

REV.  
E

AS39029™/45

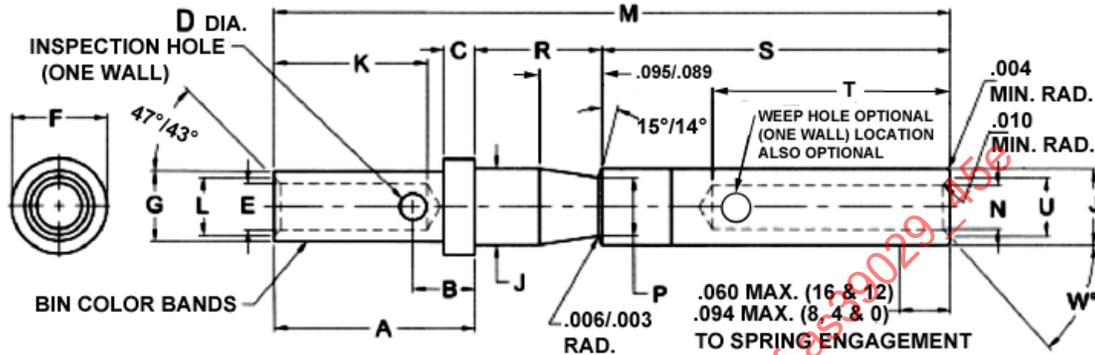
FEDERAL SUPPLY CLASS  
5999

RATIONALE

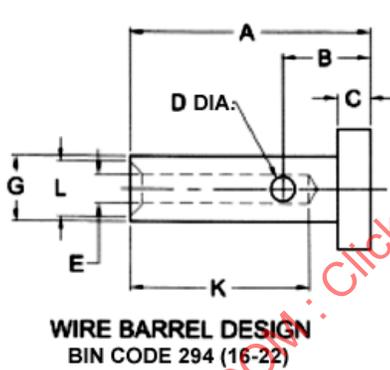
LIMIT SCOPE REVISION NEEDED TO ADD NEW TOOLS TO TABLE 3 AND PROVIDE MINOR TECHNICAL CHANGES AS NEEDED.

NOTICE

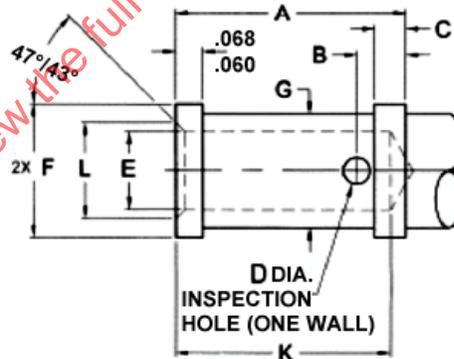
THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39029.



**SOCKET INTERFACE DESIGN FOR ALL BIN CODES**  
WIRE BARREL DESIGN FOR BIN CODES 295 THRU 297 (SIZES 16 & 12)



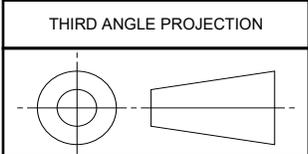
**WIRE BARREL DESIGN**  
BIN CODE 294 (16-22)



**WIRE BARREL DESIGN**  
BIN CODES 298 THRU 300 (SIZES 8, 4 & 0)

FIGURE 1 - SOCKET CONTACT

For more information on this standard, visit  
<https://www.sae.org/standards/content/AS39029/45E/>



CUSTODIAN: AE-8C1

PROCUREMENT SPECIFICATION: AS39029



**AEROSPACE STANDARD**

CONTACTS, ELECTRICAL CONNECTOR, SOCKET,  
CRIMP REMOVABLE (FOR AS50151 SERIES  
AS34001 AND AS95234 CONNECTORS)

**AS39029™/45**  
SHEET 1 OF 4

**REV.  
E**

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ISSUED 2001-03 REVISED 2023-05

**TABLE 1 - CONTACT DIMENSIONS**

| BIN CODE | E DIA                        | F DIA                        | J DIA                        | M REF                      | N DIA                      | P DIA                        | R                            | S                            | T MIN        | U MIN       | W          |
|----------|------------------------------|------------------------------|------------------------------|----------------------------|----------------------------|------------------------------|------------------------------|------------------------------|--------------|-------------|------------|
| 294      | .0355 (0.90)<br>.0335 (0.85) | .148 (3.76)                  | .113 (2.87)                  | 1.272 (32.31)              | .064 (1.63)                | .087 (2.21)                  |                              |                              | .510 (12.95) | .086 (2.18) | 53°<br>43° |
| 295      | .068 (1.73)                  | .133 (3.38)                  | .110 (2.79)                  | 1.286 (32.66)              |                            | .083 (2.11)                  |                              |                              |              |             |            |
| 296      | .066 (1.68)                  | .202 (5.13)                  | .161 (4.09)                  |                            | .0955 (2.43)               | .135 (3.43)                  | .189 (4.80)<br>.185 (4.70)   | .808 (20.52)<br>.798 (20.27) |              | .125 (3.18) |            |
| 297      | .102 (2.59)<br>.098 (2.49)   |                              |                              | .158 (4.01)                |                            |                              |                              |                              |              |             |            |
| 298      | .184 (4.67)<br>.179 (4.55)   | .313 (7.95)<br>.309 (7.85)   | .252 (6.40)<br>.249 (6.32)   | .149 (3.78)<br>.145 (3.68) | .221 (5.61)                | .625 (15.88)                 | .193 (4.90)                  |                              |              |             |            |
| 299      | .286 (7.26)<br>.279 (7.09)   | .419 (10.64)<br>.409 (10.39) | .336 (8.53)<br>.333 (8.46)   | .232 (5.89)<br>.228 (5.79) | .310 (7.87)<br>.307 (7.80) |                              |                              | .281 (7.14)<br>.250 (6.35)   | .080 (2.03)  |             |            |
| 300      | .458 (11.63)<br>.451 (11.46) | .611 (15.52)<br>.601 (15.27) | .518 (13.16)<br>.515 (13.08) | 1.660 (42.16)              | .364 (9.25)<br>.360 (9.14) | .492 (12.50)<br>.489 (12.42) | .542 (13.77)<br>.532 (13.51) |                              |              | 31°<br>29°  |            |

**TABLE 1 - CONTACT DIMENSIONS (CONTINUED)**

| BIN CODE | A                            | B                          | C                          | D DIA                      | G DIA                      | K                            | L                            |
|----------|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|------------------------------|------------------------------|
| 294      | .285 (7.24)<br>.280 (7.11)   | .106 (2.69)<br>.100 (2.54) | .042 (1.07)<br>.036 (0.91) | .032 (0.81)<br>.026 (0.66) | .078 (1.98)<br>.076 (1.93) | .216 (5.49)<br>.206 (5.23)   | .067 (1.70)<br>.061 (1.55)   |
| 295      | .298 (7.57)<br>.294 (7.47)   | .079 (2.01)<br>.073 (1.85) |                            | .042 (1.07)<br>.036 (0.91) | .105 (2.67)<br>.101 (2.57) | .281 (7.14)<br>.250 (6.35)   | .090 (2.29)<br>.080 (2.03)   |
| 296      |                              |                            |                            |                            |                            |                              |                              |
| 297      |                              |                            |                            |                            | .153 (3.89)<br>.147 (3.73) |                              | .125 (3.18)<br>.115 (2.92)   |
| 298      | .520 (13.21)                 | .094 (2.39)<br>.084 (2.13) | .048 (1.22)<br>.044 (1.12) |                            | .269 (6.83)<br>.263 (6.68) | .534 (13.56)<br>.480 (12.19) | .230 (5.84)<br>.220 (5.59)   |
| 299      | .510 (12.95)                 |                            |                            |                            | .364 (9.25)<br>.354 (8.99) |                              |                              |
| 300      | .675 (17.15)<br>.665 (16.89) |                            |                            | .066 (1.68)<br>.060 (1.52) | .380 (9.65)<br>.370 (9.40) | .690 (17.53)<br>.636 (16.15) | .542 (13.77)<br>.532 (13.51) |

**TABLE 2 - MARKING AND DESIGN CHARACTERISTICS**

| BIN CODES | COLOR BANDS |       |        | MATING END SIZE | WIRE BARREL SIZE | TYPE SIZE | CLASS |
|-----------|-------------|-------|--------|-----------------|------------------|-----------|-------|
|           | 1ST         | 2ND   | 3RD    |                 |                  |           |       |
| 294       | RED         | WHITE | YELLOW | 16              | 22               | A         | B     |
| 295       | RED         | WHITE | GREEN  | 16              | 16               |           |       |
| 296 1/    | RED         | WHITE | BLUE   | 12              | 16               |           |       |
| 297       | RED         | WHITE | VIOLET | 12              | 12               |           |       |
| 298       | RED         | WHITE | GRAY   | 8               | 8                |           |       |
| 299       | RED         | WHITE | WHITE  | 4               | 4                |           |       |
| 300       | ORANGE      | BLACK | BLACK  | 0               | 0                |           |       |

1/ BIN 296 SHALL MEET ALL APPLICABLE TEST REQUIREMENTS FOR SIZE 12-14.

**TABLE 3 - TOOL REQUIREMENTS**

| BIN CODE | BASIC CRIMPING TOOL          | DIE SET      | LOCATOR      | POSITIONER         | INSTALLING TOOL | REMOVAL TOOL |
|----------|------------------------------|--------------|--------------|--------------------|-----------------|--------------|
| 294 1/   | M22520/1-01                  | ---          | ---          | M22520/1-02 BLUE   | M81969/17-09    | M81969/19-01 |
| 295      | M22520/1-01                  | ---          | ---          | M22520/1-02 BLUE   | M81969/17-04    | M81969/19-01 |
| 296      | M22520/1-01                  | ---          | ---          | M22520/1-02 YELLOW | M81969/17-04    | M81969/19-02 |
| 297      | M22520/1-01                  | ---          | ---          | M22520/1-02 YELLOW | M81969/17-05    | M81969/19-02 |
| 298      | M22520/23-01<br>M22520/48-01 | M22520/23-02 | M22520/23-09 | ---                | M81969/17-06    | M81969/19-03 |
| 299      |                              | M22520/23-04 | M22520/23-11 | ---                | M81969/17-07    | M81969/19-04 |
| 300      |                              | M22520/23-05 | M22520/23-13 | ---                | M81969/17-08    | M81969/19-05 |

1/ USE SELECTOR NUMBER 3, 2, AND 1 FOR WIRE SIZE 22, 24, AND 26, RESPECTIVELY.

**TABLE 4 - PART NUMBERS**

| AS39029<br>PART NUMBER | BIN<br>CODE | SUPERSEDED<br>PART NUMBER(S) |
|------------------------|-------------|------------------------------|
| M39029/45-294          | 294         | MS90454-16-22                |
| M39029/45-295          | 295         | MS90454-16-16                |
| M39029/45-296          | 296         | MS90454-12-16                |
| M39029/45-297          | 297         | MS90454-12-12                |
| M39029/45-298          | 298         | MS90454-8-8                  |
| M39029/45-299          | 299         | MS90454-4-4                  |
| M39029/45-300          | 300         | MS90454-0-0                  |

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39029.

1. DESIGN:

CONTACT SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLES 1 AND 2. DIMENSIONS ARE IN INCHES AND SHOWN AFTER PLATING. UNLESS OTHERWISE SPECIFIED, SPHERICAL END DIMENSIONS SHALL CONFORM TO AS39029. ALL DIMENSIONS IN PARENTHESES ARE METRIC EQUIVALENTS AND PROVIDED FOR GENERAL INFORMATION ONLY (SEE TABLE 1). AN ALTERNATE DESIGN OF THE WIRE BARREL LEAD-IN ANGLE SHALL BE AS FOLLOWS:

SIZE 16: BLEND RADIUS .020 INCH ± .005 INCH.  
SIZE 12: BLEND RADIUS .020 INCH ± .010 INCH.

2. TOOLS:

TOOLS REQUIRED FOR CRIMPING CONTACTS TO WIRE/CABLE AND THE INSTALLING/REMOVAL FROM THE CONNECTOR SHALL BE IN ACCORDANCE WITH TABLE 3.

3. PART NUMBERS:

CONTACT PART NUMBERS SHALL BE IN ACCORDANCE WITH TABLE 4. SUPERSEDED PART NUMBERS ARE AS SPECIFIED.

4. MATERIALS:

MATERIALS SHALL BE IN ACCORDANCE WITH AS39029.

5. MECHANICAL:

MECHANICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.

6. ELECTRICAL:

ELECTRICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.

7. ENVIRONMENTAL:

ENVIRONMENTAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.

VIBRATION SHALL BE TEST CONDITION III FOLLOWED BY THE ENDURANCE TEST IN ACCORDANCE WITH MIL-STD-167-1.

SHOCK SHALL BE TEST CONDITION A.

APPLICATION NOTES:

1. CONTACT MATES DIRECTLY WITH AN AS39029/44 PIN AS SHOWN IN TABLE 5.

**TABLE 5 - CONTACT MATING PART NUMBERS**

| AS39029/45 BIN CODE | MATING AS39029/44 BIN CODE |
|---------------------|----------------------------|
| 294                 | 287                        |
| 295                 | 288                        |
| 296                 | 289                        |
| 297                 | 290                        |
| 298                 | 291                        |
| 299                 | 292                        |
| 300                 | 293                        |