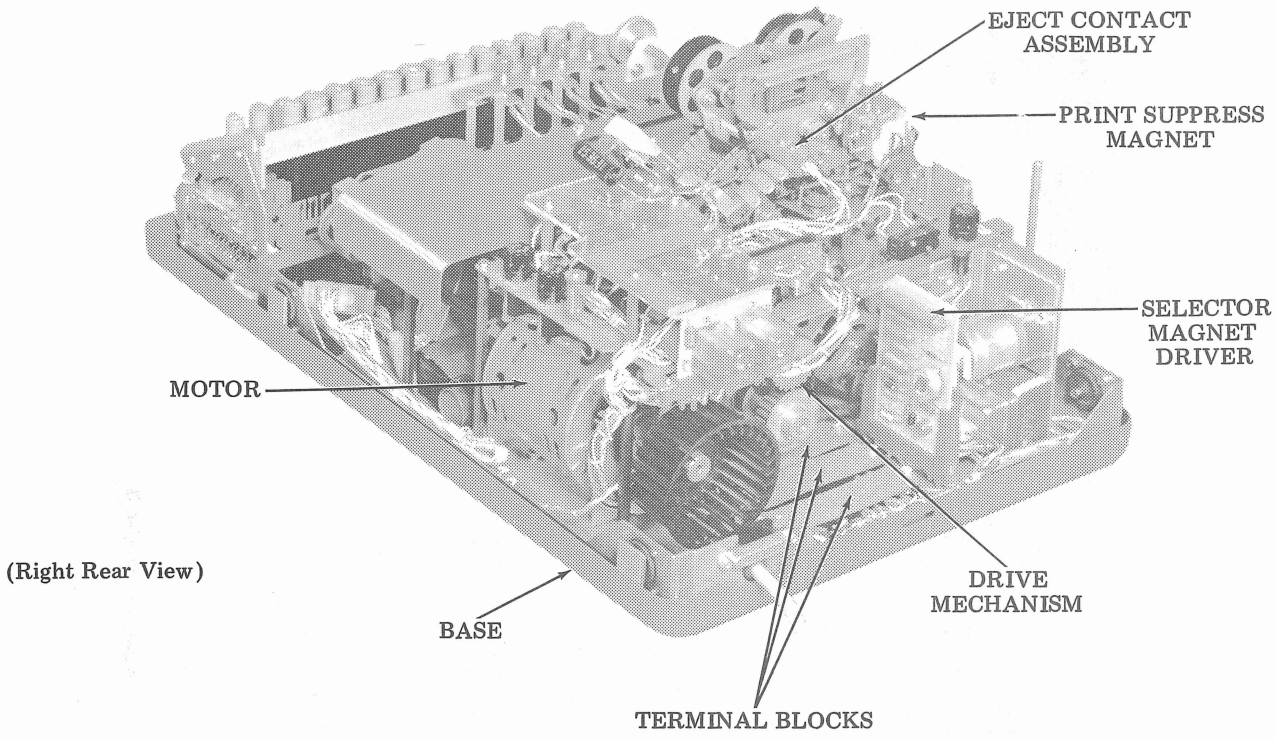


Figure 4 - 35 Edge Punched Card Typing Reperforator Set Without Cover Assembly

the card is being moved to the right, the manual backspace pushbutton must be held depressed as the thumb wheel is rotated.

H. Manual Release (Current Design Units)

2.09 This pushbutton switch restores set operation when the card supply is exhausted.

I. Null Character Generator (Current Design Units)

2.10 Current design units are equipped with a null character generator contact assembly. It is associated with the bursting mechanism in the typing reperforator, and initiates a synchronization assurance restart signal to the associated Edge Punched Card Reader and Feeder System.

J. Motor

2.11 A synchronous motor (Figure 4), single phase 115 volts ac, 60 hertz, is used to drive the base units. The motor is a 33 millihorsepower, 3600 revolutions per minute, two-pole, wound stator, sleeve bearing motor with a squirrel-cage type rotor. The stator has two windings, a main run winding and an auxiliary start winding. The auxiliary winding is in series with a 96 mfd electrolytic capacitor and a current sensitive motor start relay.

K. Selector Magnet Driver

2.12 The constant current 0.500 ampere selector magnet driver (Figure 4) consists of an etched circuit card, an externally mounted power transistor, power transformer, and filter capacitor. The circuit is a two-stage triggering amplifier capable of switching high input currents (0.500 ampere) at very closely controlled input current levels.

L. DC Power Supply

2.13 On early design units, the dc power supply for the relays, magnets, and solenoid is an unfiltered bridge rectifier. Current design units are equipped with a regulated 110 v dc rectifier assembly (TP332970).

M. Terminal Blocks

2.14 Power input to the set is made via screw type terminal blocks (Figure 4), designated R, V, and S, located at the rear of base.

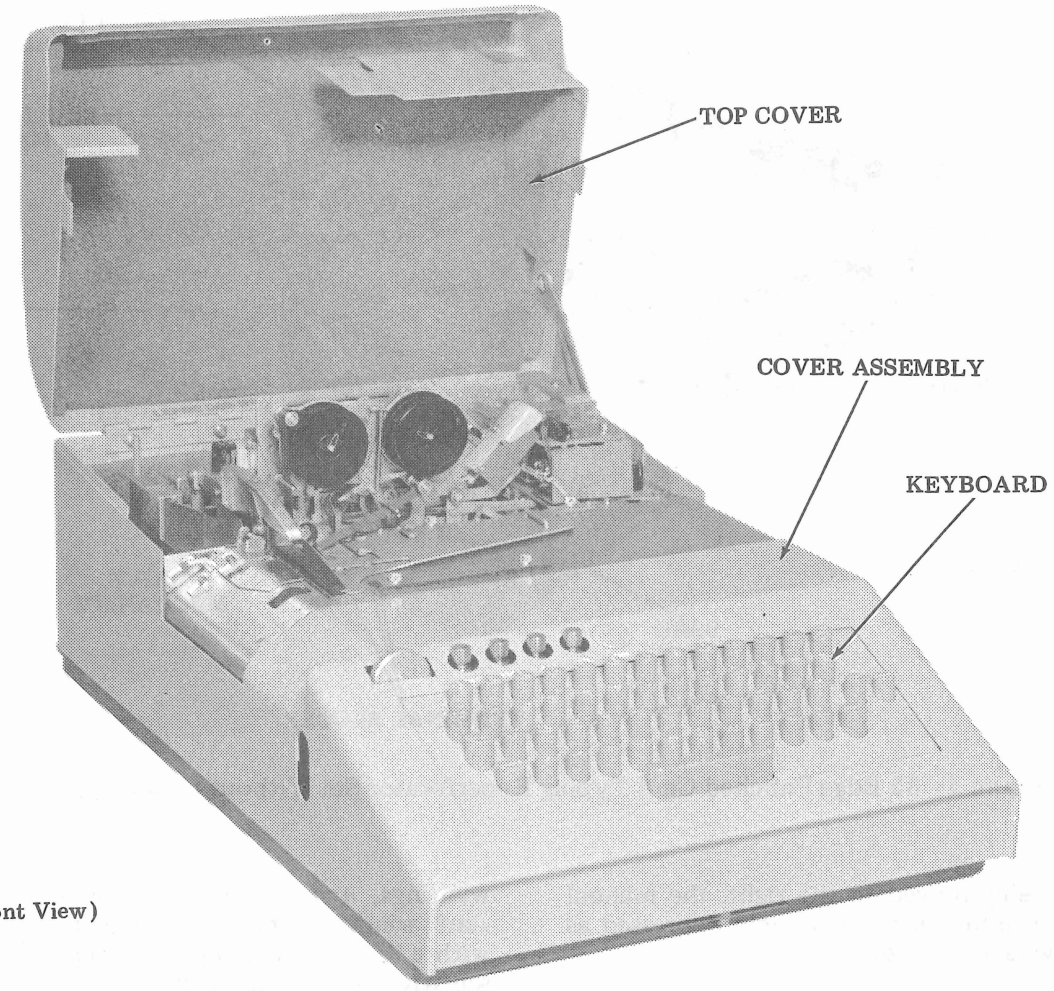


Figure 5 - 35 Edge Punched Card Typing Reperforator Set With Top Cover in Raised Position

N. Cover

2.15 The cover unit (Figure 5) is of sheet metal construction and is consistent with the styling of the Model 35 line of equipment including easy accessibility for maintenance.

O. Edge Punched Card Typing Reperforator

2.16 The edge punched card typing reperforator (Figure 3) contains the mechanisms necessary for translating electrical input signals into mechanical motions that perforate fully perforated code holes and print the equivalent messages on cards. Printing conforms to ASCII and occurs along the upper edge of the card, above and six characters behind the corresponding code perforations.

2.17 A function box is included which operates contacts used in conjunction with the print suppression mechanism and card eject mechanism.

2.18 The card ejection circuit consists of a code operated function box contact assembly (Figure 4) and two relays controlling the operation of the eject solenoid. A switch and extension arm is provided in the punch for the purpose of sensing through a common reference hole in the card to signal the end of the eject cycle. A manual eject (Figure 3) is also provided to eject the card without the selection of a code.

2.19 The bursting circuit consists of a relay, switch burster clutch trip magnet, and a switch arm to sense the common reference hole in

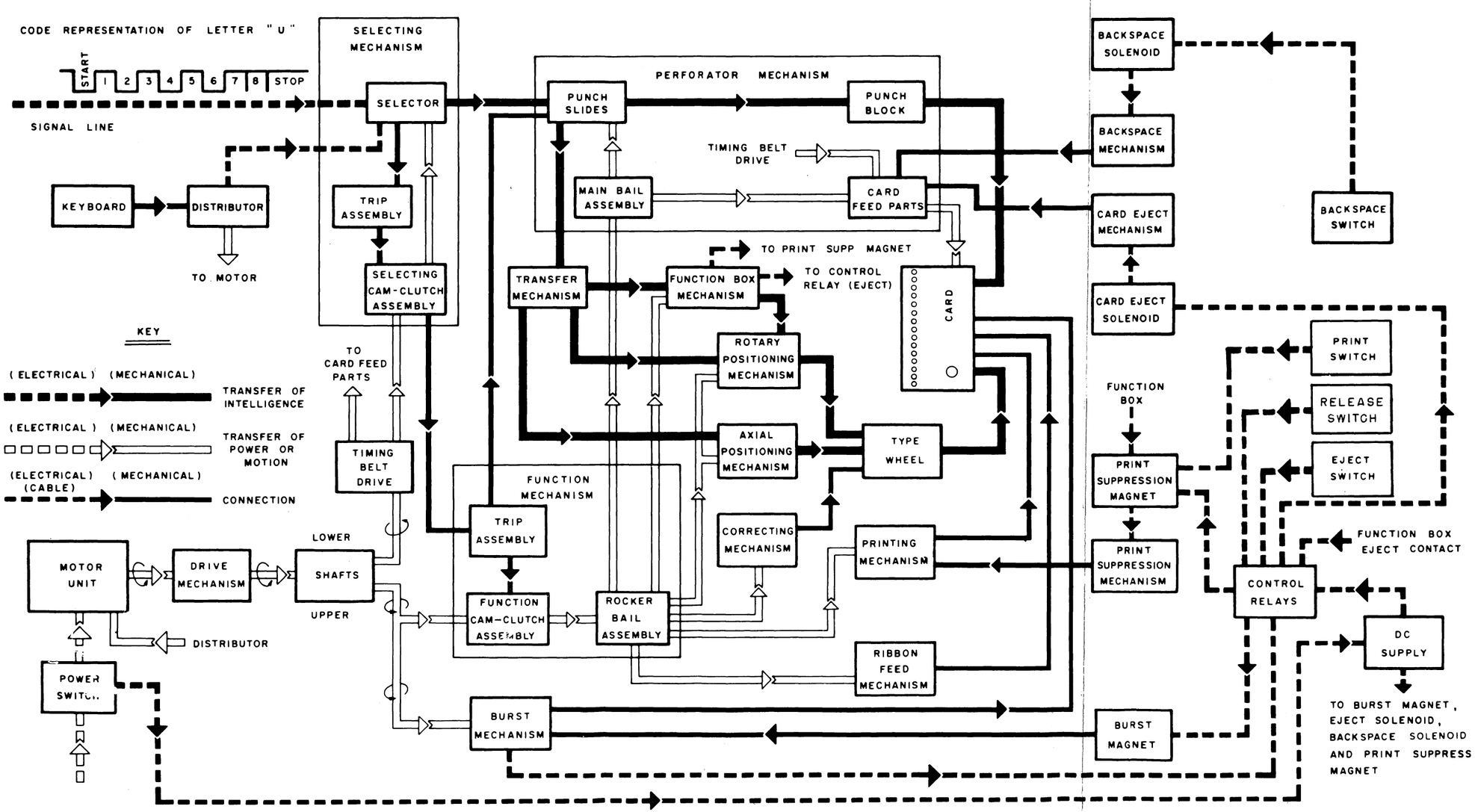


Figure 6 - Functional Block Diagram of Edge Punched Card Typing Reperforator Set

the card. A second switch (burst limit) is provided to prevent the burster from operating when a single card or the last card of a series of cards (fanfold) is being punched.

2.20 The print suppression circuit consists of a set of contacts (Figure 3) in the function box, the print suppression magnet (Figure 4), and a switch arm and switch to again sense the reference hole in the card.

2.21 The manual backspace mechanism is initiated by depressing the B. SP. push-button (Figure 3) and energizing the lowermost solenoid mounted on the center plate. The backspace function is completed by manually rotating the shaft with handwheel in a clockwise direction to obtain the desired card positions.

3. PRINCIPLES OF OPERATION

3.01 Refer to Figure 6 for a block diagram of the operation of the set. Also, refer to the following sections for the description and principles of operation of the keyboard, typing reperforator, and base:

Section No.	Content
574-121-100	33 Keyboard Description and Principles of Operation
574-243-100	Typing Reperforator Description and Principles of Operation
574-244-100	Base Description and Principles of Operation

A. Keyboard Trip

3.02 Depressing a keylever (except the local functions) shifts codebars to the right and the selected code combinations are set up in the keyboard code reading contact block. This causes the spring loaded keyboard reset arm to be unlatched and tripped. Through its H member connection, the keyboard transmits rotary motion into linkage associated with releasing the distributor clutch.

B. Distributor

3.03 The distributor is essentially a disc type with multiwire parallel input from the keyboard. It transmits sequentially the combination received from the keyboard selection. The normal stop position of the brush is near the end of the stop segment and this position maintains continuous line current in the idle condition. Near the end of the distributor cycle the keyboard trip lever is rotated in the opposite direction by means of a camming roller on the distributor clutch assembly. This unlocks the common linkage and moves the clutch stop bail into a position to stop the clutch.

3.04 The keyboard trip and the distributor operations are repeated each time the keyboard is operated. Except when the repeat key has been depressed, the keyboard trip arm is not latched up and the distributor runs continuously at full line speed.

3.05 Keyboard intelligence is transmitted to the selector coils and translated into mechanical motions to type and perforate the card.

C. DC Power Supply (Early Design Units)

3.06 All electrical components used in the control circuits of this set are operated from the 115 volt dc supply. The dc power is obtained by rectifying ac directly from the power line with a packaged bridge rectifier.

3.07 Protection is supplied in the form of a 3/4-ampere fuse (use fast-blowing type only) and an 8-ohm resistor, both located in the "hot" ac side of the diode input circuit.

CAUTION: THE POLARITY OF THE AC POWER LINE MUST BE OBSERVED (SHOWN ON WIRING DIAGRAM 6997WD) TO AVOID DESTRUCTION OF THE BRIDGE DIODE SHOULD THE DC BE SHORTED FOR ANY REASON.

D. DC Power Supply (Current Design Units)

3.08 Current design units are equipped with a regulated 110 volt dc rectifier assembly (TP332970), replacing the unregulated dc supply, in early design units, obtained by rectifying ac.

3.09 Protection to the rectifier assembly is provided by a 2-ampere fuse (fast-blow type) in the line side of the ac input, and by a 1/2-ampere fuse (fast-blow type) in the dc output. Wiring information for this assembly is contained in wiring diagram 6999WD.

E. Selector Magnet Driver

3.10 Refer to Section 574-244-100 for information covering the selector magnet driver.

F. Card Eject Circuit

3.11 The function of the eject circuit is to both start and control the ejection of cards from the punch unit. Ejection of cards may be initiated by a coded signal or by the manual operation of a pushbutton switch.

Note: Refer to wiring diagram 6997WD for location and designation identification of the following components.

G. Function Box Contact

3.12 This is a momentary leaf type contact located on the function box of the punch unit and is designated DB on the associated wiring diagram. Upon receipt of the eject code, this contact closes and allows relay D to energize. The function of relay D is to open the hold path of relay A, thereby initiating the release of relay A.

H. Relays

3.13 Relays designated A, B, C, and D operate on 115 volts dc and have a coil resistance of 10,000 ohms.

3.14 Relay A acts as a delay by virtue of a capacitor across its coil. Early design units use a 55 ms time delay element, while current design units use a 200 ms time delay element. A delay in the start of ejection is necessary to allow the punch pins to be withdrawn from the card before rapid feeding begins. When relay A does release, its contact (in series with the eject solenoid) closes.

3.15 The eject solenoid FB is a 115 volt dc intermittent duty component. The purpose of this solenoid is to allow the eject feed pawls to engage the feed wheel ratchet, thereby moving the card rapidly out of the punch.

3.16 The eject switch KB is a two-circuit switch. When the reference hole in the edge punched card is sensed by this switch, the eject solenoid and relay D become de-energized. On current design units, switch KB initiates a blind condition in the selector magnet driver.

3.17 The manual eject switch H requires momentary closure of the pushbutton switch. Operation of this switch will result in the rapid ejection of a card. If held in the operated position, this switch will cause rapid feeding to continue until it is released.

I. Burst Circuit

3.18 The burst circuit initiates and controls the separation of cards at the completion of the eject cycle. Relay C is energized upon closure of the function box contact DB or the manual eject switch H. Operation of relay C conditions the burst magnet to energize when the burst switch closes.

3.19 The burst switch MB is a two-circuit switch. Its function is to sense the reference hole in the card as it closes to energize the burster clutch trip magnet. When the card is in the proper position to be separated, the burst magnet BB will trip the burster clutch.

3.20 The burst limit switch EB is a two-circuit switch and is used to terminate the burst cycle and prevent more than one revolution of the burster clutch from occuring.

J. Print Suppression

3.21 The print suppress switch LB is a two-circuit switch. The normally open side of this switch prevents the burster from operating a group of fanfolded cards which is being punched.

3.22 The print suppression circuitry assures that control characters will not be printed on the edge punched cards. A second function of this circuit is to suppress printing at the beginning of a card and at the end of the last card or a single card.

3.23 The function box print suppress contact assembly HB consists of two-swinger type leaf contact pile-ups. The swingers of these contacts are connected in common. These contacts are connected in the punch circuit in a manner which allows the print suppress magnet to energize when both contacts are marking or both spacing.

3.24 The print suppress magnet CB operates a latch which will inactivate the path of the print hammer when printing is not to occur.

3.25 The normally open side of the print suppress switch LB closes as the reference hole in the card is sensed. The closure of the switch allows the relay B to energize. The purpose of relay B is to energize the print suppress magnet when the switch closes.

3.26 The normally open side of the two-circuit burst switch MB will cause the B relay to de-energize when the reference hole is sensed by switch MB.

K. Electrical Operation

3.27 The mode of operation to be described is one in which fanfolded cards are being punched.

3.28 The left-hand side of the edge punched card has a 1/4-inch hole which serves to locate three switch actuating arms. These arms are staggered and protrude through the top plate to sense the 1/4-inch hole as the card moves over them. The first switch arm to the right of the punch block is the burst switch MB; the second to the right is the eject switch KB, while the third is the print suppress switch LB.

3.29 The first card of the fanfolded stock is manually fed, by means of the hand-wheel, until the reference hole is over the burst switch arm or the serrated edge of the card is flush with the left side of the punch block. The card is now in proper position to be punched.

3.30 Intelligence signals are now transmitted to the reperforator unit either from the keyboard and distributor or from the external signal line.

3.31 Mounted on the function box of the punch unit is the print suppression contact assembly HB. The contacts are positioned so that their swinger contacts will sense the mark or spacing condition of extensions of the no. 6 and 7 bellcranks. When a code is received in which the 6 and 7 bits are both marking or both spacing, the normally energized print suppression magnet CB is allowed to remain energized. With CB energized, no printing can occur.

3.32 If either bellcrank is spacing while the other is marking, the holding path for CB will be broken and printing will occur. At the end of the printing cycle, the bellcranks are reset and the holding path for CB is again closed. This holding path is through the print suppress magnet CB, the current limit resistor R12 (1800 ohms), and the function box print suppression contacts HB.

3.33 Since the printing on the edge punched card follows the perforations by approximately six characters, it is desirable to suppress printing near the extreme end of the card being punched. This suppression is necessary to prevent printing associated with one card from appearing on the following card.

3.34 In order to prevent the above condition from developing, the print suppress switch LB actuating arm is positioned so that it will sense the reference hole in the card trailing the one being punched. Adjustments are made to assure that this sensing occurs in time to prevent any printed characters belonging to the first card from appearing on the second.

3.35 When the reference hole is sensed by the print suppress switch LB actuating arm, a path is provided for relay B to energize. This path is through the print suppress switch LB and the burst switch MB. At this time, MB is held closed by the card. Relay B now holds through its contact B4 and the MB switch.

3.36 With relay B energized; its contact B1, which is in series with the print suppress magnet, the manual print switch Y, and resistor R12, closes and provides a holding path for the print suppress magnet. Contact B1 is now shunting the function box print suppression contact HB and prevents printing even though contact HB opens. The print suppress magnet CB remains energized until the burst switch MB actuating arm enters the reference hole in the following card. With the opening of the switch MB, the hold path for relay B is opened and relay B releases. Contact B1 opens and the print suppress magnet CB is again under control of the function box print suppress contacts HB. Printing may now resume.

L. Card Eject

3.37 Cards may be ejected from the punch unit at any time at a rate which is about six times the normal line speed. Ejection of cards may be accomplished by code or manual operation.

3.38 A code transmitted to the punch unit from the keyboard or from the external signal line will cause the function box contact DB to close momentarily for approximately 9 ms. Relay D operate path is through function box contact DB and the eject switch KB; relay D then holds through diode C7, contact D4, and the eject switch KB.

3.39 Relay A which was energized through the normally closed contact D2 now has its holding path broken by the operation of relay D. Relay A acts as a slow release relay due to the capacitor across its coil (early design units use a 55 ms time delay element, while current design units use a 200 ms time delay element).

Since the eject code is sensed by the function box early in the cycle, it is necessary to delay the actual start of ejection until the punch pins have withdrawn from the card. A minimum delay of 55 ms is required to assure that the punch pins will be out of the card when rapid feeding starts. This delay is accomplished by the 1 mfd capacitor and relay A.

3.40 When relay A does release; its contact A2, which is in series with the eject solenoid FB, closes. The eject solenoid now pulls in and holds through contact A2, contact D4, and the eject switch KB. The rapid feed pawls engage the feed wheel ratchet and the card moves out of the punch at six times line speed.

3.41 Ejection continues until the eject switch KB actuating arm senses the reference hole in the card trailing the one being ejected. The eject switch KB opens and allows the eject solenoid FB to release. During the time required for this solenoid to be released, the card is fed an additional 1-1/2 characters. In doing so the card is moved over the burst switch MB actuating arm and is now in a position to be separated from the following cards.

M. Manual Card Eject

3.42 Ejection of the card may be initiated by the depression of the manual eject switch H. If switch H is pushed and then released, one card will be ejected. If switch H is depressed and held, cards will continue to be rapidly fed out of the punch until it is released.

3.43 Operation of the manual eject switch H provides a path for the energizing of the relay D. If switch H is released, it will perform the same function as the stunt box contact DB during coded eject. From this point on ejection takes place as was described for coded ejection.

3.44 Holding the manual eject switch H depressed shunts the eject switch KB and the eject solenoid will not release when KB opens. Thus, cards will continue to be fed out until switch H is released and control of the eject solenoid FB is returned to KB.

N. Bursting of Fanfolded Cards

3.45 After completion of the eject cycle, fanfolded cards are automatically separated from the following cards. If single cards or the last fanfolded card is ejected, provision is made so that bursting will not take place.

3.46 Relay A was de-energized by the operation of relay D. With contact A3 in series with the eject solenoid closed, a path was also provided for the relay C to energize. This path is through diode CR6, contact A2, contact D4, and the eject switch KB. Relay C then holds operated through its contact C4 and the burst limit switch EB.

3.47 Relay C, contact C1 which is in series with the burst magnet BB, closes and conditions the burst magnet to operate when the burst switch MB senses the reference hole in the edge punched card. This sensing occurs at the completion of the eject cycle.

3.48 Magnet BB will energize through contact C1, the print suppress switch LB, and the burst switch MB. The burst magnet BB mechanically trips the burster clutch. The burster blade is then driven through the serrations in the edge punched card. Because only one operation of the burster blade is required to produce complete separation of the card, the burst clutch is disengaged after a single revolution. This is accomplished by de-energizing the burst magnet BB through the action of the burst limit switch EB.

3.49 The burst limit switch EB is mounted above the burster blade actuating arm. When the burster clutch is disengaged, switch EB is held in the operated position by the blade actuating arm. Relay C is holding itself energized through contact EB, the burst limit switch. As the burster blade operating arm moves down through its stroke, the burst limit switch EB is allowed to open. With EB open, relay C releases, opening its contact CL in series with the burst magnet BB. The burster clutch now disengages after a single revolution.

O. Single Card Operation

3.50 On single cards, no bursting is allowed to occur. The reason is clear when it is remembered that the burst switch would be allowed to close when the end of the card passed over it. This is considerably before the burst switch would have sensed the reference hole. If the burst clutch were to trip at this point, the burster blade would attempt to shear the card. It is, therefore, recommended that the card be removed from the punch block by manual eject before inserting the following single card.

3.51 As the end of the card moves over the print suppress switch LB, it opens. Since LB is in series with the burst magnet BB, no burst can occur.

P. Diodes

3.52 Two diodes are included in the punch control circuitry. CR6 is a blocking diode which allows relay D to release when the eject switch KB opens. Without CR6, the D relay would remain energized through contact A2, contact C4, and the burst limit switch EB. Diode CR7 is in series with the relay D, and is used in conjunction with an attachment that is not now available for the typing reperforator. Its presence will in no way affect normal operation of the card punch. At this time the card is in a position which is incorrect for bursting.

Q. Manual Backspace

3.53 The manual backspace switch Z is a normally open pushbutton switch. Operation of this switch completes the connection of the manual backspace solenoid NB to the plus side of the dc power supply, and activates the mechanism.

R. Manual Print

3.54 The manual print switch Y is a normally closed pushbutton switch. Operation (opening) of this switch prevents the print suppress magnet CB from energizing, thereby permitting printing on normally suppressed characters.

S. Manual Release (Current Design Units)

3.55 The manual release switch is a normally open bushbutton switch. Operation of this switch (X) is required after the eject code function when the card supply is exhausted, or in single card operation, for resetting the synchronization assurance circuitry. Closure of the release switch initiates the burst cycle, and generates a null character which signals the associated card reader to resume transmission.

3.56 Prior to the operation of the release switch, or the insertion of a card into the punch top plate sensing lever area, a previous card remaining in the punch block area must be removed by manual eject.

T. Synchronization Assurance (Current Design Units)

3.57 Due to the difference in eject speeds between the card reader (associated unit) and card typing reperforator, a method for synchronizing these units is provided. The card reader is equipped with the capability of stopping transmission upon reading the eject code, and has the means of reading a null character generated by the card punch as a restart signal. This circuitry is mounted within the edge punched card feeder (associated unit).

3.58 The eject code is recognized in the card reader by a set of transmitter mounted code reading contacts. After transmission of the eject code, the card reader transmission stops and control relays are latched. The card reader will remain in the stop condition until a signal (null character) to restart is received from the card punch.

3.59 The eject code, transmitted by the card reader, is sensed in the function box of the card punch and a contact is made. The closure of this contact causes the card eject mechanism to actuate. Through the same contact, a relay in the punch synchronization circuitry energizes and blinds the selector magnet driver to the null character which will be generated.

3.60 The completion of the eject cycle activates the card burst mechanism, and a blade is driven through the serrated portion of the card. Mounted on the clutch that drives the burst mechanism is a cam segment. This cam segment controls the operation of a contact that generates the null character. The null character is sent back to the card reader as a signal to resume transmission. After the null character has been sent, the selector magnet driver of the punch is unblinded and allows new information to be received.

3.61 The receiving card punch recognizes the eject code in its function box. Referring to wiring diagram 6997WD, the DB function box contact closes, and allows relay K6 to energize. The current path for relay K6 is from dc ground in the typing reperforator set, through the 2000 ohm resistor R1, relay K6 coil, diode CR3, and the DB function box contact, to the +dc supply.

3.62 After the DB contact opens, relay K6 holds through its contact K6-3, 8000 ohm resistor R2, and the normally closed contact K7-2, to the +dc supply. Relay K6 contact K6-4 (across the signal line input to the selector magnet driver) closes, blinding the selector magnet driver. A third contact, K6-1, closes across the typing reperforator set keyboard distributor, and disables the keyboard.

3.63 A synopsis of the sequence of operations in synchronization assurance as they occur is as follows:

(a) Eject code received by the card punch.

(b) DB function box contact closes.

(c) Relay K6 energizes and holds.

(d) Relay K6 contact K6-4 blinds the input to the selector magnet driver.

(e) Relay K6 contact K6-1 blinds the keyboard.

3.64 Upon completion of card eject, the burst switch MB senses the reference hole located near the beginning of the following card. Operation of this switch triggers the burst magnet BB. The burst mechanism clutch begins to rotate and a cam segment, mounted on the clutch, allows the null generator contact JB to open. The cam permits the contact to remain open for approximately 85 ms. The null character is now sent back to the reader as a restart signal.

3.65 As the null character is being generated, the burst limit switch EB, mounted below the burst arm, closes. This switch is in series with the coil of relay K7. Relay K7 energizes from dc ground, through resistor R1, the burst limit switch EB, the eject switch KB, to the +dc supply.

3.66 At the completion, the burst switch EB is opened by the burst blade arm, and the holding path for relay K7 is broken. Relay K7 releases, and opens the blinding contact K7-1. The card punch may now accept additional information from the signal line.

3.67 As explained earlier, the burst blade does not operate on the last card of a series of fanfolded cards. Without the burst cycle, the null character will not be generated. The synchronization circuitry, at both the reader and the card punch, will remain in the hold condition (relay K6 in the punch synchronizer will remain energized).

3.68 When a fresh supply of cards are inserted into the card punch and properly positioned, the transmission is restarted by depressing the release switch X. Relay K7 will then energize through resistor R1, relay K7 coil, diode CR-6, contact K6-2, and the X release switch to the +dc supply. Relay K7 then holds through its contact K7-3, diode CR7, contact 4 and 5 of the C relay, and the burst limit switch EB to the +dc supply.

3.69 The burst magnet BB is also energized when the release switch X is depressed. The current path is from dc ground, through the burst magnet coil BB, diode CR-4, contact K6-2, and the X release switch to the +dc supply. The blinding (null generation) and reset take place as previously described.

4. TECHNICAL DATA

4.01 Speed: 100 words per minute
(600 operations per minute)
(110 baud)

Card Ejection: 6 times the normal line speed

4.02 Transmission Code: 8-level start-stop signals with 11-unit transmission pattern compatible with ASCII.

4.03 Dimensions and Weight (approximate): Edge Punched Card Typing Reperforator Set

Width	14-1/2 inches
Depth	23-1/4 inches
Height	9-3/4 inches
Weight	54 pounds

4.04 Electrical

AC Power Requirements
115 volts ac ±10%
60 hertz +0.45 hertz

Signal Line Current
0.020 ampere

Nominal Input to Selector
0.500 ampere with selector magnet driver

DC Power Supply
115 volts dc

4.05 Motor

Type	Synchronous, capacitor start
Input	115 volts ac ±10%, 60 hertz ±0.45 hertz, single phase
Input Current	2 amperes
Output	.33 millihorsepower

Speed . . . . . 3600 rpm
Temperature Rating . . . 50°C continuous

4.06 Cards

Cards with Prepunched
Feed Holes . . . . .Individual or fanfolded
Width . . . . . .3 to 3-1/2 inches
Length . . . . . .7 to 8-1/2 inches
Holes . . . . . .10 per inch
Feed Hole and Code Holes . . . . . In line
Perforations . . . . . 8-level, fully perforated

4.07 Printed Characters

Height . . . . . 0.012 inch
Width . . . . . 0.050 inch

Type style and character arrangement variable.