

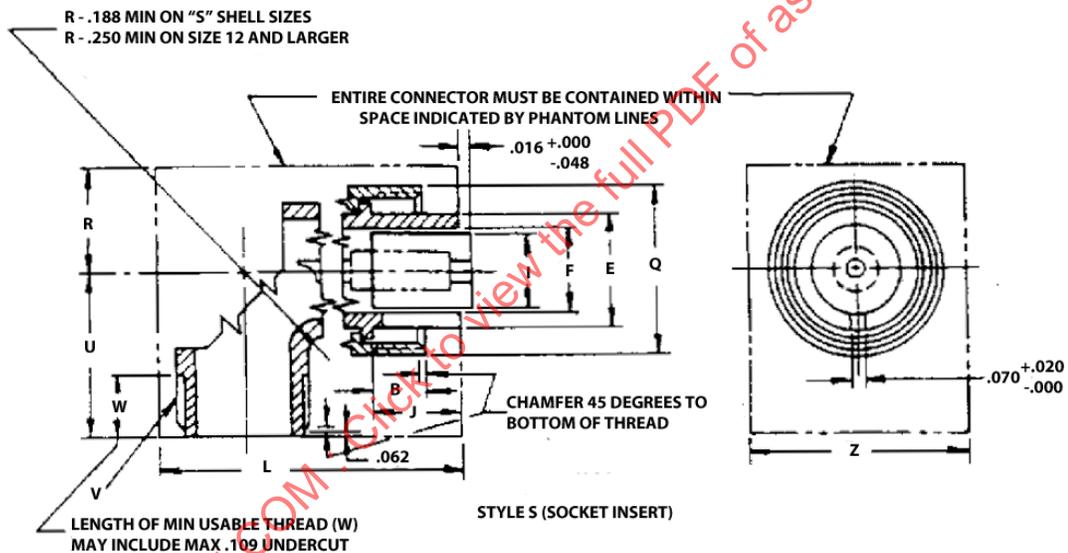
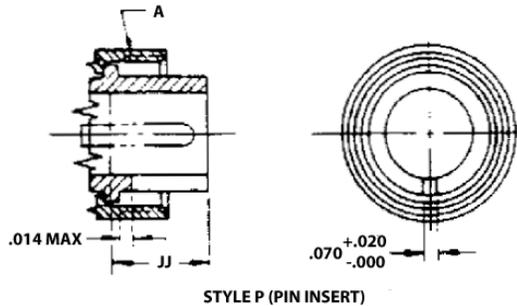
REV.
A

SAE AS31081

RATIONALE

REVISE TO INCLUDE COMMENTS RECEIVED BY THE GOVERNMENT AND INDUSTRY, UPDATE REFERENCES, ALIGN SPECIFICATION WITH SAE GUIDELINES AND RE-WORK ILLEGIBLE DRAWINGS/TABLES, AND REVIEW SPECIFICATION FOR KNOWN TECHNICAL PROBLEMS.

THE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE LATEST ISSUE OF SAE AS50151.

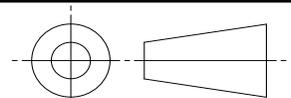


(CLASS A-SOLID SHELL/CLASS B-SPLIT SHELL)

FIGURE 1 – CONNECTOR CONFIGURATIONS AND DIMENSIONS

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THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C1

PROCUREMENT SPECIFICATION: AS50151

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

(R) CONNECTORS, PLUG, ELECTRIC, SOLDER CONTACT, 90 DEGREE, AN TYPE

SAE AS31081
SHEET 1 OF 8

REV. A

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TABLE 1 – FIGURE 1 DIMENSIONS

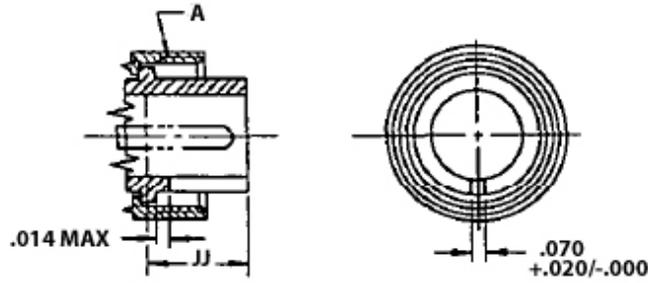
SIZE	A COUPLING THREAD	B +.000/-.062 EXTENSION COUPLING RING	E DIA. +.000 -.015	F MIN. DIA.	I MAX. INSERT DIA.	J +/- .005 LENGTH ENGAGEMENT	JJ ^{1/} , ^{2/} +.031 -.000 INSERT LOCATION
8S	1/2 – 28	.375	.365	.252	.250	.531	.562
10S	5/8 – 24		.440	.323	.320		
10SL			.446	N/A	.440		
12S	3/4 – 20	.625	.555	.450	.448	.719	.750
12							
14S	7/8 – 20	.625	.675	.526	.525	.719	.750
14							
16S	1 – 20	.375	.805	.651	.650	.531	.562
16							
18	1-1/8 – 18	.625	.930	.776	.770	.719	.750
20	1-1/4 – 18		1.050	.932	.925		
22	1-3/8 – 18		1.175	1.026	1.020		
24	1-1/2 – 18		1.300	1.151	1.145		
28	1-3/4 – 18		1.520	1.370	1.365		
32	2 – 18		1.770	1.620	1.615		
36	2-1/4 – 16		1.980	1.838	1.830		
40	2-1/2 – 16		2.230	2.057	2.045		

1/ WHERE RESILIENT INSERTS ARE USED, DIMENSION "JJ" MAY BE .109 LESS THAN THAT INDICATED.

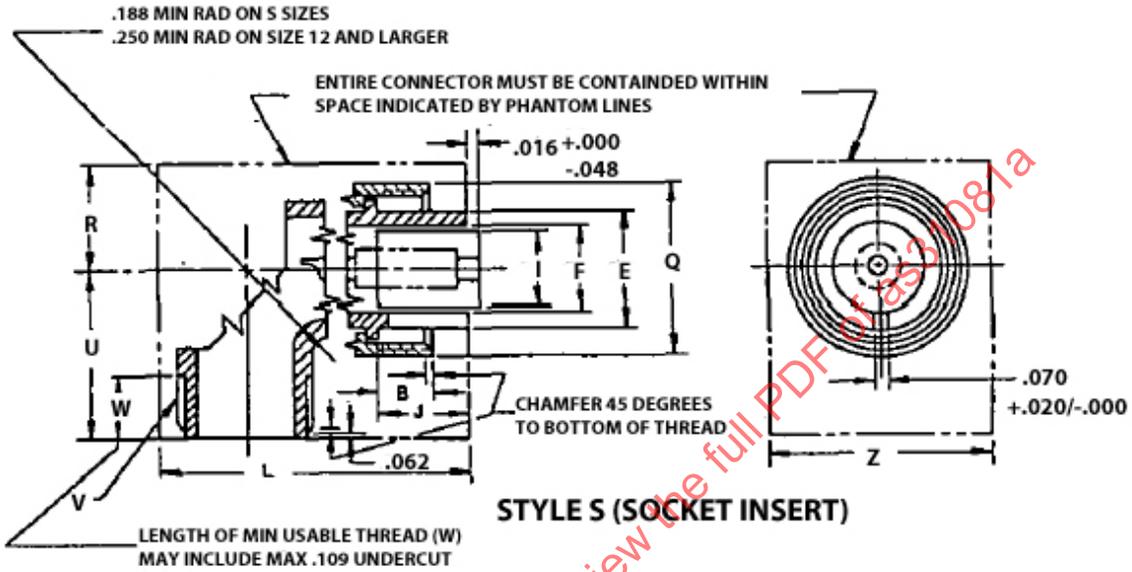
2/ SOCKET INSERT OF HARD MATERIAL SHALL EXTEND .016 INCHES MAXIMUM BEYOND OR .032 INCHES MAXIMUM BELOW THE SHELL. SOCKET INSERT OF RESILIENT MATERIAL SHALL EXTEND .047 INCHES +.000/-.047 BEYOND THE SHELL AS SHOWN.

TABLE 1 – FIGURE 1 DIMENSIONS (CONTINUED)

SIZE	L MAX.	Q MAX. DIA. COUPLING RING	R MAX.	U MAX.	V THREAD	W MIN. USABLE THREAD	Z MAX. CLASS B ONLY	FOR INSERT ARRANGEMENT SEE DRAWING
8S	1.750	.844	.422	.938	1/2 – 28	.375	.844	MIL-STD-1651
10S		.969	.485	1.000			.969	
10SL	1.812	1.062	.531	1.062	5/8 – 24		1.062	
12S	2.000						1.156	
12	2.250	1.250	.750	1.188	7/8 – 20		1.312	
14S	2.125						1.344	
14	2.312	1.469	.906	1.375	1-3/16 – 18		1.625	
16S	2.375						1.719	
16	2.562	1.594	.969	1.562	1-7/16 – 18		2.000	
18	2.688	1.719	1.156	1.875	1-3/4 – 18	.438	2.500	
20	3.031	2.219	1.312					
22	3.406	2.469	1.438	2.062	2 – 18	.500	3.031	
24		1.969	1.156	2.125	2-1/4 – 16			
28	3.750	2.219	1.312	1.875	1-3/4 – 18	.438	2.500	
32	3.938	2.469	1.438	2.062	2 – 18	.500	3.031	
36	4.750	2.719	1.562	2.125	2-1/4 – 16	.500	3.031	
40								



STYLE P (PIN INSERT)



STYLE S (SOCKET INSERT)

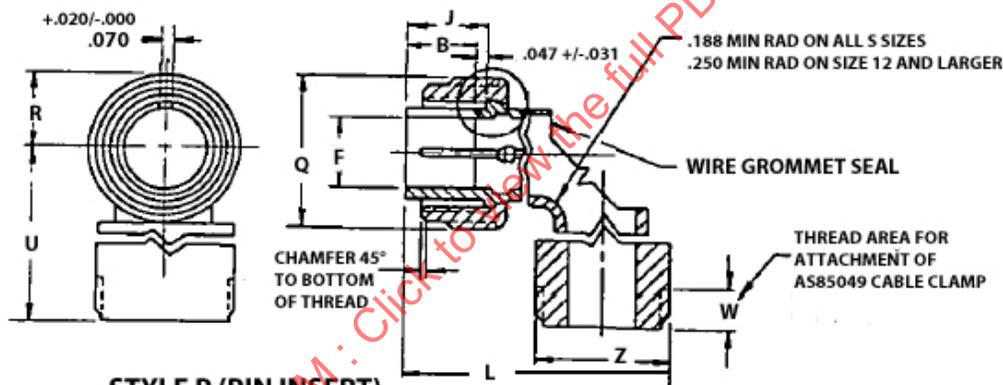
FIGURE 2 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS K - FIREWALL)

TABLE 2 – FIGURE 2 DIMENSIONS

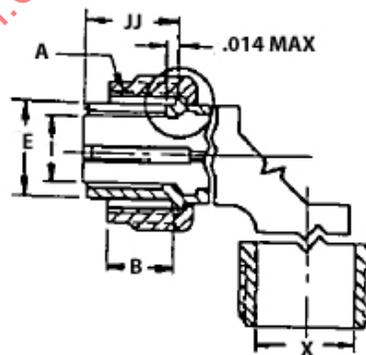
SIZE	A COUPLING THREAD	B +.000/-0.062 EXTENSION COUPLING RING	E DIA. +.000 -.015	F MIN. DIA.	I MAX. INSERT DIA.	J +/-0.005 LENGTH ENGAGEMENT	JJ +.031 -.000 INSERT LOCATION
8S	1/2 - 28	.375	.365	.252	.250	.531	.562
10S	5/8 - 24		.440	.323	.320		
10SL			.446	N/A	.440		
12S	3/4 - 20	.625	.555	.450	.448	.719	.750
14S			7/8 - 20	.375	.675	.526	.525
14		.625					.719
16S	1 - 20	.375	.805	.651	.650	.531	.562
16							
18	1-1/8 - 18	.625	.930	.776	.770	.719	.750
20	1-1/4 - 18		1.050	.932	.925		
22	1-3/8 - 18		1.175	1.026	1.020		
24	1-1/2 - 18		1.300	1.151	1.145		
28	1-3/4 - 18		1.520	1.370	1.365		
32	2 - 18		1.770	1.620	1.615		
36	2-1/4 - 16		1.980	1.838	1.830		
40	2-1/2 - 16		2.230	2.057	2.045		

TABLE 2 – FIGURE 2 DIMENSIONS (CONTINUED)

SIZE	L MAX.	Q MAX. DIA. COUPLING RING	R MAX.	U MAX.	V THREAD	W MIN. USABLE THREAD	Z MAX. CLASS B ONLY	FOR INSERT ARRANGEMENT SEE DRAWING
8S	1.750	.844	.422	1.000	1/2 – 28	.375	.844	MIL-STD-1651
10S	1.938	.969	.485	1.250				
10SL	2.188		1.062	.531	5/8 – 24			
12S	2.312							
12	2.531							
14S	2.500	1.172	.656	1.469	3/4 – 20			
14	2.719							
16S	2.938	1.266	.750	1.531	7/8 – 20			
16		1.344						
18	3.188	1.359	.828	1.625	1 – 20			
20	3.375	1.484	.906	1.688	1-3/16 – 18			
22	3.406	1.609	.969					
24	3.875	1.734	1.031	2.031	1-7/16 – 18			
28	4.094	1.984	1.156	2.312	1-3/4 – 18			
32	4.438	2.234	1.312	2.438				
36	5.000	2.484	1.438	2.656	2 – 18	.438	2.500	
40		2.719	1.562	2.125	2-1/4 – 16	.500	3.031	



STYLE P (PIN INSERT)



STYLE S (SOCKET INSERT)

FIGURE 3 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS E)

 An SAE International Group	AEROSPACE STANDARD	SAE AS31081 SHEET 4 OF 8	REV. A
	(R) CONNECTORS, PLUG, ELECTRIC, SOLDER CONTACT, 90 DEGREE, AN TYPE		

TABLE 3 – FIGURE 3 DIMENSIONS

SIZE	A COUPLING THREAD	B +.000/- .062 EXTENSION COUPLING RING	E OUTSIDE DIA. +.000 -.015	F MIN. INSIDE DIA.	I MAX. INSERT DIA.	J +/- .005 LENGTH ENGAGEMENT	JJ +.047 -.000 INSERT LOCATION	L MAX. OVERALL LENGTH
8S	1/2 – 28	.375	.365	.252	.250	.531	.531	2.156
10S	5/8 – 24		.440	.323	.320			
10SL			.446	N/A	.440			2.188
12S	3/4 – 20	.625	.555	.450	.448	.719	.719	
14S	7/8 – 20	.375	.675	.526	.525	.531	.531	2.312
14		.625				.719	.719	2.688
16S		.375				.531	.531	2.406
16	1 – 20	.625	.805	.651	.650	.719	.719	2.781
18	1-1/8 – 18		.930	.776	.770			2.844
20	1-1/4 – 18		1.050	.932	.925			3.250
22	1-3/8 – 18		1.175	1.026	1.020			
24	1-1/2 – 18		1.300	1.151	1.145			3.719
28	1-3/4 – 18		1.520	1.370	1.365			
32	2 – 18		1.770	1.620	1.615			4.188
36	2-1/4 – 16		1.980	1.838	1.830			4.297
40	2-1/2 – 16		2.230	2.057	2.047			7.411

TABLE 3 – FIGURE 3 DIMENSIONS (CONTINUED)

SIZE	Q MAX. DIA. COUPLING RING	R MAX.	U MAX.	W MIN. USABLE THREAD	X CABLE CLEARANCE MIN.	Y DIA. +.005 -.010	Z MAX.	PACKING MS28900 DASH NO.	FOR INSERT ARRANGEMENT SEE DRAWING
8S	.844	.422	1.469	.375	.172	.355	1.046	-8	MIL-STD-1651
10S	.969	.516				.440		-10	
10SL			.446		1.125	-12			
12S	1.062	.562	.281			.555			
12	1.156	.625	1.594		.406	.675	1.343	-14	
14S					14				
16S	1.250	.688	1.688		.500	.805	1.484	-16	
16	1.344	.750	1.781		.531	.930	1.609	-18	
18					18				
20	1.469	.844	1.969		.656	1.050	1.890	-20	
22	1.594	.906	2.000	.750	1.175	2.170	-22		
24	1.719	.953	2.125	.781	1.300		-24		
28	1.969	1.094	2.188	.922	1.520	-28			
32	2.219	1.234	2.594	.438	1.156	1.770	2.650	-32	
36	2.469	1.359	2.719	.500	1.250	1.980	2.922	-36	
40	2.719	1.422	4.730		1.562	2.230	3.531	-40	

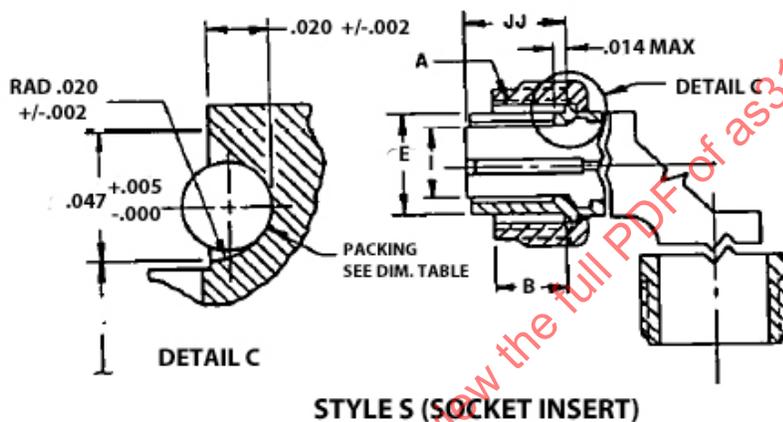
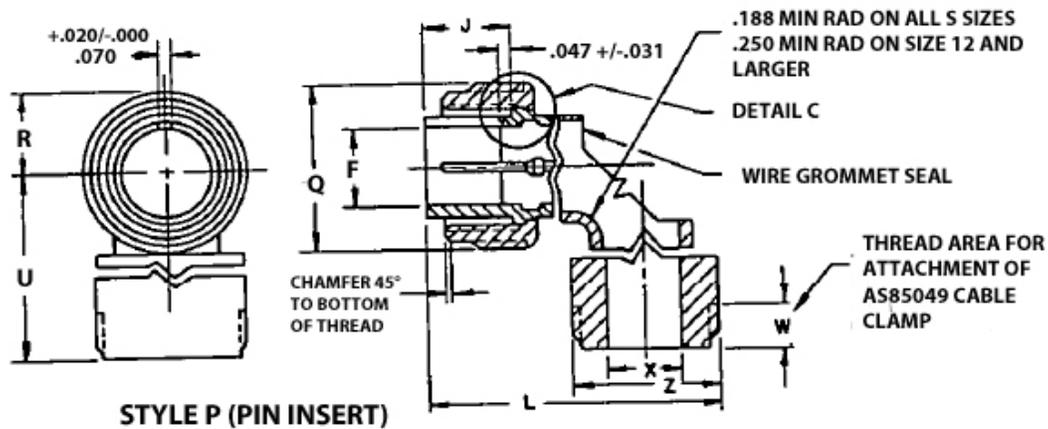


FIGURE 4 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS R)

TABLE 4 – FIGURE 4 DIMENSIONS

SIZE	A COUPLING THREAD	B +.000/-0.062 EXTENSION COUPLING RING	E DIA. +.000 -.015	F MIN. DIA.	I MAX. INSERT DIA.	J +/-0.005 LENGTH ENGAGEMENT	JJ +.047 -.000 INSERT LOCATION	L MAX. OVERALL LENGTH
8S	1/2 – 28	.375	.365	.252	.250	.531	.531	2.156
10S	5/8 – 24		.440	.323	.320			
10SL			.446	N/A	.440			
12S	3/4 – 20	.625	.555	.450	.448	.719	.719	2.531
14S	7/8 – 20	.375	.675	.526	.525	.531	.531	2.312
14		.625				.719	.719	2.688
16S	1 – 20	.375	.805	.651	.650	.531	.531	2.406
16		.625				.719	.719	2.781
18	1-1/8 – 18		.930	.776	.770			2.844
20	1-1/4 – 18		1.050	.932	.925			3.250
22	1-3/8 – 18		1.175	1.026	1.020			
24	1-1/2 – 18		1.300	1.151	1.145			3.719
28	1-3/4 – 18		1.520	1.370	1.365			
32	2 – 18		1.770	1.620	1.615			
36	2-1/4 – 16		1.980	1.838	1.830			4.297
40	2-1/2 – 16		2.230	2.057	2.047			7.411