

## RATIONALE

REVISE TO INCLUDE COMMENTS RECEIVED BY THE GOVERNMENT AND INDUSTRY SINCE 1988, INCORPORATES VARIOUS AMENDMENTS, REMOVE GOVERNMENT JARGON AS A RESULT OF THE WORD-FOR-WORD TRANSFERENCE OF AS39029 TO SAE, UPDATE SPECIFICATION REFERENCES, ALIGN SPECIFICATIONS WITH SAE GUIDELINES AS NEEDED, AND REVIEW SPECIFICATIONS FOR KNOWN TECHNICAL PROBLEMS.

## NOTICE

THE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE LATEST ISSUE OF: SAE AS39029.

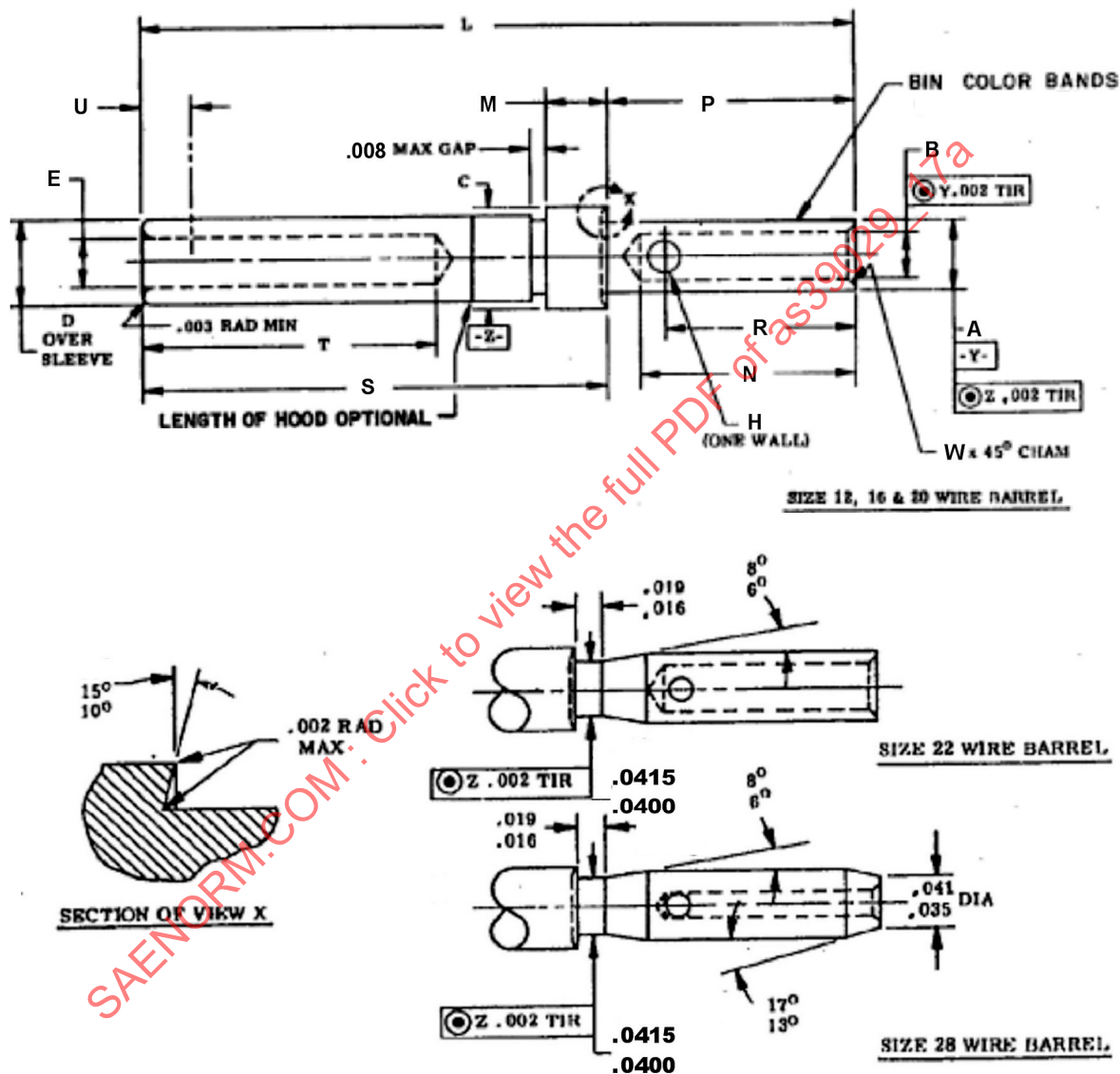
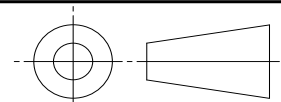


FIGURE 1 - AS39029/17 SOCKET

THIRD ANGLE PROJECTION



CUSTODIAN: SAE AE-8/AE-8C1

PROCUREMENT SPECIFICATION: AS39029

**SAE Aerospace**  
An SAE International Group

**AEROSPACE STANDARD**

(R) CONTACTS, ELECTRICAL CONNECTOR,  
SOCKET, CRIMP REMOVABLE  
(FOR MIL-C-81511 SERIES 3 CONNECTORS)

**SAE AS39029/17A**  
SHEET 1 OF 4

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TABLE 1 - CONTACT DIMENSIONS

| BIN CODE | A DIA          | B DIA          | C DIA                              | D MAX DIA | E MIN DIA ONLY | H DIA        | L (REF)         | M            | N            | P            | R            | S            | T            | U MAX | W CHAM       |
|----------|----------------|----------------|------------------------------------|-----------|----------------|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|--------------|
| 171      | .0480<br>.0465 | .0200<br>.0180 | .0555<br>(1.41)<br>.0540<br>(1.37) | .055      | .028           | .022<br>.018 | .937<br>(23.80) | .445<br>.425 | .155<br>.145 | .218<br>.208 | .145<br>.139 | .726<br>.716 | .250<br>.190 | .038  | .006<br>.003 |
| 172      | .0480<br>.0465 | .0355<br>.0335 | .0555<br>(1.41)<br>.0540<br>(1.37) | .055      | .028           | .022<br>.018 | .937<br>(23.80) | .445<br>.425 | .155<br>.145 | .218<br>.208 | .145<br>.139 | .726<br>.716 | .250<br>.190 | .038  | .006<br>.003 |
| 173      | .0615<br>.0600 | .0450<br>.0430 | .0760<br>(1.93)<br>.0745<br>(1.89) | .076      | .0415          | .027<br>.023 | .937<br>(23.80) | .395<br>.375 | .195<br>.185 | .218<br>.208 | .165<br>.159 | .726<br>.716 | .360<br>.270 | .045  | .007<br>.004 |
| 174      | .0925<br>.0910 | .0645<br>.0625 | .1080<br>(2.74)<br>.1065<br>(2.71) | .108      | .064           | .027<br>.023 | .937<br>(23.80) | .370<br>.350 | .195<br>.185 | .218<br>.208 | .165<br>.159 | .726<br>.716 | .360<br>.270 | .045  | .010<br>.006 |
| 175      | .1515<br>.1500 | .1020<br>.0980 | .1695<br>(4.31)<br>.1680<br>(4.27) | .169      | .0955          | .042<br>.038 | .954<br>(24.23) | .370<br>.350 | .232<br>.216 | .245<br>.235 | .196<br>.190 | .726<br>.716 | .360<br>.250 | .050  | .012<br>.006 |

TABLE 2 - MARKING AND DESIGN CHARACTERISTICS

| BIN code | Color bands |        |        | Mating end size | Wire barrel size | Type | Class |
|----------|-------------|--------|--------|-----------------|------------------|------|-------|
|          | 1st         | 2nd    | 3rd    |                 |                  |      |       |
| 171      | Brown       | Violet | Brown  | 23              | 28               | A    | B     |
| 172      | Brown       | Violet | Red    | 23              | 22               |      |       |
| 173      | Brown       | Violet | Orange | 20              | 20               |      |       |
| 174      | Brown       | Violet | Yellow | 16              | 16               |      |       |
| 175      | Brown       | Violet | Green  | 12              | 12               |      |       |

TABLE 3 - TOOL REQUIREMENTS

| BIN CODE | BASIC CRIMPING TOOL | POSITIONER  | INSTALLING TOOL | REMOVAL TOOL  |                 |
|----------|---------------------|-------------|-----------------|---------------|-----------------|
|          |                     |             |                 | WIRED CONTACT | UNWIRED CONTACT |
| 171      | M22520/2-01         | M22520/2-13 | M81969/16-04    | M81969/16-04  | M81969/30-01    |
| 172      | M22520/2-01         | M22520/2-13 | M81969/16-04    | M81969/16-04  | M81969/30-01    |
| 173      | M22520/2-01         | M22520/2-14 | M81969/16-01    | M81969/16-01  | M81969/30-02    |
| 174      | M22520/2-01         | M22520/2-15 | M81969/16-02    | M81969/16-02  | M81969/30-03    |
| 175      | M22520/1-01         | M22520/1-09 | M81969/16-03    | M81969/16-03  | M81969/30-04    |

TABLE 4 - PART NUMBERS

| AS39029<br>PART NUMBER | BIN<br>CODE | SUPERSEDED<br>PART NUMBER(S) |
|------------------------|-------------|------------------------------|
| M39029/17-171          | 171         | M39029/17-23-28              |
| M39029/17-172          | 172         | M39029/17-23-22              |
| M39029/17-173          | 173         | M39029/17-20-20              |
| M39029/17-174          | 174         | M39029/17-16-16              |
| M39029/17-175          | 175         | M39029/17-12-12              |

## DETAIL SPECIFICATION REQUIREMENTS:

## 1. DESIGN:

CONTACT SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1, TABLE 1 AND 2. DIMENSIONS ARE IN INCHES AND SHOWN AFTER PLATING. UNLESS OTHERWISE SPECIFIED, SPHERICAL END DIMENSIONS SHALL CONFORM TO AS39029. ALL DIMENSIONS PROVIDED IN PARENTHESES ARE METRIC EQUIVALENTS AND GIVEN FOR GENERAL INFORMATION ONLY (SEE AS39029 SECTION 6). DIMENSION "U" IS THE POINT OF INITIAL ENGAGEMENT. THERE SHALL BE A MAXIMUM GAP OF .008 INCHES BETWEEN THE HOOD AND BODY OF THE CONTACT. A 0.002 IN. MAXIMUM BURR IS PERMITTED ON THE PERIPHERY OF SHOULDER NOTED (SEE VIEW X).

## 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 IN ACCORDANCE WITH EIA-364-28 TEST CONDITION IV WITH A TEMPERATURE CYCLE IN ACCORDANCE WITH TEST CONDITION I. TEST THE CONTACT IN THE HIGHEST TEMPERATURE RATED, MIL-C-81511 CONNECTOR SERIES. THE MINIMUM TEMPERATURE SHALL BE -65 (+0, -3) °C. THE DURATION OF TIME AT THE TEMPERATURE'S STEPS 1 AND 3 SHALL BE 25% OF THE TIME DETERMINED BY THE SPECIFIED CONNECTOR MASS. THERE SHALL BE A MINIMUM OF 10% OR NOT LESS THAN THREE MATED CONTACTS WIRED IN SERIES. THE CONTACT RESISTANCE SHALL NOT INCREASE MORE THAN 5 OHMS DURING 1 MICROSECOND.

SHOCK SHALL BE IN ACCORDANCE WITH EIA-364-27 TEST CONDITION A. PERFORM ONE SHOCK IN EACH AXIS. THERE SHALL BE A MINIMUM OF 10% OR NOT LESS THAN THREE MATED CONTACTS WIRED IN SERIES. THE CONTACT RESISTANCE SHALL NOT EXCEED 5 OHMS IN 1 MICROSECOND.