

RATIONALE

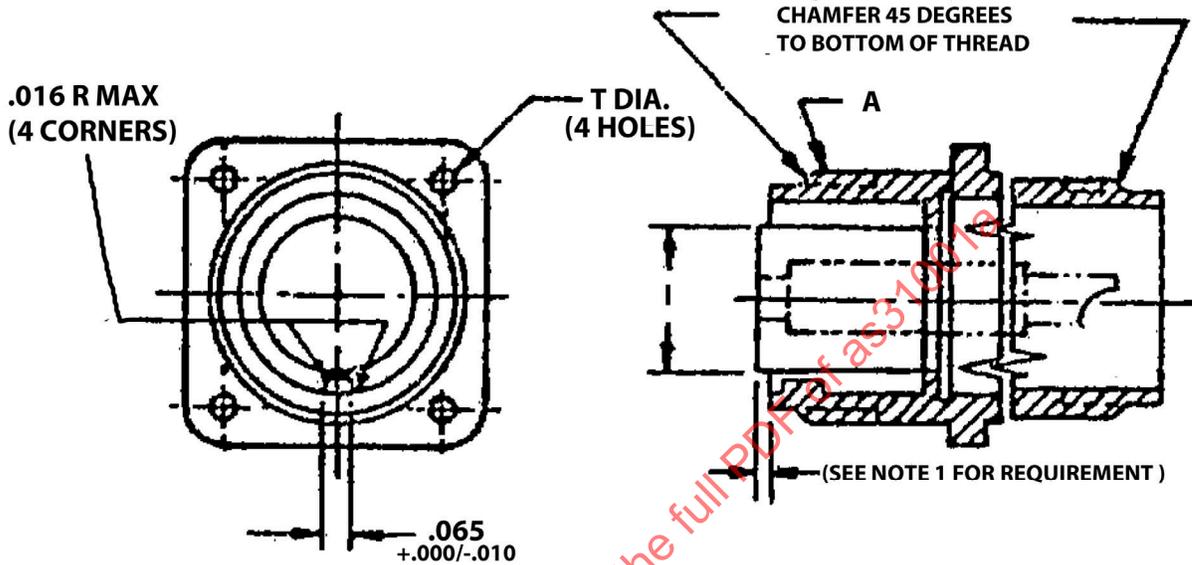
REVISE TO INCLUDE COMMENTS RECEIVED BY THE GOVERNMENT AND INDUSTRY, UPDATE REFERENCES, ALIGN SPECIFICATION WITH SAE GUIDELINES AND RE-WORK ILLEGIBLE DRAWINGS/TABLES, AND REVIEW SPECIFICATION FOR KNOWN TECHNICAL PROBLEMS.

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

REV.  
A

SAE AS31001

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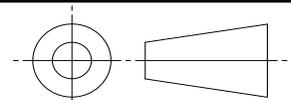
**STYLE S (SOCKET INSERT)**

**CLASS A – SOLID SHELL**  
**CLASS C – PRESSURIZED**

FIGURE 1 – STYLE S (SOCKET INSERT)

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THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C1

PROCUREMENT SPECIFICATION: AS50151

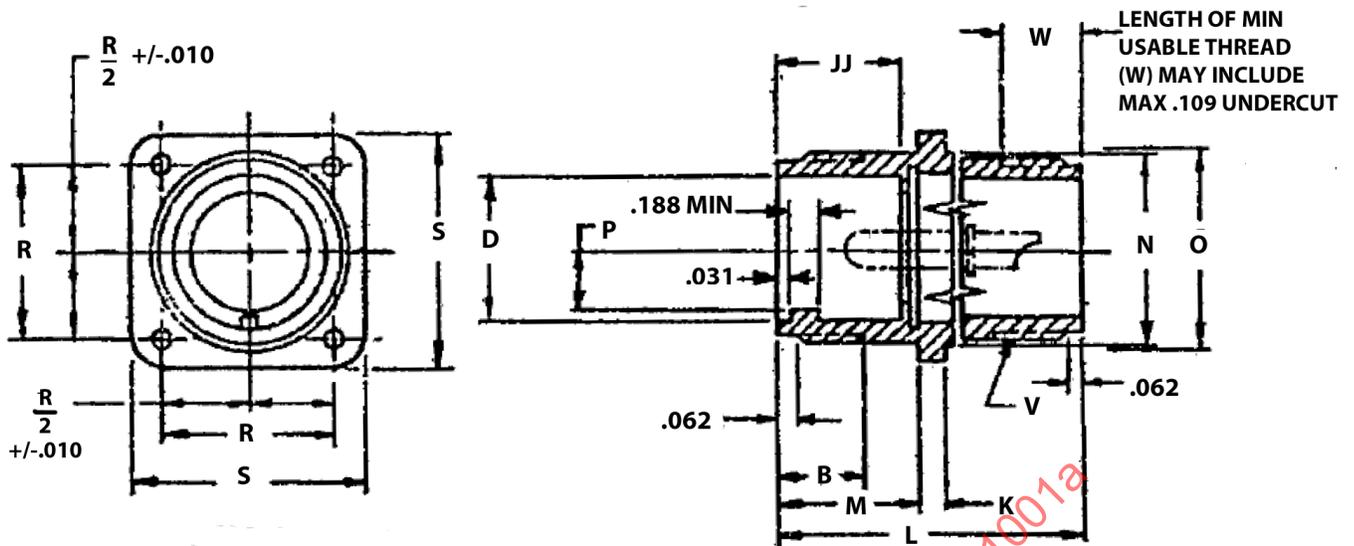
**SAE Aerospace**  
An SAE International Group

**AEROSPACE STANDARD**

(R) CONNECTOR, RECEPTACLE, ELECTRIC,  
WALL MOUNTING, SOLDER CONTACTS,  
AN TYPE

**SAE AS31001**  
SHEET 1 OF 12

**REV. A**



**STYLE P (PIN INSERT)**

**CLASS A – SOLID SHELL  
CLASS C – PRESSURIZED**

FIGURE 2 – STYLE P (PIN INSERT)

TABLE 1 – FIGURE 1 AND 2 DIMENSIONS

SIZE	A COUPLING THREAD	B MIN USABLE THREAD	D +.015 -.000 ID	MAX INSERT DIA	JJ 1/ +.031 -.000 INSERT LOCATION	K THICKNESS MOUNTING FLANGE		L MAX OVERALL LENGTH	M +.031 -.000 MOUNTING FLANGE LOCATION			
						MAX	MIN					
8S	1/2 – 28	.375	.370	.250	.562	.156	.062	1.469	.562			
10S	5/8 – 24		.448	.320				1.531				
10SL				.448				1.688				
12S	3/4 – 20	.625	.557	.448	.750	.156	.062	2.062	.750			
12												1.688
14S	7/8 – 20	.625	.682	.525	.562	.156	.062	1.688	.562			
14												2.062
16S	1 – 20	.375	.807	.650	.562	.156	.062	1.688	.562			
16												2.062
18	1-1/8 – 18	.625	.932	.770	.750	.203	.094	2.062	.750			
20	1-1/4 – 18		1.058	.925				2.188				
22	1-3/8 – 18		1.182	1.020				2.312				
24	1-1/2 – 18		1.307	1.145				2.438				
28	1-3/4 – 18		1.526	1.365				2.562				
32	2 – 18		1.776	1.615				.359		.125	2.438	.875
36	2-1/4 – 16		1.995	1.830								
40	2-1/2 – 16		2.245	2.045								
44	2-3/4 – 16	2.495	2.300									
48	3 – 16		2.745	2.550				2.562				

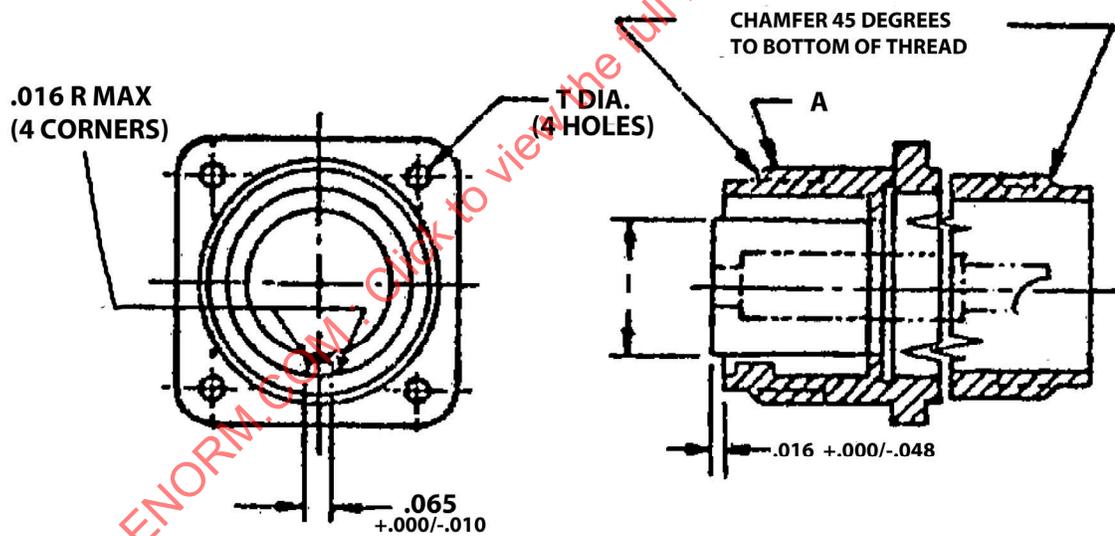
1/ WHERE RESILIENT INSERTS ARE USED, "JJ" MAY BE .109 LESS THAN THAT INDICATED.

TABLE 1 – FIGURE 1 AND 2 DIMENSIONS (CONTINUED)

SIZE	N MAX O.D.	O (REF) MOUNTING HOLE DIA	P +.015 -.000 KEY HEIGHT	R ± .005 ϕ - ϕ MOUNTING HOLES	S +.031 -.000 LENGTH SIDE	T +.010 -.005 MOUNTING BOLT HOLE DIA	V THREAD	W MIN USABLE THREAD	FOR INSERT ARRANGEMENT SEE DRAWING
8S	.532	.562	.130	.594	.875	.120	1/2 – 28	.375	MIL-STD 1651
10S	.656	.688	.165	.719	1.000		5/8 – 24		
10SL	.782	.812		.224	.812				
12S			.906				.938		
12									
14S	1.032	1.062	.325	.969	1.281		7/8 – 20		
14									
16S	1.156	1.188	.385	1.062	1.375		1 – 20		
16									
18	1.282	1.312	.463	1.156	1.500		1-3/16 – 18		
20									
22	1.406	1.438	.510	1.250	1.625		1-7/16 – 18		
24									
24	1.532	1.562	.573	1.375	1.750	.147	1-3/4 – 18	.438	
28									
28	1.782	1.812	.683	1.562	2.000	.173	2 – 18	.500	
32									
32	2.032	2.062	.808	1.750	2.250	2-1/4 – 16	.562		
36									
36	2.282	2.312	.915	1.938	2.500	2-1/2 – 16	.625		
40									
40	2.532	2.562	1.023	2.188	2.750	3 – 16			
44									
44	2.782	2.812	1.150	2.375	3.000				
48									
48	3.032	3.062	1.275	2.625	3.250				

NOTES FOR CLASS A AND C:

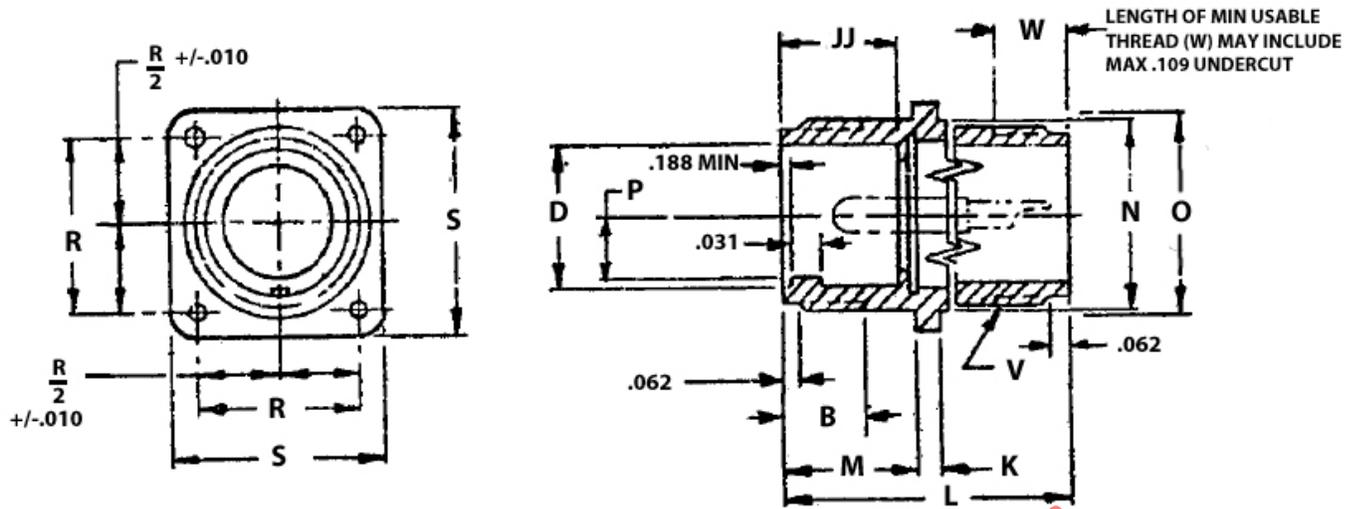
1. SOCKET INSERTS OF HARD MATERIAL SHALL EXTEND .016 MAXIMUM BEYOND OR .032 MAXIMUM BELOW SHELL. SOCKET INSERT OF RESILIENT MATERIAL SHALL EXTEND .047 +.000/-.047 BEYOND SHELL.



**STYLE S (SOCKET INSERT)**

**CLASS K – FIREWALL**

FIGURE 3 – STYLE S (SOCKET INSERT)



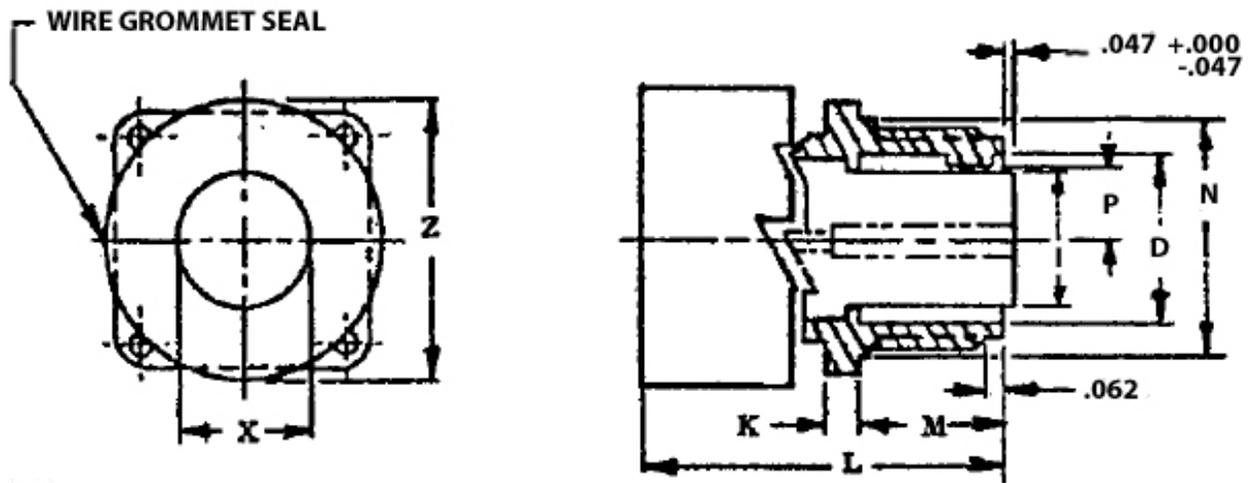
### CLASS K – FIREWALL

FIGURE 4 – STYLE P (PIN INSERT)

TABLE 2 – FIGURE 3 AND 4 DIMENSIONS

SIZE	A COUPLING THREAD	B MIN USABLE THREAD	D +.015 -.000 ID	I MAX INSERT DIA	JJ +.031/- .000 INSERT LOCATION	K MIN THICKNESS MOUNTING FLANGE	L MAX OVERALL LENGTH	M +.031/-0.000 MOUNTING FLANGE LOCATION
8S	1/2 – 28	.375	.370	.250	.562	.062	2.188	.562
10S	5/8 – 24		.448	.320				
10SL								
12S	3/4 – 20	.625	.557	.448	.750	.062	2.875	.750
12								
14S	7/8 – 20	.375	.682	.525	.562	.062	2.188	.562
14		.625			.750			
16S	1 – 20	.375	.807	.650	.562	.062	2.188	.562
16								
18	1-1/8 – 18	.625	.932	.770	.750	.078	2.875	.750
20	1-1/4 – 18		1.058	.925				
22	1-3/8 – 18		1.182	1.020				
24	1-1/2 – 18		1.307	1.145				
28	1-3/4 – 18		1.526	1.365				
32	2 – 18		1.776	1.615				
36	2-1/4 – 16	1.995	1.830	.125	3.125	.812		
40	2-1/2 – 16	2.245	2.045					





**STYLE S (SOCKET INSERT)**  
**CLASS E – ENVIRONMENT RESISTANT**

FIGURE 6 – STYLE S (SOCKET INSERT)

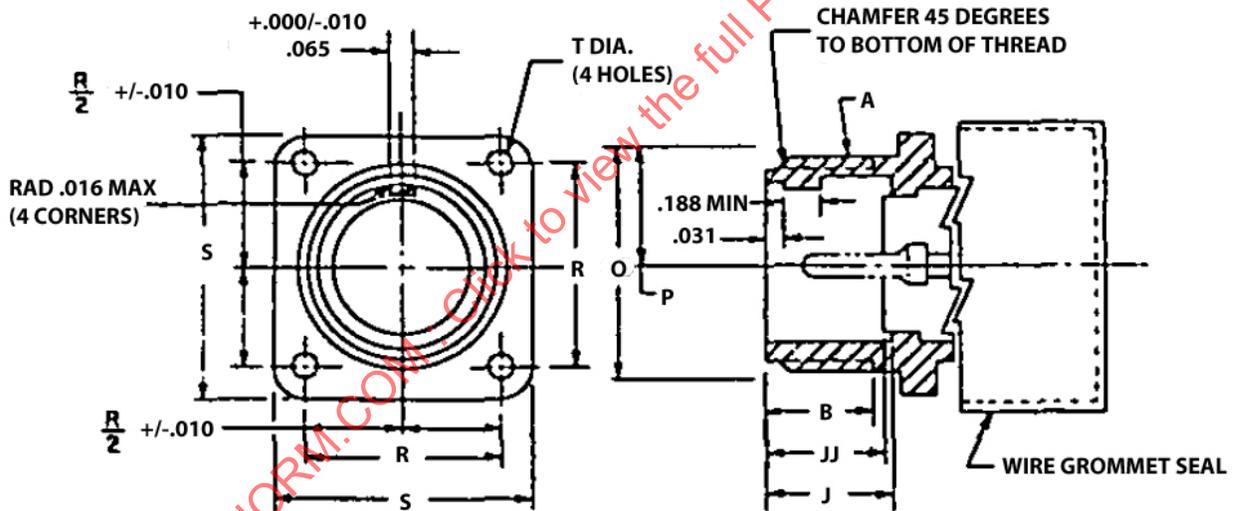
TABLE 3 – FIGURE 5 AND 6 DIMENSIONS

SIZE	A COUPLING THREAD	B MIN USABLE THREAD	D +.015 -.000 ID	I MAX INSERT DIA	J +.031 -.000 INT SHELL SHLDR	JJ ± .031 INSERT LOCATION	K THICKNESS MOUNTING FLANGE		L MAX 1/ OVERALL LENGTH	M +.031 -.000 MOUNTING FLANGE LOCATION				
							MAX	MIN						
8S	1/2 – 28	.375	.370	.250	.562	.484	.156	.078	2.250	.562				
10S	5/8 – 24		.448	.320										
10SL														
12S	3/4 – 20	.625	.557	.448	.750	.672			2.625	.750				
12														
14S	7/8 – 20	.375	.682	.525	.750	.672			2.250	.562				
14		.625									.750	.672	2.625	.750
16S		1 – 20									.375	.807	.650	.562
16														
18	1-1/8 – 18	.625	.932	.770	.750	.672			.203	.094	2.688	.750		
20	1-1/4 – 18		1.058	.925										
22	1-3/8 – 18		1.182	1.020										
24	1-1/2 – 18		1.307	1.145			2.969	.812						
28	1-3/4 – 18		1.526	1.365										
32	2 – 18		1.776	1.615										
36	2-1/4 – 16		1.995	1.830										
40	2-1/2 – 16		2.245	2.045			.359	.125	3.281	.875				
													3.500	

1/ ADD .375 FOR SIZE "0" CONTACTS.

TABLE 3 – FIGURE 5 AND 6 DIMENSIONS (CONTINUED)

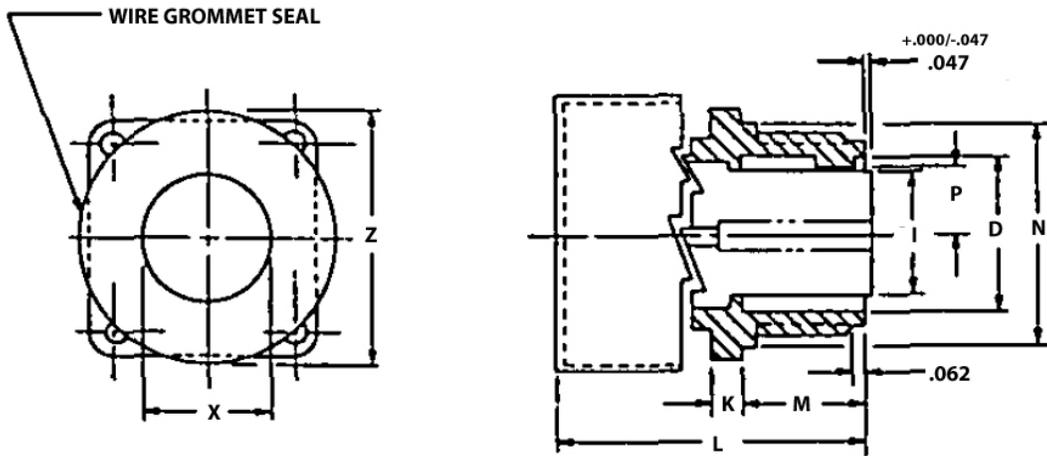
SIZE	N MAX O.D.	O (REF) MOUNTING HOLE DIA	P +.015 -.000 KEY HEIGHT	R ± .005 ϕ - ϕ MOUNTING HOLES	S +.031 -.000 LENGTH SIDE	T +.010 -.005 MOUNTING BOLT HOLE DIA	X MIN CABLE CLEARANCE	Z MAX ACROSS SEAL ASSEMBLY	FOR INSERT ARRANGEMENT SEE DRAWING
8S	.532	.562	.130	.594	.875	.120	.172	1.046	MIL-STD 1651
10S	.656	.688	.165	.719	1.000				
10SL	.782	.812							
12S			.224	.812	1.094				
12									
14S	.906	.938	.263	.906	1.188				
14									
16S	1.032	1.062	.325	.969	1.281				
16									
18	1.156	1.188	.385	1.062	1.375				
20	1.282	1.312	.463	1.156	1.500	.656	1.890		
22	1.406	1.438	.510	1.250	1.625	.750			
24	1.532	1.562	.573	1.375	1.750	.147	.781	2.170	
28	1.782	1.812	.683	1.562	2.000		.922		
32	2.032	2.062	.808	1.750	2.250	.173	1.156	2.656	
36	2.282	2.312	.915	1.838	2.500		1.250		2.922
40	2.532	2.562	1.023	2.188	2.750		1.562		



STYLE P (PIN INSERT)

**CLASS R – ENVIRONMENT RESISTANT**

FIGURE 7 – STYLE P (PIN INSERT)



**STYLE S (SOCKET INSERT)**

**CLASS R – ENVIRONMENT RESISTANT**

FIGURE 8 – STYLE S (SOCKET INSERT)

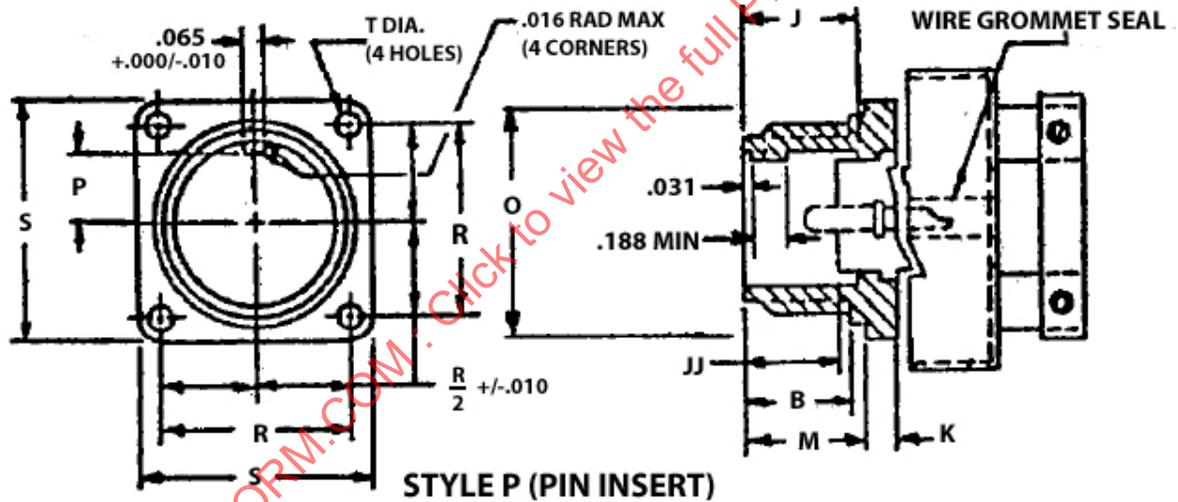
TABLE 4 – FIGURE 7 AND 8 DIMENSIONS

SIZE	A COUPLING THREAD	B MIN USABLE THREAD	D +.015 -.000 ID	I MAX INSERT DIA	J +.031 -.000 INT SHELL SHLDR	JJ +.031 INSERT LOCATION	K THICKNESS MOUNTING FLANGE		L MAX 1/ OVERALL LENGTH	M +.031 -.000 MOUNTING FLANGE LOCATION
							MAX	MIN		
8S	1/2 – 28	.375	.370	.250	.562	.484	.156	.076	1.838	.562
10S	5/8 – 24		.448	.320						
10SL										
12S	3/4 – 20	.625	.557	.448	.750	.672	.203	.094	2.281	.750
12										
14S	7/8 – 20	.375	.682	.525	.562	.484	.359	.125	2.322	.875
14		.625								
14S										
16S	1 – 20	.375	.807	.650	.562	.484	.203	.094	2.281	.812
16										
18	1-1/8 – 18	.625	.932	.770	.750	.672	.203	.094	2.281	.750
20	1-1/4 – 18		1.058	.925						
22	1-3/8 – 18		1.182	1.020						
24	1-1/2 – 18		1.307	1.145						
28	1-3/4 – 18		1.526	1.365						
32	2 – 18		1.776	1.615						
36	2-1/4 – 16	1.995	1.930	.750	.672	.359	.125	2.322	.875	
40	2-1/2 – 16	2.245	2.045							

1/ ADD .375 FOR SIZE "0" CONTACTS.

TABLE 4 – FIGURE 7 AND 8 DIMENSIONS (CONTINUED)

SIZE	N MAX O.D.	O (REF) MOUNTING HOLE DIA	P +.015 -.000 KEY HEIGHT	R ± .005 ϕ - ϕ MOUNTING HOLES	S +.031 -.000 LENGTH SIDE	T +.010 -.005 MOUNTING BOLT HOLE DIA	X MIN CABLE CLEARANCE	Z MAX ACROSS SEAL ASSEMBLY	FOR INSERT ARRANGEMENT SEE DRAWING
8S	.532	.562	.130	.594	.875	.120	.172	1.046	MIL-STD 1651
10S	.656	.688	.165	.719	1.000				
10SL	.782	.812							
12S			.224	.812	1.094				
12									
14S	.906	.938	.263	.906	1.188				
14									
16S	1.032	1.062	.325	.969	1.281				
16									
18	1.156	1.188	.385	1.062	1.375				
20	1.282	1.312	.463	1.156	1.500	.656	1.890		
22	1.406	1.438	.510	1.250	1.625	.750			
24	1.532	1.562	.573	1.375	1.750	.147	.781	2.170	
28	1.782	1.812	.683	1.562	2.000		.922		
32	2.032	2.062	.808	1.750	2.250	.173	1.156	2.656	
36	2.282	2.312	.915	1.938	2.500		1.250		2.922
40	2.532	2.562	1.023	2.188	2.750		1.562		



**CLASS F – ENVIRONMENT RESISTANT**

FIGURE 9 – STYLE P (PIN INSERT)