

REV.
A

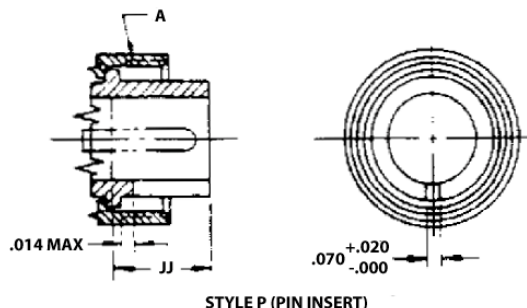
SAE AS31081

FEDERAL SUPPLY CLASS
5935

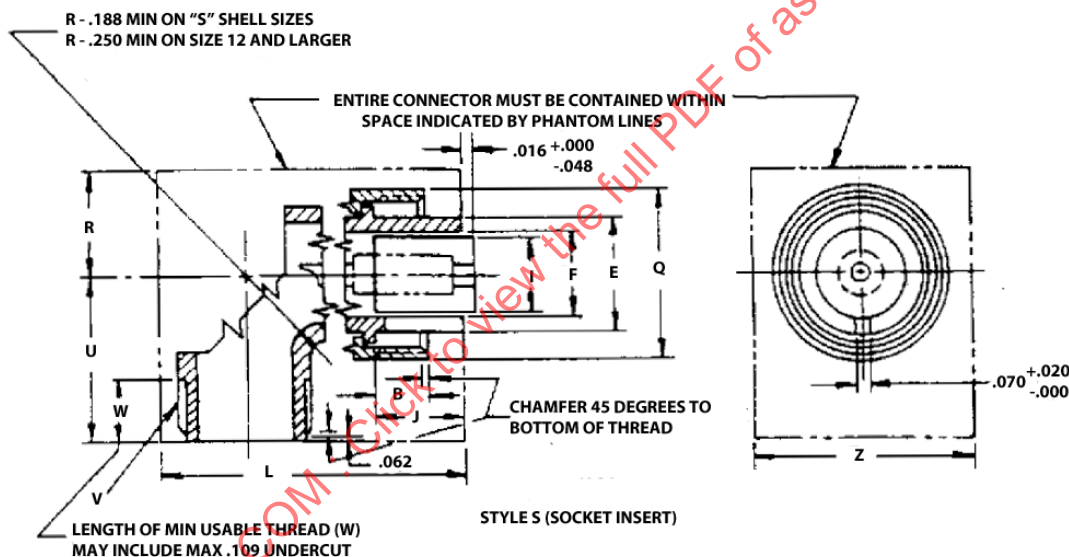
RATIONALE

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.



STYLE P (PIN INSERT)



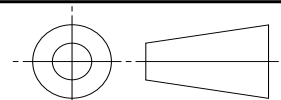
STYLE S (SOCKET INSERT)

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

FIGURE 1 – CONNECTOR CONFIGURATIONS AND DIMENSIONS

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS31081A>

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

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	.375	.675	.526	.525	.531	.562
14		.625				.719	.750
16S	1 – 20	.375	.805	.651	.650	.531	.562
16		.625				.719	.750
18	1-1/8 – 18		.930	.776	.770		
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							
12S	2.000	1.062	.531	1.062	5/8 – 24		1.062	
12	2.250							
14S	2.125	1.156	.656	1.125	3/4 – 20		1.156	
14	2.312							
16S	2.375	1.250	.750	1.188	7/8 – 20		1.312	
16	2.562							
18	2.688	1.344	.828	1.312	1 – 20		1.344	
20	3.031	1.469	.906	1.375	1-3/16 – 18		1.625	
22		1.594	.969					
24		1.719	1.031	1.562	1-7/16 – 18		2.000	
28	3.406	1.969	1.156					
32	3.750	2.219	1.312	1.875	1-3/4 – 18	.438	2.500	
36	3.938	2.469	1.438	2.062	2 – 18	.500		
40	4.750	2.719	1.562	2.125	2-1/4 – 16		3.031	

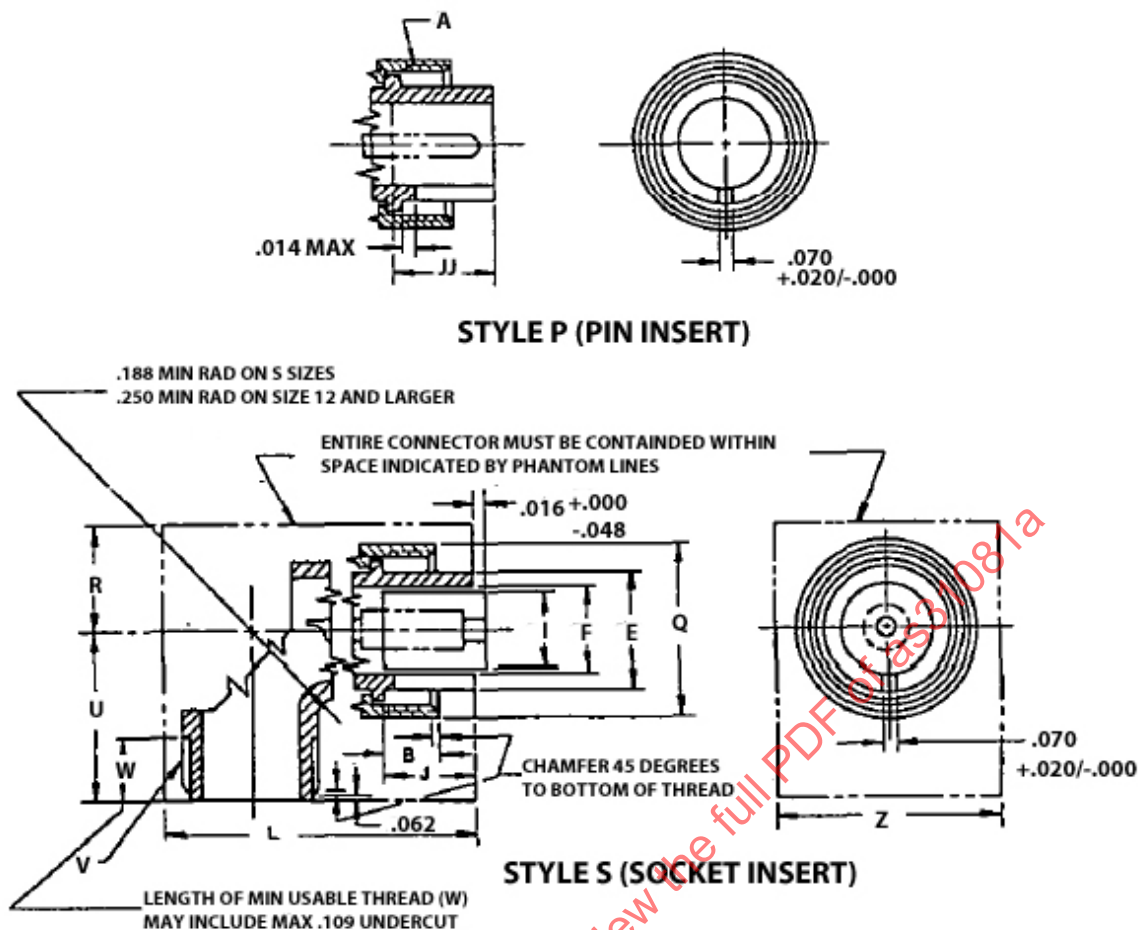


FIGURE 2 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS K - FIREWALL)

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	.531	.562
14		.625				.719	.750
16S	1 – 20	.375	.805	.651	.650	.531	.562
16		.625				.930	.776
18	1-1/8 – 18						
20	1-1/4 – 18						
22	1-3/8 – 18						
24	1-1/2 – 18						
28	1-3/4 – 18						
32	2 – 18						
36	2-1/4 – 16						
40	2-1/2 – 16						

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			.969	
10SL	2.188		.531		1.406		5/8 – 24	
12S	2.312	1.062		1.469				
12	2.531		1.172		1.531		7/8 – 20	
14S	2.500	1.266		1.625				
14	2.719		.750		1.688		1-3/16 – 18	
16S		1.359		.906				
16	2.938		1.484		2.031		.438	
18	3.188	1.609		2.312				
20	3.375		1.734		2.438		2-1/4 – 16	
22	3.406	1.984		2.656				
24	3.875		1.156		2.125			
28	4.094	1.312		2.125				
32	4.438		1.438		2.125			
36	5.000	2.234		2.438				
40			2.484		2.656			
		2.719	1.562	2.125				

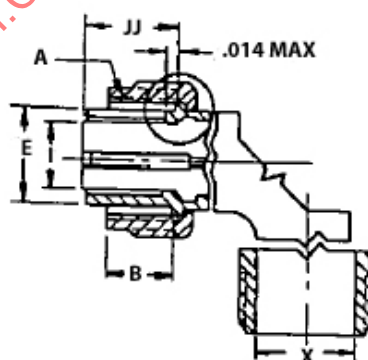
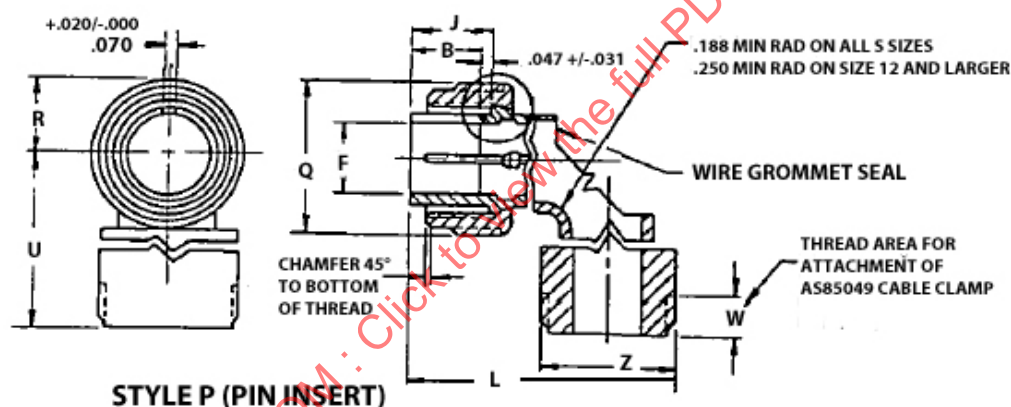


FIGURE 3 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS E)

 <i>An SAE International Group</i>	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			2.188
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								2.781
18	1-1/8 – 18	.625	.930	.776	.770	.719	.719	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				1.500		.281		.555
12			1.156		.625		1.594			
14S	1.250	.688				1.688		.500		.805
14			1.344		.750		1.781			
16S	1.469	.844				1.969		.656		1.050
16			1.594		.906		2.000			
18	1.719	.953				2.125		.781		1.300
20			1.969		1.094		2.188			
22	2.219	1.234				2.594		.438		1.156
24			2.469		1.359		2.719			
28	2.719	1.422				4.730		1.562		2.230

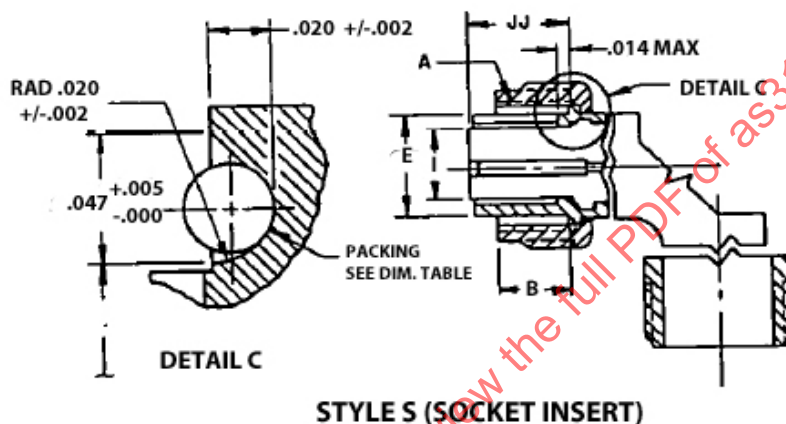
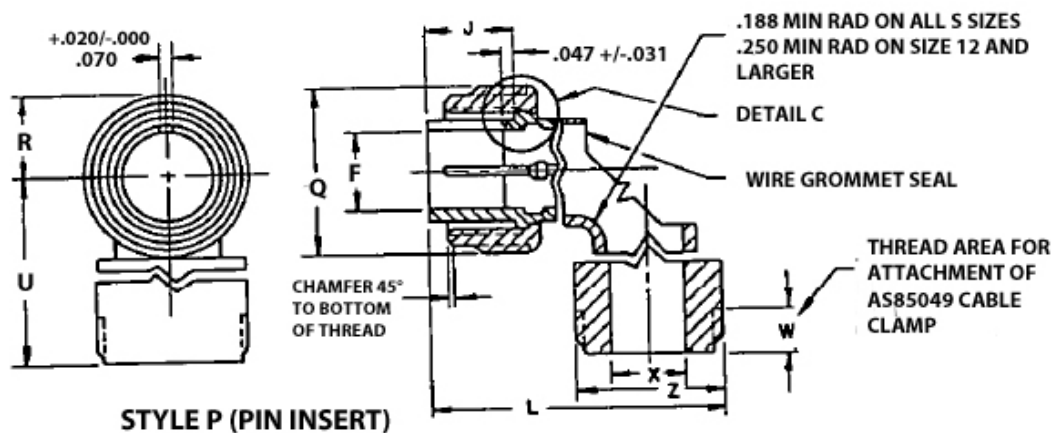


FIGURE 4 – CONNECTOR CONFIGURATIONS AND DIMENSIONS (CLASS R)

TABLE 4 – FIGURE 4 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 +.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			2.188
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			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