

## 1. INTRODUCTION

This specification covers the requirements for application of the Card Edge Connectors with contact centerlines on .050 in. They are designed for mother/daughter board applications and will accept a daughterboard of .070 in. maximum thickness (including circuit pads). They can also be used with Edgemate Connectors with which have circuit pads on .050 in centers. The connectors can be positioned on a pc board by hand or by automatic machine application.

Connectors are available with 10 through 120 contact positions. All have a polarizing web, two guide/retention pins, standoffs, and an identification mark on the housing that represents the number 1 contact position. See Figure 1 for connector features.

NOTE All dimensions in this specification are in inches and have a decimal tolerance of  $\pm .005$  and an angle tolerance of  $\pm 3^\circ$  unless otherwise specified. Metric equivalents (mm) can be calculated by multiplying the given dimension by 25.4.

## 2. REFERENCE MATERIAL

### 2.1. Product Numbers and Product Codes

Product part numbers are assigned to each item and a product code is used to designate a group of items of similar design. Continuous product development renders an up-to-date listing of all numbers impractical. The following are reference numbers that have been included to identify the product line and expedite inquiries: Product Part Number 650090 and Product Code 5283.

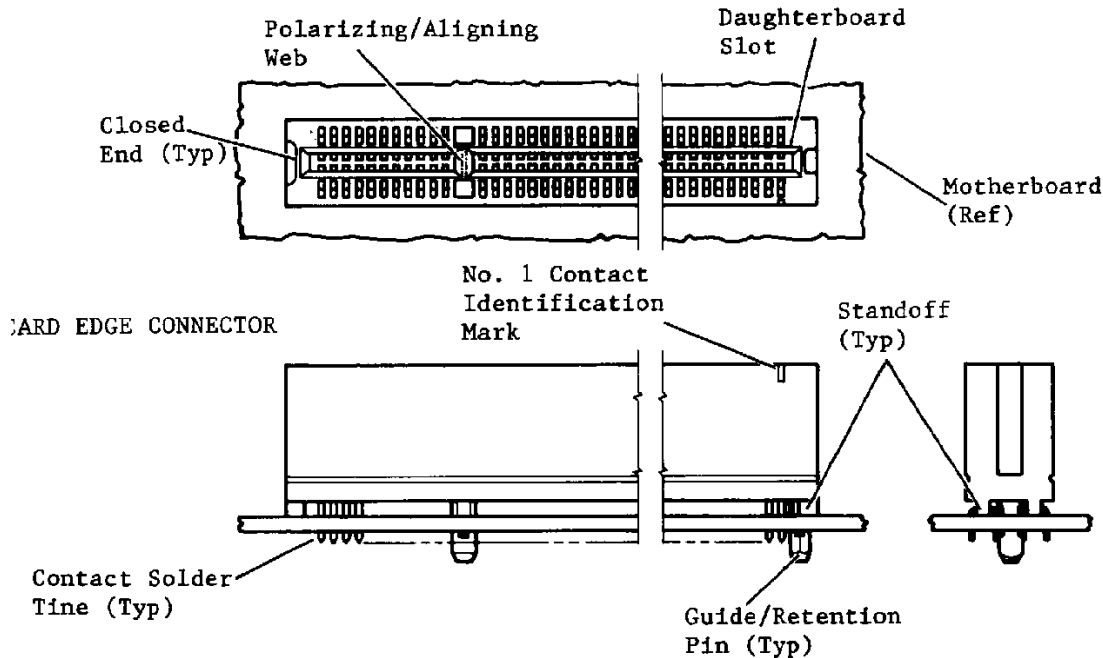


Fig. 1 Product Features

## Revision Summary

Revisions to this application specification include:

- Changed company name and logo

2.2. Customer Drawing

A Customer Drawing is available for each part number assigned to this product line. In the event of a variance between this specification and the customer drawing, the customer drawing information will take precedence.

2.3. Product Specification

The performance of the product during various tests is provided on Product Specification 108-14034.

2.4. Related Material

Bulletin 52 provides some guidelines for soldering and is available upon request through your local Representative.

3. REQUIREMENTS

3.1. Printed Circuit Board Layouts

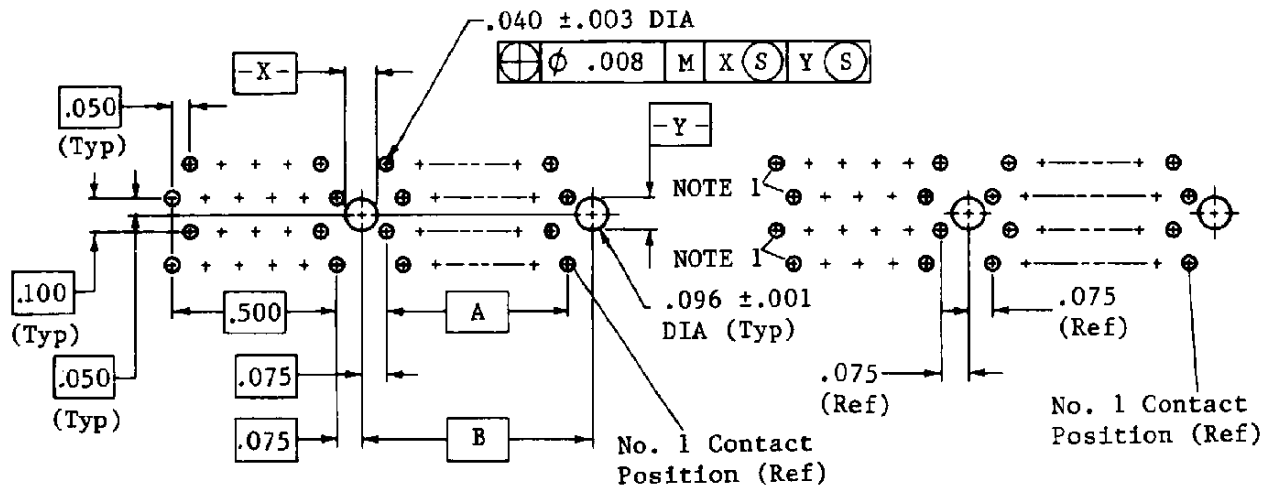
A. Motherboard

There are two motherboard layouts provided in Figure 2. Both can be used for hand or automatic machine placement of the connectors. One layout is for connectors with an even number of dual contact positions and the other for connectors with an odd number of dual contact positions.

MOUNTING DIMENSIONS FOR HAND OR MACHINE PLACEMENT IN COMPONENT SIDE OF MOTHERBOARD.

HOLE PATTERN FOR EVEN NUMBER OF DUAL-CONTACT POSITIONS

HOLE PATTERN FOR ODD NUMBER OF DUAL-CONTACT POSITIONS



A = The total number of dual contact positions, between position No. 1 and the polarizing web, minus one, times .050.

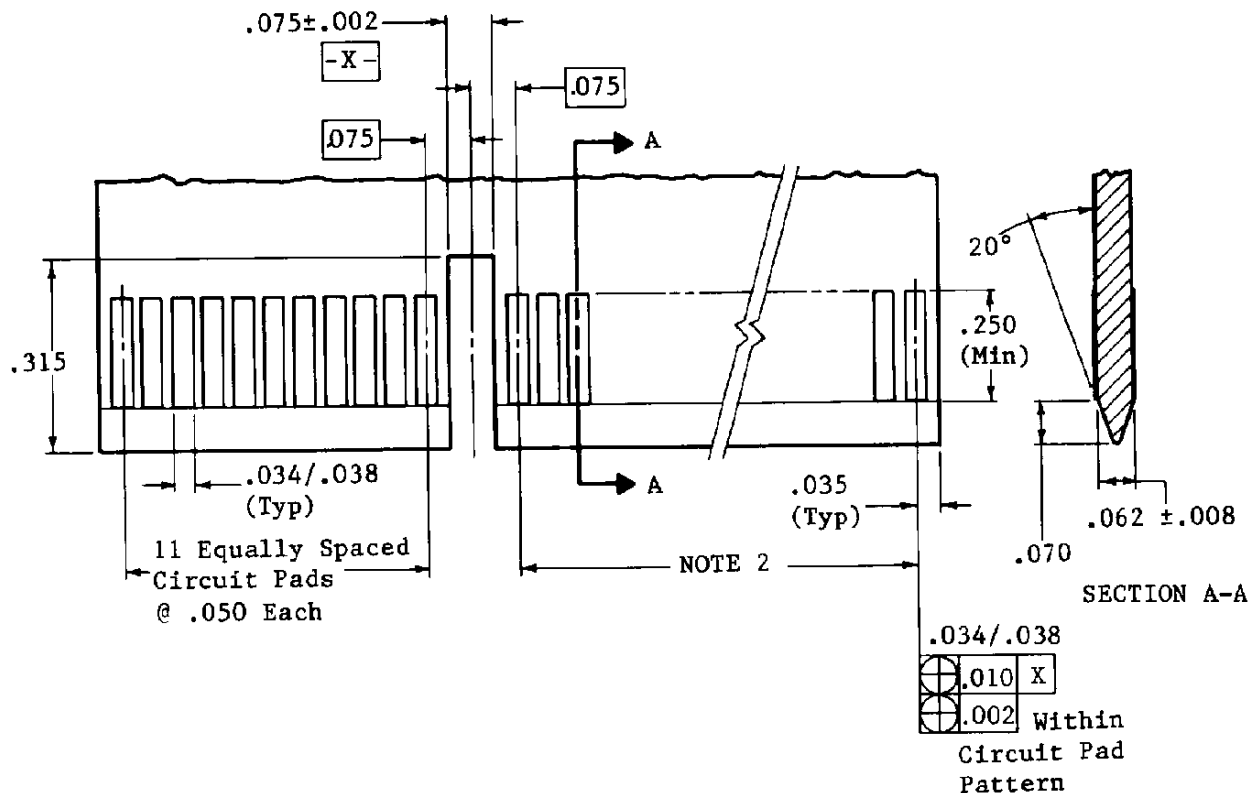
B = The total of dimension "A" plus .150 in.

NOTE 1 These hole patterns are the reverse of the ODD position connector. Otherwise all dimensional information is the same for both layouts.

Fig. 2 Motherboard Layout

## B. Daughterboard Design

Figure 3 provides the dimensional requirements of a daughterboard for use in the card edge connectors. Note that a slot must be made at the "12th and 13th" contact position to accommodate the connector polarizing web.



NOTE 2 Total number of dual contact positions between contact position No. 1 and the polarizing web, minus one dual contact position, times .050.

Fig. 3 Daughterboard Layout

### 3.2. Polarization

The closed ends and polarizing/alignment web provide polarization for the connector. Dimensions for a mating daughterboard are provided in Figure 3. Edgemate connectors that may be used with these connectors have a slot that matches the polarizing/alignment web.

### 3.3. Limitations

Use the product specification referenced in Paragraph 2.3. for testing and limitations that apply to these connectors.

### 3.4. Storage and Handling

Connectors should remain in their shipping container until ready for use to prevent deformation of the solder tines and/or damage to the housing. When handling the connectors, pick them up by the housing only.

### 3.5. Installation

When placing the connector onto the pc board, all solder tines should be aligned with the holes and inserted through the board at the same time. The guide/retention posts will assist in positioning the connector for alignment of the contact solder tines. The standoffs must be seated on the board within the specified tolerance.

If robotic equipment is used it will require a total equipment accuracy of  $\pm .0015$ . This includes the gripper and fixture tolerances and equipment repeatability. If tolerances exceed these limits the solder tine tips may stub on the pc board.

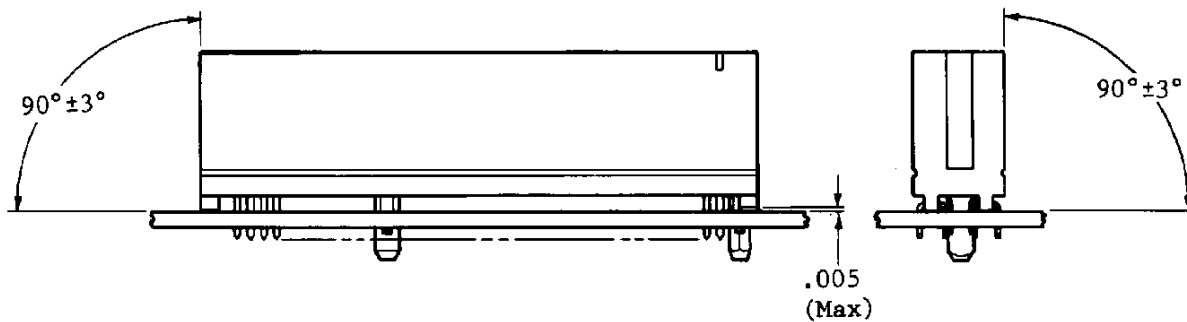


Fig. 4 Functional Tolerances

### 3.6. Soldering

#### A. General

These connectors are compatible with vapor phase and infrared reflow processes provided the temperature does not exceed  $220^{\circ}\text{C}$  for more than 3 minutes. For suitability with other reflow techniques, contact the Engineer whose name appears on the front page of this specification.

Bulletin No. 52 is available upon request and can be used as a guide in soldering. This bulletin provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is attached to the bulletin which is intended to serve as a guide for obtaining information on soldering.

#### B. Flux Selection

The connector solder tines must be fluxed prior to soldering with a medium active rosin base flux, or a medium to highly active organic flux. Selection of the proper flux will depend on the type of pc board and other components mounted on the board. Also, the choice of flux will have to be compatible with the flow solder equipment, manufacturing, and safety requirements.

WARNING Considerations must be given to toxicity and other safety requirements recommended by the solder cleaning solvent manufacture.

Removing of fluxes, residues and activators is mandatory. Cleaning procedures will depend on the type of flux used on the solder line. The connector housing material is unaffected by most popular cleaning solvents for 5 minutes at 105±F. Included in this group are:

Dow Prelete †	Allied Geneesol DSX †
Freon TA †	Perclene †
Freon TE †	Trichlorethylene
Freon TES †	Trichlorethane
Freon TF †	Methylene Chloride
Freon TMC †	Isopropyl Alcohol
Freon TMS †	Alpha 1003 †
3M FC-70 †	

Contact Engineering to assure compatibility with other solvent that are not listed on this specification.

#### D. Drying

When dry cleaning assemblies and pc boards, make sure the recommended temperature limitation is not exceeded. Excessive temperature may cause housing degradation.

† Manufacture's descriptive identifier of listed cleaning solvents.

4. VISUAL AID

Figure 5 depicts a typical Card Edge Connector after it has been installed on the motherboard and a typical daughterboard prepared for insertion into the connector. The illustration describes in general terms the conditions that must exist for the assembler to assume a suitable installation. Dimensional considerations for inspectors are provided throughout the text of this specification.

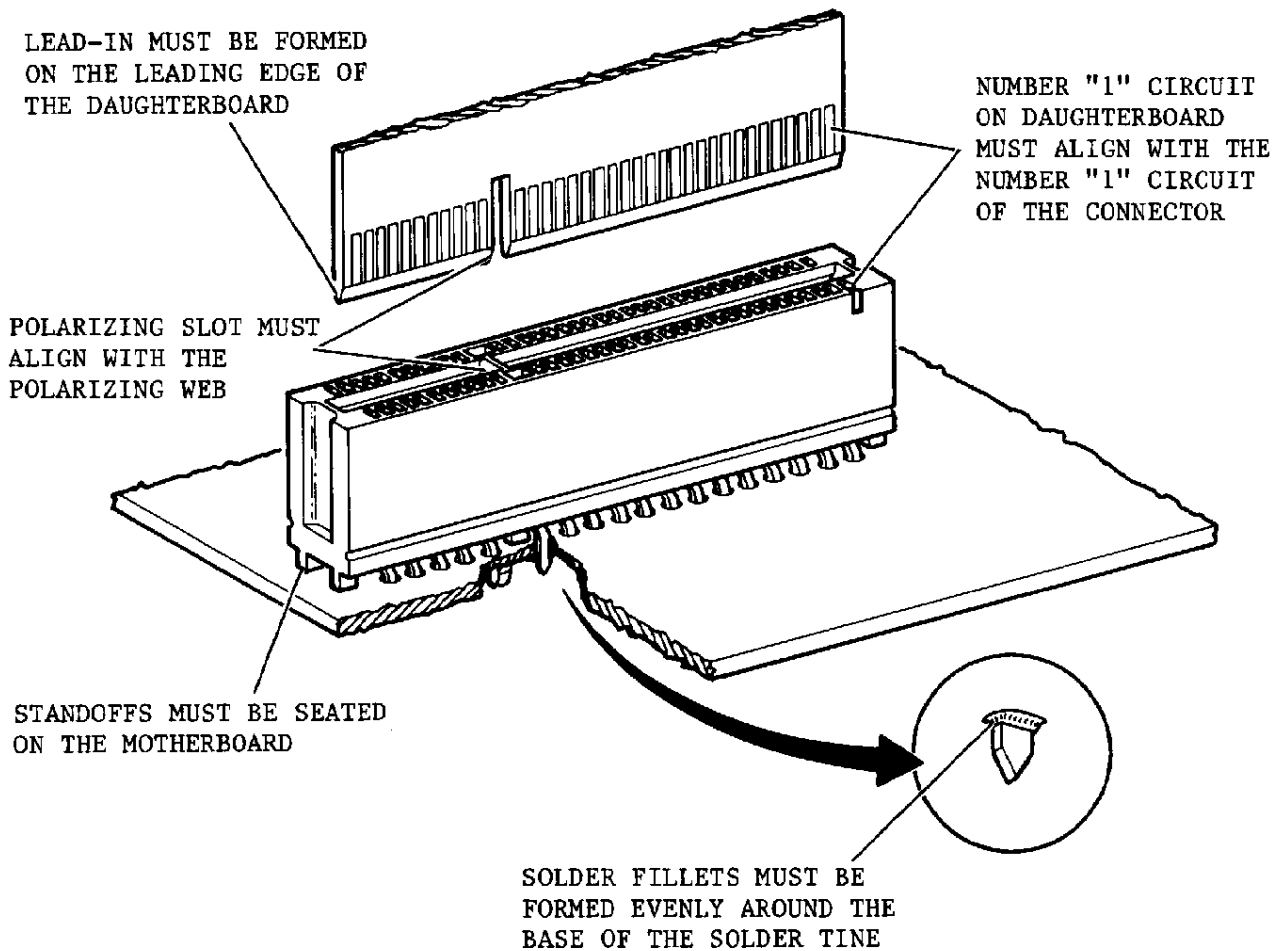


Fig. 5 Visual Aid