

SAE Executive Standards Committee Rules provide that: " This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

**REV.
D**

AS39029™/91

FEDERAL SUPPLY CLASS
5935

RATIONALE

AS39029/91D CONTACT IS BEING STABILIZED BECAUSE THE PROCESSES/PRODUCT IS CONSIDERED MATURE AND THE COMMITTEE DOES NOT ANTICIPATE FUTURE TECHNICAL CHANGES. STABILIZATION DOES NOT IMPLY THE PROCESS OR PRODUCT IS UNACCEPTABLE FOR APPLICATIONS FOR WHICH IT IS DESIGNED. ANY TECHNICAL CHANGES NOTED BY A SUPPLIER OR USER WHICH RESULTS IN A PRODUCT OR REQUIREMENT CHANGE WILL BE ADDRESSED BY A NEW REVISION. QUALIFIED SUPPLIERS ARE STILL MAINTAINED. AS39029/91 IS RECOMMENDED FOR REPLACEMENT ONLY. USERS ARE REFERRED TO AS39029/114.

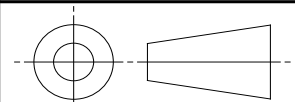
STABILIZED NOTICE

THIS DOCUMENT HAS BEEN DECLARED "STABILIZED" BY SAE AE-8C1 CONNECTORS COMMITTEE AND WILL NO LONGER BE SUBJECT TO PERIODIC REVIEWS FOR CURRENCY. USERS ARE RESPONSIBLE FOR VERIFYING REFERENCES AND CONTINUED SUITABILITY OF TECHNICAL REQUIREMENTS. NEWER TECHNOLOGY MAY EXIST.

SAENORM.COM : Click to view the full PDF of as39029_91d

For more information on this standard, visit
<https://www.sae.org/standards/content/AS39029/91D/>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C1

PROCUREMENT SPECIFICATION: AS39029



AEROSPACE STANDARD

CONTACT, ELECTRICAL CONNECTOR,
CONCENTRIC TWINAX, SOCKET,
SHIELDED, SIZE 8

AS39029™/91

**REV.
D**

Copyright © 2025 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Fax: 724-776-0790

Tel: +1 724-776-4970 (outside USA)
Email: CustomerService@sae.org

SAE WEB ADDRESS: <http://www.sae.org>

ISSUED 2001-03 REVISED 2018-11 STABILIZED 2025-03

NOTICE

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

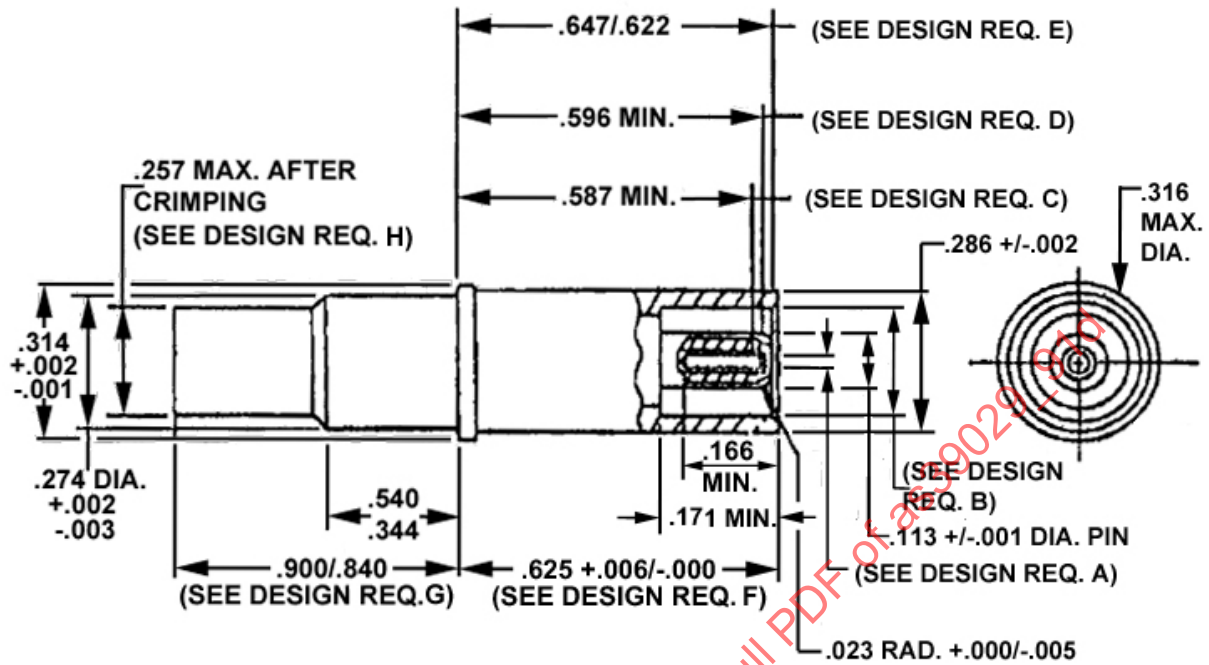


FIGURE 1 - CONCENTRIC TWINAX CONTACT

	AEROSPACE STANDARD CONTACT, ELECTRICAL CONNECTOR, CONCENTRIC TWINAX, SOCKET, SHIELDED, SIZE 8	AS39029™/91 SHEET 1 OF 8	REV. D
---	---	------------------------------------	-------------------------

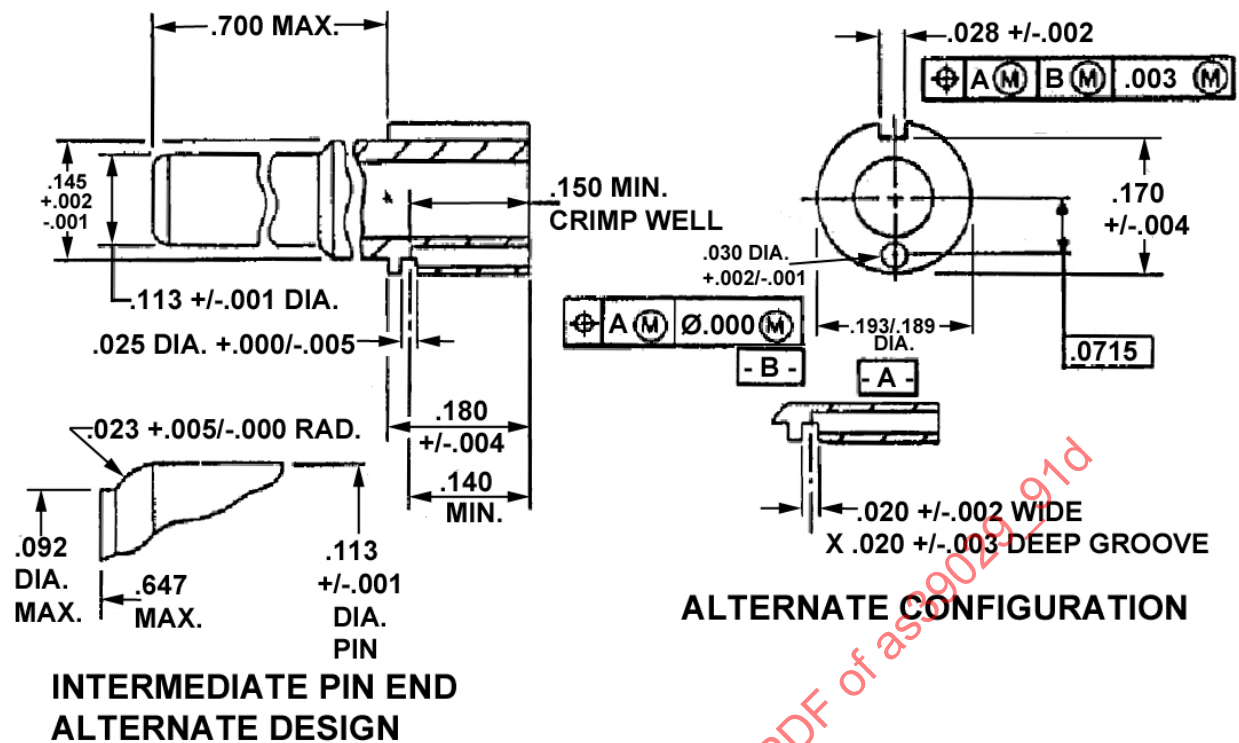


FIGURE 2 - INTERMEDIATE PIN CONTACT

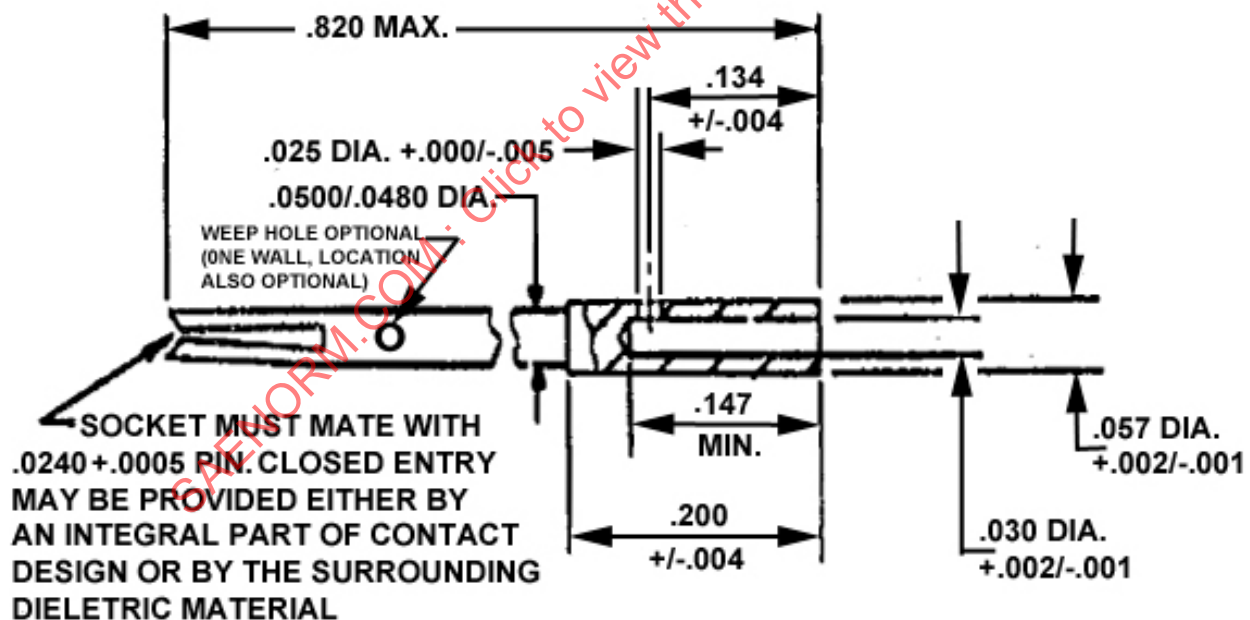


FIGURE 3 - CENTER SOCKET CONTACT

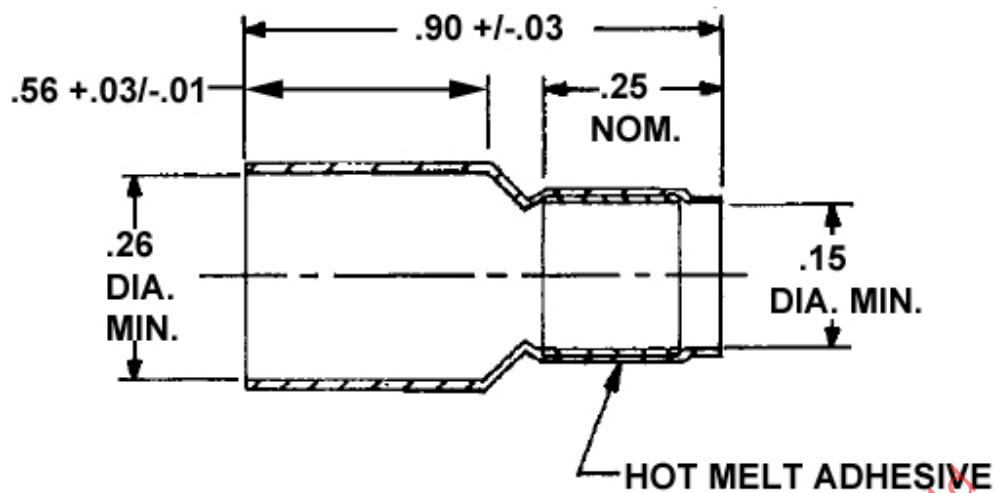
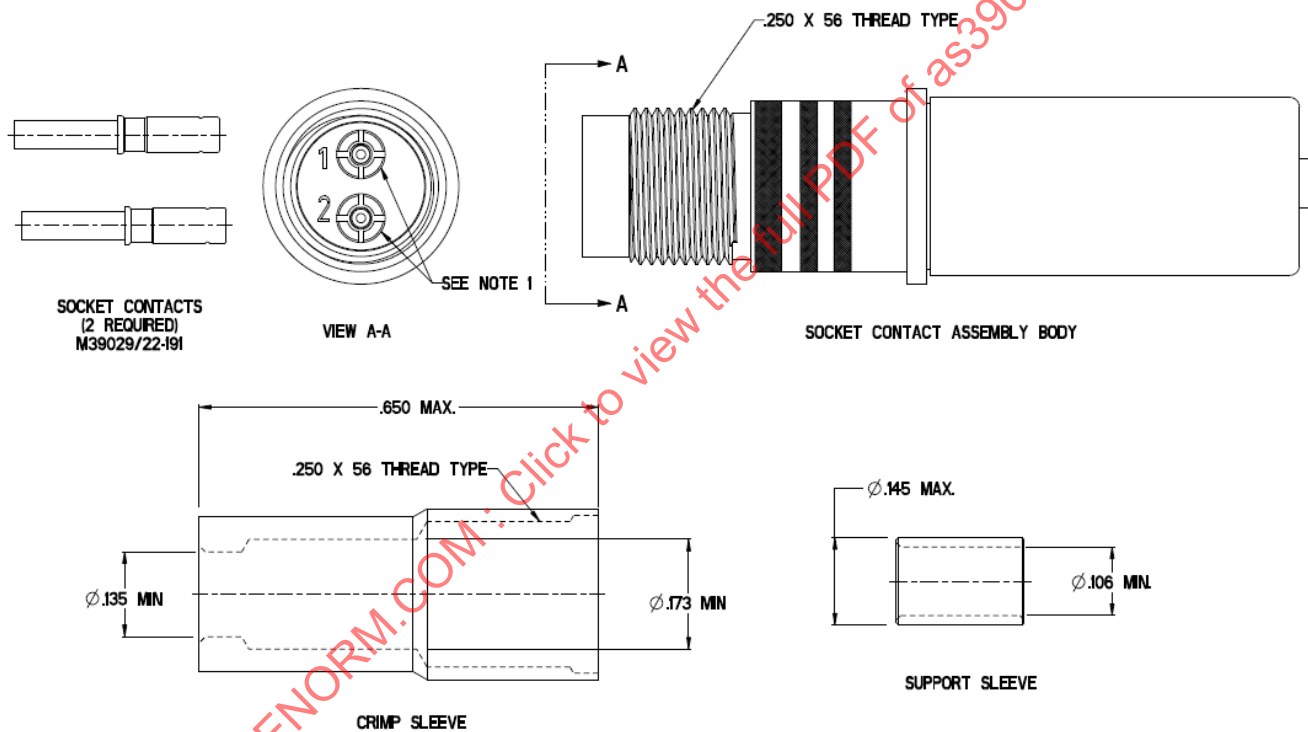


FIGURE 4 - HEAT SHRINK BOOT



1. CAVITY MARKED "1" CONNECTS TO INNER CONTACT. CAVITY MARKED "2" CONNECTS TO INTERMEDIATE CONTACT.
2. CONTACTS MAY BE INSERTED/REMOVED USING MIL-I-81969/14-1 INSERTION/EXTRACTION TOOL.

FIGURE 5 - ALTERNATE PRE-ASSEMBLED DESIGN

	AEROSPACE STANDARD	AS39029™/91 SHEET 3 OF 8	REV. D
	CONTACT, ELECTRICAL CONNECTOR, CONCENTRIC TWINAX, SOCKET, SHIELDED, SIZE 8		

TABLE 1 - FIGURE 1 THROUGH 5 METRIC EQUIVALENTS

INCH	MILLIMETERS	INCH	MILLIMETERS	INCH	MILLIMETERS	INCH	MILLIMETERS
.0005	0.013	.031	0.79	.171	4.34	.316	8.03
.001	0.03	.0480	1.219	.173	4.39	.344	8.74
.002	0.05	.050	1.27	.180	4.57	.495	12.57
.003	0.08	.057	1.45	.189	4.80	.540	13.72
.004	0.10	.0715	1.816	.193	4.90	.56	14.2
.005	0.13	.106	2.69	.200	5.08	.587	14.91
.006	0.15	.113	2.87	.218	5.54	.622	15.80
.008	0.20	.134	3.40	.25	6.4	.625	15.88
.010	0.25	.135	3.43	.257	6.53	.647	16.43
.023	0.58	.145	3.68	.26	6.6	.650	16.51
.0240	0.61	.147	3.73	.274	6.96	.840	21.34
.025	0.64	.150	3.81	.286	7.26	.900	22.86
.030	0.76	.166	4.22	.314	7.98		

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

1. DESIGN:

CONTACT SHALL BE DESIGNED IN ACCORDANCE WITH FIGURES 1 THROUGH 4 AND TABLE 2. THE CONTACT MAY ALSO BE DESIGNED IN ACCORDANCE WITH THE ALTERNATE PRE-ASSEMBLED CONFIGURATION OF FIGURE 5, FIGURE 1, FIGURE 4 AND TABLE 2. DIMENSIONS ARE IN INCHES AND SHOWN AFTER PLATING. METRIC EQUIVALENTS ARE IN PARENTHESES, ARE GIVEN FOR GENERAL INFORMATION ONLY, AND ARE BASED UPON 1 INCH = 25.4 MILLIMETERS (SEE TABLE 1).

- a. MATES WITH A .0240 ± .0005 CENTER PIN CONTACT (SPRING DESIGN OPTIONAL).
- b. MATES WITH A .218 ± .001 DIAMETER PIN (SPRING DESIGN OPTIONAL).
- c. THE .587 MINIMUM DIMENSION IS TO THE POINT AT WHICH A .218 BASIC DIAMETER SQUARE ENDED PIN, THE SAME BASIC DIAMETER AS THE MATING CONTACT, FIRST ENGAGES THE OUTER CONTACT SPRING. PROVISIONS FOR A CLEARANCE HOLE SHALL BE PROVIDED FOR THE TEST PIN.
- d. THE .596 MINIMUM DIMENSION IS TO THE POINT AT WHICH A .0240 BASIC DIAMETER SQUARE ENDED PIN, THE SAME BASIC DIAMETER AS THE MATING CONTACT, FIRST ENGAGES THE INNER CONTACT SPRING.
- e. THE .647/.622 DIMENSION IS TO THE END OF THE INTERMEDIATE PIN CONTACT.
- f. DIELECTRIC PROTRUSION SHALL NOT BE GREATER THAN .035 INCHES.
- g. THE .900/.840 DIMENSION MEASUREMENT SHALL BE TAKEN AFTER ASSEMBLY AND SHALL INCLUDE THE CRIMP FERRULE.
- h. THE .257 MAXIMUM DIAMETER SHALL NOT EXCEED .276 (7.01 MM) OVER THE RECOVERED HEAT SHRINK TUBING.

TABLE 2 - DESIGN CHARACTERISTICS

BIN CODE	COLOR BANDS			CONTACT CAVITY SIZE	CABLE ACCOMMODATED	TYPE	CLASS
	1ST	2ND	3RD				
530	GREEN	ORANGE	BLACK	8	M17/176-00002	D	B

2. ASSEMBLY PROCEDURE: MANUFACTURER'S RECOMMENDED ASSEMBLY INSTRUCTIONS SHALL BE SHIPPED WITH UNIT PACKAGE. ASSEMBLY INSTRUCTIONS TO INCLUDE REQUIRED TOOLS FOR ASSEMBLY.

3. MATERIAL:

HEAT SHRINK BOOT: SHALL BE IN ACCORDANCE WITH AMS-DTL-23053/8.

	AEROSPACE STANDARD	AS39029™/91 SHEET 4 OF 8	REV. D
	CONTACT, ELECTRICAL CONNECTOR, CONCENTRIC TWINAX, SOCKET, SHIELDED, SIZE 8		

4. ELECTRICAL:

LOW SIGNAL LEVEL CONTACT RESISTANCE (CENTER AND INTERMEDIATE CONTACTS ONLY): SEE TABLE 3.

CONTACT RESISTANCE: SEE TABLE 4.

FREQUENCY: 0 TO 20 MHz (OPERATING FREQUENCY RANGE).

VOLTAGE RATING: 500 VRMS MAXIMUM; WORKING VOLTAGE AT SEA LEVEL, 125 VRMS MAXIMUM AT 70000 FEET.

TABLE 3 - LOW SIGNAL LEVEL CONTACT RESISTANCE (CENTER AND INTERMEDIATE CONTACTS ONLY)

BIN CODE	CABLE ACCOMMODATED	MAXIMUM CONTACT RESISTANCE (MILLIOHMS)	
		INITIAL	AFTER CONDITIONING
530	M17/176-00002	55	66

TABLE 4 - CONTACT RESISTANCE

BIN CODE	CONTACT	CABLE ACCOMMODATED	TEST CURRENT (AMPERES)	MAXIMUM VOLTAGE DROP (MILLIVOLTS)		
				25 °C, +3 °C, -0 °C		+175 °C, +3 °C, -0 °C
				INITIAL	AFTER CONDITIONING	AFTER CONDITIONING
530	CENTER	M17/176-00002	1.0	55	66	94
530	INTERMEDIATE	M17/176-00002	1.0	55	66	94
530	OUTER	M17/176-00002	12.0	75	90	128

DIELECTRIC WITHSTANDING VOLTAGE: SHALL BE AS SPECIFIED IN TABLE 5.

TABLE 5 - DIELECTRIC WITHSTANDING VOLTAGE

CONTACTS	ALTITUDE	TEST VOLTAGES AC RMS
CENTER TO INTERMEDIATE	SEA LEVEL	1000
INTERMEDIATE TO OUTER	SEA LEVEL	500

MATING CONTACT: SHALL BE IN ACCORDANCE WITH AS39029/90.

5. MECHANICAL:

CONTACT ENGAGEMENT AND SEPARATION FORCE (SOCKET CONTACTS ONLY): THE ENGAGEMENT DEPTH SHALL BE A MINIMUM OF 0.7 OF THE MINIMUM SOCKET BORED. THE TEST PINS SHALL BE IN ACCORDANCE WITH AS31971, EXCEPT THE DIAMETERS SHALL BE AS SPECIFIED IN TABLE 6. PROVISION FOR CLEARANCE HOLE ON OUTER CONTACT TEST PINS SHALL BE PROVIDED.

TABLE 6 - CONTACT ENGAGEMENT AND SEPARATION FORCE

TEST PIN DIAMETER (INCH)	MINIMUM SEPARATION FORCE (OUNCES)		MAXIMUM ENGAGEMENT FORCE (OUNCES)		MAXIMUM AVERAGE ENGAGEMENT FORCE
	INITIAL	AFTER CONDITIONING	INITIAL	AFTER CONDITIONING	
.2190 +.0000 -.0001	NA	NA	48	60	NA
.2170 +.0001 -.0000	3.0	2.0	NA	NA	NA
.0245 +.0000 -.0001	NA	NA	12	14	NA
.0235 +.0001 -.0000	0.5	0.4	NA	NA	NA

CRIMP TENSILE STRENGTH (CENTER, INTERMEDIATE, AND OUTER CONTACT CRIMP JOINT): SEE TABLE 7.

	AEROSPACE STANDARD	AS39029™/91 SHEET 5 OF 8	REV. D
	CONTACT, ELECTRICAL CONNECTOR, CONCENTRIC TWINAX, SOCKET, SHIELDED, SIZE 8		

TABLE 7 - CRIMP TENSILE STRENGTH (AT AMBIENT)

BIN CODE	CABLE ACCOMMODATED	AXIAL LOAD (POUNDS, MINIMUM)		
		CENTER CONTACT	INTERMEDIATE CONTACT	OUTER CONTACT
530	M17/176-00002	8	8	25

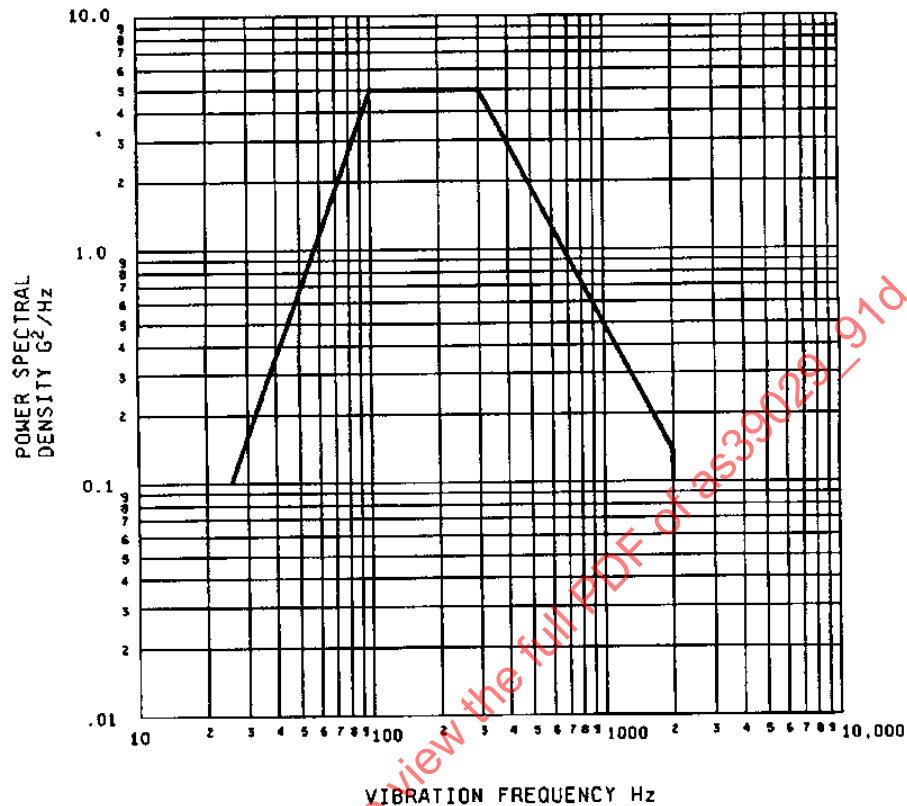


FIGURE 6 - VIBRATION ENVELOPE

6. VIBRATION: VIBRATION SHALL BE IN ACCORDANCE WITH AS39029, EXCEPT TEST CONDITION V SHALL BE USED. THE FOLLOWING DETAILS SHALL APPLY:
 - a. USE THE VIBRATION ENVELOPE SHOWN ON FIGURE 6.
 - b. VIBRATION: TO BE CONDUCTED AT STANDARD TEST CONDITIONS.
 - c. DURATION: 8 HOURS IN THE LONGITUDINAL DIRECTION AND 8 HOURS IN A PERPENDICULAR DIRECTION (16 HOURS).
7. HIGH IMPACT SHOCK: ALL CONTACTS SHALL BE WIRED IN A SERIES CIRCUIT WITH 100 mA MAXIMUM CURRENT FLOW THROUGH THE SERIES CIRCUIT DURING SHOCK. CONNECTORS SHALL BE MONITORED FOR ANY DISCONTINUITIES. A DETECTOR CAPABLE OF DETECTING ALL DISCONTINUITIES IN EXCESS OF 1 μ S SHALL BE USED. WIRED AND MATED CONNECTORS SHALL BE SUBJECTED TO THE TEST SPECIFIED IN MIL-S-901, GRADE A WITH THE FOLLOWING MODIFICATIONS AND ADDITIONS. MOUNTING FIXTURE SHALL BE IN ACCORDANCE WITH MIL-S-901, LIGHTWEIGHT. THE CABLE OR WIRE BUNDLE SHALL BE SUPPORTED ON A STATIONARY FRAME TO PROVIDE A FREE FLEXING CABLE LENGTH BETWEEN THE FRAME AND FIXTURE OF NOT LESS THAN 36 INCHES (914.4 MM).
 - a. COUPLING: COUPLED BY NORMAL MOUNTING MEANS.
 - b. TEST CONDITION A: PLUG SHALL BE TERMINATED WITH AT LEAST 80% OF WIRED CONTACTS. THE WIRE BUNDLE SHALL BE PROVIDED WITH STRAIGHT, OPEN FRAME, STRAIN RELIEF ACCESSORY HARDWARE.