

Tri-Start

insert availability and identification

AMPHENOL TRI-START INSERT ARRANGEMENTS

Shell Size/Arrg.	Military Shell	Crimp	Hermetics*	Service Rating	Total Contacts	Contact Size								
						22D	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8†† (Twinax)	
9-5★■	A			Grounded	1									1
9-35	A	X	P	M	6	6								
9-94■	A	◆		M	2		2							
9-98	A	X	P	I	3		3							
11-2★	B	◆		I	2			2						
11-5	B	◆	P	I	5		5							
11-35	B	X	P	M	13	13								
11-54■	B	X		II	4	4								
11-98	B	X	P	I	6		6							
11-99	B	X		I	7		7							
13-4★	C	X	P	I	4			4						
13-8	C	X	P	I	8		8							
13-13■	C			I, Fiber Optic	4			2**	2					
13-35	C	X	P	M	22	22								
13-98	C	X	P	I	10		10							
15-4■	D	◆		I	4				4					
15-5★	D	X	P	II	5			5						
15-15	D	X	P	I	15		14	1						
15-18	D	X	P	I	18		18							
15-19	D	◆	P	I	19		19							
15-35	D	X	P	M	37	37								
15-97	D	X	P	I	12		8	4						
17-2	E	X		M	39	38								1
17-6	E	X	P	I	6				6					
17-8★	E	X	P	II	8			8						
17-22★■	E	◆		Coax	4					2			2	
17-26	E	X	P	I	26		26							
17-35	E	X	P	M	55	55								
17-99	E	X		I	23		21	2						
19-11★	F	X	P	II	11			11						
19-18	F	X		M	18	14								4
19-28	F	X		I	28		26	2						
19-31■	F	◆		M	15	12			1				2	
19-32	F	X	P	I	32		32							
19-35	F	X	P	M	66	66								
21-11★	G	X		I	11				11					
21-16★	G	X	P	II	16			16						
21-29■	G	X		I	27		19	4	4					
21-35	G	X	P	M	79	79								
21-39	G	X	P	I	39		37	2						
21-41	G	X	P	I	41		41							
21-75★◇	G	X		M	4							4	(See note)	
21-79■	G	X		II	19	17						2		
23-6★■	H	P		M	6									6
23-14■	H	◆		I	14				14					
23-21★	H	X	P	II	21			21						

- X Completely tooled.
- Majority of tooling is completed (contact Amphenol Aerospace for availability).
- ◆ Not tooled for 02-R.
- P Pin inserts only (contact Amphenol Aerospace for socket availability).
- ★ Ground plane proprietary option available. Arrg. 9-5 is exclusively ground plane type. See pg. 49 for further information on ground plane connectors.
- Not Mil-Qualified.
- ◇ 21-75 is Mil-Qualified with twinax contacts only.

Note: MS connector 21-75 is supplied with size 8 twinax.
Proprietary connector 21-75 is supplied with size 8 coax.

- * Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
- ** Two size 16 contacts dedicated to fiber optics. Consult Amphenol Aerospace catalog 12-352 for fiber optic information.
- *** For use in MIL-STD-1760 applications (see pages 31 & 32).
- † For RG 180/U and RG 195/U cables only.
- †† Size 8 Coax and Twinax are interchangeable.

Tri-Start and Specials

insert availability and identification

TRI-START ARRANGEMENTS, CONT.

Shell Size/Arrg.	Military Shell	Crimp	Hermetics*	Service Rating	Total Contacts	Contact Size							
						22D	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8†† (Twinax)
23-35	H	X	P	M	100	100							
23-53	H	X	P	I	53		53						
23-54 ■	H	◆		M	53	40		9	4				
23-55	H	◆	P	I	55		55						
25-4	J	X	P	I	56		48	8					
25-7	J	◆		Twinax	99	97							2
25-8★	J	◆		Twinax	8								8
25-11***	J	◆		N	11		2				9		
25-17 ■	J	◆		M	42	36							6
25-19★	J	X	P	I	19				19				
25-20***	J	◆		N	30		10	13		4			3
25-24★	J	X	P	I	24			12	12				
25-26 ■	J	◆		I	25		16		5			4	
25-29★	J	X		I	29			29					
25-35	J	X	P	M	128	128							
25-37★■	J	◆		I	37			37					
25-41 ■	J	X		N/Inst.	41	22	3	11		2			3
25-43	J	◆		I	43		23	20					
25-46	J	◆		I	46		40	4				2†	
25-61	J	X	P	I	61		61						
25-90	J	X		I	46		40	4					2
25-F4 ■	J	◆		M/I	66	49		13	4				

SPECIAL ARRANGEMENTS (Not Mil-Spec Qualified)

Shell Size/Arrg.	Military Shell	Crimp	Hermetics*	Service Rating	Total Contacts	Comments	Contact Size					
							22D	20	16	12	8†† (Twinax)	
9-2	A	X		I	2	formerly Pyle		2				
15-4	D	X		II	4	formerly Pyle			4			
15-25	D	X		M	25	formerly Pyle	22		3			
17-20	E	X		M	20	formerly Pyle	16			4		
21-12	G	X		I	12	formerly Pyle		3			9	
21-21	G	X		M/Inst.	41	improved sealing	32				9	
21-99	G	X		M	16	formerly Pyle	5				11	
25-92	J	X		M	101	formerly Pyle	92			9		
25-97	J	X		M	42	formerly Pyle	26			3	13	

SPECIAL ARRANGEMENTS (Not Mil-Spec Qualified) (insert arrangements requiring non-standard shells or larger contacts)

Shell Size/Arrg.	Crimp	Hermetics*	Service Rating	Total Contacts	Contact Size				
					22D	20	8	4	0
25-16	X		M	8		6		2	
25L-3	X		II	3			1		2
25L-7	X		II	7			7		
33-3	X		II	3				1	2
33-5	X		II	5				5	
33-6	X		II	6			2		4
37-5	X		II	4					4

- X Completely tooled.
 - Majority of tooling is completed (contact Amphenol Aerospace for availability).
 - ◆ Not tooled for 02-R.
 - P Pin inserts only (contact Amphenol Aerospace for socket availability).
 - ★ Ground plane proprietary option available. Arrangement 9-5 is exclusively ground plane type.
 - Not Mil-Qualified.
 - * Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
 - ** Two size 16 contacts dedicated to fiber optics. Consult Amphenol Aerospace catalog 12-352 for fiber optic information.
 - *** For use in MIL-STD-1760 applications (pgs. 31 & 32).
 - † For RG 180/U and RG 195/U cables only.
 - †† Size 8 Coax and Twinax are interchangeable.
- Note: 25L-3 and 25L-7 require longer shells.

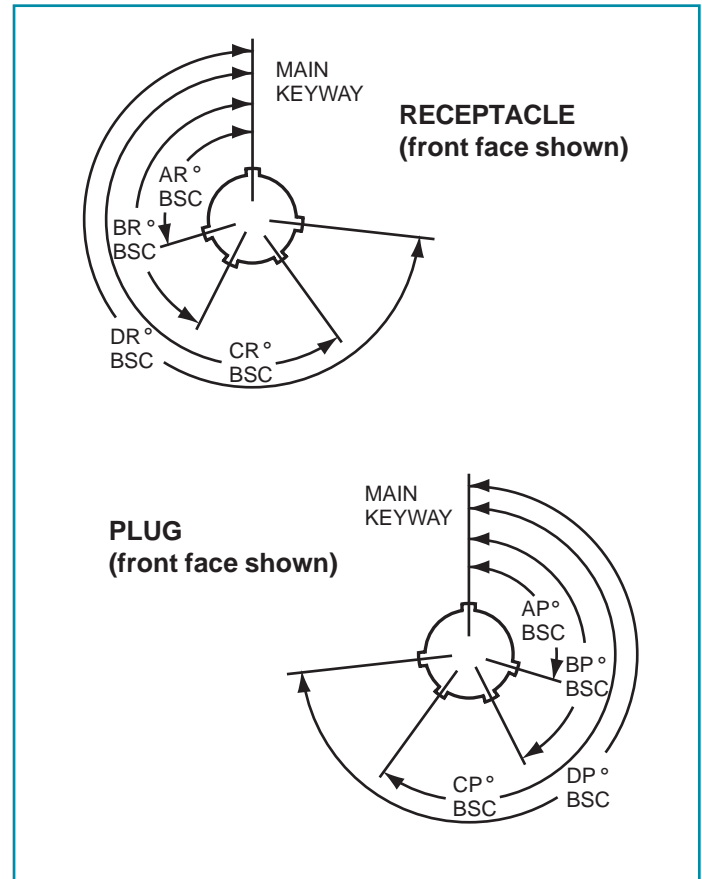
Tri-Start

alternate positioning

Master Key/Keyway Position

Shell Size	Key & keyway arrangement identification letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
11, 13, and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
21, 23, and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
25L, 33, and 37	N	80	142	188	293
	A	135	170	188	310
	B	49	169	188	244
	C	66	140	188	257
	D	62	145	188	280
	E	79	153	188	272

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.



Tri-Start

insert arrangements

front face of pin inserts illustrated

Insert Arrangement	9-5	9-35	9-94	9-98	11-2	11-5	11-35	11-54
Service Rating	Grounded	M	M	I	I	I	M	II
Number of Contacts	1	6	2	3	2	5	13	4
Contact Size	8 Twinax	22D	20	20	16	20	22D	22D

Insert Arrangement	11-98	11-99	13-4	13-8	13-13	13-35	13-98	15-4
Service Rating	I	I	I	I	I, Fiber Optic	M	I	I
Number of Contacts	6	7	4	8	2 2	22	10	4
Contact Size	20	20	16	20	16 12	22D	20	12

Dedicated to
Fiber Optics

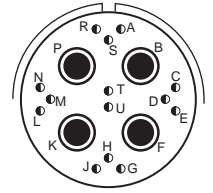
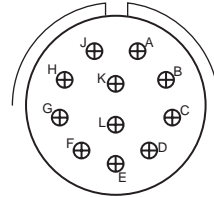
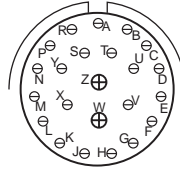
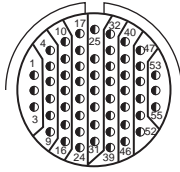
Insert Arrangement	15-5	15-15	15-18	15-19	15-35	15-97
Service Rating	II	I	I	I	M	I
Number of Contacts	5	14 1	18	19	37	8 4
Contact Size	16	20 16	20	20	22D	20 16

Insert Arrangement	17-2	17-6	17-8	17-22	17-26
Service Rating	M	I	II	Coax	I
Number of Contacts	38 1	6	8	2 2	26
Contact Size	22D 8 Twinax	12	16	12 Coax 8 Coax	20

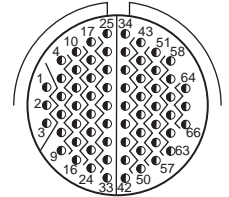
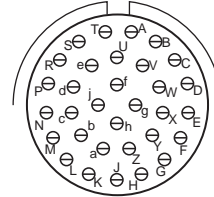
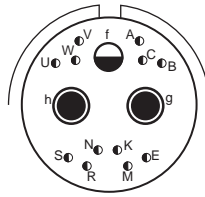
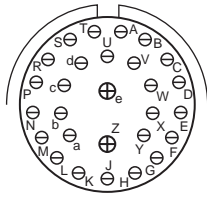


Tri-Start insert arrangements

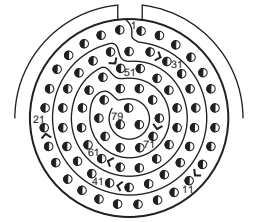
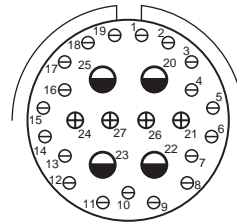
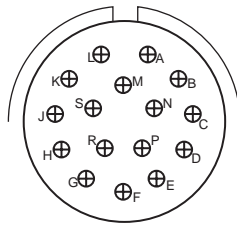
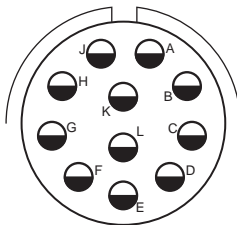
front face of pin inserts illustrated



Insert Arrangement	17-35	17-99	19-11	19-18
Service Rating	M	I	II	M
Number of Contacts	55	21 2	11	14 4
Contact Size	22D	20 16	16	22D 8 Twinax



Insert Arrangement	19-28	19-31	19-32	19-35
Service Rating	I	M	I	M
Number of Contacts	26 2	2 1 12	32	66
Contact Size	20 16	8 Coax 12 22D	20	22D



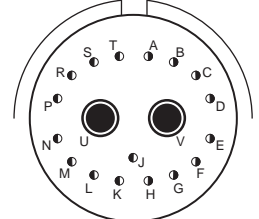
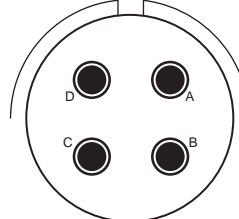
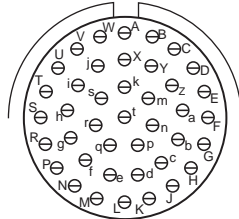
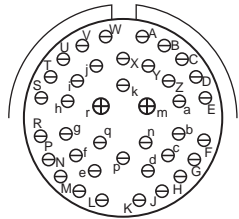
Insert Arrangement	21-11	21-16	21-29	21-35
Service Rating	I	II	I	M
Number of Contacts	11	16	19 4 4	79
Contact Size	12	16	20 16 12	22D



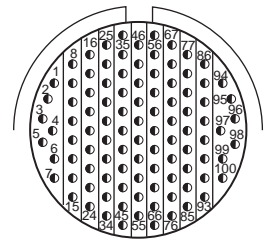
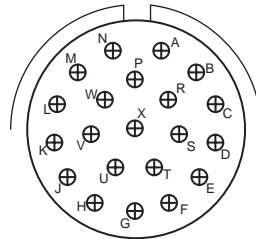
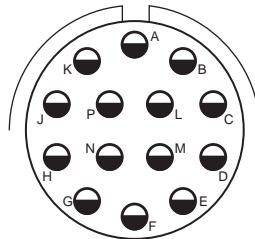
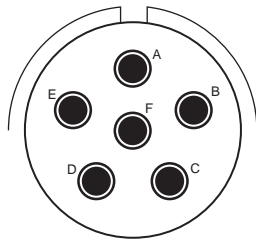
Tri-Start

insert arrangements

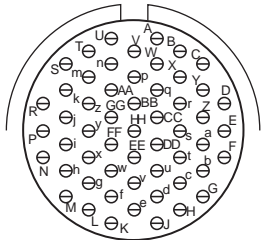
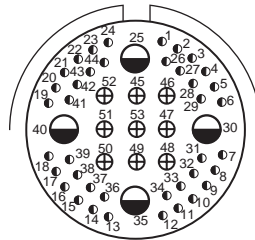
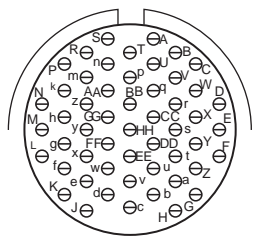
front face of pin inserts illustrated



Insert Arrangement	21-39		21-41		21-75		21-79	
Service Rating	I		I		M		II	
Number of Contacts	37	2	41		4		17	2
Contact Size	20		20		8 Twinax		22D	8 Coax



Insert Arrangement	23-6		23-14		23-21		23-35	
Service Rating	M		I		II		M	
Number of Contacts	6		14		21		100	
Contact Size	8 Twinax		12		16		22D	

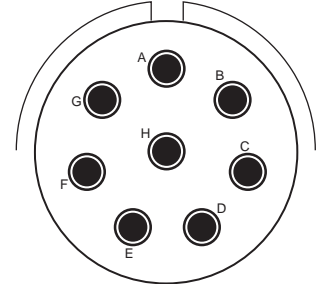
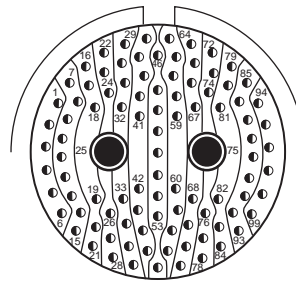
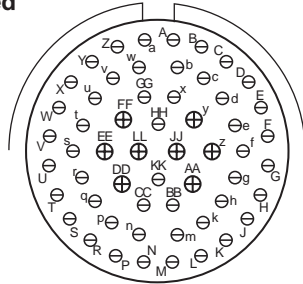


Insert Arrangement	23-53		23-54		23-55	
Service Rating	I		M		I	
Number of Contacts	53		40	9	55	
Contact Size	20		22D	16	12	

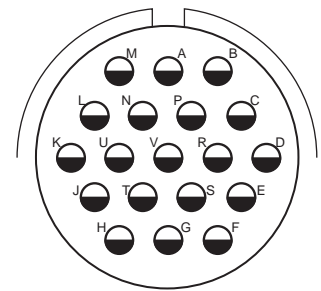
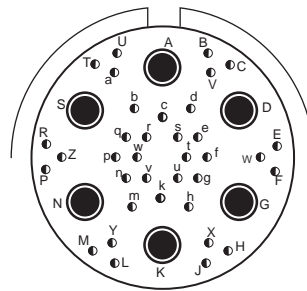
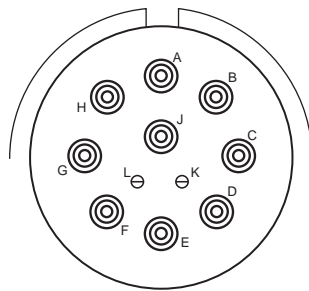


Tri-Start insert arrangements

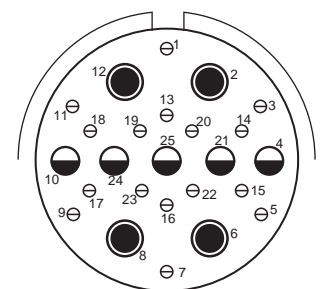
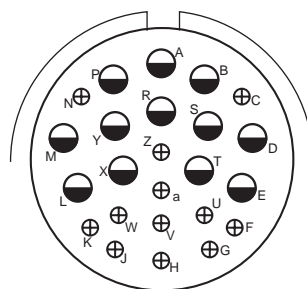
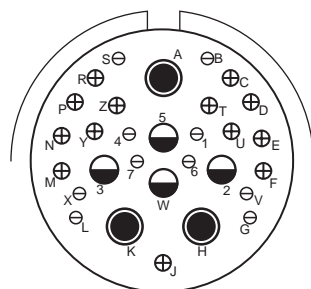
front face of pin inserts illustrated



Insert Arrangement	25-4		25-7		25-8	
Service Rating	I		Twinax		Twinax	
Number of Contacts	48	8	97	2	8	
Contact Size	20	16	22D	8 Twinax	8 Twinax	



Insert Arrangement	25-11***		25-17		25-19	
Service Rating	N		M		I	
Number of Contacts	2	9	36	6	19	
Contact Size	20	10 Power	22D	8 Twinax	12	



Insert Arrangement	25-20***				25-24		25-26		
Service Rating	N				I		I		
Number of Contacts	10	13	3	4	12	12	16	5	4
Contact Size	20	16	8 Twinax	12 Coax	16	12	20	12	8 Coax

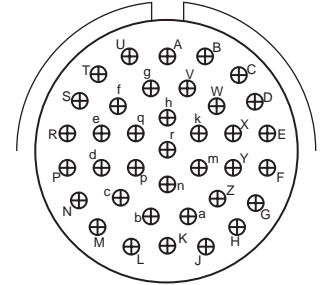
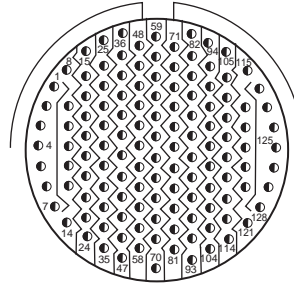
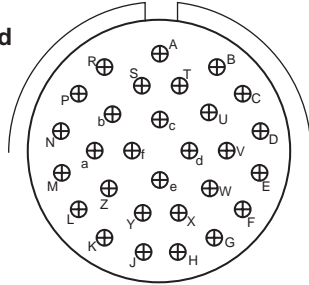
(With Matched Impedance)

*** For use in MIL-STD-1760 applications (see pages 31 and 32).



Tri-Start insert arrangements

front face of pin inserts illustrated

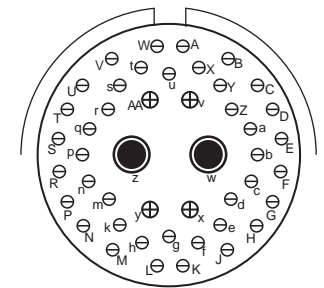
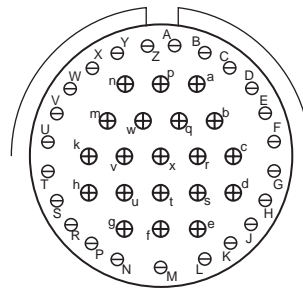
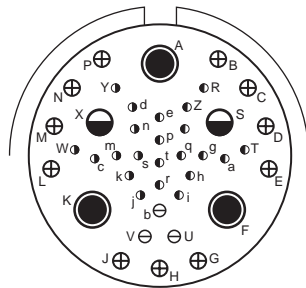


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

25-29
I
29
16

25-35
M
128
22D

25-37
I
37
16

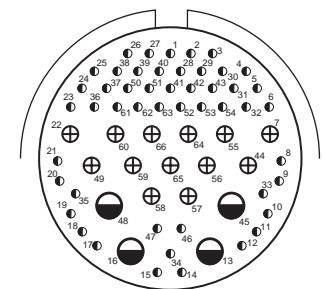
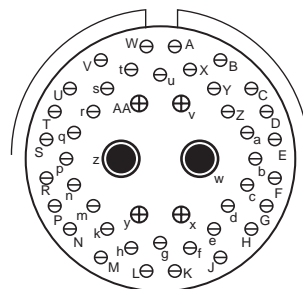
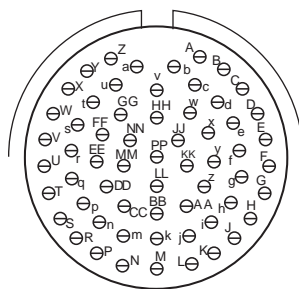


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

25-41
N/Inst.
22 **3** **11** **2** **3**
22D **20** **16** **12 Coax** **8 Twinax**

25-43
I
23 **20**
20 **16**

25-46
I
40 **4** **2**
20 **16** **8 Coax†**



Insert Arrangement
Service Rating
Number of Contacts
Contact Size

25-61
I
61
20

25-90
I
40 **4** **2**
20 **16** **8 Twinax**

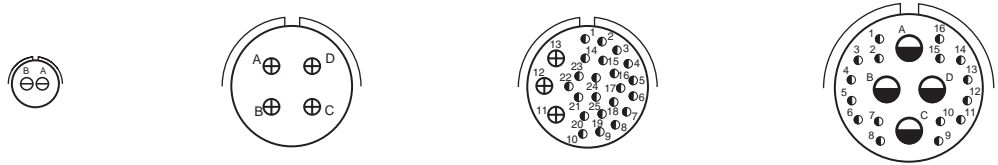
25-F4
Size 22D = M, Balance = I
49 **13** **4**
22D **16** **12**

† Coax contacts for RG180/U or RG195/U cable.

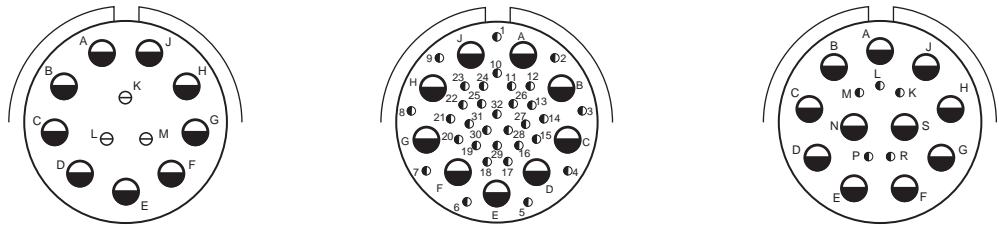


Special insert arrangements

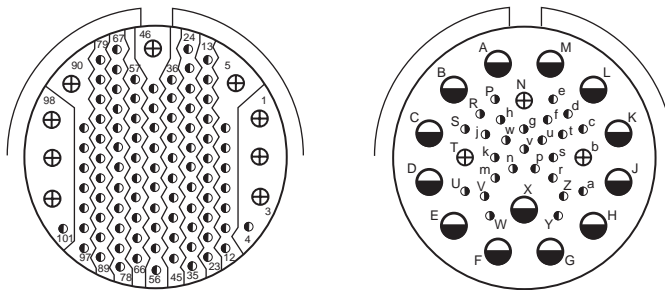
front face of pin inserts illustrated



Insert Arrangement	9-2	15-4*	15-25	17-20
Service Rating	I	II	M	M
Number of Contacts	2	4	22 3	16 4
Contact Size	20	16	22D 16	22D 12



Insert Arrangement	21-12	21-21	21-99
Service Rating	I	M/Inst.	M
Number of Contacts	3 9	32 9	5 11
Contact Size	20 12	22D 12	22D 12



Insert Arrangement	25-92	25-97
Service Rating	M	M
Number of Contacts	92 9	26 3 13
Contact Size	22D 16	22D 16 12

NOTE: Some specials shown here were formerly known as Pyle arrangements. Consult Amphenol for how to order information for connectors with these inserts.

For further information on special arrangements consult Amphenol Aerospace, Sidney NY.

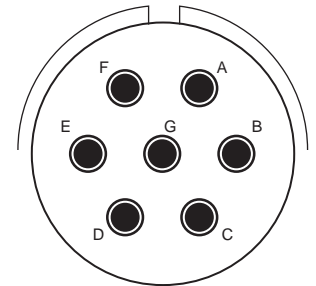
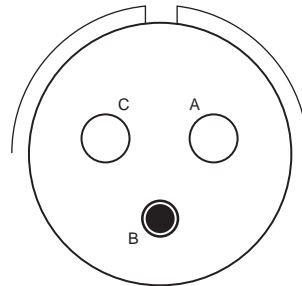
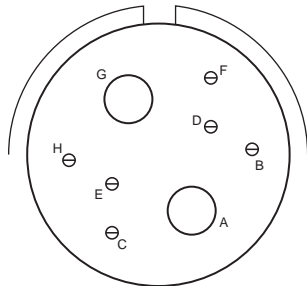
* Pyle 15-4 does not mate with Amphenol Tri-Start 15-4 insert.



Special

insert arrangements requiring non-standard shells or larger contacts

front face of pin inserts illustrated

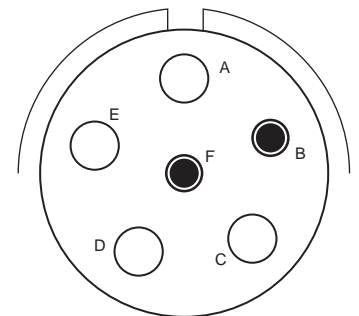
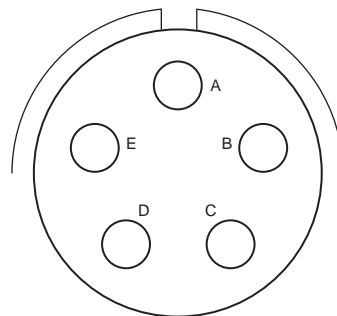
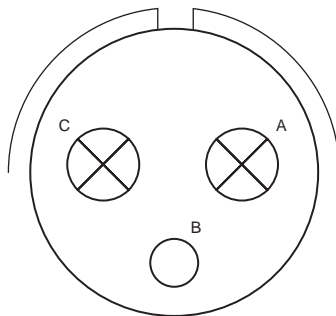


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

25-16
M
6 2
20 4

25L-3
II
1 2
8 4

25L-7
II
7
8

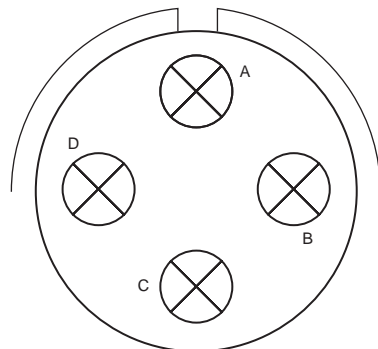


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

33-3
II
1 2
4 0

33-5
II
5
4

33-6
II
2 4
8 4



Insert Arrangement
Service Rating
Number of Contacts
Contact Size

37-5
II
4
0

NOTE: Some specials shown here were formerly known as Pyle arrangements. Consult Amphenol for how to order information for connectors with these inserts.

Consult Amphenol Aerospace for longer shell drawings.

