

AS39029/122

RATIONALE

THIS DETAIL SPECIFICATION SHEET IS REQUIRED TO ALIGN/HARMONIZE THE CONTACT PERFORMANCE REQUIREMENTS WITH THE APPLICABLE CONNECTOR PERFORMANCE REQUIREMENTS AND INCLUDE ADDITIONAL VERIFICATION TESTING FOR THE VIBRATION AND SHOCK REQUIREMENTS INCLUDING PERIODIC TESTING, TO ADD SIZE 23 CONTACT DETAILS/PART NUMBERS, TO ADD METAL TOOLING, TO CHANGE THE APPLICABLE CONNECTORS TO 38999 SERIES III ONLY, TO CHANGE SIZE 23-28 TO 23-26, TO DELETE SIZES 22 AND 22M, TO ADD WIRE RANGE ACCOMMODATION FOR SIZE 26 WIRE BARREL, TO DELETE THE .445-.425 DIMENSION FROM FIGURE 2, TO CLARIFY VISUAL/VIBRATION TESTING DETAILS AND TO ADD THE BLENDED RADIUS OPTION TO THE H DIMENSION.

NOTICE

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

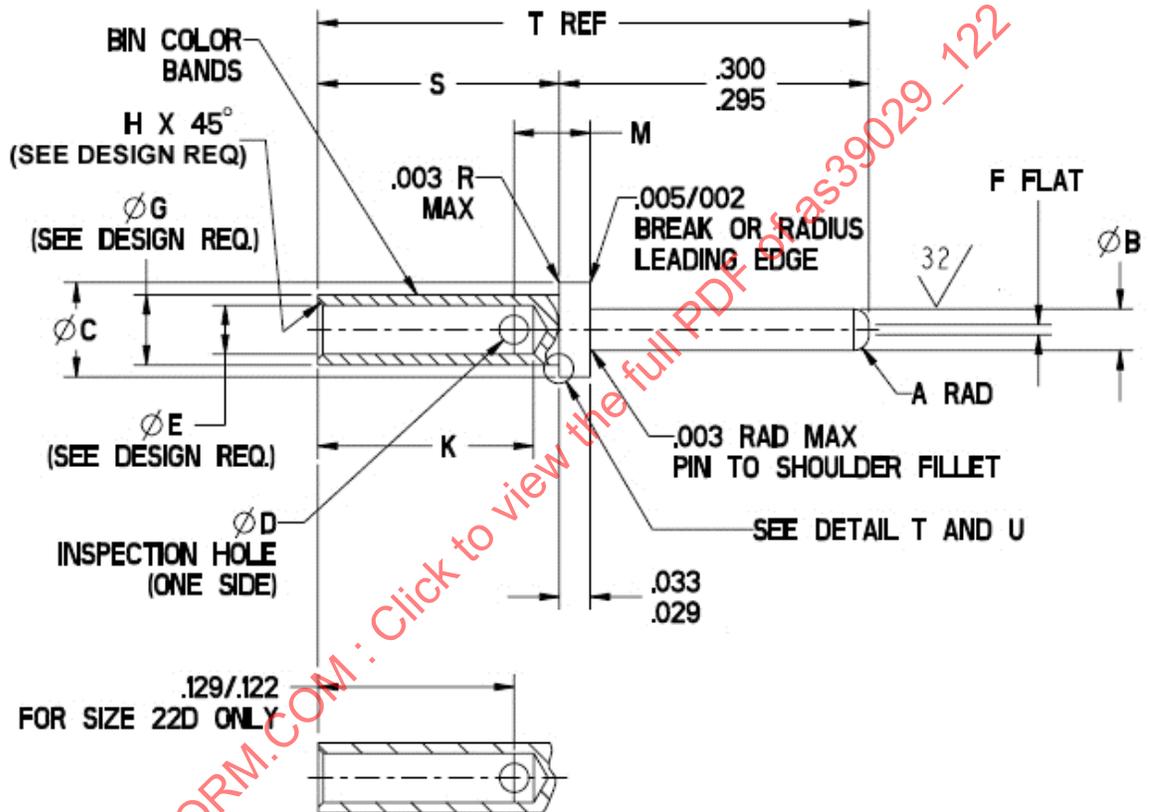
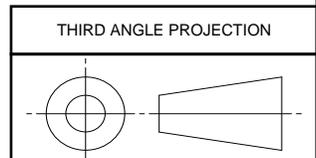


FIGURE 1 - CONNECTOR CONTACT (ALL SIZES EXCEPT 23)

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CUSTODIAN: AE-8/AE-8C1

PROCUREMENT SPECIFICATION: AS39029



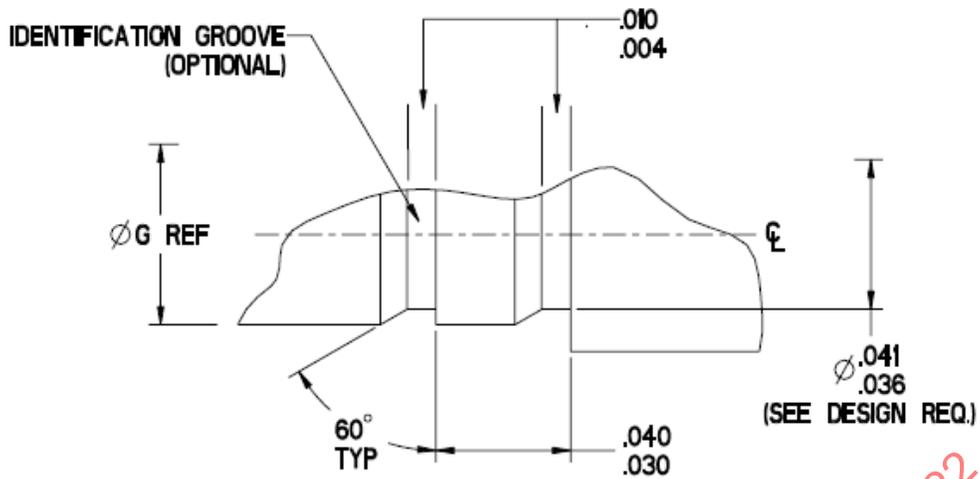
AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, PIN, CRIMP REMOVABLE, EXPANDED PERFORMANCE, SIZES 10, 12, 16, 20, 22 AND 23 (FOR MIL-DTL-38999 SERIES III CONNECTORS)

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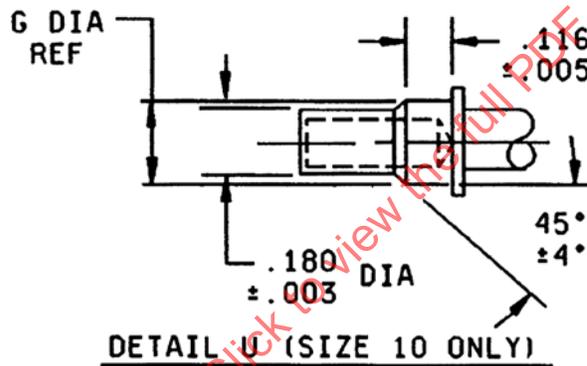
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DETAIL T (SIZE 22D ONLY)

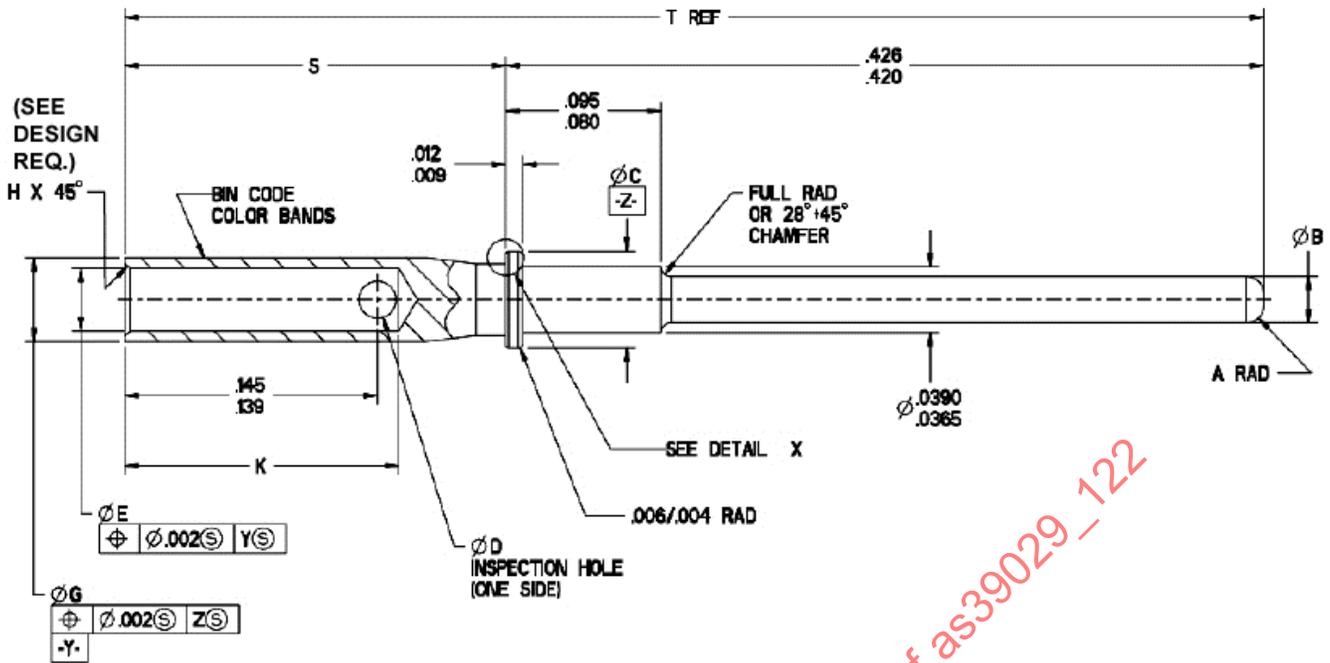
FIGURE 1 - CONNECTOR CONTACT (ALL SIZES EXCEPT 23) (CONTINUED)



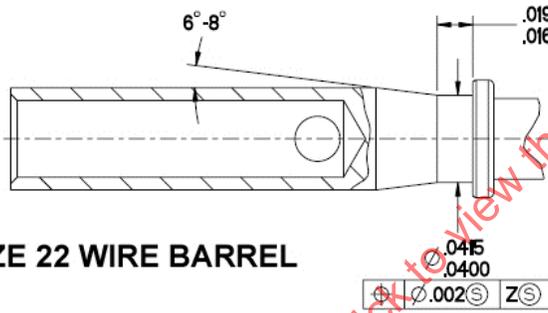
DETAIL U (SIZE 10 ONLY)

FIGURE 1 - CONNECTOR CONTACT (CONTINUED)

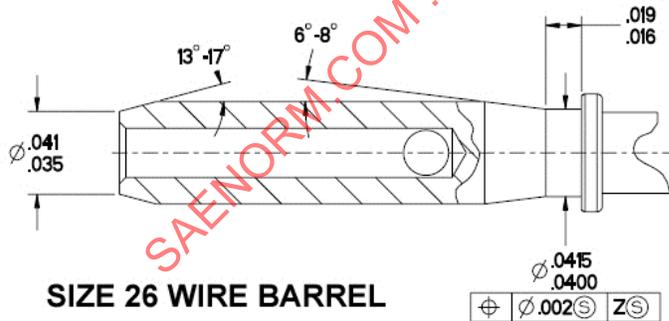
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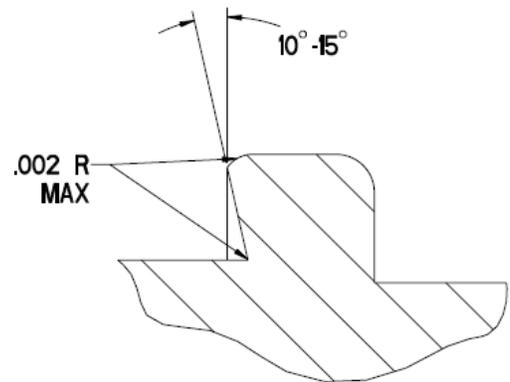
SIZE 22 WIRE BARREL



SIZE 26 WIRE BARREL



SIZE 23-22 AND 23-26 WIRE BARRELS



DETAIL X

FIGURE 2 - CONNECTOR CONTACT (SIZE 23 ONLY)



AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, PIN, CRIMP
 REMOVABLE, EXPANDED PERFORMANCE, SIZES 10, 12, 16,
 20, 22 AND 23 (FOR MIL-DTL-38999 SERIES III CONNECTORS)

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TABLE 1 - FIGURE 1 AND 2 DIMENSIONS

| BIN CODE | MATING END SIZE | WIRE BARREL SIZE | A RADIUS | B Ø | C Ø | D Ø | E Ø | F Ø | G Ø | H | |
|----------|-----------------|------------------|--------------------|--------------------------------|--------------------------------|----------------------------|------------------------------|------------------------------|--------------------------------|------------------------------|----------------------------|
| 669 | 23 | 26 | SHER. RAD. APPROX. | .0275 (0.699) .0260 (0.660) | .0555 (1.41) .0540 (1.37) | .022 (0.60) .018 (0.46) | .0235 (0.60) .0215 (0.55) | N/A | .0480 (1.219) .0465 (1.181) | .006 (0.152) .002 (0.051) | |
| 670 | 23 | 22 | SHER. RAD. APPROX. | .0275 (0.699) .0260 (0.660) | .0555 (1.41) .0540 (1.37) | .022 (0.60) .018 (0.46) | .0355 (0.90) .0335 (0.85) | N/A | .0480 (1.219) .0465 (1.181) | .006 (0.152) .002 (0.051) | |
| 671 | 22 | 22D | | .020 (0.508) .010 (0.254) | .0305 (0.774) .0295 (0.749) | .062 (1.57) .060 (1.52) | .022 (0.56) .018 (0.46) | .0355 (0.90) .0335 (0.85) | .011 (0.28) MAX. | .048 (1.22) .046 (1.17) | .005 (0.13) .003 (0.08) |
| 672 | 20 | 20 | | .025 (0.635) .015 (0.381) | .041 (1.04) .039 (0.991) | .094 (2.39) .091 (2.31) | .032 (0.81) .026 (0.66) | .048 (1.22) .046 (1.17) | .015 (0.38) MAX. | .070 (1.78) .068 (1.73) | .010 (0.25) .005 (0.13) |
| 673 | 16 | 16 | | | .0635 (1.613) .0615 (1.562) | .130 (3.30) .127 (3.23) | .042 (1.07) .036 (0.914) | .068 (1.73) .066 (1.68) | .030 (0.76) .011 (0.28) | .103 (2.62) .101 (2.57) | |
| 674 | 12 | 12 | | .025 (0.635) .020 (0.508) | .095 (2.41) .093 (2.36) | .182 (4.62) .179 (4.55) | | .102 (2.59) .098 (2.49) | .062 (1.57) .043 (1.09) | .151 (3.84) .148 (3.76) | .016 (0.41) .005 (0.13) |
| 675 | 10 | 10 | | | .126 (3.20) .124 (3.15) | .242 (6.15) .238 (6.05) | .052 (1.32) .040 (1.02) | .140 (3.56) .134 (3.40) | .094 (2.39) .074 (1.88) | .213 (5.41) .207 (5.26) | |

TABLE 1 - FIGURE 1 AND 2 DIMENSIONS (CONTINUED)

| BIN CODE | MATING END SIZE | WIRE BARREL SIZE | K MINIMUM | M | S | T (REF) |
|----------|-----------------|------------------|---------------------|----------------------------|------------------------------|--------------|
| 669 | 23 | 26 | .145 MIN. (3.68) | N/A | .218 (5.54) .208 (5.28) | .636 (16.15) |
| 670 | 23 | 22 | | N/A | .218 (5.54) .208 (5.28) | .636 (16.15) |
| 671 | 22 | 22D | .141 (3.58) | ---- | | |
| 672 | 20 | 20 | .209 (5.31) | .078 (1.98) .072 (1.83) | .237 (6.02) .231 (5.87) | .531 (13.49) |
| 673 | 16 | 16 | | .088 (2.24) .082 (2.08) | | |
| 674 | 12 | 12 | | | | |
| 675 | 10 | 10 | .355 (9.02) | .115 (2.92) .108 (2.74) | .405 (10.29) .395 (10.03) | .647 (16.43) |

TABLE 2 - DESIGN CHARACTERISTICS

| BIN CODE | COLOR BANDS | | | MATING END SIZE | WIRE BARREL SIZE | TYPE | CLASS |
|----------|-----------------|-----------------|-----------------|-----------------|------------------|------|-------|
| | 1 ST | 2 ND | 3 RD | | | | |
| 669 | BLUE | BLUE | WHITE | 23 | 26 | A | B |
| 670 | BLUE | VOILET | BLACK | 23 | 22 | | |
| 671 | BLUE | VOILET | BROWN | 22 | 22D | | |
| 672 | BLUE | VOILET | RED | 20 | 20 | | |
| 673 | BLUE | VOILET | ORANGE | 16 | 16 | | |
| 674 | BLUE | VOILET | YELLOW | 12 | 12 | | |
| 675 | BLUE | VOILET | GREEN | 10 | 10 | | |

TABLE 3 - TOOLS

| BIN CODE | BASIC CRIMPING TOOL | POSITIONER | INSTALLING TOOL 1/ | REMOVAL TOOL | |
|----------|---|---|--|--|------------------------------------|
| | | | | WIRED CONTACT | UNWIRED CONTACT |
| 669 | M22520/2-01 | M22520/2-16 | M81969/1-05 (METAL & PLASTIC) M81969/8-15 (ANGLED, METAL) M81969/8-315 (STRAIGHT, METAL) | M81969/1-05 (METAL & PLASTIC) M81969/8-16 (ANGLED, METAL) M81969/8-316 (STRAIGHT, METAL) | DANIELS PART NUMBER (DRK276-23) 2/ |
| 670 | M22520/2-01 | M22520/2-16 | M81969/1-05 (METAL & PLASTIC) M81969/8-15 (ANGLED, METAL) M81969/8-315 (STRAIGHT, METAL) | M81969/1-05 (METAL & PLASTIC) M81969/8-16 (ANGLED, METAL) M81969/8-316 (STRAIGHT, METAL) | DANIELS PART NUMBER (DRK276-23) 2/ |
| 671 | M22520/2-01 M22520/7-01 | M22520/2-09 M22520/7-07 | M81969/14-01 (ALL PLASTIC) M81969/8-01 (ANGLED, METAL) M81969/8-301 (STRAIGHT, METAL) | M81969/14-01 (ALL PLASTIC) M81969/8-02 (ANGLED, METAL) M81969/8-302 (STRAIGHT, METAL) | M81969/30-08 |
| 672 | M22520/2-01 M22520/7-01 M22520/1-01 | M22520/2-10 M22520/7-08 M22520/1-04 (RED) | M81969/14-10 (ALL PLASTIC) M81969/8-05 (ANGLED, METAL) M81969/8-305 (STRAIGHT, METAL) | M81969/14-10 (ALL PLASTIC) M81969/8-06 (ANGLED, METAL) M81969/8-306 (STRAIGHT, METAL) | M81969/30-11 |
| 673 | M22520/1-01 M22520/7-01 | M22520/1-04 (BLUE) M22520/7-04 | M81969/14-03 (ALL PLASTIC) M81969/8-07 (ANGLED, METAL) M81969/8-307 (STRAIGHT, METAL) | M81969/14-03 (ALL PLASTIC) M81969/8-08 (ANGLED, METAL) M81969/8-308 (STRAIGHT, METAL) | M81969/30-12 |
| 674 | M22520/1-01 | M22520/1-04 (YELLOW) | M81969/14-04 (ALL PLASTIC) M81969/8-09 (ANGLED, METAL) M81969/8-309 (STRAIGHT, METAL) | M81969/14-04 (ALL PLASTIC) M81969/8-10 (ANGLED, METAL) M81969/8-310 (STRAIGHT, METAL) | M81969/30-13 |
| 675 | M22520/45-01 | POSITIONER BUILT INTO BASIC TOOL | M81969/14-05 (ALL PLASTIC) M81969/8-11 (ANGLED, METAL) M81969/8-311 (STRAIGHT, METAL) | M81969/14-05 (ALL PLASTIC) M81969/8-12 (ANGLED, METAL) M81969/8-312 (STRAIGHT, METAL) | DANIELS PART NUMBER (DRK514B) 2/ |

1/ SEE APPLICATION NOTE 2.

2/ OR EQUIVALENT.

TABLE 4 - PART NUMBERS

| PART NUMBER | BIN CODE | SUPERSEDED |
|----------------|----------|------------|
| M39029/122-669 | -669 | N/A |
| M39029/122-670 | -670 | N/A |
| M39029/122-671 | -671 | N/A |
| M39029/122-672 | -672 | N/A |
| M39029/122-673 | -673 | N/A |
| M39029/122-674 | -674 | N/A |
| M39029/122-675 | -675 | N/A |

| | | |
|---|---|------------------------------------|
|  | AEROSPACE STANDARD | AS39029/122 SHEET 5 OF 8 |
| | CONTACTS, ELECTRICAL CONNECTOR, PIN, CRIMP REMOVABLE, EXPANDED PERFORMANCE, SIZES 10, 12, 16, 20, 22 AND 23 (FOR MIL-DTL-38999 SERIES III CONNECTORS) | |

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

1. DESIGN:

CONTACTS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURES 1 AND 2 AND TABLES 1 AND 2. DIMENSIONS ARE IN INCHES. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION ONLY. DIMENSIONS SHOWN APPLY AFTER PLATING. OPERATING TEMPERATURE RANGE: -65 °C (-85 °F) TO 200 °C (392 °F). WIRE BARREL RANGE ACCOMMODATION FOR CONTACT SIZE 23-26 IS WIRE SIZES 26, 28, AND 30.

FIGURE 1 ADDITIONAL DETAILS:

FOR BIN CODE 671 ONLY, DIAMETERS E AND G ARE TO BE CONCENTRIC WITHIN .003 (TIR) REGARDLESS OF FEATURE SIZE (RFS); FOR BIN CODES 672, 673, 674, AND 675, DIAMETERS E AND G TO BE CONCENTRIC WITH .001 TOTAL INDICATOR READING (TIR) OF MAXIMUM MATERIAL CONDITION (MMC). THE .036-.041 DIAMETER IN DETAIL "T" SHALL BE CONCENTRIC TO G DIAMETER WITHIN .003 (TIR) (RFS). FOR DIMENSION H, THE FOLLOWING BLEND RADIUS DIMENSIONS ARE OPTIONAL:

SIZE 23 - BLEND RADIUS .010 INCH ± .005 INCH.
SIZE 22 - BLEND RADIUS .010 INCH ± .005 INCH.
SIZE 20 - BLEND RADIUS .015 INCH ± .005 INCH.
SIZE 16 - BLEND RADIUS .020 INCH ± .005 INCH.
SIZE 12 - BLEND RADIUS .020 INCH ± .010 INCH.
SIZE 10 - BLEND RADIUS .020 INCH ± .010 INCH.

FIGURE 2 ADDITIONAL DETAILS:

UNLESS OTHERWISE SPECIFIED, SPHERICAL END DIMENSIONS SHALL CONFORM TO AS39029. A .001 INCH MAXIMUM BURR IS PERMITTED ON THE PERIPHERY OF SHOULDER (SEE VIEW X).

2. TOOLS:

TOOLS REQUIRED FOR CRIMPING CONTACTS TO THE 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 AND AS LISTED BELOW:

VIBRATION: THE FOLLOWING VIBRATION TESTS SHALL BE PERFORMED ON SEPARATE SAMPLES FOR EACH TEST. EACH TEST SAMPLE MUST COMPLY WITH THE AS39029 BASIC SPECIFICATION SAMPLE REQUIREMENTS.

SAMPLE PREPARATION:

- a. THE SAMPLE SIZE OF CONTACTS FOR GROUP 2 SHALL BE TRIPLED TO ALLOW FOR 3 GROUPS OF CONTACTS TO BE SUBJECTED TO THE VIBRATION TEST.
- b. THE CONTACTS SHALL BE DIVIDED INTO 3 SUB-GROUPS AND MOUNTED IN MIL-DTL-38999 CONNECTORS (MATING FREE PLUG AND RECEPTACLE) RATED AT 200 °C.
- c. HIGH STRENGTH WIRE MAY BE USED FOR VIBRATION TESTING.



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