

RATIONALE

REVISION IS REQUIRED TO RE-WRITE THE REQUIREMENTS SECTION TO INCLUDE THE REQUIREMENTS THAT HAVE BEEN MISPLACED IN THE NOTES SECTION.

NOTICE

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

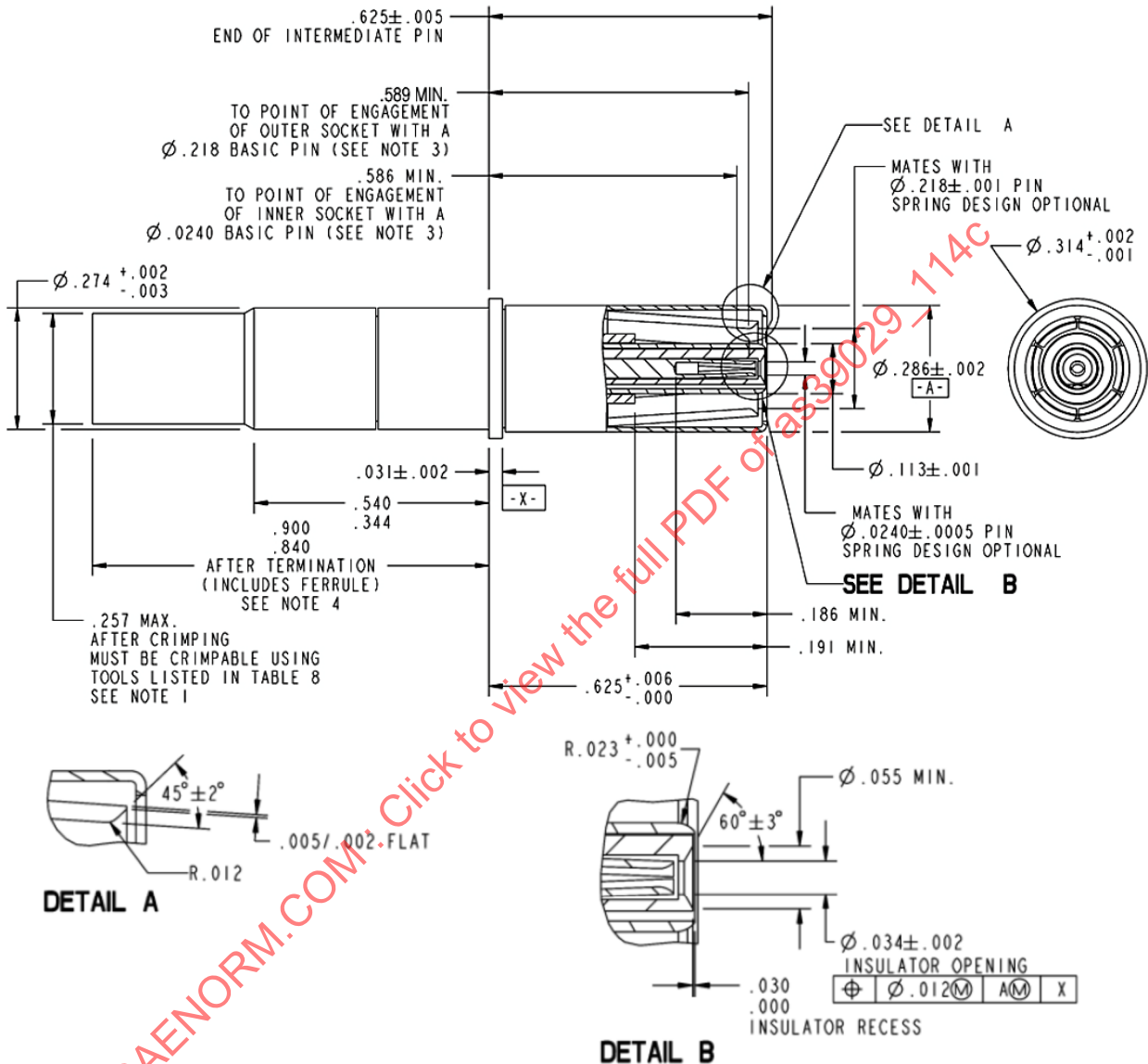
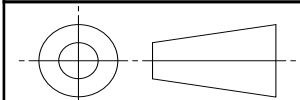


FIGURE 1 - CONCENTRIC TWINAX FINAL ASSEMBLY
(SEE REQUIREMENT 2)

For more information on this standard, visit
<https://www.sae.org/standards/content/AS39029/114C/>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C1

PROCUREMENT SPECIFICATION: AS39029



AEROSPACE STANDARD

(R) CONTACT, ELECTRICAL CONNECTOR,
CONCENTRIC TWINAX, SOCKET, SIZE 8,
MIL-DTL-38999 SERIES I, III, AND IV

AS39029™/114
SHEET 1 OF 7

REV. C

FIGURE 1 NOTES:

- 1. WHEN THE HEAT SHRINK BOOT IS USED THE DIAMETER SHALL NOT EXCEED .276 INCH (7.01 MM) OVER THE INSTALLED AND RECOVERED HEAT SHRINK BOOT (SEE DRAWING, FIGURE 4).
- 2. DIMENSIONS SHOWN AFTER PLATING.
- 3. POINT AT WHICH SQUARE ENDED PIN OF THE SAME BASIC DIAMETER AS THE MATING CONTACT FIRST ENGAGES THE INNER AND OUTER SOCKET CONTACT SPRINGS (SEE REQUIREMENT 5). PROVISIONS FOR CLEARANCE HOLE SHALL BE PROVIDED FOR THE OUTER CONTACT TEST PIN (SEE DRAWING AND FIGURE 6).
- 4. MEASUREMENT SHALL BE TAKEN AFTER ASSEMBLY BUT BEFORE INSTALLATION OF THE HEAT SHRINK BOOT. MEASUREMENT SHALL INCLUDE CRIMP FERRULE (SEE DRAWING).
- 5. THE MINIMUM HARDNESS OF THE INSULATOR BETWEEN THE CENTER CONTACT AND THE INTERMEDIATE CONTACT SHALL BE ROCKWELL HARDNESS M90 WHEN TESTED PER ASTM D 785. FOR QUALIFICATION, CERTIFICATION IS REQUIRED (SEE REQUIREMENT 2).

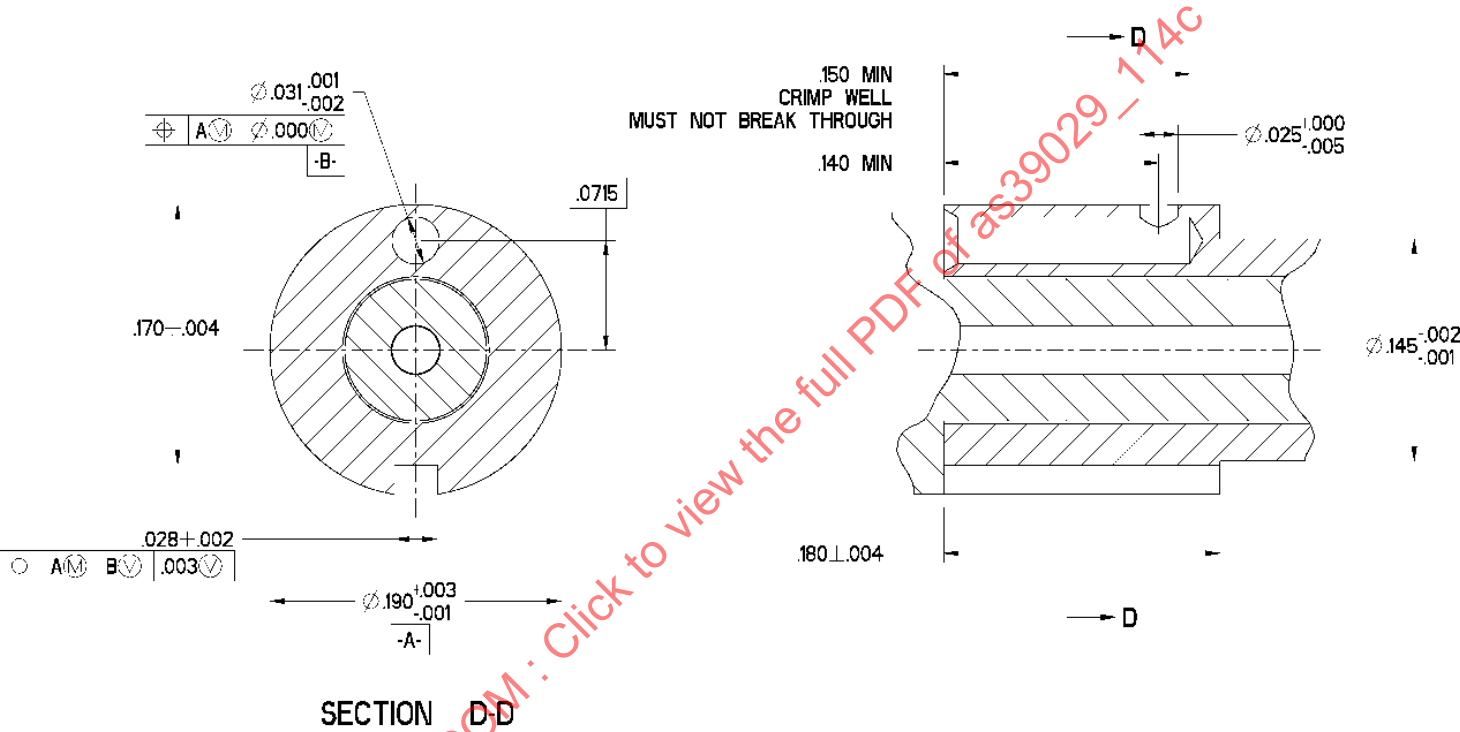
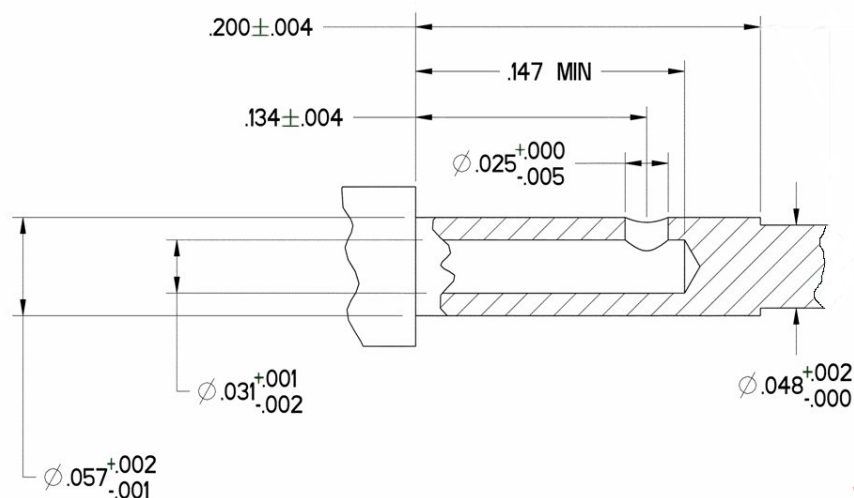


FIGURE 2 - BIN CODE 628: UNASSEMBLED CONCENTRIC TWINAX INTERMEDIATE CONTACT PIECE PART (SEE REQUIREMENT 1)

	AEROSPACE STANDARD	AS39029™/114 SHEET 2 OF 7	REV. C
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**FIGURE 3 - BIN CODE 628: UNASSEMBLED CONCENTRIC TWINAX CENTER CONTACT PIECE PART-CRIMP AREA DETAILS
(SEE REQUIREMENT 1)**

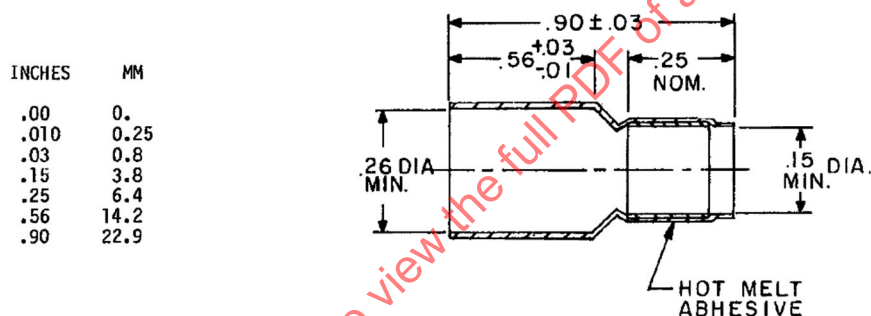


FIGURE 4 - HEAT SHRINK BOOT

FIGURE 4 NOTES:

- ONE HEAT SHRINK BOOT SHALL BE PROVIDED WITH EACH ASSEMBLY (FIGURE 1). REPLACEMENT HEAT SHRINK BOOTS MAY BE ORDERED USING PART NUMBER M39029/114-BT1.
- THERE IS NO QPL FOR THE HEAT SHRINK BOOT. THE HEAT SHRINK BOOT IS ONLY AVAILABLE FROM QUALIFIED CONTACT SUPPLIERS.

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

1. DESIGN AND CONSTRUCTION:

CONTACTS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURES 1 THROUGH 3 AND TABLE 1. DIMENSIONS ARE IN INCHES. METRIC EQUIVALENTS ARE IN PARENTHESES, ARE GIVEN FOR GENERAL INFORMATION ONLY, AND BASED UPON 1.00 INCH = 25.4 MM. DIMENSIONS SHOWN APPLY AFTER PLATING. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M.

THE MAXIMUM NUMBER OF PIECE PARTS IN THE ASSEMBLED CONTACT (FIGURE 1), EXCLUDING THE HEAT SHRINK BOOT, SHALL NOT EXCEED FIVE. THE CONTACT SHALL BE PROVIDED AS UNASSEMBLED PIECE PARTS. SOME PIECE PARTS OF BIN CODE 628 (FIGURES 2 AND 3) REQUIRE DIFFERENT CRIMP TOOLS PRIOR TO FINAL ASSEMBLY (SEE TABLE 8). SEE TABLE 1 FOR DESIGN CHARACTERISTICS.

TABLE 1 - DESIGN CHARACTERISTICS

BIN CODE	COLOR BANDS			CONTACT CAVITY SIZE	CABLE ACCOMMODATED	TYPE	CLASS
	1ST	2ND	3RD				
628	BLUE	RED	GRAY	8	M17/176-00002	D	B

ASSEMBLY PROCEDURE: MANUFACTURER'S RECOMMENDED ASSEMBLY INSTRUCTIONS, INCLUDING AN EXPLODED VIEW OF THE ASSEMBLY, SHALL BE SHIPPED WITH UNIT PACKAGE.

2. MATERIAL: THE MINIMUM HARDNESS OF THE INSULATOR BETWEEN THE CENTER CONTACT AND THE INTERMEDIATE CONTACT SHALL BE ROCKWELL HARDNESS M90 WHEN TESTED PER ASTM D785.

HEAT SHRINK BOOT SHALL BE IN ACCORDANCE WITH AS23053/8.

3. QUALIFICATION: CONTACTS SHALL COMPLY WITH THE REQUIREMENTS OF AS39029. CONTACTS SHALL BE QUALIFIED USING THE TOOLING DEFINED IN TABLE 8.

THE MANUFACTURER'S RELIABILITY ASSURANCE PROGRAM FOR AS39029/114 AND ASSEMBLY PROCEDURES SHALL COMPLY WITH THE AS9100 AEROSPACE STANDARD FOR QUALITY MANAGEMENT SYSTEM REQUIREMENTS. OTHER ESTABLISHED AND INDUSTRY RECOGNIZED QUALITY ASSURANCE STANDARDS THAT ASSURE ALL PRODUCTS PRODUCED CONFORM TO THE CONTRACT REQUIREMENTS ARE ACCEPTABLE. HOWEVER, IF USED, IT IS THE RESPONSIBILITY OF THE MANUFACTURER TO PROVIDE EVIDENCE OF COMPLIANCE TO AS9100. THE QUALIFYING ACTIVITY (QA) AUTHORITY RESERVES THE RIGHT TO MONITOR, MEASURE, AND VALIDATE COMPLIANCE AT THEIR DISCRETION.

4. ELECTRICAL: LOW SIGNAL LEVEL CONTACT RESISTANCE (CENTER AND INTERMEDIATE CONTACTS ONLY): SEE TABLE 2.

**TABLE 2 - LOW SIGNAL LEVEL CONTACT RESISTANCE
(CENTER AND INTERMEDIATE CONTACTS ONLY)**

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

CONTACT RESISTANCE: SEE TABLE 3.

TABLE 3 - 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
628	CENTER	M17/176-00002	1.0	55	66	94
	INTERMEDIATE	M17/176-00002	1.0	55	66	94
	OUTER	M17/176-00002	12.0	75	90	128

DIELECTRIC WITHSTANDING VOLTAGE: SHALL BE AS SPECIFIED IN TABLE 4.

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TABLE 4 - DIELECTRIC WITHSTANDING VOLTAGE

CONTACTS	TEST VOLTAGE (AC RMS)	
	SEA LEVEL	70000 FEET
CENTER TO INTERMEDIATE	1000	250
INTERMEDIATE TO OUTER	500	250

5. MECHANICAL: CONTACT ENGAGEMENT AND SEPARATION FORCE: THE ENGAGEMENT AND SEPARATION FORCES SHALL BE TESTED WITH PINS INSERTED A MINIMUM OF .070 INCH. THE TEST PINS SHALL BE IN ACCORDANCE WITH FIGURES 6 AND 7. ENGAGEMENT AND SEPARATION FORCES SHALL BE IN AS SPECIFIED IN TABLE 5.

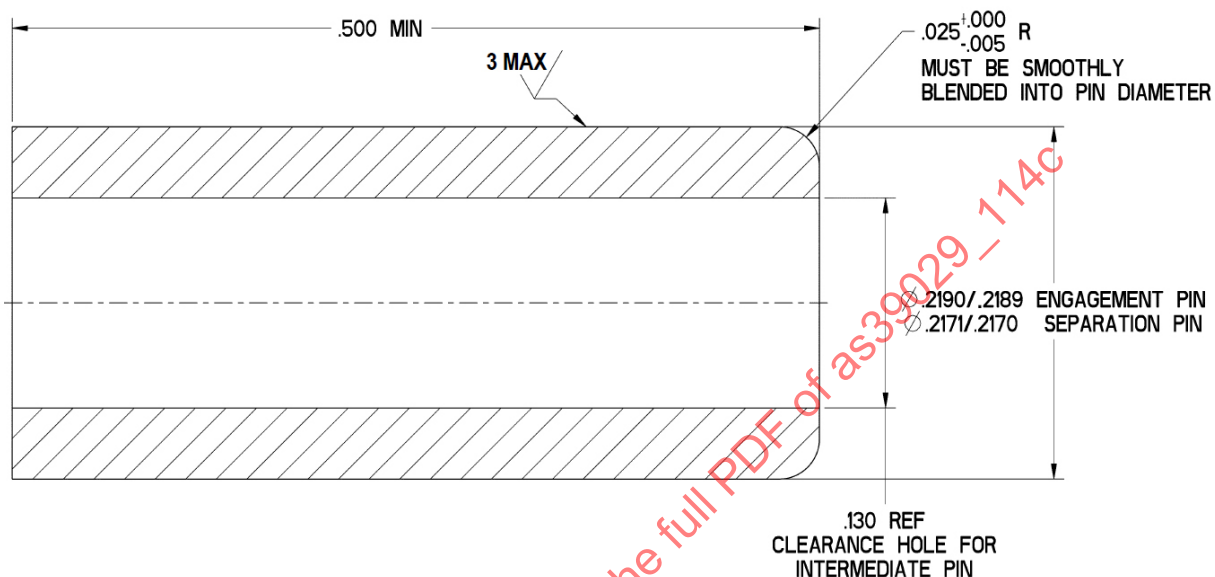


FIGURE 6 - OUTER SOCKET ENGAGEMENT AND SEPARATION TEST PIN DIMENSIONS

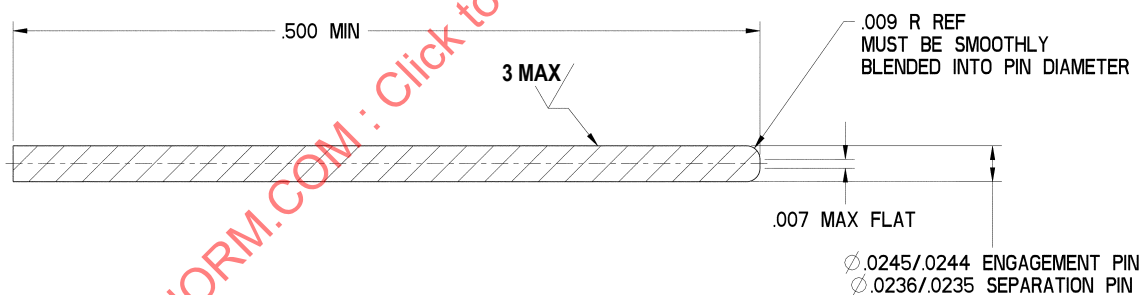


FIGURE 7 - INNER SOCKET ENGAGEMENT AND SEPARATION TEST PIN DIMENSIONS

TABLE 5 - 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