

## Contact Arrangements and Formation

	Shell Size 10			Shell Size 12			
Insert Arrangement							
Service Rating	A	INST, A	A	A	A	D	D
Number of Contacts	1	3	2	2	2	1	1
Contact Size	16	16	16	16	16	16	12

	Shell Size 14							
Insert Arrangement								
Service Rating	A	INST	D	D	INST	INST	A	A
Number of Contacts	3	4	1	1	5	6	3	2
Contact Size	16	16	8	16	16	16	16	16

	Shell Size 14	Shell Size 16				
Insert Arrangement						
Service Rating	A	A	A	D	A	A
Number of Contacts	3	8	7	2	3	3
Contact Size	16	16	16	16	16	16

	Shell Size 16					
Insert Arrangement						
Service Rating	A	A	A	A	A	A
Number of Contacts	5	2 2	3	2	1	2
Contact Size	16	16 12	12	12	4	12

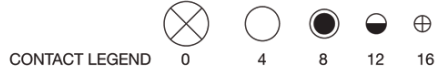
  

	Shell Size 18					
Insert Arrangement						
Service Rating	A (B, C, F, G) INST (OTHERS)	24V	D	D	D	A
Number of Contacts	10	3	2	4	1 2	7 1
Contact Size	16	16	12	16	16 12	16 12

	Shell Size 18					
Insert Arrangement						
Service Rating	INST	A	A	A	A	A
Number of Contacts	5 2	4	5	6	1	1 1
Contact Size	16 12	12	12	16	8	16 4

1. View from pin side insert.  
 2. Please contact factory for any special insert arrangements.  
 3. Insert arrangements per MIL-STD-1651

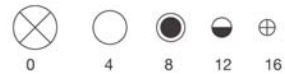


## Contact Arrangements and Formation

Shell Size 18						
Insert Arrangement	18 - 16	18 - 18	18 - 19	18 - 20	18 - 21	18 - 22
Service Rating	C	INST	A	A	A	D
Number of Contacts	1	5 2	10	5	3	3
Contact Size	12	16 12	16	16	12	16
Shell Size 20						
Insert Arrangement	20 - 01	20 - 2	20 - 3	20 - 4	20 - 7	
Service Rating	A	D	D	D	A (ALL OTHERS) D (A,B,G,H)	
Number of Contacts	10	1	3	4	8	
Contact Size	16	0	12	12	16	
Shell Size 20						
Insert Arrangement	20 - 8	20 - 10	20 - 11	20 - 15	20 - 16	
Service Rating	INST	A	INST	A	A	
Number of Contacts	4 2	4	13	7	7 2	
Contact Size	16 8	16	16	12	16 12	
Shell Size 20						
Insert Arrangement	20 - 17	20 - 18	20 - 22	20 - 23	20 - 24	
Service Rating	A	A	A	A	A	
Number of Contacts	1 5	6 3	3 3	2	2 2	
Contact Size	16 12	16 12	16 8	8	16 8	
Shell Size 20			Shell Size 22			
Insert Arrangement	20 - 27	20 - 29	20 - 33	22 - 2	22 - 4	
Service Rating	A	A	A	D	A	
Number of Contacts	14	17	11	3	2 2	
Contact Size	16	16	16	8	12 8	

1. View from pin side insert.
2. Please contact factory for any special insert arrangements.
3. Insert arrangements per MIL-STD-1651

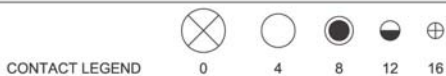
CONTACT LEGEND



## Contact Arrangements and Formation

Shell Size 22						
Insert Arrangement	22 - 5	22 - 7	22 - 8	22 - 9	22 - 10	
Service Rating	D	E	E	E	E	
Number of Contacts	4 2	1	2	3	4	
Contact Size	16 12	0	12	12	16	
Shell Size 22						
Insert Arrangement	22 - 13	22 - 14	22 - 15	22 - 18	22 - 19	
Service Rating	DA	A	A (ALL OTHERS) D(E)	A (C,D,E) D(ALL OTHERS)	A	
Number of Contacts	1 4	19	1 5	8	14	
Contact Size	16 12	16	16 12	16	16	
Shell Size 22			Shell Size 24			
Insert Arrangement	22 - 21	22 - 22	22 - 23	24 - 2		
Service Rating	A	A	A (ALL OTHERS), D(H)	D		
Number of Contacts	2 1	4	8	7		
Contact Size	16 0	8	12	12		
Shell Size 24						
Insert Arrangement	24 - 02	24 - 3	24 - 4	24 - 5		
Service Rating	A	D	D	A		
Number of Contacts	9	5 2	3 1	16		
Contact Size	12	16 12	16 0	16		
Shell Size 24						
Insert Arrangement	24 - 7	24 - 9	24 - 10	24 - 11		
Service Rating	A	A	A	A		
Number of Contacts	14 2	2	7	6 3		
Contact Size	16 12	4	8	12 8		

1. View from pin side insert.
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3. Insert arrangements per MIL-STD-1651



## Contact Arrangements and Formation

Contact Arrangements

Shell Size 24				
Insert Arrangement	24 - 12	24 - 20	24 - 22	24 - 28
Service Rating	A	D	D	INST
Number of Contacts	3 2	9 2	4	24
Contact Size	12 4	16 12	8	16

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Shell Size 28				
Insert Arrangement	28 - 2	28 - 3	28 - 6	28 - 10
Service Rating	D	E	D	A (ALL OTHERS), D(G)
Number of Contacts	12 2	3	3	3 2 2
Contact Size	16 12	8	4	12 8 4

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Shell Size 28				
Insert Arrangement	28 - 11	28 - 12	28 - 15	28 - 16
Service Rating	A	A	A	A
Number of Contacts	18 4	26	35	20
Contact Size	16 12	16	16	16

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Shell Size 28				
Insert Arrangement	28 - 17	28 - 18	28 - 19	28 - 20
Service Rating	A(ALL OTHERS) B(R), D(M,N,P)	A(A,B), C(M), INST(C,D,E,F) D(ALL OTHERS)	A(ALL OTHERS) B(H, M) D(A,B)	A
Number of Contacts	15	12	6 4	4 10
Contact Size	16	16	16 12	16 12

1. View from pin side insert.  
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 3. Insert arrangements per MIL-STD-1651

**CONTACT LEGEND**

0	4	8	12	16

## Contact Arrangements and Formation

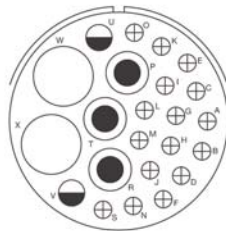
Shell Size 28			
Insert Arrangement	28 - 21	28 - 22	28 - 51
Service Rating	A	D	A
Number of Contacts	37	3 3	12
Contact Size	16	16 4	12
Shell Size 32			
Insert Arrangement	32 - 01	32 - 1	32 - 5
Service Rating	A	E (A), D (ALL OTHERS)	D
Number of Contacts	24	3 2	2
Contact Size	12	12 0	0
Shell Size 32			
Insert Arrangement	32 - 6	32 - 7	32 - 8
Service Rating	A	A (ALL OTHERS), INST (A, B, h, j)	A
Number of Contacts	16 2 3 2	28 7	24 6
Contact Size	16 12 8 4	16 12	16 12
Shell Size 32			
Insert Arrangement	32 - 9	32 - 13	32 - 15
Service Rating	D	D	D
Number of Contacts	12 2	18 5	6 2
Contact Size	16 4	16 12	12 0

1. View from pin side insert.
2. Please contact factory for any special insert arrangements.
3. Insert arrangements per MIL-STD-1651

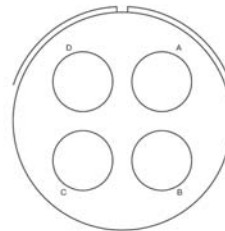


## Contact Arrangements and Formation

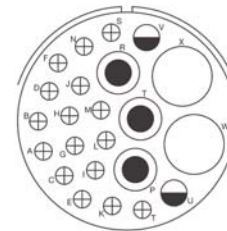
Shell Size 32



Insert Arrangement	32 - 16
Service Rating	A
Number of Contacts	16 2 3 2
Contact Size	16 12 8 4

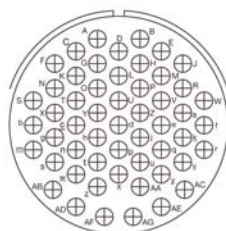


Insert Arrangement	32 - 17
Service Rating	D
Number of Contacts	4
Contact Size	4

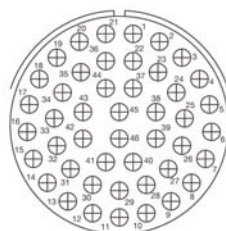


Insert Arrangement	32 - 20
Service Rating	A
Number of Contacts	16 2 3 2
Contact Size	16 12 8 4

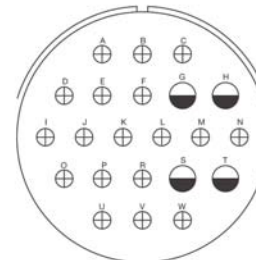
Shell Size 32



Insert Arrangement	32 - 22
Service Rating	A
Number of Contacts	54
Contact Size	16

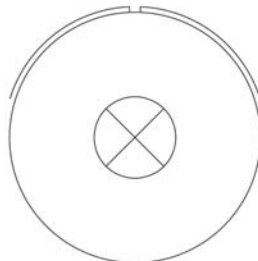


Insert Arrangement	32 - 73
Service Rating	A
Number of Contacts	46
Contact Size	16

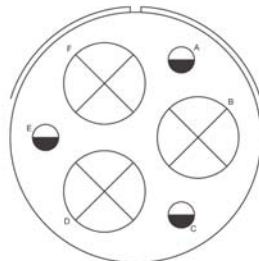


Insert Arrangement	36 - 1
Service Rating	D
Number of Contacts	18 4
Contact Size	16 12

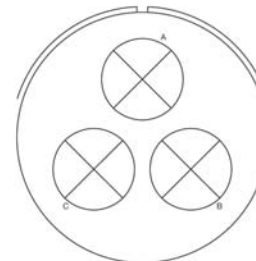
Shell Size 36



Insert Arrangement	36 - 03
Service Rating	A
Number of Contacts	1
Contact Size	0



Insert Arrangement	36 - 3
Service Rating	D
Number of Contacts	3 3
Contact Size	12 0



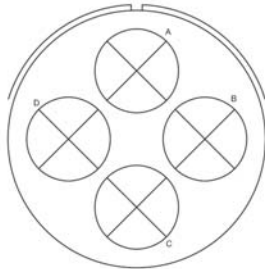
Insert Arrangement	36 - 4
Service Rating	A(B, C), D(A)
Number of Contacts	3
Contact Size	0

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3. Insert arrangements per MIL-STD-1651



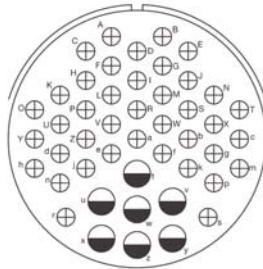
## Contact Arrangements and Formation

Shell Size 36

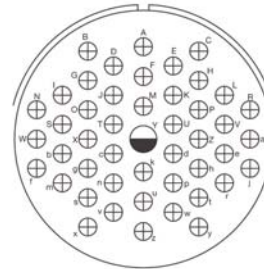


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

36 - 5  
A  
4  
0

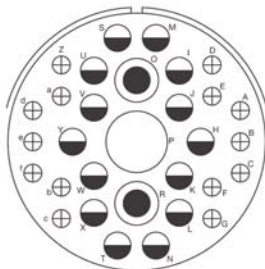


36 - 7  
A  
40 7  
16 12



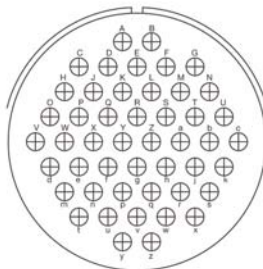
36 - 8  
A  
46 1  
16 12

Shell Size 36

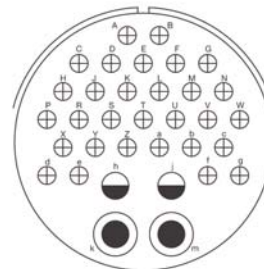


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

36 - 9  
A  
14 14 2 1  
16 12 8 4

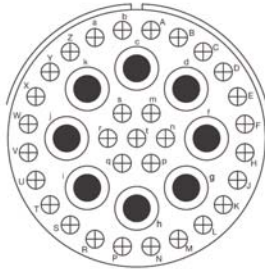


36 - 10  
A  
48  
16



36 - 20  
A  
30 2 2  
16 12 8

Shell Size 36



Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

36 - 54  
A  
31 8  
16 8

- View from pin side insert.
- Please contact factory for any special insert arrangements.
- Insert arrangements per MIL-STD-1651



## Contact Arrangements and Formation

SHELL SIZE	NUMBER OF CONTACTS	CONTACT SIZE				
		16	12	8	4	0
<b>SHELL SIZE 10</b>						
10S-2	1	1				
10SL-3	3	3				
10SL-4	2	2				
<b>SHELL SIZE 12</b>						
12S-1	2	2				
12S-3	2	2				
12S-4	1	1				
12S-5	1		1			
12S-01	3	3				
12-5	1		1			
<b>SHELL SIZE 14</b>						
14S-1	3	3				
14S-2	4	4				
14S-3	1		1			
14S-4	1	1				
14S-5	5	5				
14S-6	6	6				
14S-7	3	3				
14S-9	2	2		1		
14S-12	3	3				
14-3	1			1		
<b>SHELL SIZE 16</b>						
16S-01	8	8				
16-9	4	2	2			
16-10	3		3			
16-11	2		2			
16-12	1				1	
16-13	2		2			
16S-1	7	7				
16S-4	2	2				
16S-5	3	3				
16S-6	3	3				
16S-8	5	5				

SHELL SIZE	NUMBER OF CONTACTS	CONTACT SIZE				
		16	12	8	4	0
<b>SHELL SIZE 18</b>						
18-1	10	10				
18-2	3	3				
18-3	2		2			
18-4	4	4				
18-5	3	1	2			
18-8	8	7	1			
18-9	7	5	2			
18-10	4		4			
18-11	5		5			
18-12	6	6				
18-13	4		3	1		
18-14	4	1			1	
18-16	1		1			
18-18	7	5	2			
18-19	10	10				
18-20	5	5				
18-21	3		3			
18-22	3	3				
18-01	8	8				
<b>SHELL SIZE 20</b>						
20-2	1					1
20-3	3		3			
20-4	4	4	4			
20-7	8	8				
20-8	6	4		2		
20-10	4	4				
20-13	13	13				
20-15	7		7			
20-16	9	7	2			
20-17	6	1	5			
20-18	9	6	3			
20-19	3			3		
20-22	6	3		3		
20-23	2			2		
20-24	4	2		2		
20-27	14	14				
20-29	17	17				
20-33	11	11				
20-01	10	10				
20-02	10	8	2			
20-03	3	1		2		

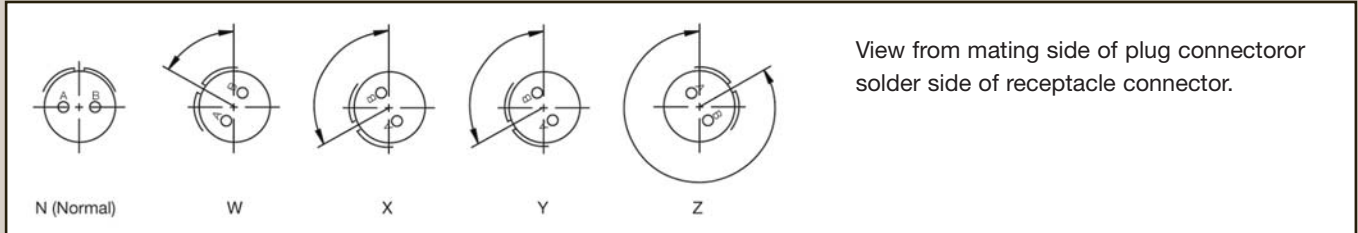
Contact Arrangements

## Contact Arrangements and Formation

SHELL SIZE	NUMBER OF CONTACTS	CONTACT SIZE				
		16	12	8	4	0
<b>SHELL SIZE 22</b>						
22-2	3			3		
22-4	4		2	2		
22-5	6	4	2			
22-7	1					1
22-8	2		2			
22-9	3		3			
22-10	4	4				
22-13	5	1	4			
22-14	19	19				
22-15	6	1	5			
22-18	8	8				
22-19	14	14				
22-21	3	2				1
22-22	4			4		
22-23	8		8			
22-27	9	8		1		
22-01	12	8	4			
22-02	9	9				
<b>SHELL SIZE 24</b>						
24-2	7		7			
24-3	7	5	2			
24-4	4	3				1
24-5	16	16				
24-7	16	14	2			
24-9	2				2	
24-10	7			7		
24-11	9		6	3		
24-12	5		3		2	
24-20	11	9	2			
24-22	4			4		
24-28	24	24				
24-01	2				2	
24-02	9		9			
24-03	12	12				
<b>SHELL SIZE 28</b>						
28-2	14	12	2			
28-3	3			3		
28-6	3				3	
28-7	2				2	
28-9	12	6	6			
28-10	7		3	2	2	
28-11	22	18	4			
28-12	26	26				

SHELL SIZE	NUMBER OF CONTACTS	CONTACT SIZE				
		16	12	8	4	0
<b>SHELL SIZE 28</b>						
28-15	35	35				
28-16	20	20				
28-17	15	15				
28-18	12	12				
28-19	10	6	4			
28-20	14	4	10			
28-21	37	37				
28-22	6	3			3	
28-51	12		12			
28-56	16	14	2			
<b>SHELL SIZE 32</b>						
32-1	5		3			2
32-5	2					2
32-6	23	16	2	3	2	
32-7	35	28	7			
32-8	30	24	6			
32-9	14	12			2	
32-13	23	18	5			
32-15	8		6			2
32-16	23	16	2	3	2	
32-17	4				4	
32-20	23	16	2	3	2	
32-22	54	54				
32-73	46	46				
32-01	24		24			
32-02	16		16			
32-03	3				3	
32-04	7		7			
32-05	28	18	8	2		
32-59	40	38	2			
<b>SHELL SIZE 36</b>						
36-1	22	8	4			
36-3	6		3			3
36-4	3					3
36-5	4					4
36-7	47	40	7			
36-8	47	46	1			
36-9	31	14	14	2	1	
36-03	1					1
36-10	48	48				
36-20	34	30	2	2		
36-02	27	27				
36-52	52	52				
36-54	39	31		8		

## Alternate Insert Positions PER MIL-STD-1651



Alternate Insert Positions

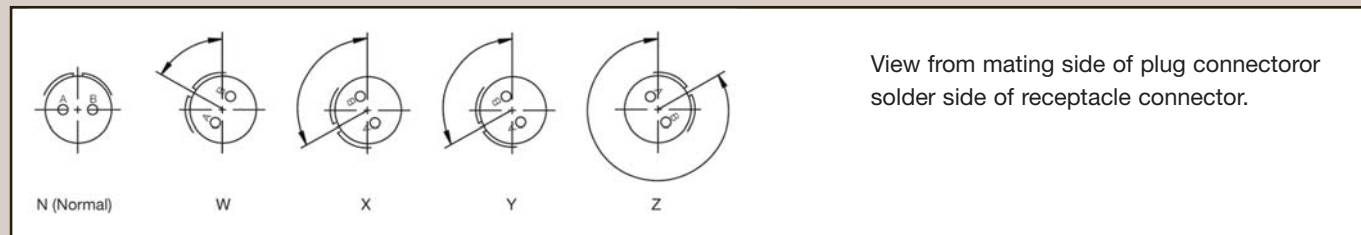
SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS			
				W	X	Y	Z
12S	12S-3	2 #16	A	70	145	215	290
14S	14S-2	4 #16	Inst.	-	120	240	-
	14S-5	5 #16	Inst.	-	110	-	-
	14S-7	2 #16	A	90	180	270	-
	14S-9	2 #16	A	70	145	215	290
16	16-9	2 #12 2 #16	A	35	110	250	325
	16-10	3 #12	A	90	180	240	-
	16-11	2 #12	A	35	110	250	325
	16-13	2 #12	A	35	110	250	325
16S	16S-1	7 #16	A	80	-	-	280
	16S-4	2 #16	D	35	110	250	325
	16S-5	3 #16	A	70	145	215	290
	16S-6	3 #16	A	90	180	270	-
	16S-8	5 #16	A	-	170	265	-
	16S-5	3 #16	A	70	145	215	290
	16S-6	3 #16	A	90	180	270	-
	16S-8	5 #16	A	-	170	265	-
18	18-1	10 #16	A (B,C, F, G)	70	145	215	290
	Inst. (all others)						
	18-3	2 #12	D	35	110	250	325
	18-4	4 #16	D	35	110	250	325
	18-5	1 #16 2 #12	D	80	110	250	280
	18-8	7 #16 1 #12	A	70	-	-	290
	18-9	5 #16 2 #12	Inst.	80	110	250	280
	18-10	4 #12	A	-	120	240	-
	18-11	5 #12	A	-	170	265	-
	18-12	6 #16	A	80	-	-	280
	18-13	3 #12 1 #8	A	80	110	250	280
	18-15	4 #12	A	-	120	240	-
	18-22	3 #16	D	70	145	215	290

SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS			
				W	X	Y	Z
20	20-3	3 #12	D	70	145	215	290
	20-4	4 #12	D	45	110	250	-
	20-7	8 #16	A(C-F)	80	110	250	280
	D (A, B, G, H)						
	20-8	4 #16 2 #8	Inst.	80	110	250	280
	20-14	3 #12 2 #8	A	80	110	250	280
	20-15	7 #12	A	80	-	-	280
	20-16	7 #16 2 #12	A	80	110	250	280
	20-17	1 #16 5 #12	A	90	180	270	-
	20-18	6 #16 3 #12	A	35	110	250	325
20-19	3 #8	A	90	180	270	-	
20-22	3 #16 3 #18	A	80	110	250	280	
20-23	2 #8	A	35	110	250	325	
20-24	2 #16 2 #8	A	35	110	250	325	
20-27	14 #16	A	35	110	250	325	
20-29	17 #16	A	80	-	-	280	

# Industrial 5015

Alternate Insert Positions

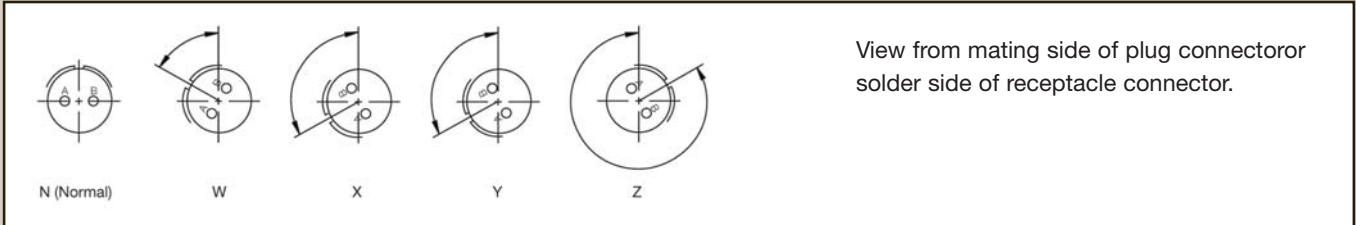
## Alternate Insert Positions Per MIL-STD-1651



SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS			
				W	X	Y	Z
22	22-2	3 #8	D	70	145	215	290
	22-4	2 #12 2 #8	A	35	110	250	325
	22-5	4 #16 2 #12	D	35	110	250	325
	22-6	1 #16 2 #8	D	80	110	250	280
	22-9	3 #12	E	70	145	215	290
	22-10	4 #16	E	35	110	250	325
	22-11	2 #16	B	35	110	250	325
	22-12	3 #16 2 #8	D	80	110	250	280
	22-13	1 #16 4 #12	A (A-D) D (E)	35	110	250	325
	22-14	19 #16	A	80	-	-	280
	22-15	1 #16 5 #12	A (A-C, E, F) E (D)	80	110	250	280
	22-17	8 #16 1 #12	D (A) A (all others)	80	110	250	280
	22-18	8 #16	A (C-E)	80	110	250	280
	A (all others)						
	22-19	18 #16	A	80	110	250	280
	22-20	9 #16	A	35	110	250	325
	22-22	4 #8	A	-	110	250	-
	22-23	8 #12	D (H)	35	-	250	-
	A (all others)						
	22-27	8 #16 1 #8	D (J) A (all others)	80	-	250	280
	22-28	7 #12	A	80	-	-	280

SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS			
				W	X	Y	Z
24	24-2	7 #12	D	80	-	-	280
	24-5	16 #16	A	80	110	250	280
	24-6	8 #12	D (A, G, H)	80	110	250	280
	A (all others)						
	24-7	14 #16 2 #12	A	80	110	250	280
	24-9	2 #4	A	35	110	250	325
	24-10	7 #8	A	80	-	-	280
	24-11	6 #16 3 #8	A	35	110	250	325
	24-12	3 #12 2 #4	A	80	110	2580	280
	24-20	9 #16 2 #12	D	80	110	250	280
	24-22	4 #8	D	45	110	250	-
	24-27	7 #16	E	80	-	-	280
	24-28	24 #16	Inst.	80	110	250	280
28	28-1	6 #12 3 #8	D (A, E, J) A (all others)	80			
	28-2	12 #16 2 #12	D	35	110	250	325
	28-7	2 #4	D	35	110	250	325
	28-9	6 #16		80	110	250	280
		6 #12	D				
	28-10	3 #12 2 #8 2 #4	D (G) A (all others)	80	110	250	280
	28-11	18 #16 4 #12	A	80	110	250	280
	28-12	26 #16	A	90	180	270	-
	28-15	35 #16	A	80	110	250	280
	28-16	20 #16	A	80	110	250	280

## Alternate Insert Positions PER MIL-STD-1651



Alternate Insert Positions

SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS			
				W	X	Y	Z
28	28-17	15 #16	A (A-L) B (R) D (M-P)	80	110	250	280
	28-19	6 #16 4 #12	A (C,E,G, J, K,L) B (H,M) D (A,B)	80	110	250	280
	28-20	4 #16 10 #12	A	80	110	250	280
	28-21	37 #16	A	80	110	250	280
	28-22	3 #16 3 #4	D	70	145	215	290
32	32-1	3 #12 2 #0	E (A) D (all others)	80	110	250	280
	32-6	16 #16 2 #12 3 #8 2 #4	A	80	110	235	280
	32-7	28 #16 7 #12	Inst. (A, B, H, J) A (all others)	80	125	235	280
	32-8	24 #16 6 #12	A	80	125	235	280
	32-9	12 #16 2 #4	D	80	110	250	280
	32-17	4 #4	D	45	110	250	-

SHELL SIZE	INSERT ARRANGEMENT	CONTACT SIZE	SERVICE RATING	ALTERNATE POSITIONS				
				W	X	Y	Z	
36	36-4	3 #0	A (B,C) D (A)	70	145	215	290	
	36-5	4 #0	A	-	120	240	-	
	36-7	40 #16 7 #12	A	80	110	250	280	
	36-8	46 #16 1 #12	A	80	110	250	280	
	36-9	14 #16 14 #12 2 #8 1 #4	A	80	125	235	280	
	36-10	48 #16	A	80	1258	235	280	
	36-15	35 #16	D (M)	60	125	245	305	
	A (all others)							