

## COMPONENT LOCATION

The major assemblies and electrical components of the Mach 10 are identified in Figures 3-1 through 3-10 to aid in servicing the Mach 10. The following Index indicates the figure that shows the location of the listed components.

## INDEX

COMPONENT	FIGURE	COMPONENT	FIGURE	COMPONENT	FIGURE
Circuit B Board	3-1, 3-10	T1	3-1	S19	3-3
F1	3-1	Transformer Connector	3-1	S20	3-6
K1 through K17	3-10	S1	3-6	S21	3-6
K26	3-10	S2	3-9	S22	3-6
L1 through L11	3-9	S3	3-6	S23	3-6
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PJX	3-1	S10	3-6	S30	3-5
Punch	3-1	S11	3-6	S31	3-6
Photo Diode Amplifier	3-10	S12	3-3	S32	3-1
Punch Diode Block	3-2	S13	3-3	S34	3-7
Punch Power Supply Board	3-10	S14	3-4	S35	3-7
RB	3-1	S15	3-3	S37	3-7
R55	3-1	S16	3-3	S38	3-8
Reader	3-1	S17	3-3		
Reader Diode Block	3-9	S18	3-3		

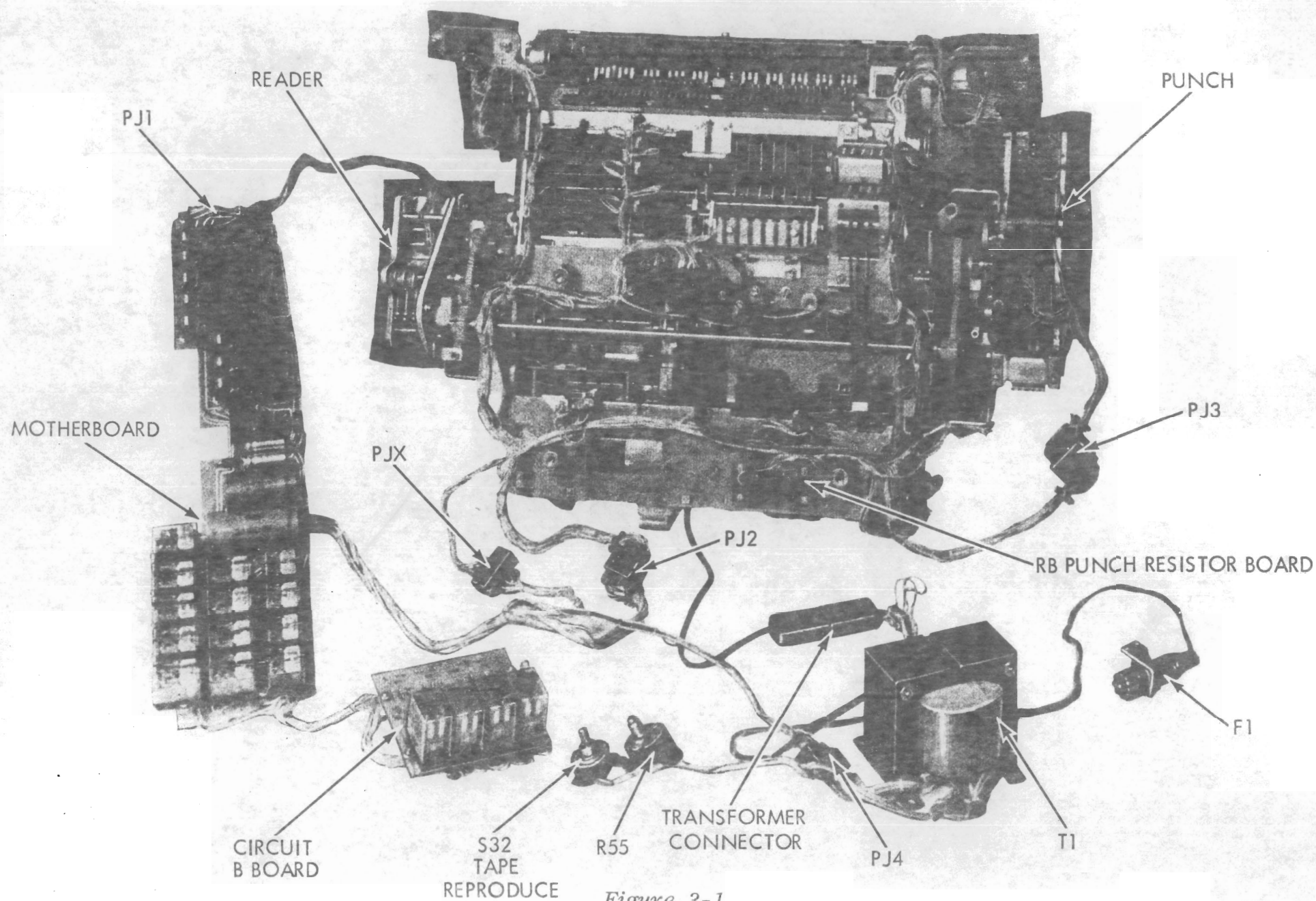
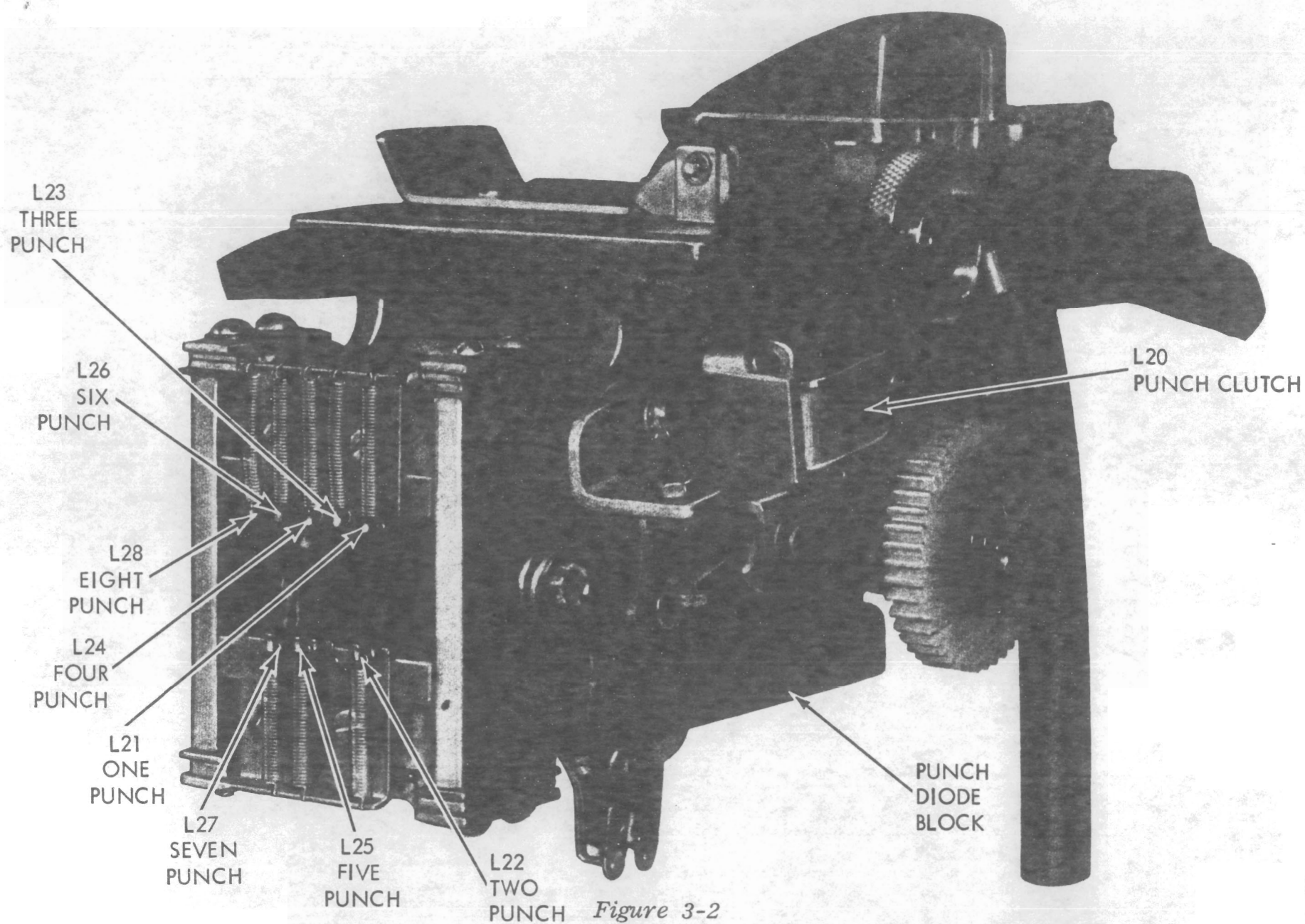
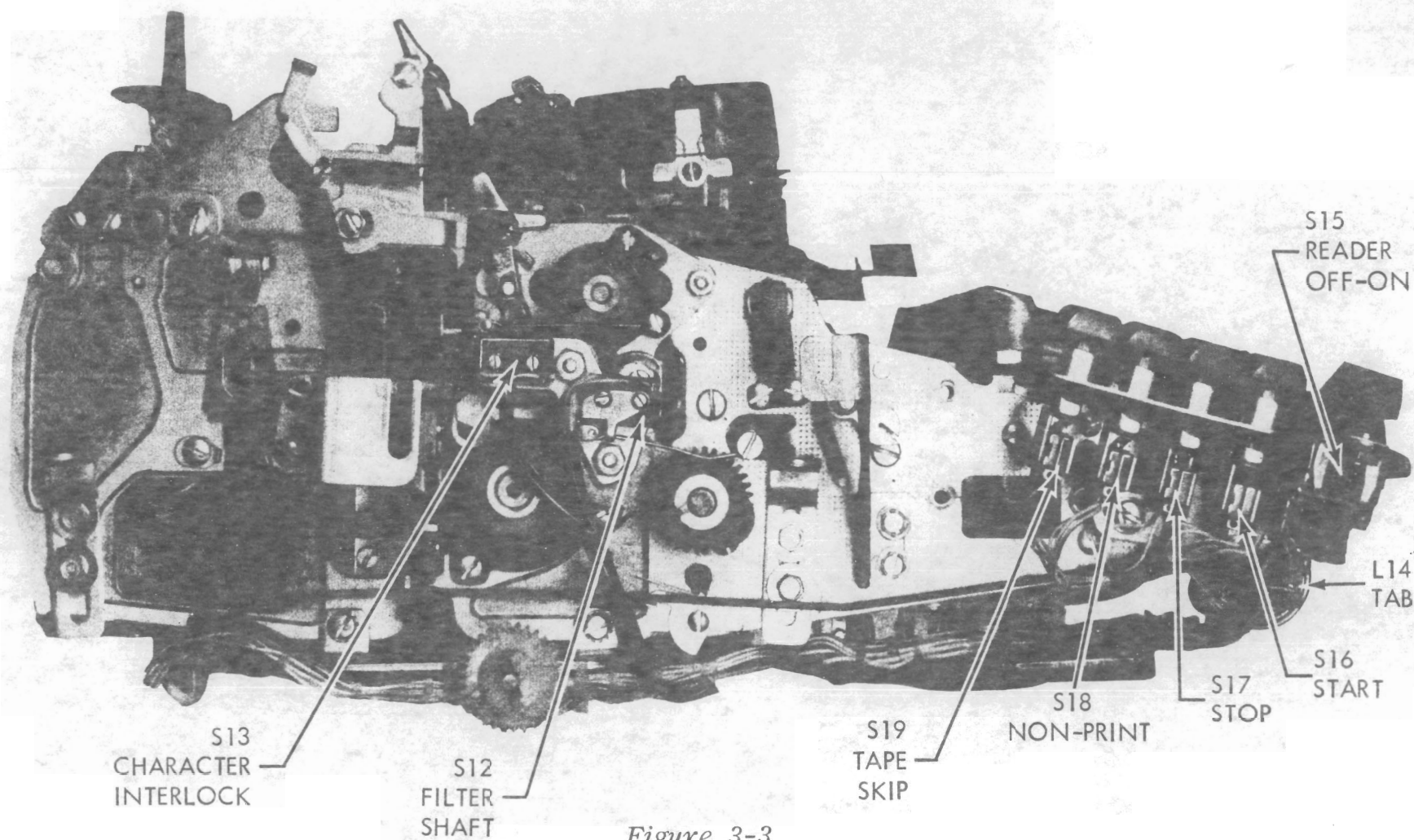


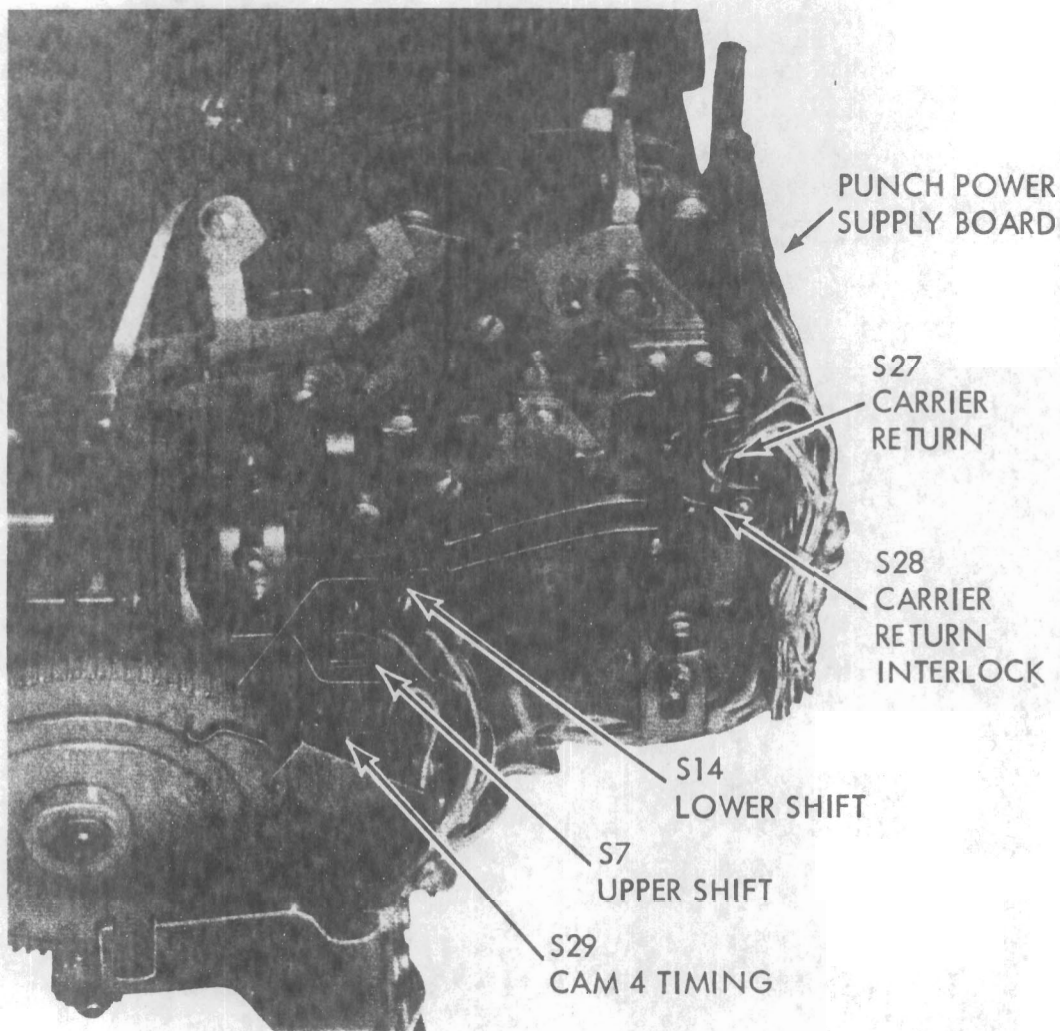
Figure 3-1



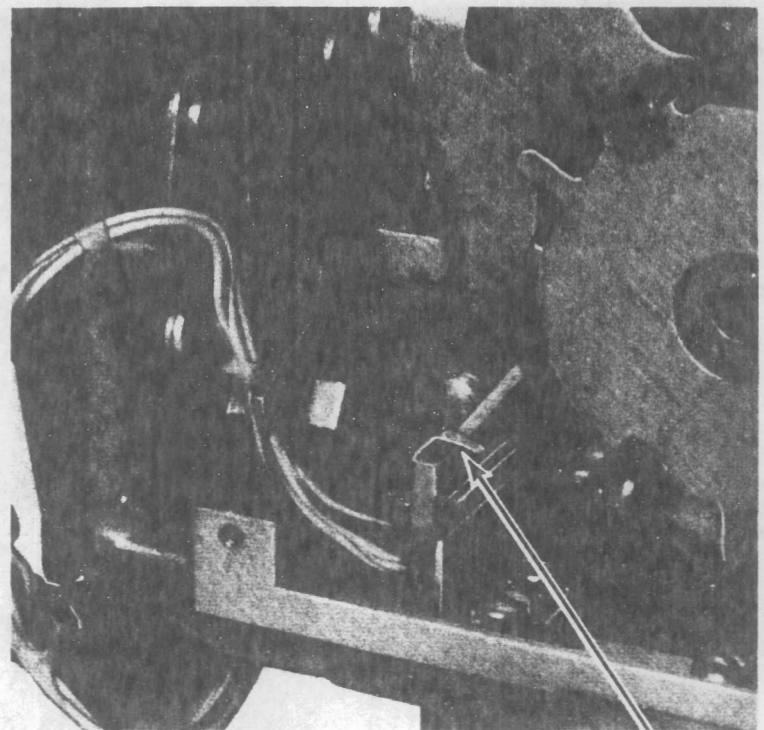




*Figure 3-3*



*Figure 3-4*



NOTE: PUNCH POWER SUPPLY BOARD  
REMOVED TO SHOW S30

*Figure 3-5*

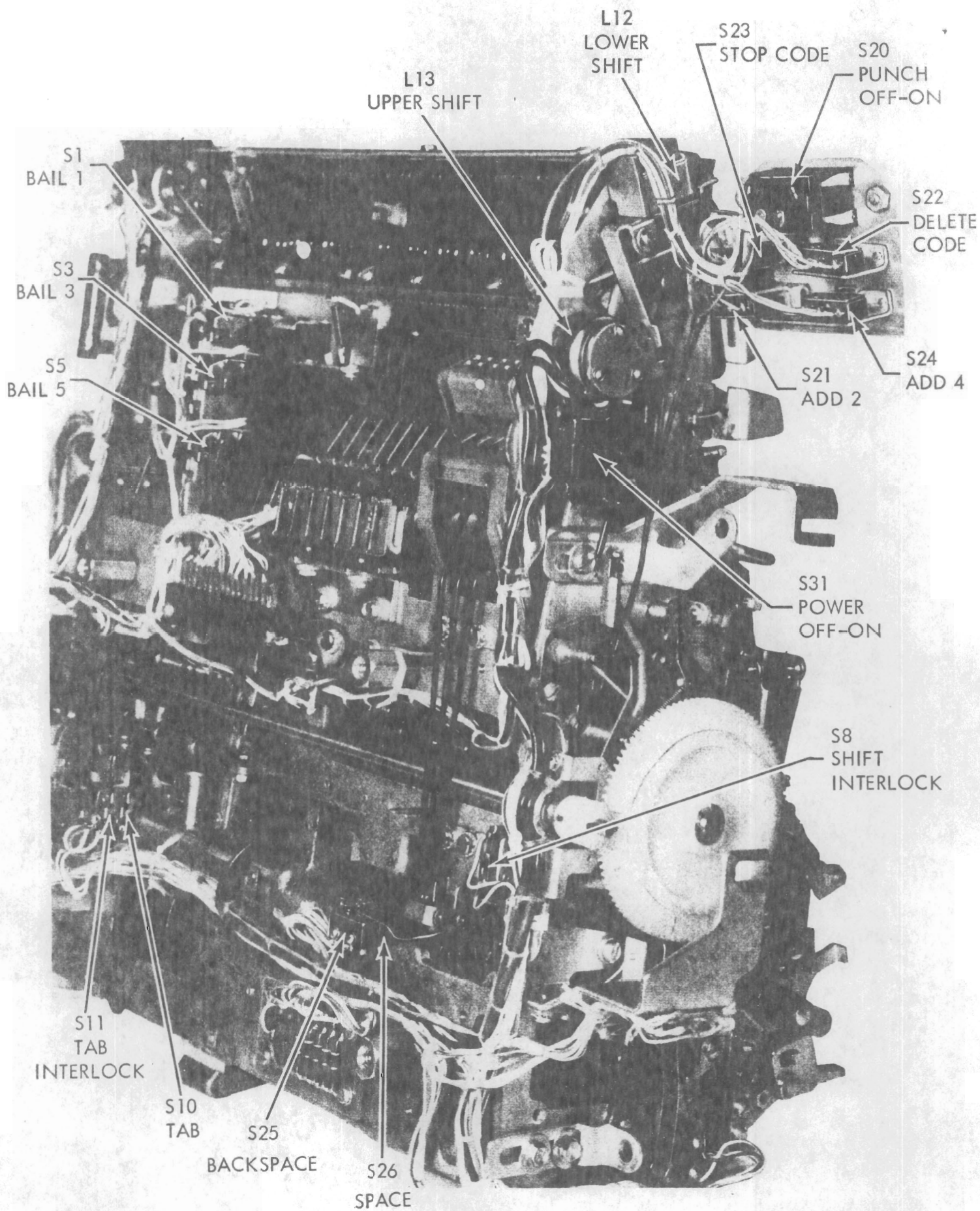


Figure 3-6



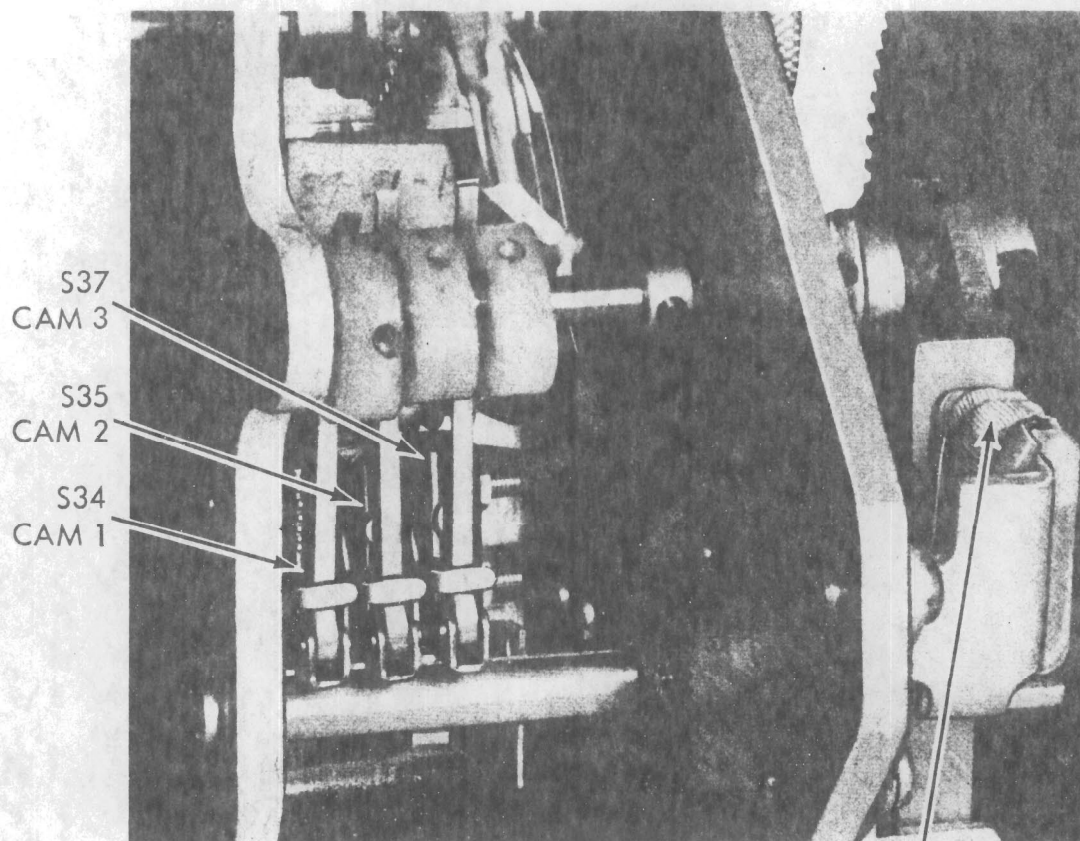


Figure 3-7

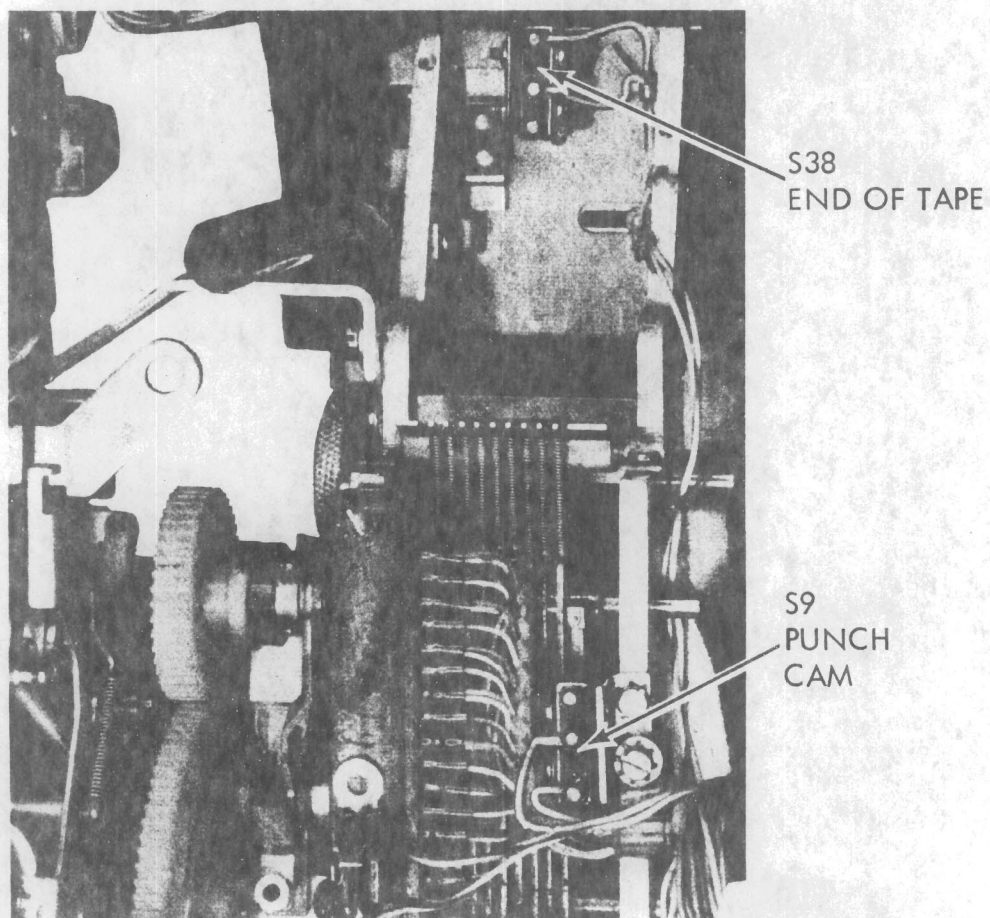
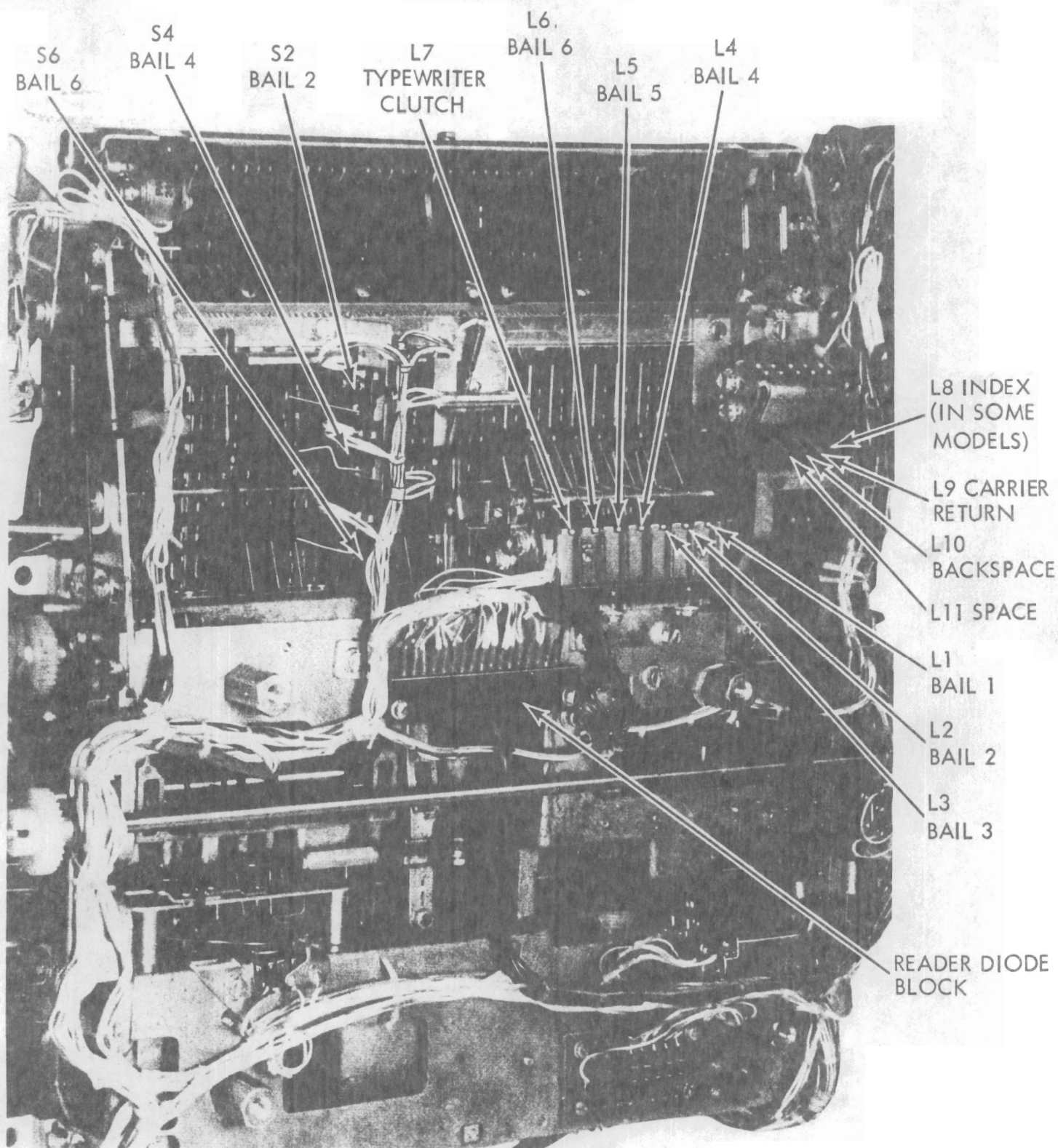


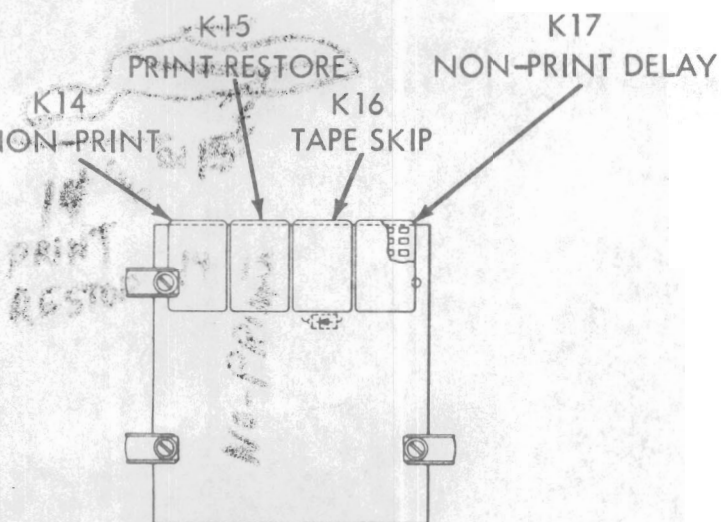
Figure 3-8



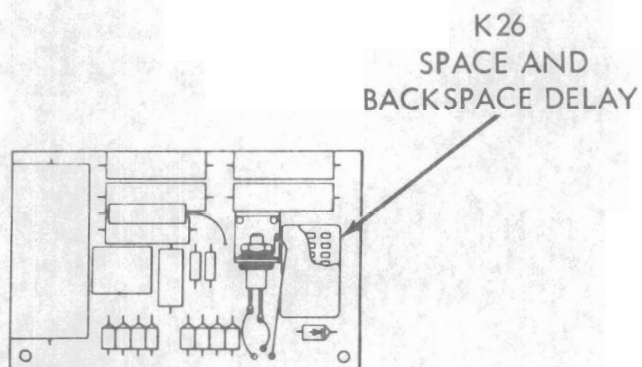
*Figure 3-9*



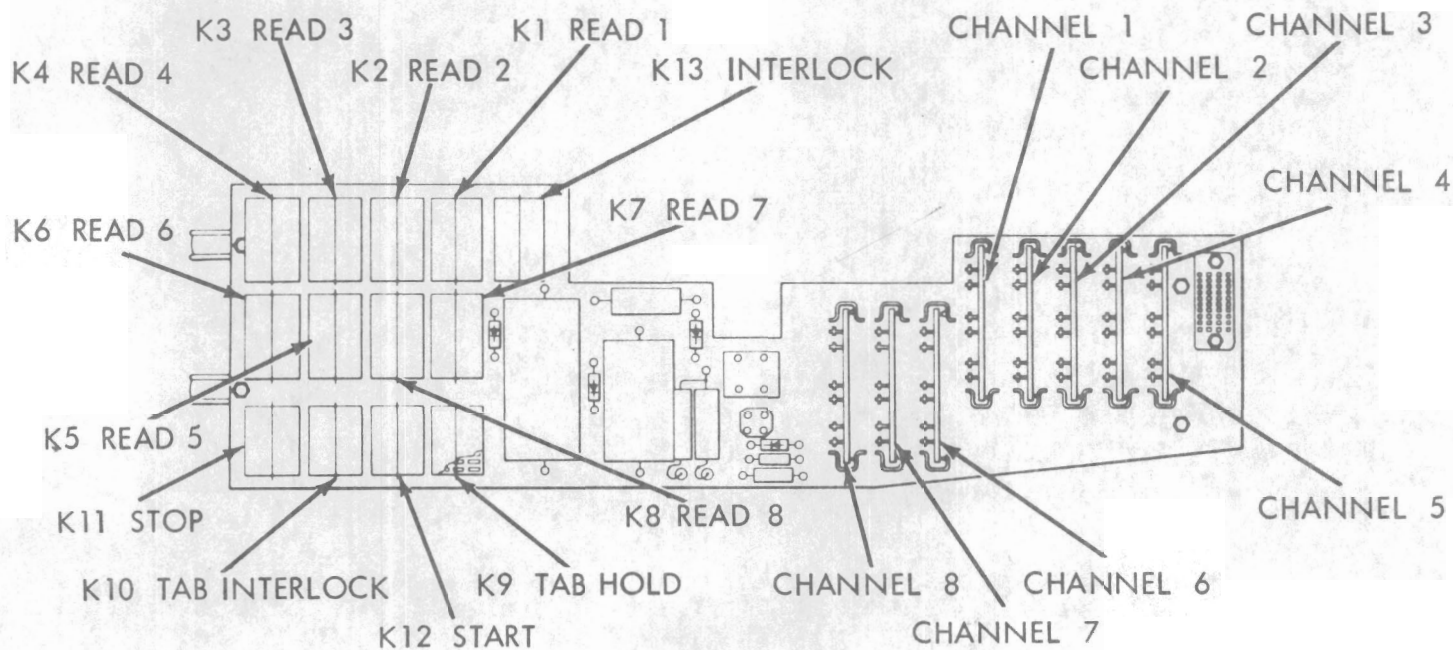
# MACH 10 RELAY AND PHOTO DIODE AMPLIFIER IDENTIFICATION



CIRCUIT B BOARD



PUNCH POWER SUPPLY BOARD



MOTHERBOARD

Figure 3-10

## MACH 10 TYPEWRITER MICRO-SWITCH ADJUSTMENTS

The teeth settings are referenced to the number of teeth rotated by the drive shaft gear, the large white gear located on the right side of the typewriter.

NOTE: Remove power from the Mach 10 and place the typewriter switch in the "ON" position.

SWITCH	FUNCTION	ACTUATED BY	ADJUSTMENT
S1-S6 Bail Switches	Controls Punch Solenoids during typewriter operation	Selector Bails	"MADE" for a minimum of 3-5 teeth during character operation
S7 Upper Shift S14 Lower Shift	Operates punch solenoids to code typewriter shift operation. S7-four punch and S14-five punch	Shift Arm	The "TRANSFERRED" switch "RESTORES" at 15-18 in each case
S8 Shift Interlock	To restore K13 from typewriter shift operation	Shift Detent	To be "MADE" when detent is in dwell and "OPEN" during shift motion
S10 Tab Punch  S11 Tab Interlock	S10 operates punch solenoid to code tab operation-one punch  S11 controls K10 Tab interlock relay	Tab Bellcrank from Tab Key	Adjust S11 to "TRANSFER" at the same time as S10  Adjust S11 for both switches to "TRANSFER" and "RESTORE" with Tab Key operation
S12 Filter Shaft	Controls seven punch during typewriter character operation	Cam on Filter Shaft	Adjust S12 to be "MADE" for 15 teeth on each lobe. Adjust Cam for S12 to "MAKE" 2 teeth after the last bail switch S1-S6 is "MADE"

NOTE : Refer to Component Location Index on  
Page 3-2 for location of switches

# MACH 10 TYPEWRITER MICRO-SWITCH ADJUSTMENTS

SWITCH	FUNCTION	ACTUATED BY	ADJUSTMENT
S13 Print Shaft	Restore K13 from a type-writer character operation	Cam on Print Shaft	Rotate Print Shaft counter-clockwise, viewed from cam, to take up backlash. Trip an interposer and adjust for S13 to "MAKE" at 3-4 teeth. Ensure that S13 "TRANSFERS" on high and low points of cam
S25 Backspace	S25 operates K26 and punch solenoid to code backspace operation-three punch	S25 - Backspace Typewriter Interposer	Each switch "TRANSFER" when its interposer is released and "RESTORES" when reset by typewriter
S26 Space	S26 operates K26 and punch solenoid to code space operation-six punch	S26 - Space Typewriter Interposer	
S27 Carrier Return Punch	S27 operates punch to code typewriter carrier return-two punch	Carrier Return Latch	S27 to "TRANSFER" at 31 teeth
S28 Carrier Return Interlock	S28 restore K13 from typewriter carrier return operation		S28 to "TRANSFER" at 25-30 teeth but not later than S27
S29 Cam 4	Operates reader clutch after interlocks have restored K13	Cam on Drive Shaft Gear	S29 to be "MADE" for 12-15 teeth on each cam lobe
S30 Space and Backspace Interlock	Operates reader clutch through transferred contacts 6 and 7 of K13	Cam follower lever	S30 to be held "TRANSFERRED" for a minimum of 12 teeth and a maximum of 15 teeth



### MACH 10 READER MICRO-SWITCH ADJUSTMENTS

Remove Reader from typewriter. The teeth setting are referenced to the number of teeth rotated by the Reader Drive Gear after the clutch is tripped.

SWITCH	FUNCTION	ACTUATED BY	ADJUSTMENT
S34 Cam #1	Controls +35 volts to Reader Photo-Diode Amplifiers	Cam on Reader Cam Shaft	S34 to "MAKE" at 5 teeth (20°) and "BREAK" at 53 teeth (200°) NOTE: S34 is mounted with button near actuator pivot
S35 Cam #2	S35 controls K13 and typewriter solenoids as selected by K1 to K8	Cams on Reader Cam Shaft	S35 and S37 to "MAKE" at 29 teeth (110°) and "BREAK" at 51 teeth (195°). Both should "BREAK" 2 teeth before S34
S37 Cam #3	S37 controls punch solenoids as selected by K1 to K8 during non-print operation		

### MACH 10 PUNCH MICRO-SWITCH ADJUSTMENTS

Remove punch from typewriter. Switch actuation is referenced to timing mark on right end of eccentric shaft.

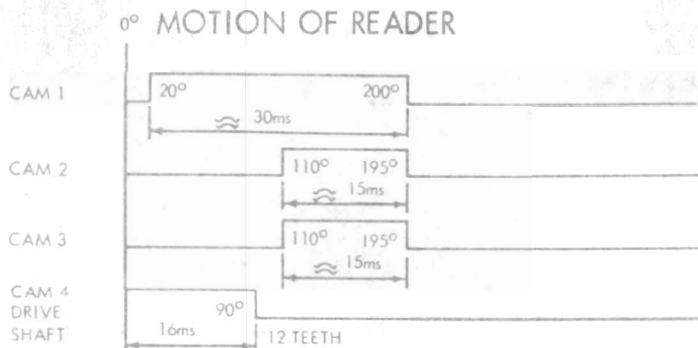
SWITCH	FUNCTION	ACTUATED BY	ADJUSTMENT
S9 Punch Cam	Controls +125 volts gated line	Punch Eccentric Shaft	S9 to "MAKE" at 3 o'clock (270°) and "BREAK" at 9 o'clock (90°). Bottom dead center of eccentric shaft is 6 o'clock (0° or 360°)
S38 End of Tape	Stops punch operation at end of tape	Tape in Punch operating position	S38 to "MAKE" with tape properly installed in Punch and "BREAK" if tape is absent.

# MACH 10 TIMING CHART

## NOTE

INDICATED TEETH ARE ON  
DRIVE SHAFT GEAR  
INDICATED DEGREES ARE ON  
READER OR PUNCH GEAR

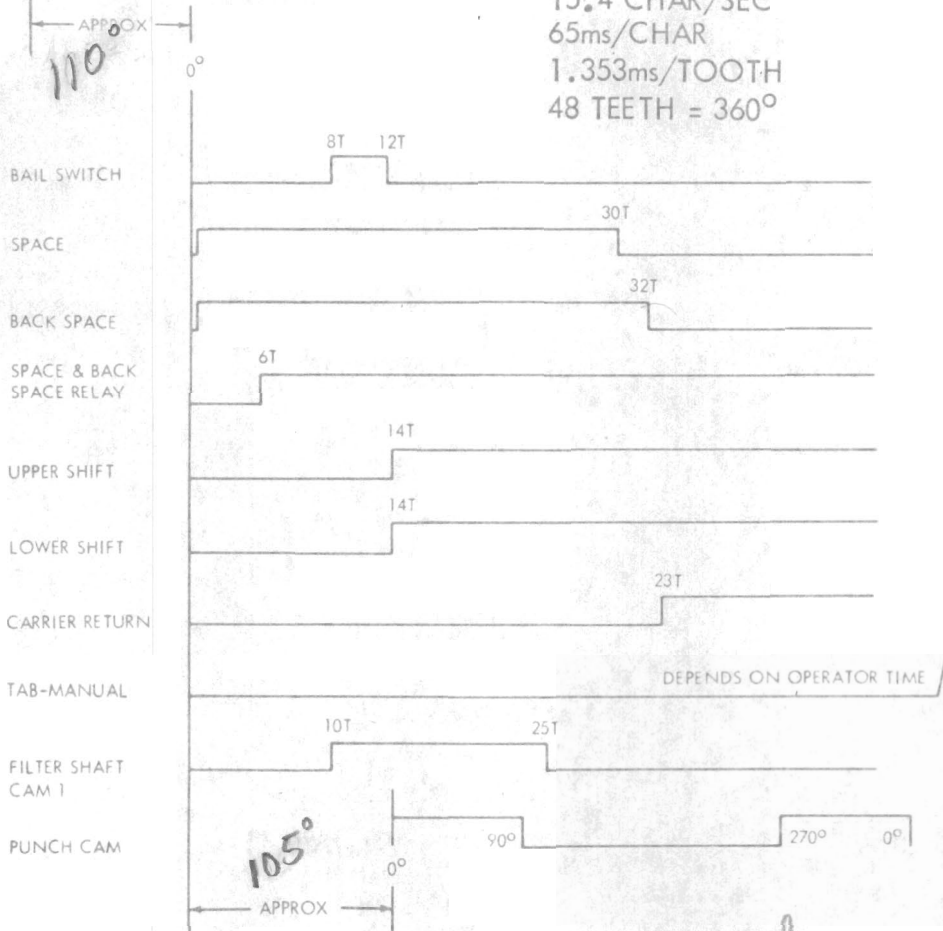
BAIL SWITCH AND FILTER  
CAM 1 TIMING WILL VARY  
AND MAY BE DELAYED UP  
TO A MAXIMUM OF 2  
TEETH IN SOME UNITS.



## READER TIMING

## NOTE

15.4 CHAR/SEC  
65ms/CHAR  
1.353ms/TOOTH  
48 TEETH = 360°



## PUNCH TIMING

215° Total

## SCALE

1/16 INCH EQUALS 7.5° OR 1 GEAR TOOTH

Figure 3-11