

# APPLICATION SPECIFICATION

## 1. SCOPE

### 1.1. Content

This specification covers the requirements for application of the printed circuit board mounted AMP\* Trio-Mate flat flexible discrete circuit .100 centerline connectors. These requirements are applicable to hand insertion. For specific part numbers relative to the products covered in this specification see Figure 11.

### 1.2. Reference Specification

For applicable performance requirements see AMP Specification 108-2038.

## 2. NOMENCLATURE

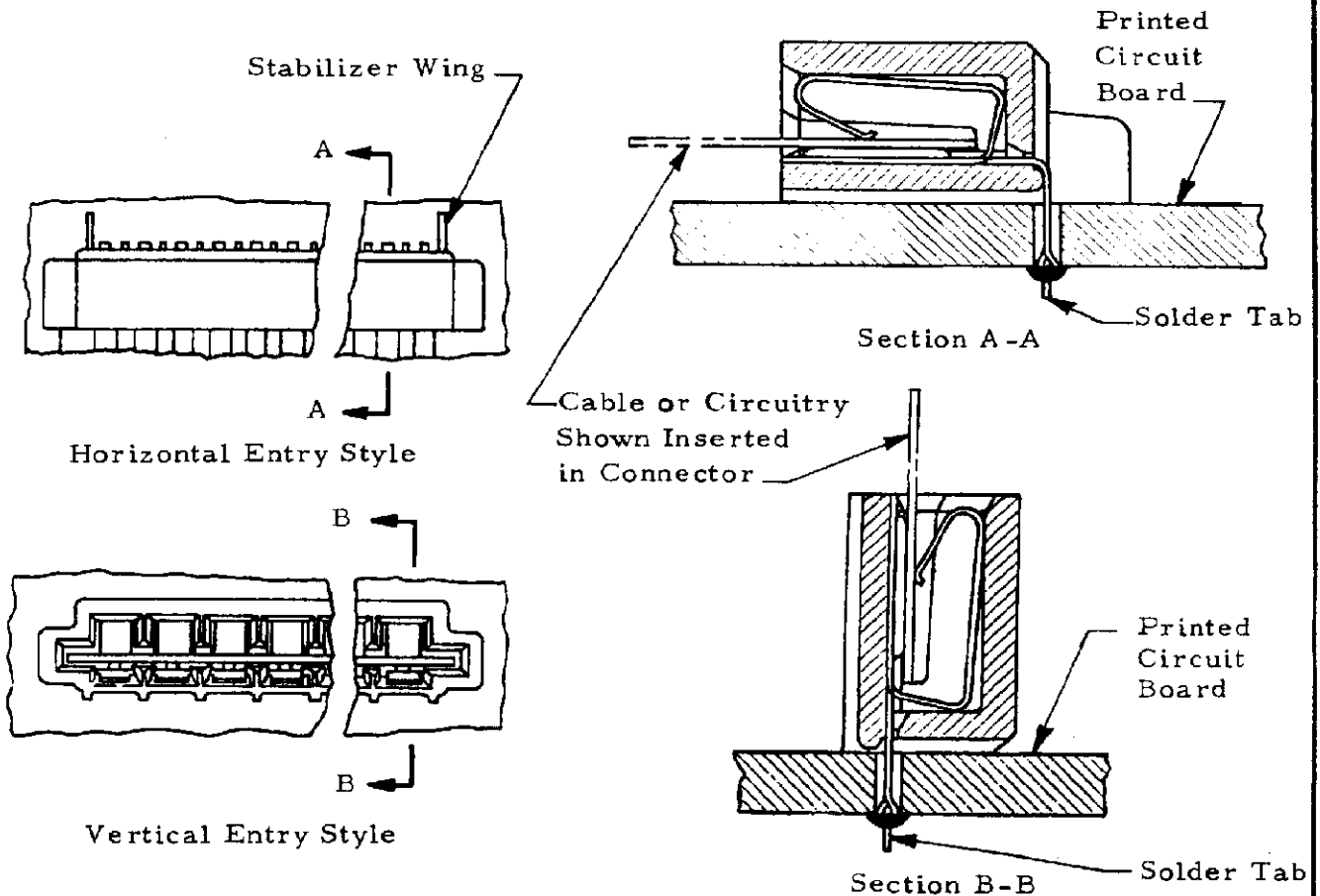


Figure 1

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|      |                  |     |      |        |                               |                                                                                             |          |     |                 |
|------|------------------|-----|------|--------|-------------------------------|---------------------------------------------------------------------------------------------|----------|-----|-----------------|
|      |                  |     |      |        |                               |                                                                                             |          |     |                 |
|      |                  |     |      | DR     | <i>J. E. Fitey</i> 10/21/81   | <b>AMP</b>   AMP INCORPORATED<br>Harrisburg, Pa.                                            |          |     |                 |
|      |                  |     |      | CHK    | <i>Ann Praterley</i> 10/21/81 |                                                                                             |          |     |                 |
|      |                  |     |      | APP    | <i>C. Rolde</i> 10-22 81      | LOC                                                                                         | <b>A</b> | NO  | <b>114-2062</b> |
|      |                  |     |      |        |                               |                                                                                             |          | REV | <b>D</b>        |
| DIST | D Revise per ECN | TLC | 12-5 | SHEET  |                               | CONNECTOR, TRIO-MATE, FLAT<br>FLEXIBLE DISCRETE CIRCUIT,<br>.100 CENTERLINE, APPLICATION OF |          |     |                 |
| 16   | AZ-306           |     |      | 1 OF 8 |                               |                                                                                             |          |     |                 |
| LTR  | REVISION RECORD  | APP | DATE |        |                               |                                                                                             |          |     |                 |

### 3. REQUIREMENTS

#### 3.1. Flat Conductor Cable or Circuitry

##### A. Design

These connectors are designed to accept flat conductor cable or circuitry meeting the following requirements:

- (1) Conductor size:  $.062 \pm .003$  or  $.050 \pm .003$  wide
- (2) Conductor material: Tin plated copper or conductive ink
- (3) Conductor spacing:  $.100$  centerline
- (4) Conductor spacing tolerance:  $\pm .005$  noncumulative
- (5) Cable or circuitry thickness:  $.005 - .015$  in the contact area

##### B. Preparation

- (1) End of the cable or circuitry shall be prepared as indicated in Figure 2.

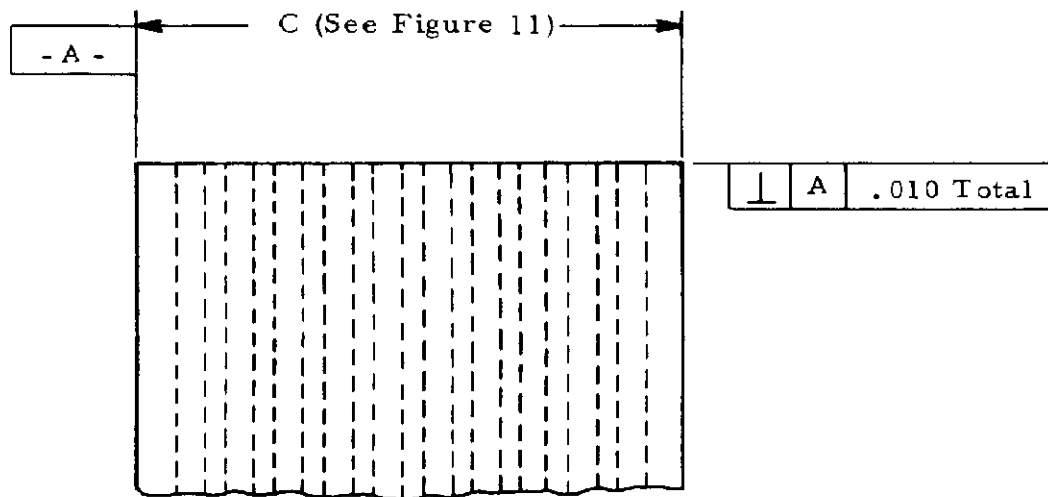


Figure 2

|                                                                                                     |          |                                     |                 |                               |  |
|-----------------------------------------------------------------------------------------------------|----------|-------------------------------------|-----------------|-------------------------------|--|
| <b>AMP</b>                                                                                          |          | AMP INCORPORATED<br>Harrisburg, Pa. |                 | SHEET<br><u>2</u> OF <u>8</u> |  |
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| NAME<br>CONNECTOR, TRIO-MATE, FLAT<br>FLEXIBLE DISCRETE CIRCUIT,<br>.100 CENTERLINE, APPLICATION OF |          |                                     |                 |                               |  |

- (2) Cable or circuitry shall be stripped of insulation to expose conductors on one side only as indicated in Figure 3. Stripped conductors shall be cleaned of contaminants, films and residues. Conductors must extend to the end of the cable or substrate.

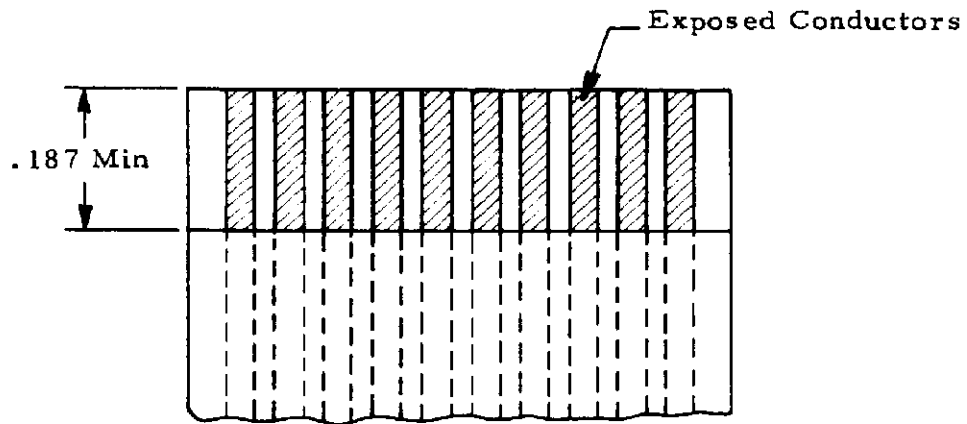


Figure 3

- (3) Printed conductive ink cable or circuitry not containing a coverlay requires no stripping.
- (4) Cable or circuitry shall be notched as indicated in Figure 4 when polarizing plugs are to be inserted in connector cavities.

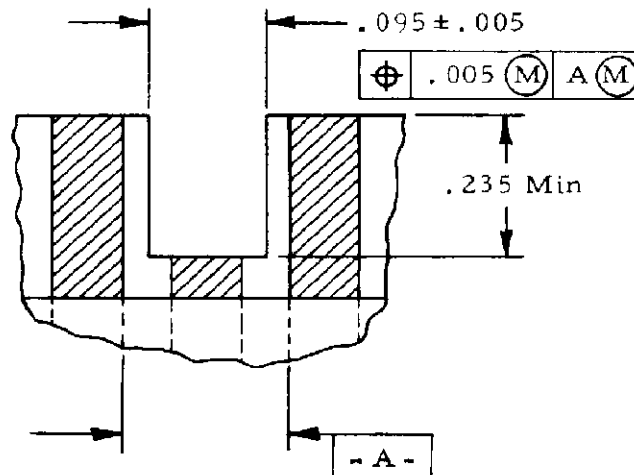


Figure 4

|                                                                                                     |                                                  |                  |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------|
| SHEET<br>3 OF 8                                                                                     | <b>AMP</b>   AMP INCORPORATED<br>Harrisburg, Pa. |                  |
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### 3.2. Printed Circuit Board

Recommended hole layout shall be as indicated in Figure 5.

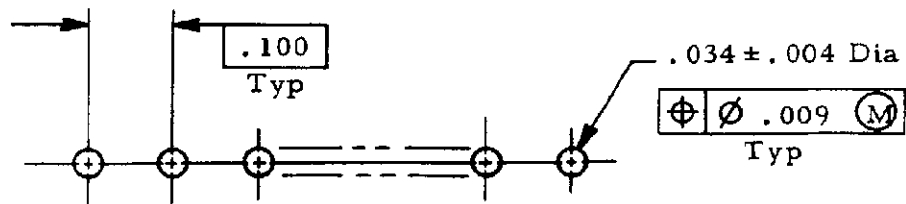


Figure 5

### 3.3. Insertion

#### A. Horizontal Entry Style

- (1) Align solder tab tips with holes in printed circuit board as indicated in Figure 6, and allow front of connector to rest on top surface of printed circuit board.
- (2) Apply pressure, with thumb or flat plate (optional), to top side of connector until it snaps into position.
- (3) Connector shall be tight against top surface of printed circuit board and all solder tabs shall protrude from underside.

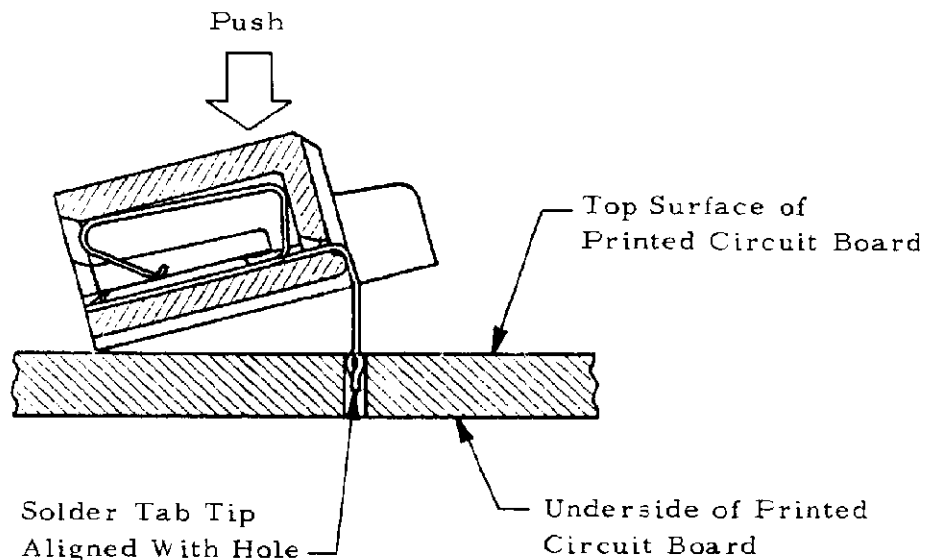


Figure 6

|                                                                                                     |   |                                     |          |        |  |
|-----------------------------------------------------------------------------------------------------|---|-------------------------------------|----------|--------|--|
| <b>AMP</b>                                                                                          |   | AMP INCORPORATED<br>Harrisburg, Pa. |          | SHEET  |  |
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## B. Vertical Entry Style

- (1) Align solder tab tips with holes in printed circuit board as indicated in Figure 7.
- (2) Place a flat plate over cable entry portion of connector.
- (3) Apply pressure perpendicular to plate and printed circuit board until connector snaps into position and rests on surface of printed circuit board.
- (4) Connector shall be tight against top surface of printed circuit board and all solder tabs shall protrude from underside.

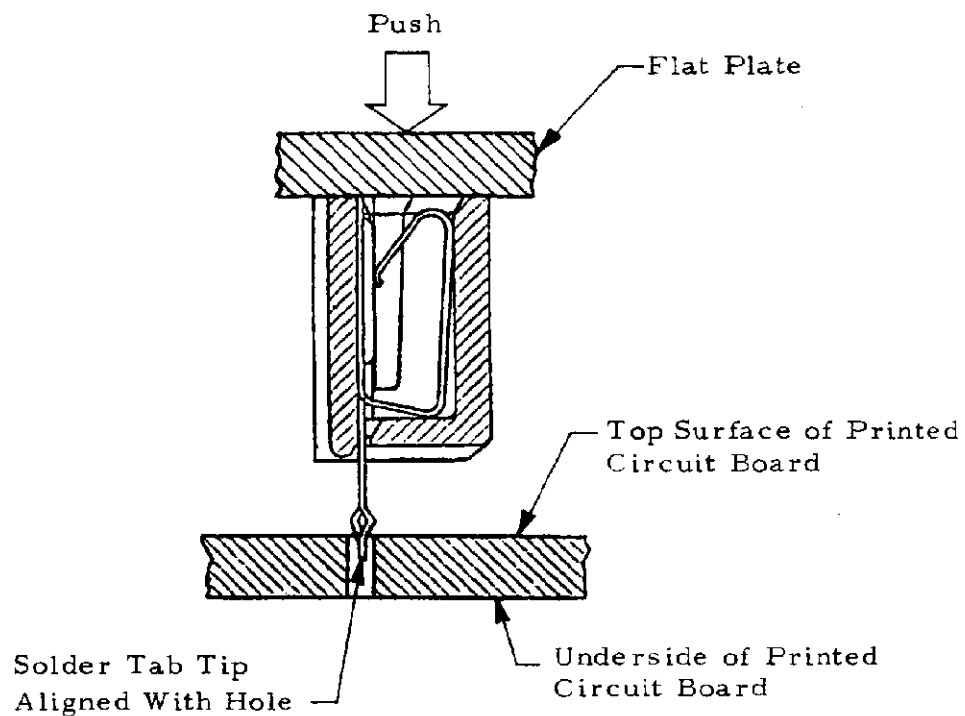


Figure 7

|                                                                                                     |                                                  |                  |          |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------|----------|
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### 3.4. Alignment

Connector solder tabs are self-aligning and retain the connector flush to the printed circuit board after insertion as indicated in Figure 8.

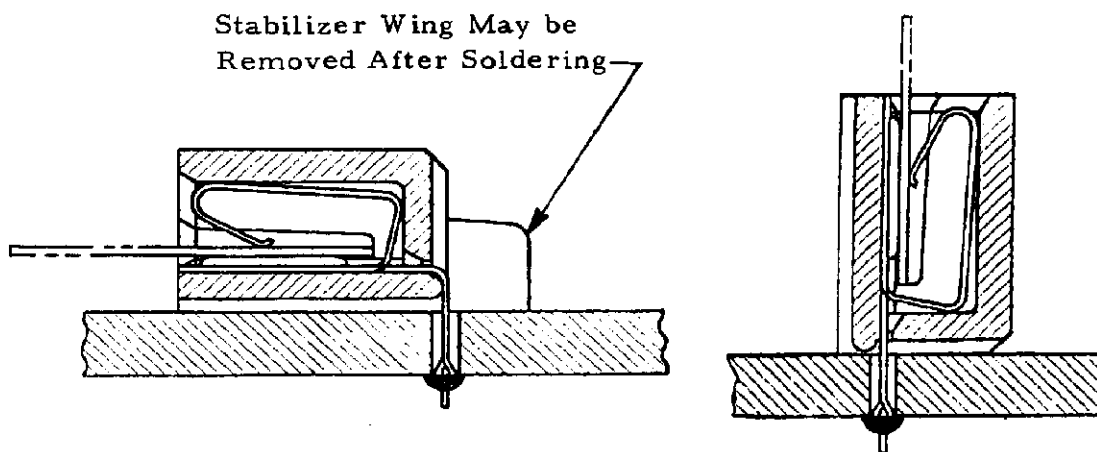


Figure 8

### 3.5. Polarizing Plug

Polarizing plug PN 520329-1 may be inserted in either vertical or horizontal entry style connector cavities as follows:

- A. Align lead-in of polarizing plug with connector cavity to be polarized as indicated in Figure 9.

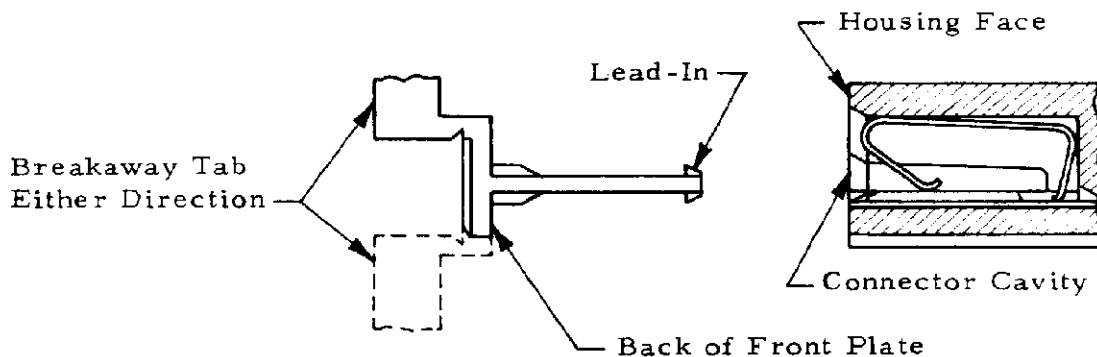


Figure 9

|                                                                                                     |   |                                     |          |                 |  |
|-----------------------------------------------------------------------------------------------------|---|-------------------------------------|----------|-----------------|--|
| <b>AMP</b>                                                                                          |   | AMP INCORPORATED<br>Harrisburg, Pa. |          | SHEET<br>6 OF 8 |  |
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- B. Insert polarizing plug into connector cavity until back of front plate is against the housing face as indicated in Figure 10.

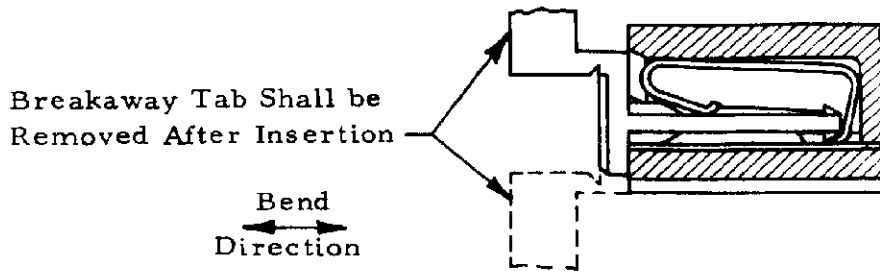


Figure 10

- C. Remove breakaway tab by bending in either direction as shown in Figure 10. Polarizing plug remains in place by the contact normal force.
- D. Polarizing plugs may be inserted in any housing cavity up to the number of positions in the connector.
- E. Removal of a polarizing plug after full insertion into the housing cavity will damage the contact and prevent further use of that circuit.

### 3.6. Soldering and Cleaning

#### A. Flux Selection

Solder tabs shall be fluxed prior to soldering by use of a medium active rosin base flux or a medium to highly active organic flux. Selection of the proper flux will depend on customer's type of printed circuit board and other components, if any, mounted on the board. Also, the choice of flux would have to be compatible with customer's flow solder line, as well as manufacturing and safety requirements.

#### B. Cleaning

Removal of fluxes, residues and activators is mandatory. Cleaning procedures would again be the choice of the customer and would depend on the type of flux used on his solder line.

#### C. Soldering Guideline

AMP Corporate Bulletin No. 52 is available upon request and can be used as a guide in soldering. This bulletin gives various flux types and characteristics along with the commercial designation and flux removal procedures. A check list is attached to the bulletin and is intended to serve as a guide for obtaining information from customers having soldering problems.

|                                                                                                     |                 |                |                                     |          |
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| Part Number | Number of Positions | C<br>*.005<br>(See Figure 2) | Printed Circuit Board<br>Thickness, nom | Cable or Circuitry<br>Entry Style |
|-------------|---------------------|------------------------------|-----------------------------------------|-----------------------------------|
| 520314-2    | 2                   | .300                         | .062                                    | Horizontal                        |
| 520314-3    | 3                   | .400                         |                                         |                                   |
| 520314-4    | 4                   | .500                         |                                         |                                   |
| 520314-5    | 5                   | .600                         |                                         |                                   |
| 520314-6    | 6                   | .700                         |                                         |                                   |
| 520314-7    | 7                   | .800                         |                                         |                                   |
| 520314-8    | 8                   | .900                         |                                         |                                   |
| 520314-9    | 9                   | 1.000                        |                                         |                                   |
| 1-520314-0  | 10                  | 1.100                        |                                         |                                   |
| 1-520314-1  | 11                  | 1.200                        |                                         |                                   |
| 1-520314-2  | 12                  | 1.300                        |                                         |                                   |
| 1-520314-3  | 13                  | 1.400                        |                                         |                                   |
| 1-520314-4  | 14                  | 1.500                        |                                         |                                   |
| 1-520314-5  | 15                  | 1.600                        |                                         |                                   |
| 1-520314-6  | 16                  | 1.700                        |                                         |                                   |
| 1-520314-7  | 17                  | 1.800                        |                                         |                                   |
| 1-520314-8  | 18                  | 1.900                        |                                         |                                   |
| 1-520314-9  | 19                  | 2.000                        |                                         |                                   |
| 2-520314-0  | 20                  | 2.100                        |                                         |                                   |
| 2-520314-1  | 21                  | 2.200                        |                                         |                                   |
| 2-520314-2  | 22                  | 2.300                        |                                         |                                   |
| 520315-2    | 2                   | .300                         |                                         |                                   |
| 520315-3    | 3                   | .400                         |                                         |                                   |
| 520315-4    | 4                   | .500                         |                                         |                                   |
| 520315-5    | 5                   | .600                         |                                         |                                   |
| 520315-6    | 6                   | .700                         |                                         |                                   |
| 520315-7    | 7                   | .800                         |                                         |                                   |
| 520315-8    | 8                   | .900                         |                                         |                                   |
| 520315-9    | 9                   | 1.000                        |                                         |                                   |
| 1-520315-0  | 10                  | 1.100                        |                                         |                                   |
| 1-520315-1  | 11                  | 1.200                        |                                         |                                   |
| 1-520315-2  | 12                  | 1.300                        |                                         |                                   |
| 1-520315-3  | 13                  | 1.400                        |                                         |                                   |
| 1-520315-4  | 14                  | 1.500                        |                                         |                                   |
| 1-520315-5  | 15                  | 1.600                        |                                         |                                   |
| 1-520315-6  | 16                  | 1.700                        |                                         |                                   |
| 1-520315-7  | 17                  | 1.800                        |                                         |                                   |
| 1-520315-8  | 18                  | 1.900                        |                                         |                                   |
| 1-520315-9  | 19                  | 2.000                        |                                         |                                   |
| 2-520315-0  | 20                  | 2.100                        |                                         |                                   |
| 2-520315-1  | 21                  | 2.200                        |                                         |                                   |
| 2-520315-2  | 22                  | 2.300                        |                                         |                                   |
| 520316-2    | 2                   | .300                         | .093                                    | Vertical                          |
| 520316-3    | 3                   | .400                         |                                         |                                   |
| 520316-4    | 4                   | .500                         |                                         |                                   |
| 520316-5    | 5                   | .600                         |                                         |                                   |
| 520316-6    | 6                   | .700                         |                                         |                                   |
| 520316-7    | 7                   | .800                         |                                         |                                   |
| 520316-8    | 8                   | .900                         |                                         |                                   |
| 520316-9    | 9                   | 1.000                        |                                         |                                   |
| 1-520316-0  | 10                  | 1.100                        |                                         |                                   |
| 1-520316-1  | 11                  | 1.200                        |                                         |                                   |
| 1-520316-2  | 12                  | 1.300                        |                                         |                                   |
| 1-520316-3  | 13                  | 1.400                        |                                         |                                   |
| 1-520316-4  | 14                  | 1.500                        |                                         |                                   |
| 1-520316-5  | 15                  | 1.600                        |                                         |                                   |
| 1-520316-6  | 16                  | 1.700                        |                                         |                                   |
| 1-520316-7  | 17                  | 1.800                        |                                         |                                   |
| 1-520316-8  | 18                  | 1.900                        |                                         |                                   |
| 1-520316-9  | 19                  | 2.000                        |                                         |                                   |
| 2-520316-0  | 20                  | 2.100                        |                                         |                                   |
| 2-520316-1  | 21                  | 2.200                        |                                         |                                   |
| 2-520316-2  | 22                  | 2.300                        |                                         |                                   |

Figure 11

|                                                                                                     |         |                                     |  |          |  |
|-----------------------------------------------------------------------------------------------------|---------|-------------------------------------|--|----------|--|
| <b>AMP</b>                                                                                          |         | AMP INCORPORATED<br>Harrisburg, Pa. |  | SHEET    |  |
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