

# **altair 680b**

## **III. DISPLAY/CONTROL BOARD ASSEMBLY**

IC Installation  
Resistor Installation  
Capacitor Installation  
Jumper Connection  
100-pin Edge Connector



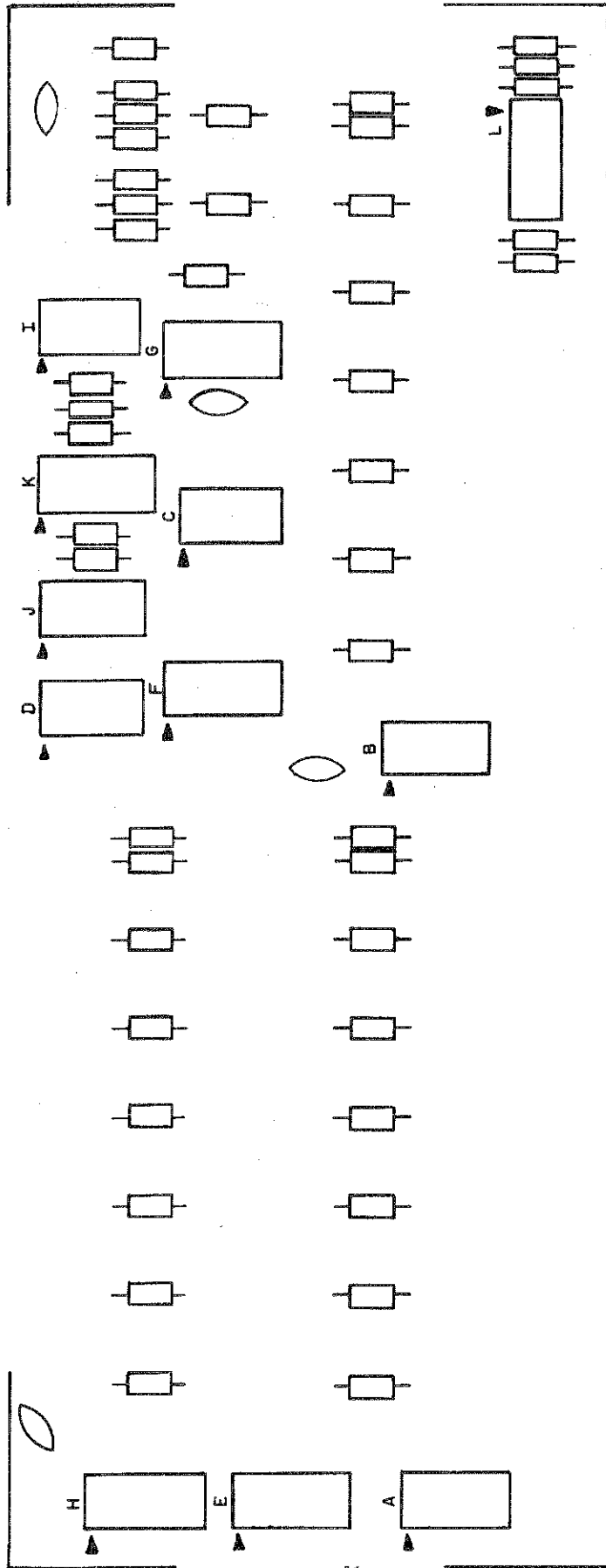
## IC Installation

There are 12 integrated circuits, or ICs, to be installed on the 680b Display/Control Board. These ICs should be installed according to the instructions given on page 7, Section A.

Part numbers for all 12 ICs are listed below.

<u>IC Part Numbers</u>	
<u>Silk Screen Designation</u>	<u>IC Part Number</u>
( ) A, B, C, D, I	SN74LS05
( ) E, F, G, H	4009+
( ) J	SN74L00
( ) K, L	SN74L123

+Static-sensitive MOS IC  
(Read "MOS IC Special Handling Precautions" before inserting these ICs.)



IC Installation

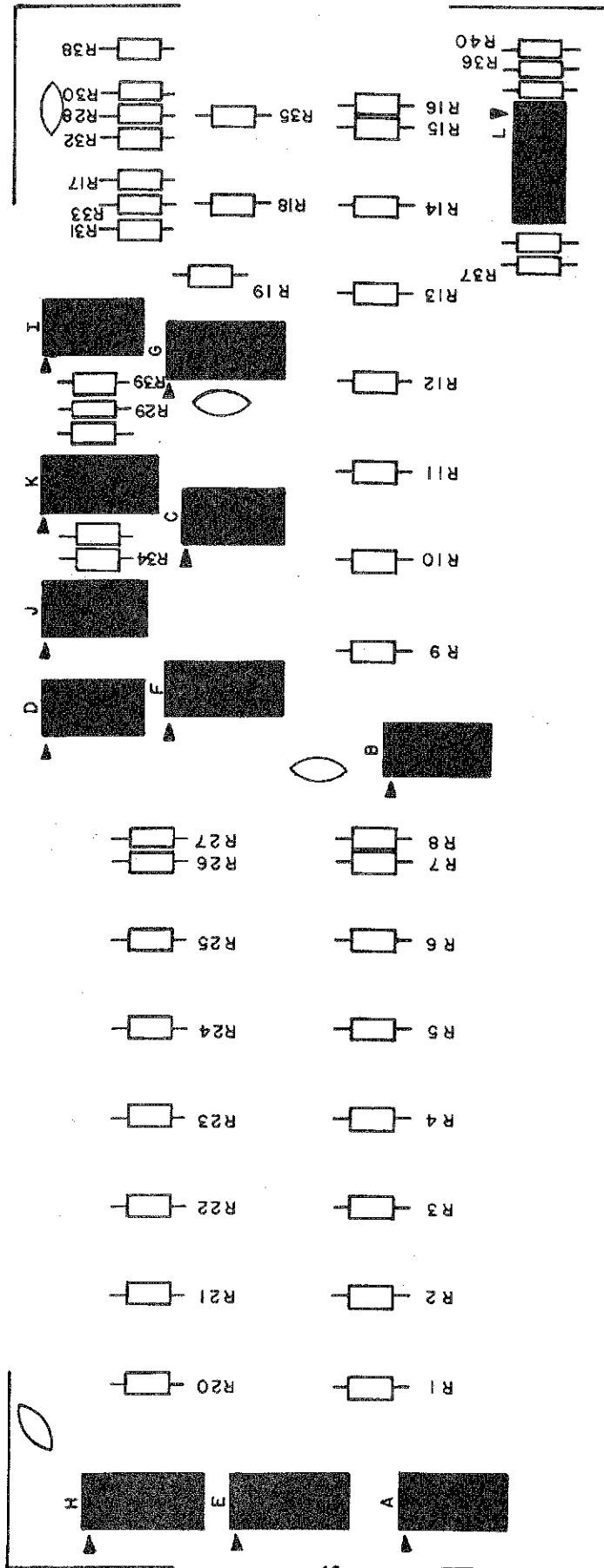
## Resistor Installation

There are 40 resistors to be installed on the 680b Display/Control Board. Install these resistors according to the instructions given on page 8.

The resistor values and color codes are listed in the chart below.

### Resistor Values and Color Codes

- ( ) R1-R16 and R20-R27 are 1.5K ohm (brown-green-red)
- ( ) R17-R19 are 22K ohm (red-red-orange)
- ( ) R28, R30, R33 and R35 are 4.7K ohm (yellow-violet-red)
- ( ) R29 and R37 are 47K ohm (yellow-violet-orange)
- ( ) R31, R32, and R38 are 1K ohm (brown-black-red)
- ( ) R34 and R36 are 100K ohm (brown-black-yellow)
- ( ) R39 and R40 are 10K ohm (brown-black-orange)



Resistor Installation

## Capacitor Installation

There are 4 electrolytic capacitors and 4 ceramic disk capacitors to be installed on the 680b Display/Control Board. To install the electrolytic capacitors, follow the instructions given on page 9, Section A. To install the ceramic disk capacitors, follow the instructions given on page 9, Section B.

The following chart shows the values for all 8 capacitors.

### Capacitor Values

(Different voltages may be substituted in some cases.)

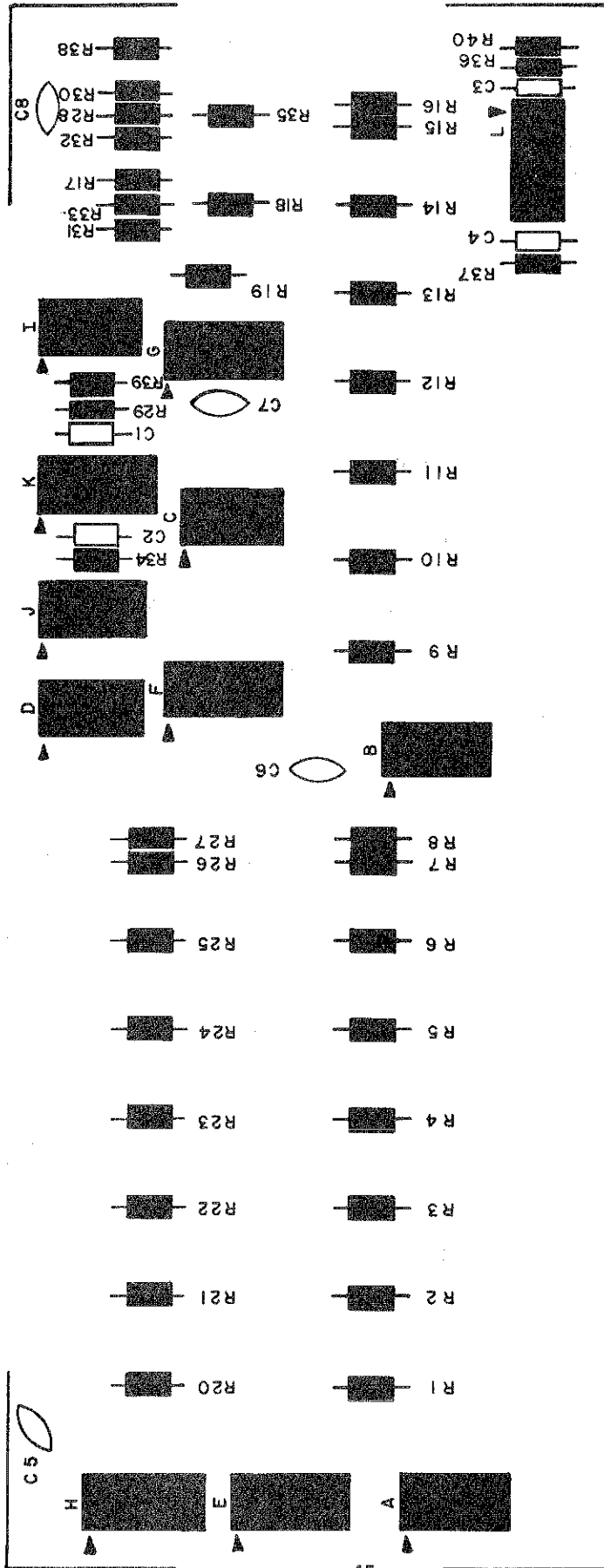
#### Electrolytic:

( ) C1-C4 = 2.µF 10v

#### Ceramic:

( ) C5-C8 = .1µF 16v

Capacitor Installation





## Jumper Connection

One jumper wire must be added to the display/control board so that the Halt switch is configured correctly. The jumper wire must be placed across the two pads labeled "HLT" and "A" on the upper, right-hand corner of the board.

1. Cut a piece of wire to length and trim 1/8 inch of insulation off the ends. Tin the ends by applying a thin coat of solder.
2. Insert the ends into the holes labeled "HLT" and "A" on the silk screened side of the PC board. Be sure not to insert any of the insulated portion of the wires.
3. Solder the ends of the wire to the foil pattern on the back side of the board.

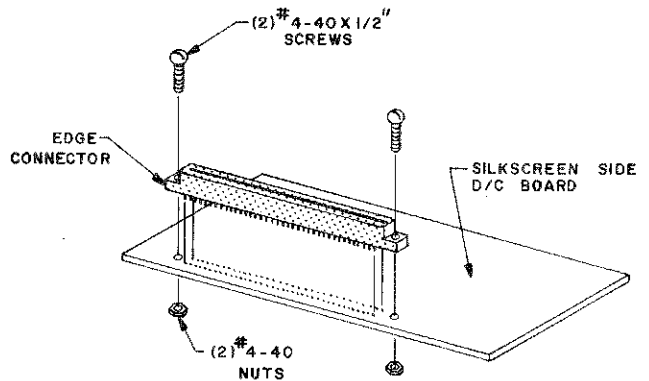
## Ground Lug Installation

1. Turn the board over so that the silk-screened side is down.
2. Put the number 6 solder lug over the hole at the top left corner of the board.
3. Solder the narrow end of the lug to the top land (ground) directly to the right of the hole.

## 100-Pin Edge Connector

Install the 100-pin edge connector onto the D/C board using the instructions and diagram given below.

1. Orient the connector over the two rows of holes at the bottom of the D/C board silkscreen.
2. Insert the connector pins into their respective holes. It may be necessary to guide some of the pins with the tip of a small screwdriver. Be sure that the connector is tight against the board and that all 100 pins are in their respective holes.



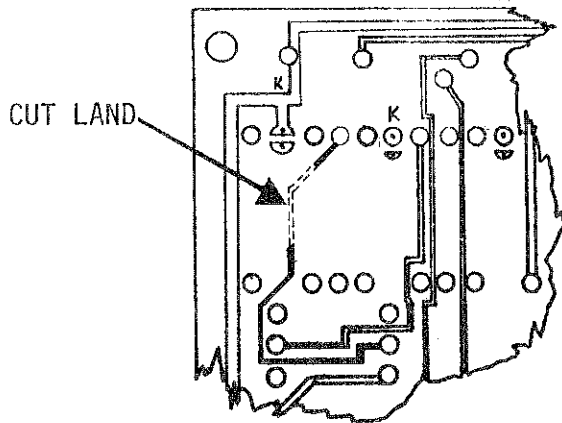
3. Secure the connector to the board with a #4-40 x 1/2" screw and a #4-40 nut at each end, as shown in the illustration.
4. Turn the board over and solder each pin to the foil pattern on the back side. Be careful not to leave any solder bridges.

## Special Insert Page

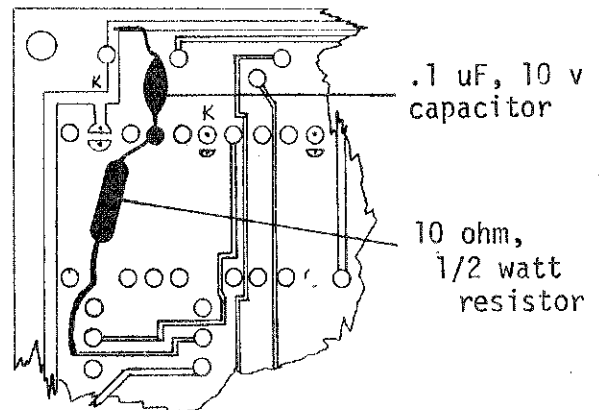
### COMPONENT ADDITIONS to the ALTAIR 680b DISPLAY/CONTROL BOARD

A resistor and a capacitor that are not included on the silk screen must be added to the Altair 680b Display/Control Board. Proper placement for the resistor and capacitor is essential. Read the following directions carefully to insure that you correctly install these two components.

1. Turn the D/C board over so that the component side is facing down. The resistor and capacitor will be installed in the upper left-hand corner, as shown in the diagrams.
3. Install the resistor (10 ohm, 1/2 watt, brown-black-black) across the cut portion of the land. That is, solder the resistor leads to the land on either side of the cut.



2. Find the land indicated in the above drawing and remove a portion of it by making two cuts in the land and lifting the cut portion off the board. Heating the cut portion with a soldering iron will facilitate lifting it off the board.



4. Install the capacitor (.1uF, 10v ceramic disk capacitor) across the uppermost resistor lead and the top-most land on the board (ground), as shown.