

# 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.

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| Reader                   | 3-1       | S17                   | 3-3    |           |        |
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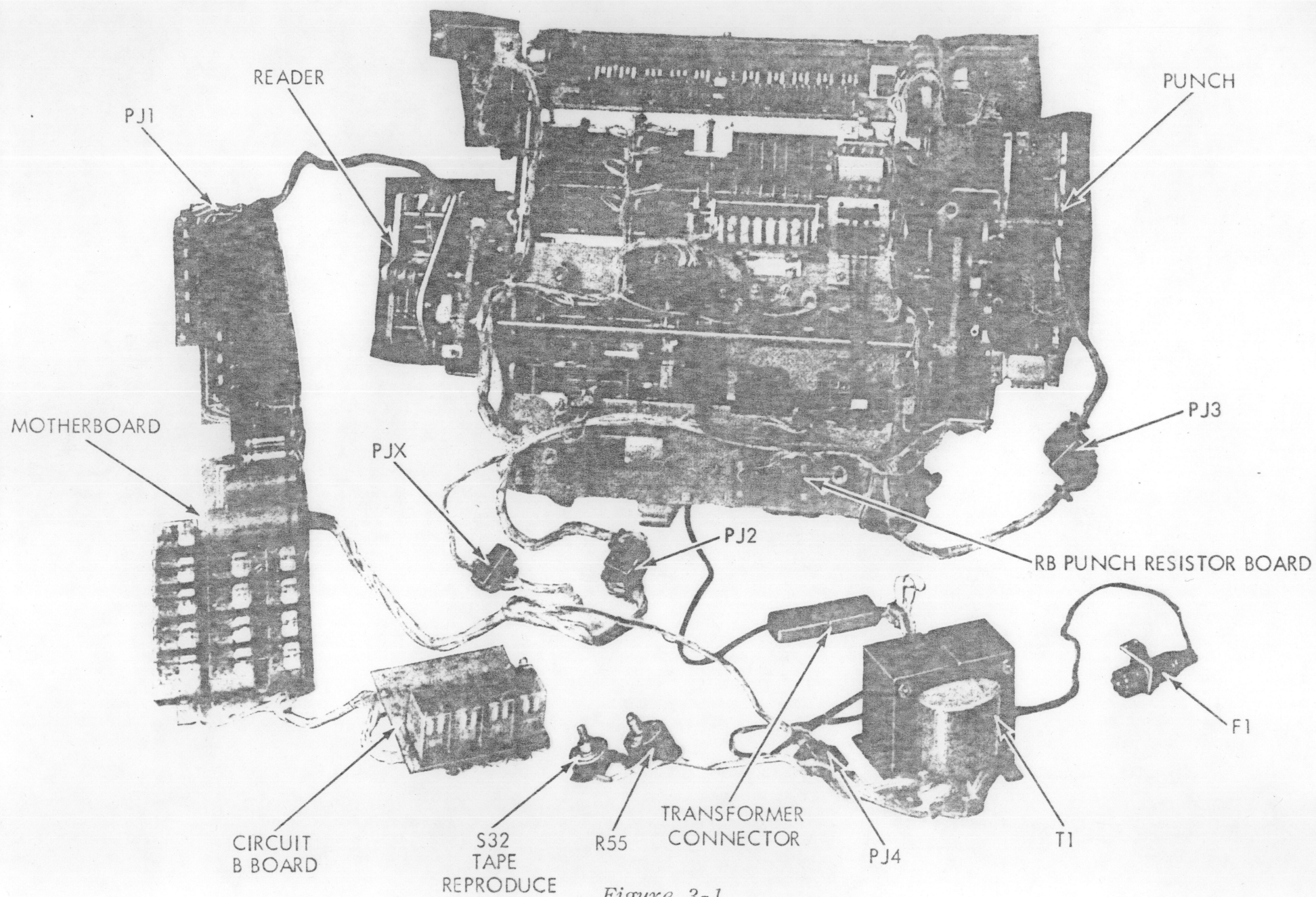
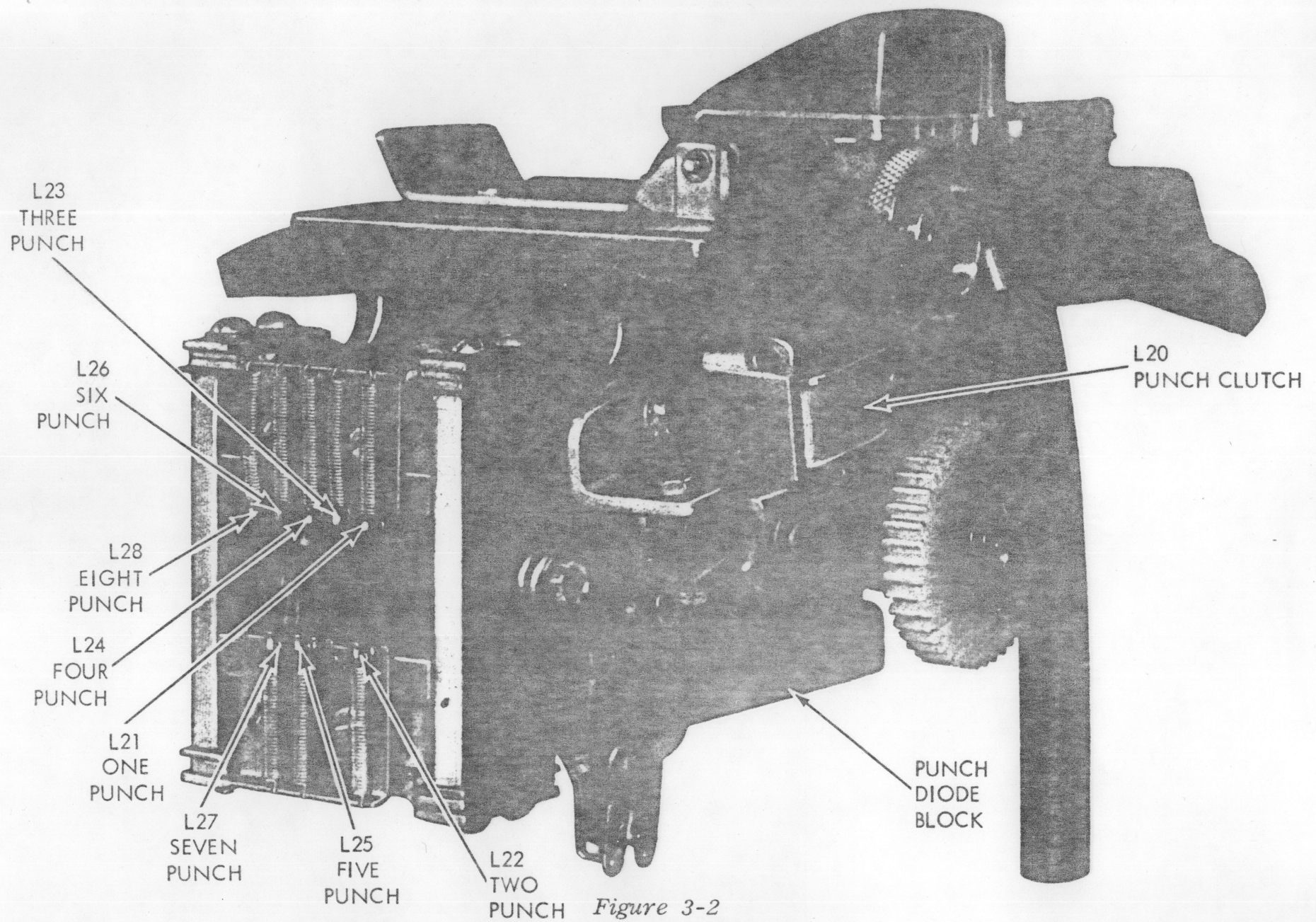
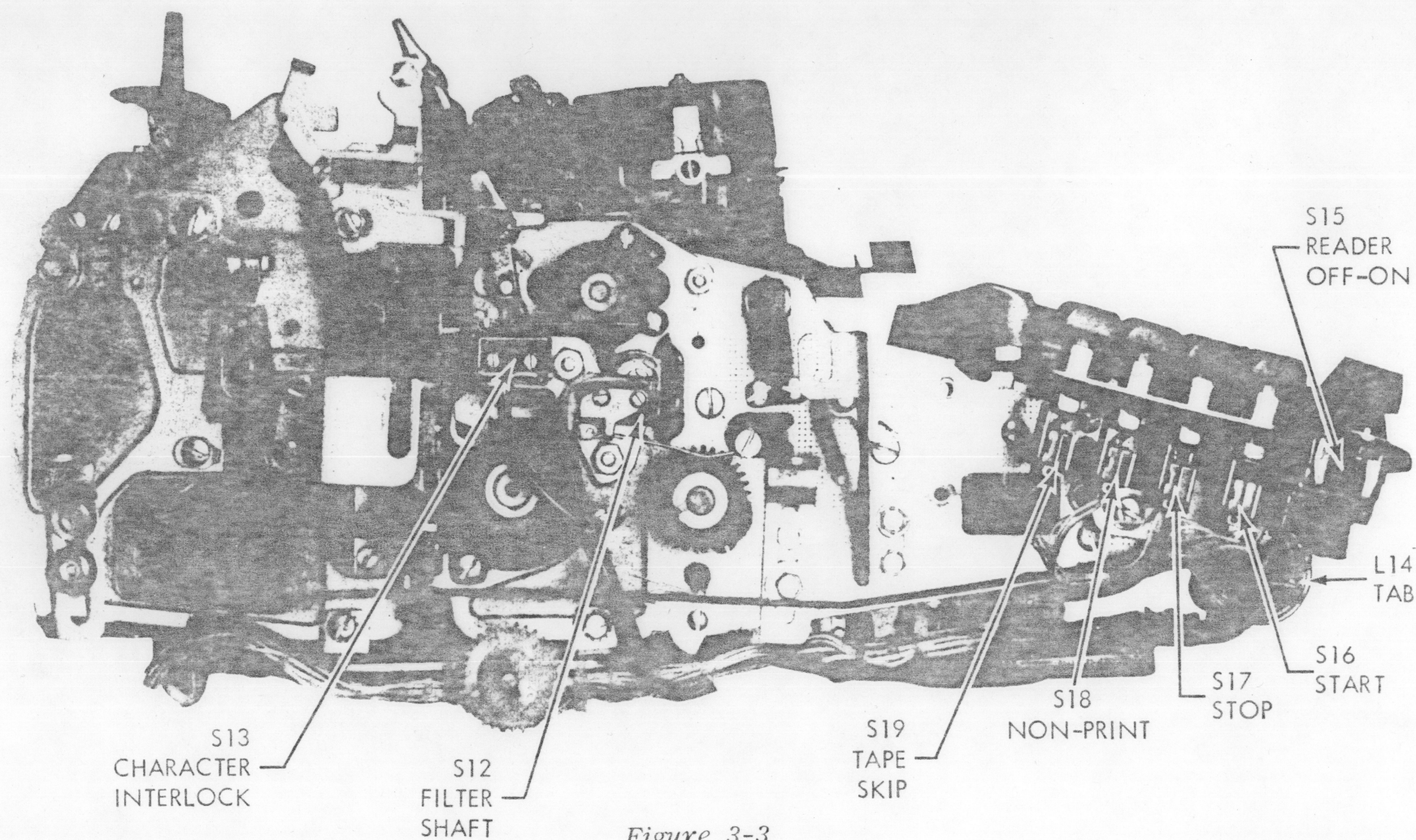


Figure 3-1







*Figure 3-3*



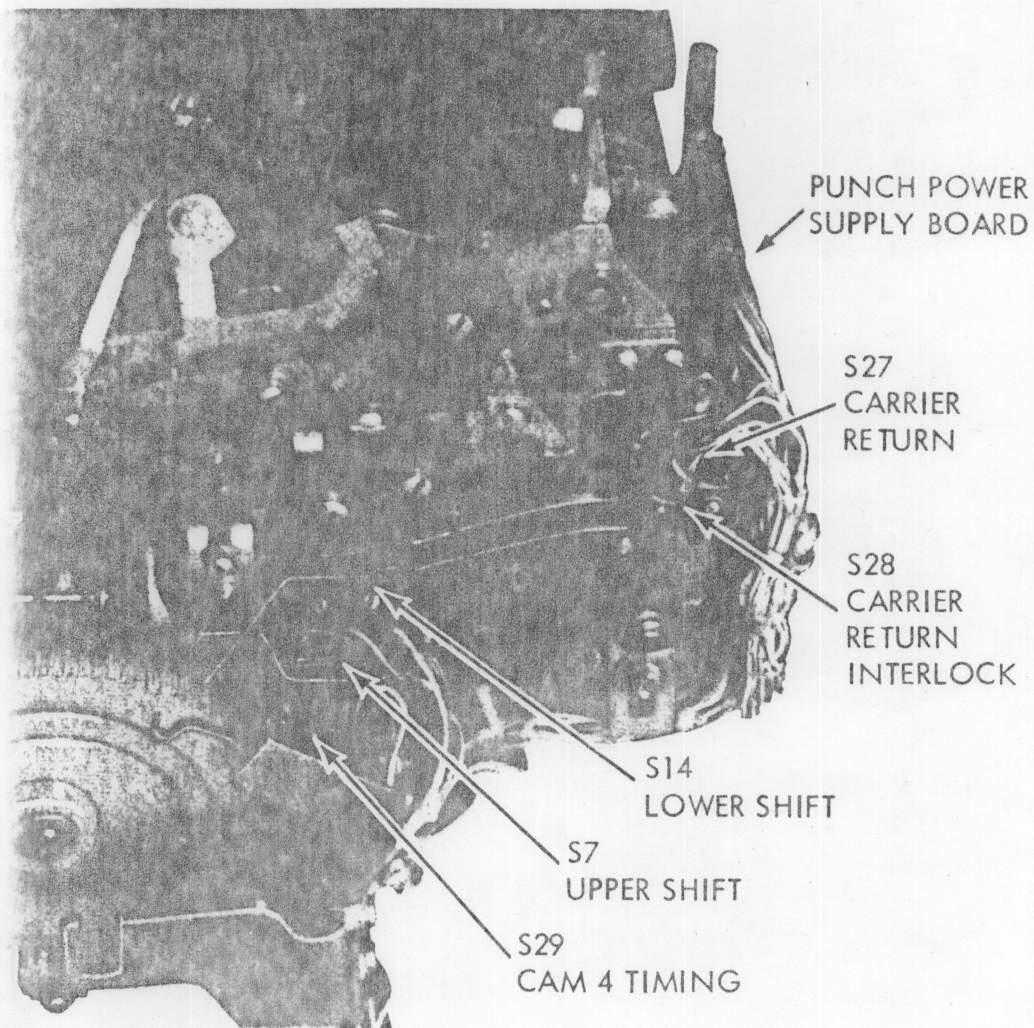
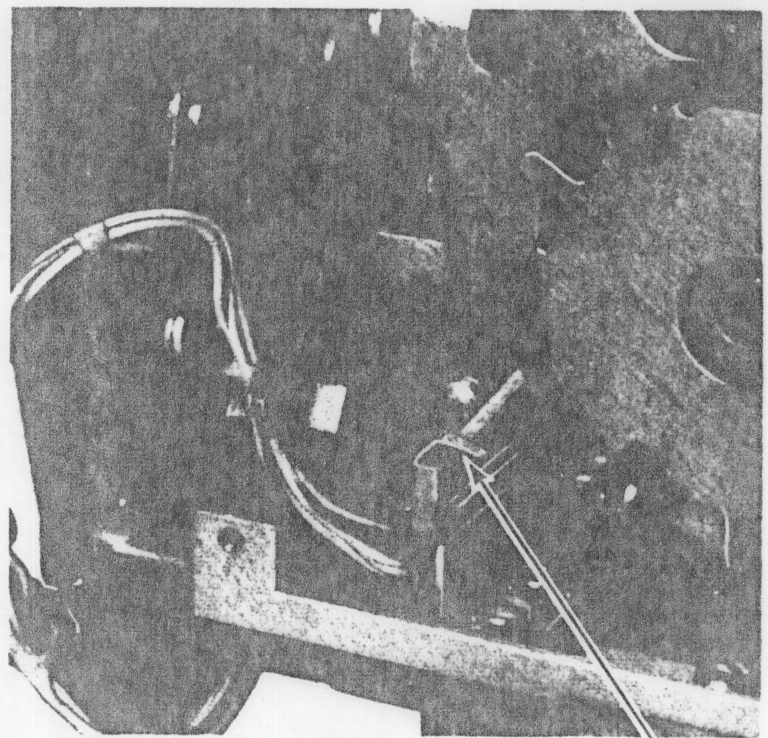


Figure 3-4



NOTE: PUNCH POWER SUPPLY BOARD  
REMOVED TO SHOW S30

Figure 3-5

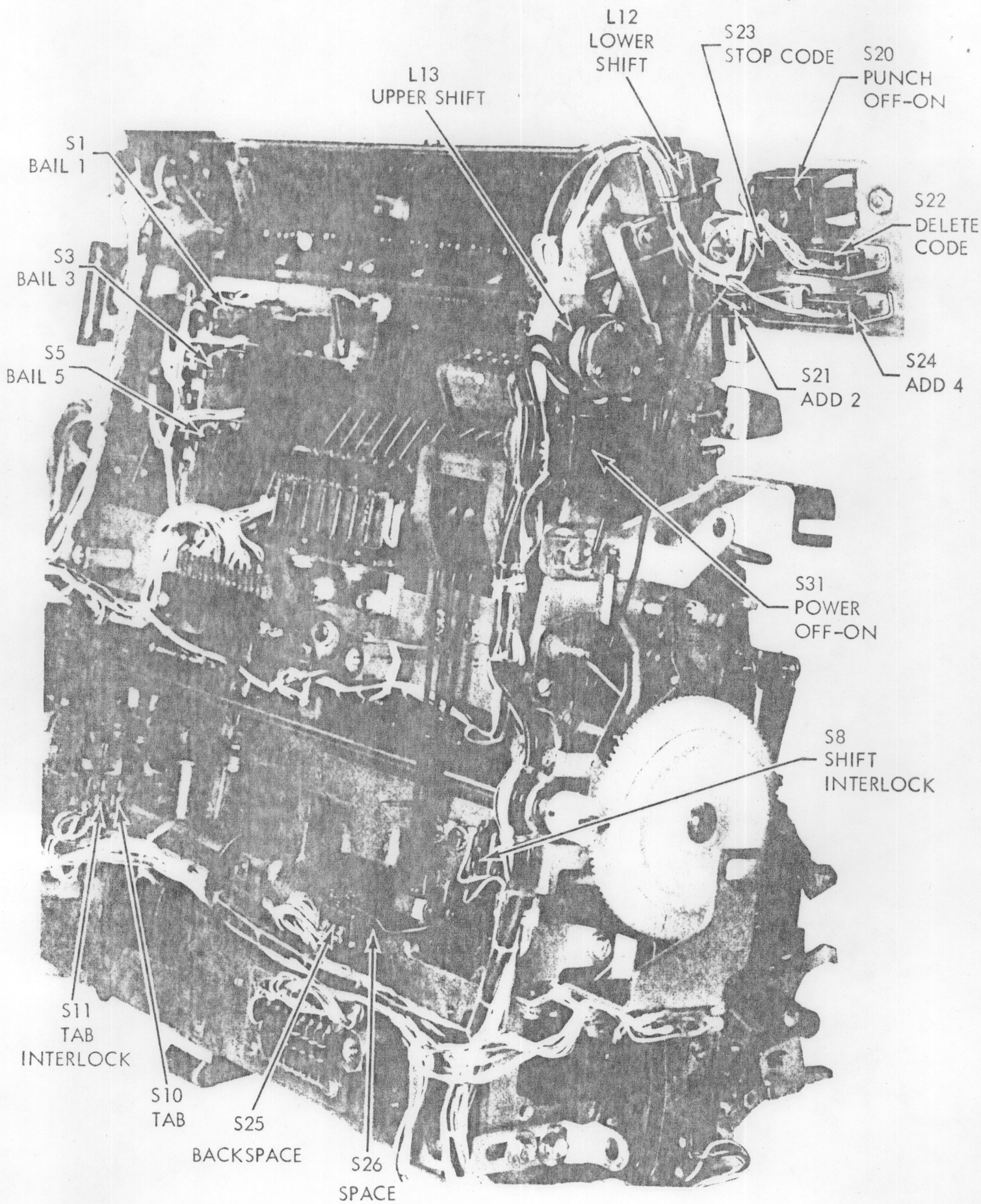
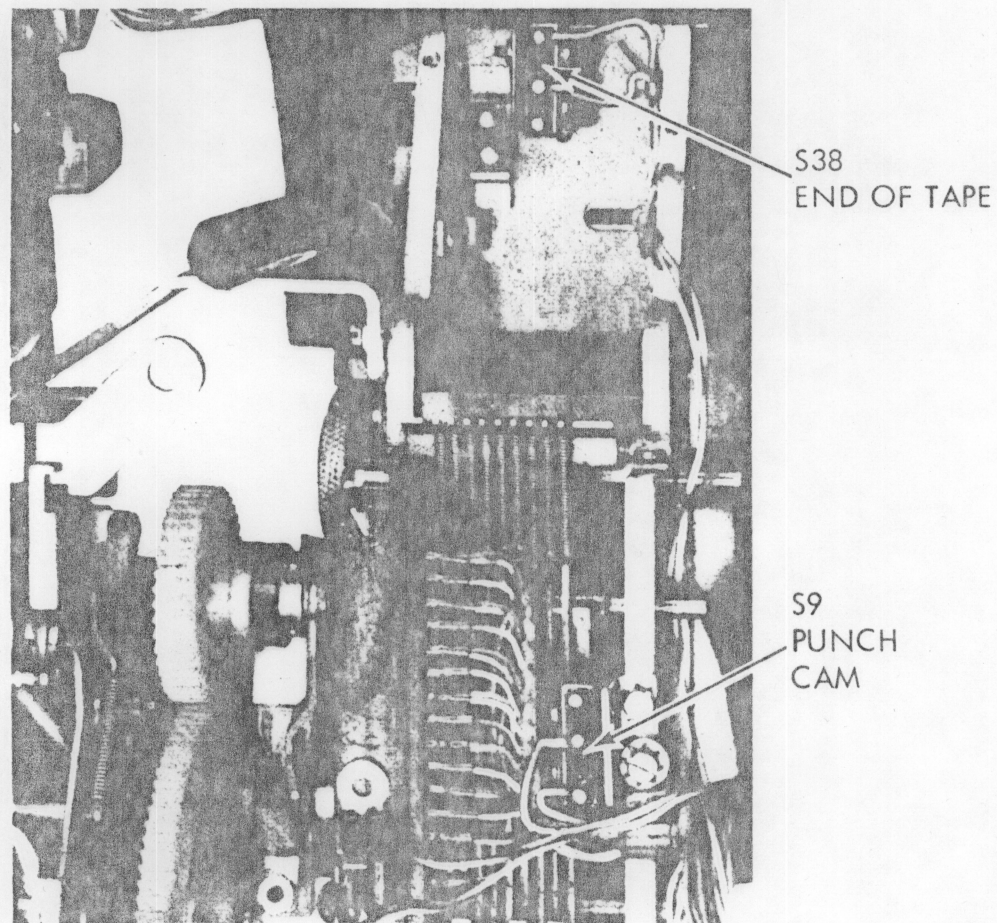
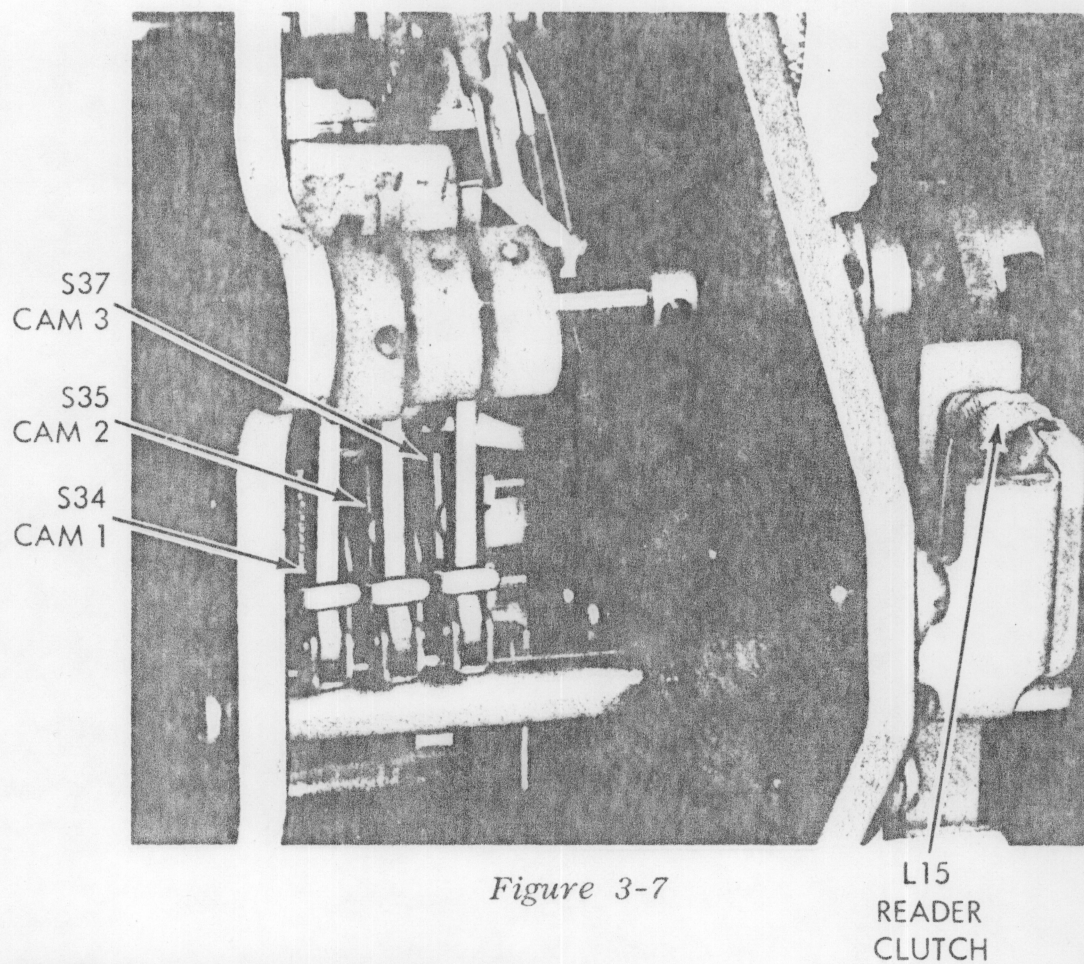


Figure 3-6





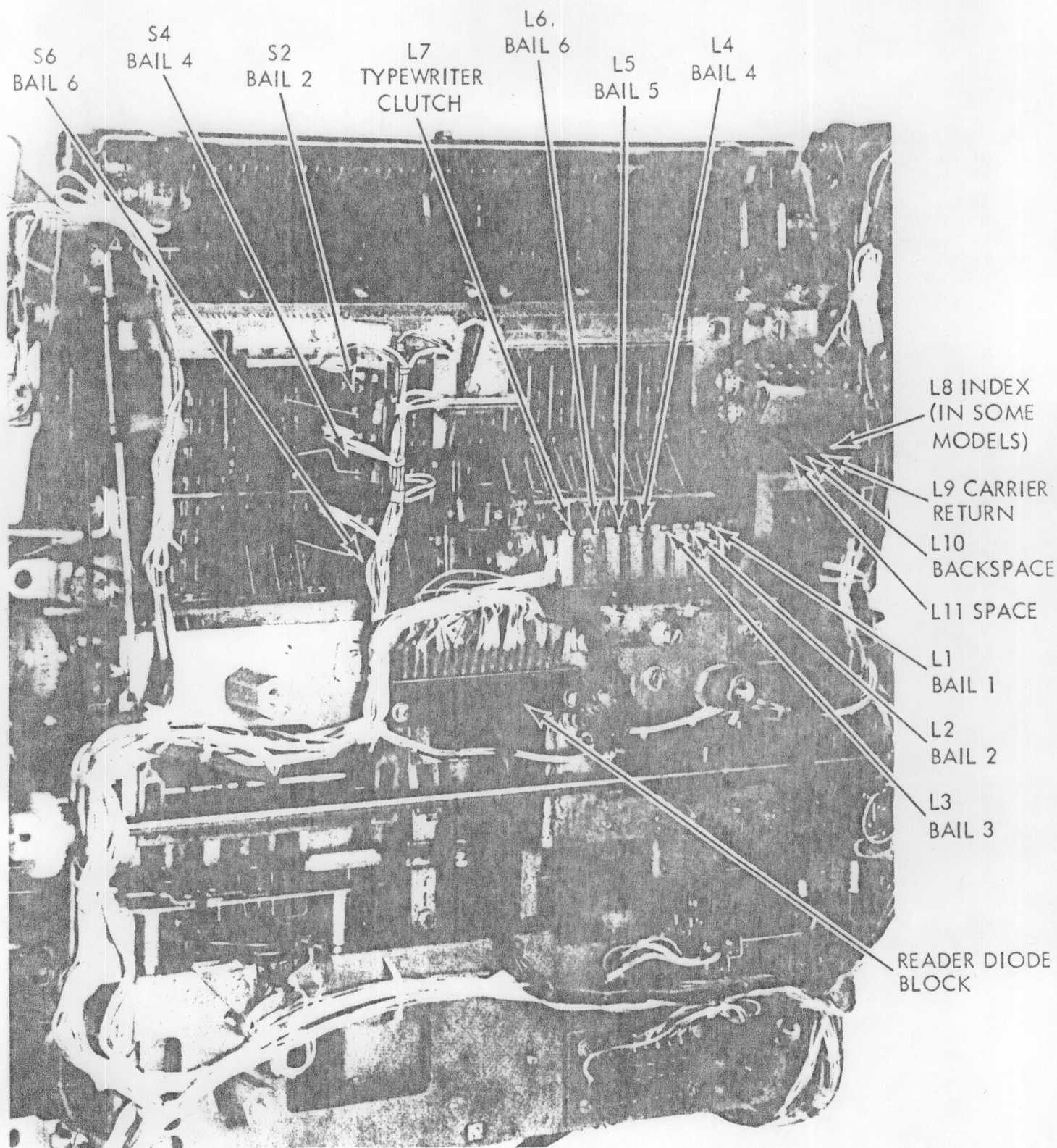


Figure 3-9



# MACH 10 RELAY AND PHOTO DIODE AMPLIFIER IDENTIFICATION

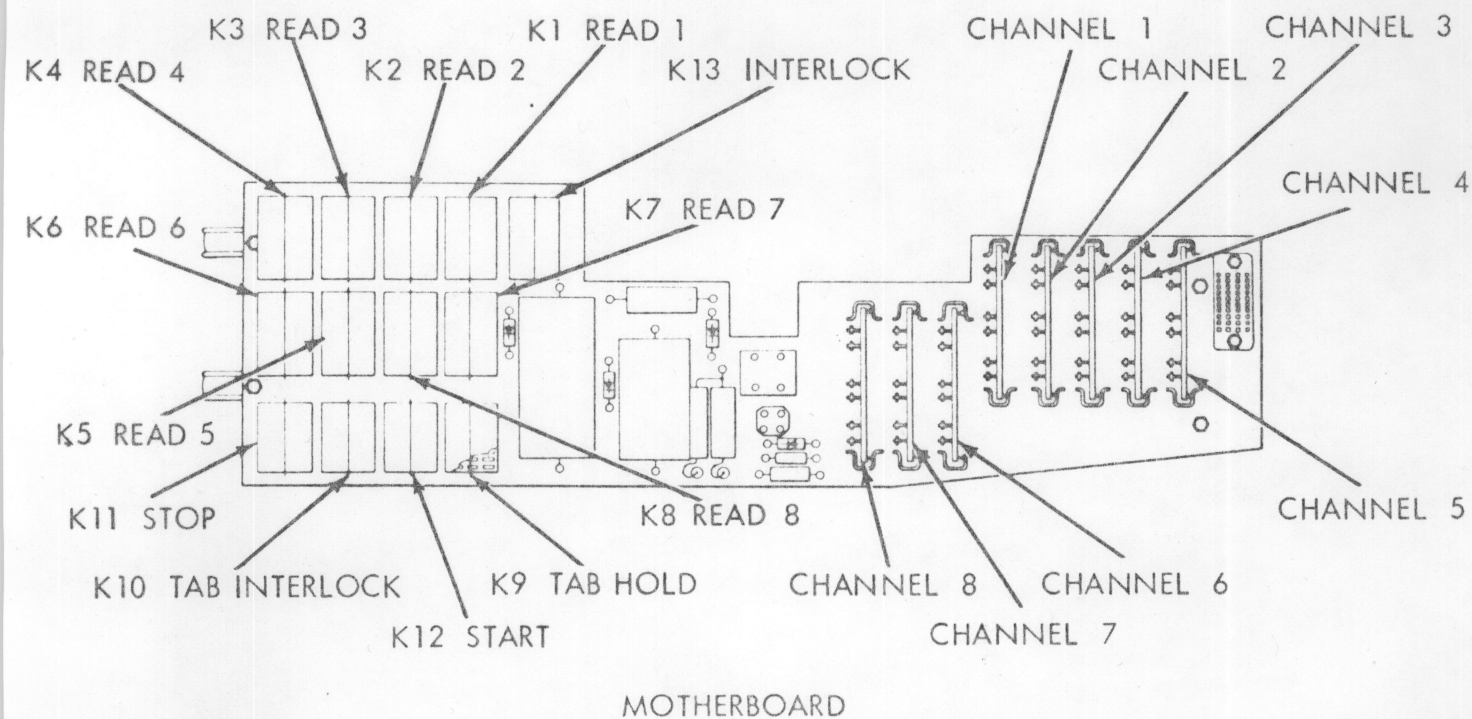
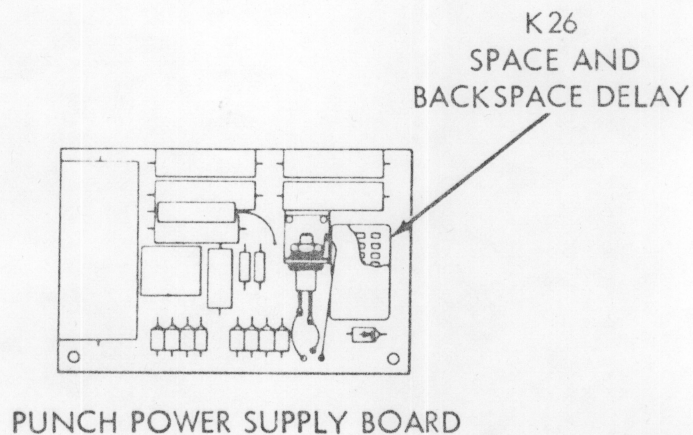
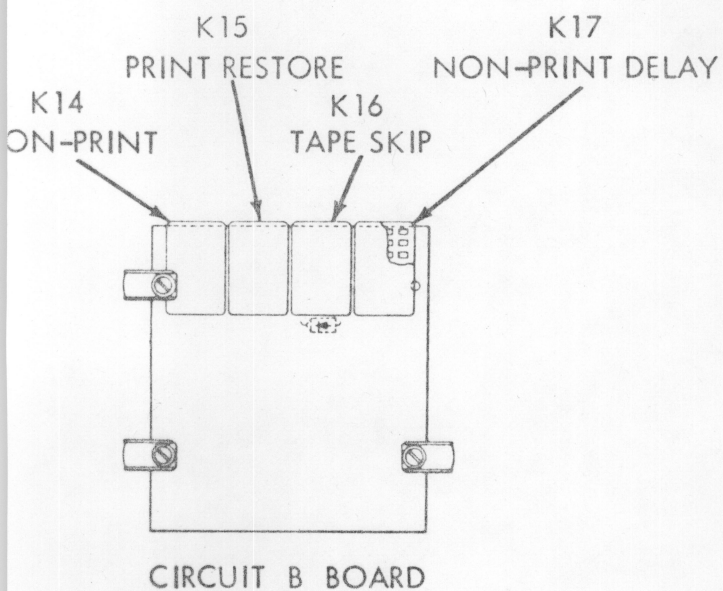


Figure 3-10

## 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<br>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<br><br>S11 Tab Interlock | S10 operates punch solenoid to code tab operation-one punch<br><br>S11 controls K10 Tab interlock relay | Tab Bellcrank from Tab Key | Adjust S11 to "TRANSFER" at the same time as S10<br><br>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 "TRANSFERS" 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°)<br>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.   |

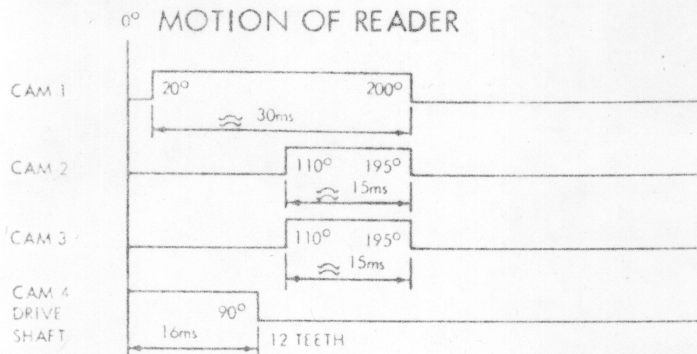


# MACH 10 TIMING CHART

## NOTE

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

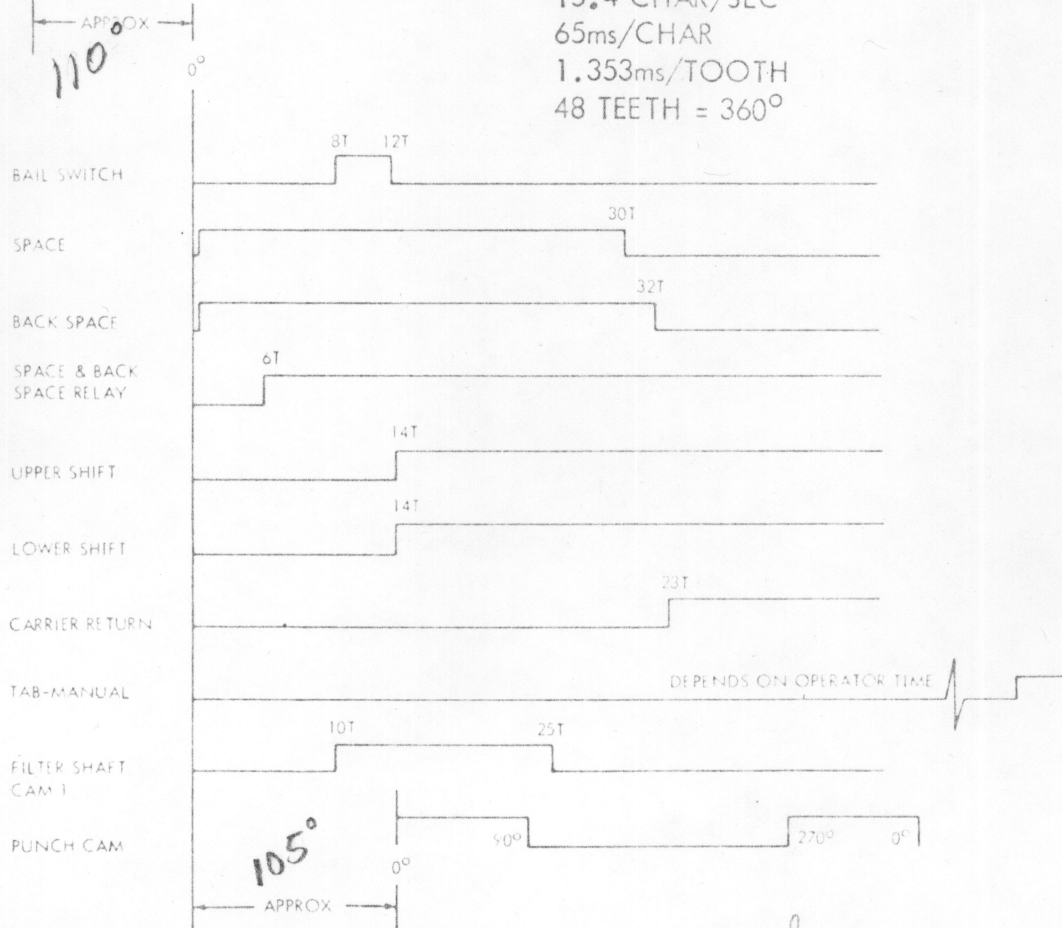
BAIL SWITCH AND FILTER  
CAM 1 TIMING WILL VARY  
AND MAY BE DELAYED UP  
TO A MAXIMUM OF 2  
TEETH IN SOME UNITS.



## READER TIMING

## NOTE

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



## PUNCH TIMING

## SCALE

1/16 INCH EQUALS 7.5° OR 1 GEAR TOOTH

Figure 3-11