STD

PADDLE CARD

OPERATING MANUAL

801-0202
Rev. B
10/80

E&L INSTRUMENTS, INCORPORATED
61 FIRST ST. DERBY, CT. 06418

TABLE OF CONTENTS

(Blank Page)

I. INTRODUCTION

The STD bus paddlecard is a small, printed circuit card designed to plug into an STD bus edge connector and generate appropriate signals for a standard MMD-1 40-pin ribbon buss connector. It is designed to permit an STD-compatible processor, such as the MMD-2, to control an MMD-1 peripheral, such as the EID-1.

II. SPECIFICATIONS

A. Physical Dimensions: 3.5" x 4.5" x ≂ 1.0" (clearance thickness)

Weight: 1-1/2 oz.

B. Input Bus: STD (Prolog/Mostek) 56-pin edge connector-based bus.

C. Output Bus: MMD-1 (E & L) 40-pin ribbon connector-based bus.

III. REPLACEMENT PARTS LIST

PACKING BAG	DESCRIPTION	QTY	P/N	CHECK
PADDLE CARD ASSEMBLY	STD-EID PADDLE CARD	1	711-0218	
	40 PIN CONNECTOR MALE RT. ANGLE	1	540-0010	
	SN7432	1	503-0034	
	40 CONDUCTOR FEM. CABLE 7" LG	1	549-0016	
	14 PIN DIP SOCKET	1	542-0005	
	WARRANTY CARD	1	801-0137	

IV. Assembly Instructions, General

A. The material has been prepacked in plastic bags in general categories for ease of assembly. Check the contents of the bags to make certain all the correct parts are there. Inspect packing material for any loose parts before discarding.

Bring all shortages or discrepancies to the immediate attention of E&L Instruments.

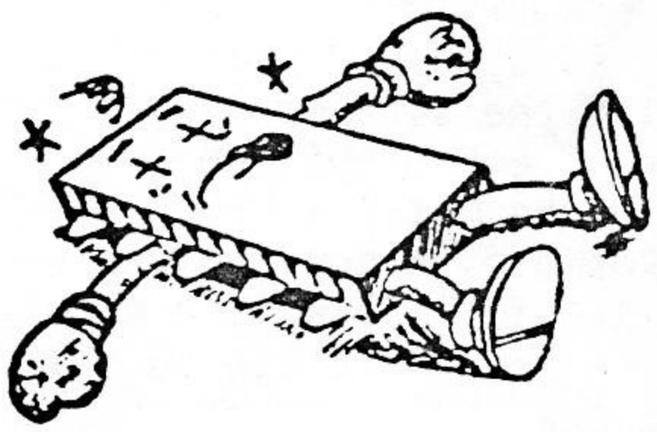
B. Certain features of construction instruction are followed throughout the building of this kit as outlined below.

1. When soldering diodes and transistors, it is most important that the heat used is minimal - a 35W soldering iron is quite adequate for all of the assembly and a larger wattage iron should not be used.

2. The instructions are given line by line with two "Check-Off" columns. The first is for checking off as you actually do that step; the second is for rechecking if a problem is encountered.

3. Use rosin core solder only. The use of corrosive (acid core) solder or paste fluxes void any and all warranties on the unit.

CAUTION!



STATIC ELECTRICITY

KILLS

IC's

Although protection against electrostatic effects is provided by built-in circuitry, the following handling precautions should be taken:

1. Soldering iron tips and test equipment should be grounded.
2. Devices should not be inserted in non-conductive containers such as conventional plastic snow or trays.
3. Assembly work surfaces should be grounded.
4. Avoid carpeting or other furnishings that encourage electrostatic charging of assembly personnel.

V. KIT BUILDING INSTRUCTIONS

Since the differences between the 115 VAC operation and the 230 VAC operation are slight, this manual will serve for both. Whenever a reference is made to the 230 VAC operation it will be done in italics. Italics will not appear in any other place in this manual.

1. SOLDERING TIPS

The quality of your unit is going to depend on the quality of your assembly and soldering techniques. We have outlined, below, some standard practices that you should adhere to.

1.1 There is more to a soldered connection than two or more pieces of metal held together by a "blob" of solder. When molten solder is applied to a metal, the solder actually disolves some of the metal's surface. Thus, metals which have been soldered together are bonded by a solidified solution of solder and parts of the metals which were joined. Soldering is an easy task, but it is a task that must be done correctly. If your soldering techniques are poor you will have a great deal of trouble with the kit that you are about to assemble.

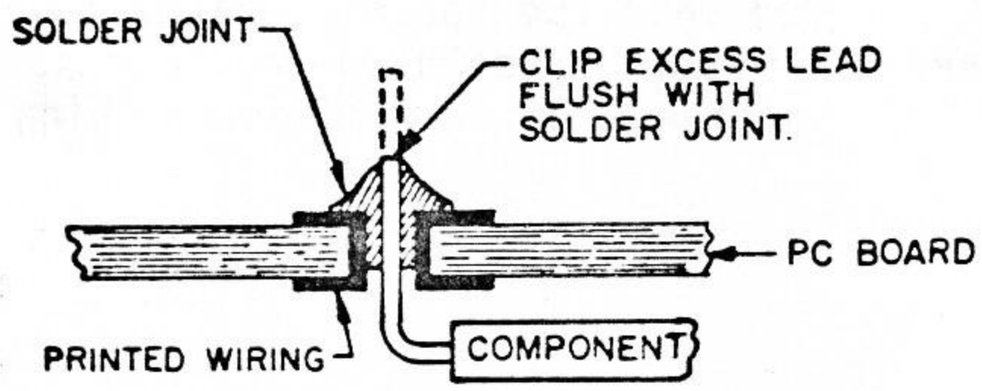
1.2 In order for molten solder to perform its function of joining metals together. the oxides on the surfaces of the metals must be removed. The oxides are removed by a FLUX. A flux is a material which, when heated, dissolves surface oxides and suspends them away from the surface of the metal. With the surface oxides removed, the molten solder can dissolve some of the surface metal and bond itself tightly to the metal.
We recommend the use of Rosin flux core solder with a mixture of 63% tin and 37% lead. This is the only mixture that goes directly from liquid state to solid state thus, bypassing the plastic state which causes cold solder joints.

1.3 A good solder connection is made in two steps: The first step is to make the mechanical connection. Then the molten solder is applied to the connection. After you have stripped a wire, always check to see that the wire is clean and free from heavy oxidation, grease or oil. Oxidation can be scraped off, and oil or grease can be removed with a rag. Steel wool or sandpaper is excellent for cleaning badly oxidized wires. Stranded wire should be tinned (covered with solder) to prevent the bare ends from fraying and possibly causing a short circuit.

The next step in making a solder connection is to secure the wire or wires to the terminal or lug. The wire should make sufficient contact with the terminal or lug, but should not be tightly fastened. The solder will provide both mechanical strength and a low resistance junction.

After the mechanical connections are complete, the next step is to apply the solder. First heat the mechanical connection, with the iron, to allow the solder to flow on the hot metal. Apply the solder to the point where the iron meets the contact to be soldered. The flux should melt and flow freely over the contact, dissolving all oxides, and aiding heat transfer from tip to connection. The solder should then melt and flow freely, covering the area to be soldered. Make sure you apply enough solder to cover the contact.

1.4 To prepare p.c. boards for soldering, clean the area to be soldered on the printed wiring by rubbing with a pencil eraser, and clean the component leads with a piece of steel wool. Place the component on the board, on the side with the nomenclature printed on it, with the leads extending through the holes indicated for the component. Flip the board over and solder the leads. The same general rule for soldering conventional circuitry should be adhered to.

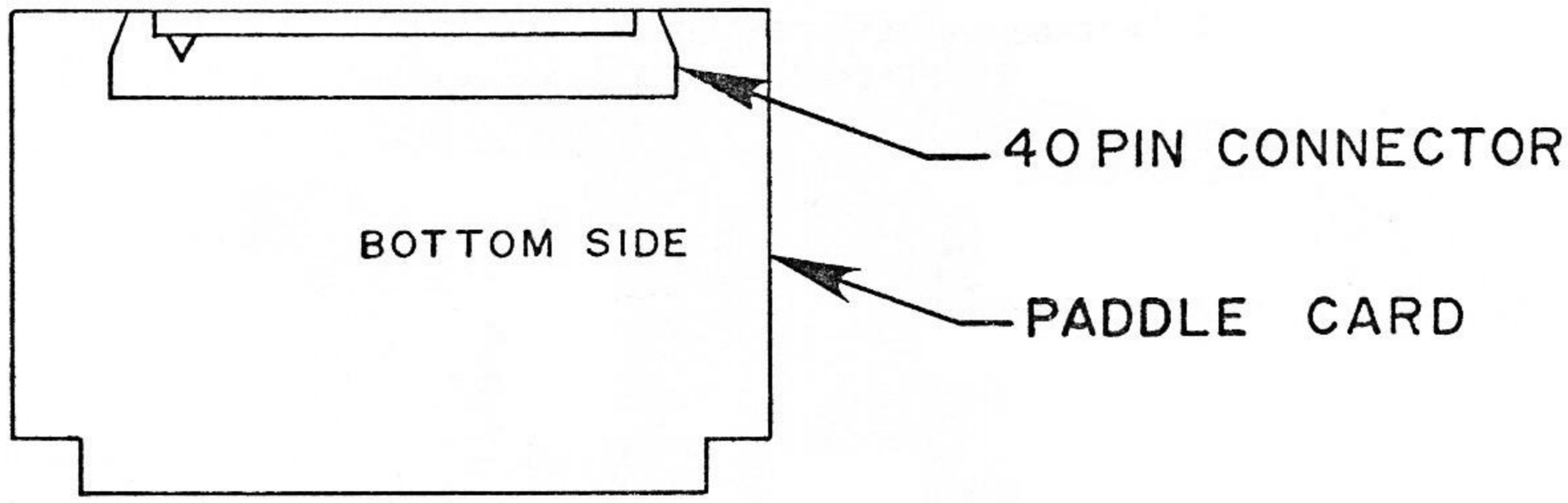


2. PADDLE CARD COMPONENT PLACEMENT

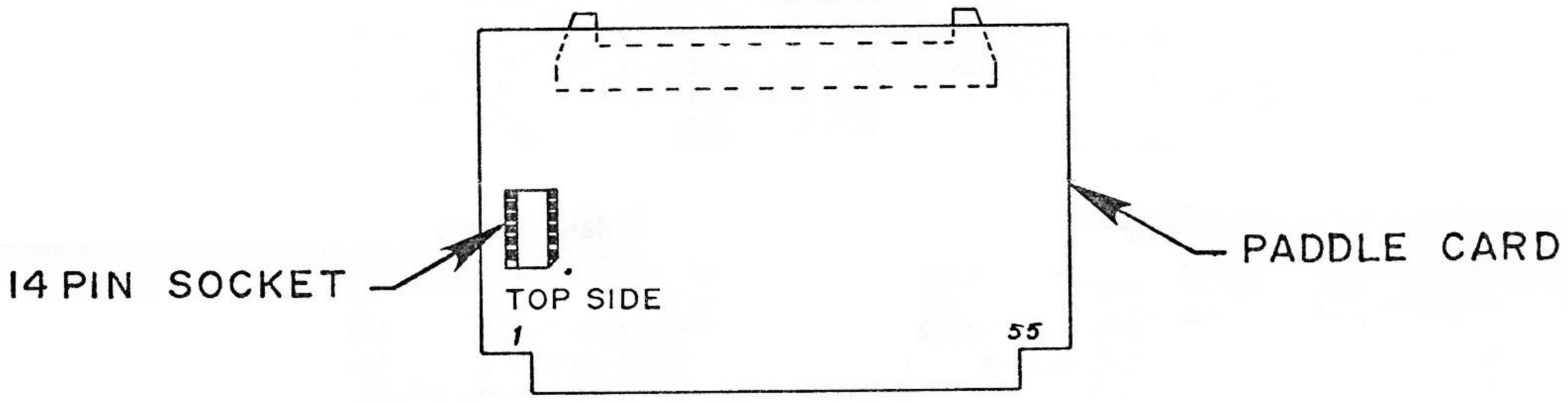
CHECK

For ease of assembly the p.c. board has been marked TOP SIDE and BOTTOM SIDE.

2.1 Connector - Locate the 40 pin male right angle connector. There should be (1) one. Insert and solder the connector on BOTTOM SIDE of board. (NOTE PIN 1 SHOULD LINE UP WITH ARROW ON CONNECTOR). As shown below. _____ _____

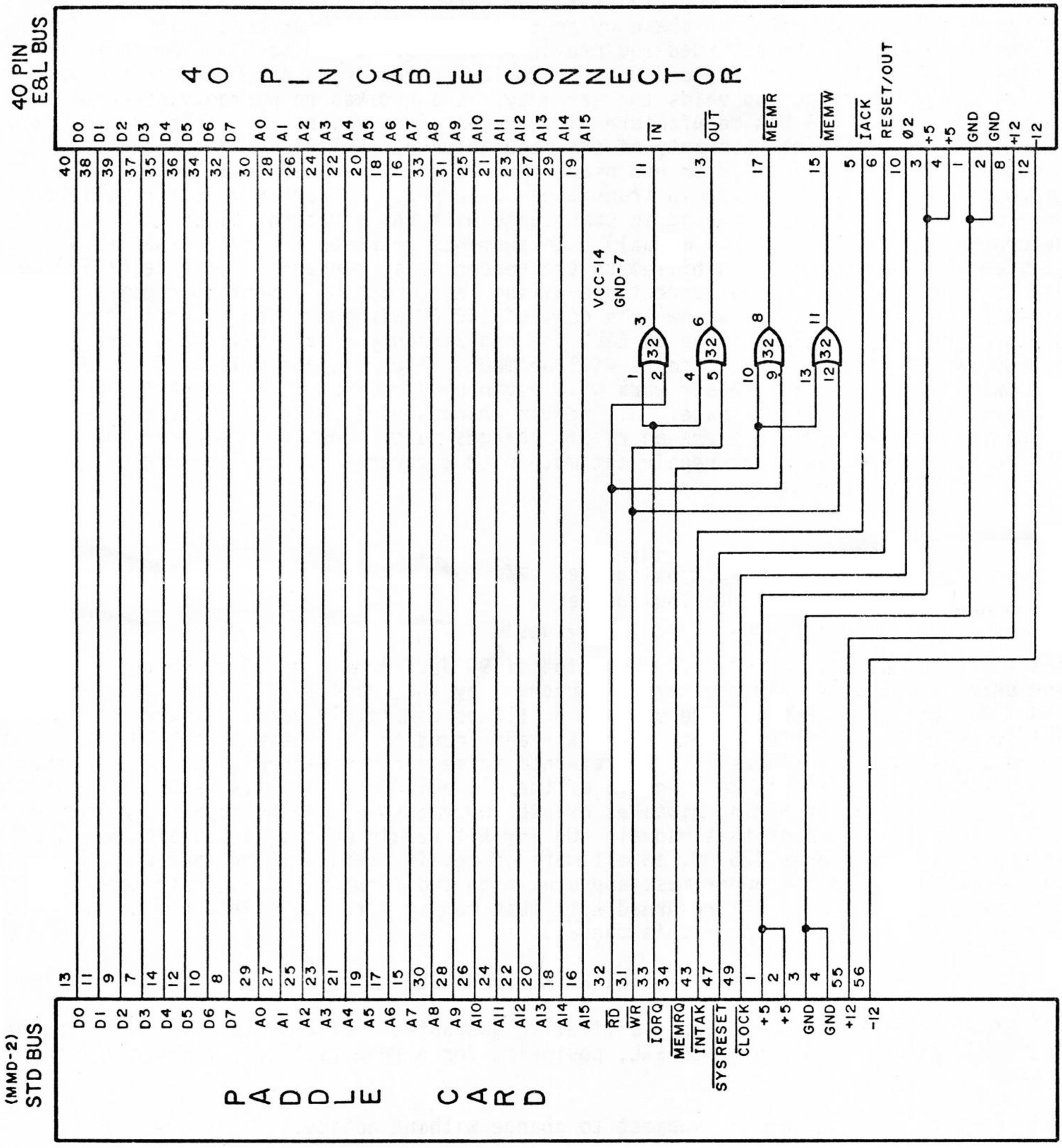


IC Socket - (14 pin)
There should be (1) one. Insert and solder on TOP SIDE of board as shown below. _____ _____



The assembly of the paddle card is now complete with the exception of the IC. At this time there should be NO IC plugged into the socket. Visually inspect your board for missed or cold solder joints. After the inspection,with everything checking out, install the I.C.. _____

VI. SCHEMATIC



VII. WARRANTY INFORMATION

1. ASSEMBLED INSTRUMENTS

E&L Instruments agrees to repair or replace, at no charge, any defects in assembled instruments for a period of one (1) year from date of purchase by the end user, or eighteen (18) months after purchase by an E&L Dealer (whichever comes first). The warranty is void if the returned equipment has been subjected to abuse or improper operation. Any assembly by the end user or Dealer to repair an assembled instrument during the warranty period voids the warranty. E & L makes no warranty concerning components not of E & L's manufacture (integrated circuits, relays, transistors, etc.) which carry the original warranty of the manufacturer. Shipping damages are the responsibility of the Dealer or end user. Prompt claims should be filed with the appropriate carrier if damage in transit has occurred. No warranty repair will be done on merchandise not returned in compliance with E&L's return policy (see Return Policy section of this manual). Instruments returned for out-of-warranty service will be repaired and billed to the sender at a standard labor rate of $20.00 per hour plus parts, or the current prevailing rate. E&L will perform repairs on non-warranty repairs up to an owner's cost of $50.00 without prior authorization by the sender. If, in the opinion of E&L, the non-warranty repair will cost more than $50.00, an estimate of repair costs will be made. The estimate will be forwarded to the owner for approval. Repair work will begin upon receipt of the owner's signed approval of the repair estimate. All repair charges will be on a C.O.D. basis. Rated companies desiring credit terms on repair charges must accompany the returned merchandise and/or approved repair estimate with a purchase order covering all repair costs and return freight.

2. KIT (Unassembled) INSTRUMENTS

Terms and conditions of warranty on kit products are identical to those on assembled instruments except for the following changes:

E & L warrantees kit products for a period of 90 days from time of purchase by the end user of 180 days from the date of purchase by the Dealer, whichever comes first. WARNING: Use of corrosive core solders or fluxes completely voids any warranty on kit products. Any kit received for repair and found to have been assembled with corrosive solders or fluxes will be returned to sender unrepaired, postage collect. E & L cannot warranty the workmanship of the kit builder. All kits returned requiring repair for reasons of wiring mistakes or poor workmanship will be repaired according to the Repair Section of this manual. On any kit repair which, in E&L's opinion, will incur repair costs over $25.00, an estimate of repair costs will be made and forwarded to the sender. The kit owner must approve, sign and forward the estimate to E&L before work can be initiated. All returned kits must comply with E&L's Returned Goods Policy (see Return Policy section of this manual).

** THE LIFETIME GUARANTEE **

All of E&L's SK sockets now carry a lifetime guarantee. If a socket ever fails to meet your requirements, return it to E&L, postpaid, for a free replacement, no questions asked.

All terms and conditions are subject to change without notice.

VIII. REPAIR AND SHIPPING

1. REPAIR

All repairs done at the factory and found due to defective components, will be done on a no-charge basis for a period of ninety (90) days after the original shipping date of the kit.

After expiration of warranty period (90 days), repairs due to defective components will be billed at materials cost plus a flat charge of $25.00 per kit.

All kits returned requiring repair for reasons of wiring errors or poor workmanship will be repaired at the standard labor rate of $20.00 an hour plus parts, or the current prevailing rate.

E & L Instruments will return unrepaired any kit assembled with corrosive solder or fluxes.

2. SHIPPING INFORMATION

If you should find it necessary to return your kit to the factory for repair, please pack carefully and ship prepaid to:

E & L INSTRUMENTS, INC.
61 First Street
Derby, Connecticut 06418

ATTENTION: KIT REPAIR DEPARTMENT

3. RETURN POLICY

All merchandise returned to E & L for repair or for any other reason must comply with the following procedure:

Prior to forwarding any returned merchandise to E & L, sender must request from E & L a Return Merchandise Authorization Number (RMA #). Sender should contact E & L by mail or telephone and request the RMA #.

A separate RMA # must be procured for each item being returned.

Upon request, E & L will forward the RMA Form to the sender. The form should be filled out completely, and the reason for returning the merchandise must be included on the RMA Form. A short description of any problems occuring with the material being returned for repair will shorten the repair time and is strongly suggested. The completed RMA Form must be in the carton with the returned merchandise, and the RMA Form Number should be prominently displayed on the outside of the shipping container.

Any material received at E & L without an RMA Number or without an RMA Form enclosed will be returned to the sender freight collect.

(Blank Page)