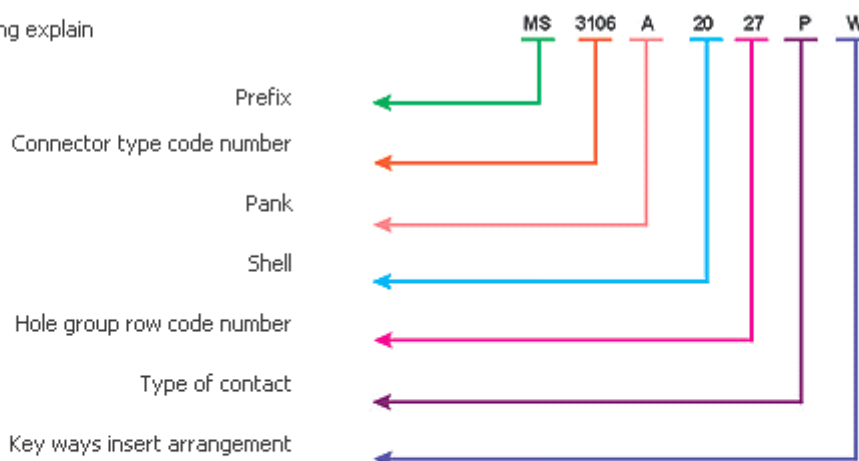


KLS3-B20-1

Marking explain



Prefix:MS show MIL-C-5015 standard connector

Connector type code:

- 3100-Wall mounting receptacle
- 3101-Cable connecting receptacle
- 3102-Box mounting receptacle
- 3106-Straight plug
- 3108-90 ° syphon plug

Shell size:8,10,12,14,16,18,20,22, 24,28,32,36,40,44,48

Rank:· A-Whole cannula · B-Bifid cannula

Type of contact: · P-Pin · S-Jack

Key ways exchange: W,X,Y or Z insert positions

plug



receptacle



Rated current and insert and withdrew force

Contact size	Rated current	Insertion and withdrew force(Kg)
	Ampere(A)	
16	12	11.34
12	23	13.61
8	46	22.64
4	80	27.23
0	150	34.04

Material and surface treatment

	Material	Surface treatment
Shel	Aluminum alloy	Dark green plating
Insulator	PPS Plastic	
Contact body	Copper alloy	Silver-plated

Service environmental condition

Insulation resistance	》 5000M Ω
Ambient temperature	55℃ ~ 125℃
Life	》 500 次 》 500times
With standing voltage	2KV
Operating voltage	AC500V DC700V

Contact size and insertion and withdraw force

Contact size	kg		
	Maximal	Average	Minimum
16 #	1.36	0.95	0.11
12 #	2.26	1.58	0.22
8 #	4.53	3.17	0.34
4 #	6.80	4.76	0.45
0 #	9.97	6.35	0.90

Contact size	Jointing of diameter(mm)	Rated current(A)	Wire size
			A.W.G
16 #	φ 2.0	13	22 # ~16 #
12 #	φ 3.0	23	14 # ~12 #
8 #	φ 5.2	46	10 # ~8 #
4 #	φ 8.5	80	6 # ~4 #
0 #	φ 12.0	150	2 # ~0 #

Insert arrangement

From the direction of pin inserting

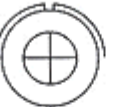
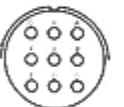
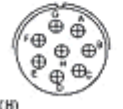
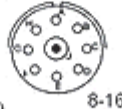
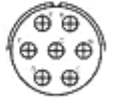
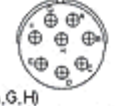


	10SL-3	10S-2	10SL-4			
10SL	 A 3-16'	 A 1-16' (1-16S)	 A 2-16'			
12	 D 1-12'	 A 2-16'	 D 1-16'			
14S	 仪器 4-16'	 仪器 5-16'	 仪器 6-16'	 A 3-16'	 A 2-16'	 A 1-8'
16S	 A 7-16'	 B 1-16'	 D 2-16'	 A 3-16'	 A 3-16'	 A 5-16'
16	 E 1-12'	 A 2-16', 1-6'	 A 2-16', 2-12'	 A 3-12'	 A 2-12'	 A 1-4'
	 A 2-12#					
	 A(B,C,F,G) 仪器 (其余全副) 10-16'	 D 2-12'	 D 4-16'	 D 1-16', 2-12'	 D 1-4'	 B 1-8'

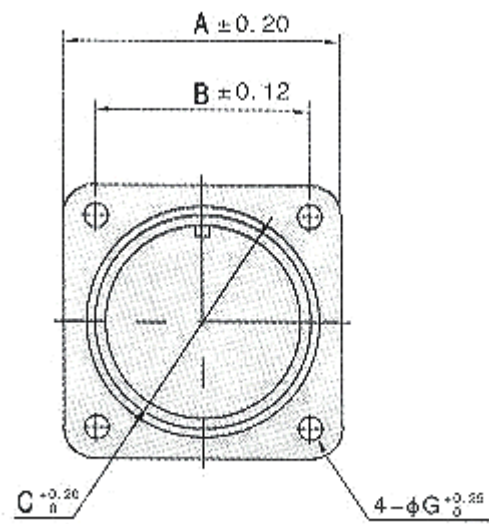
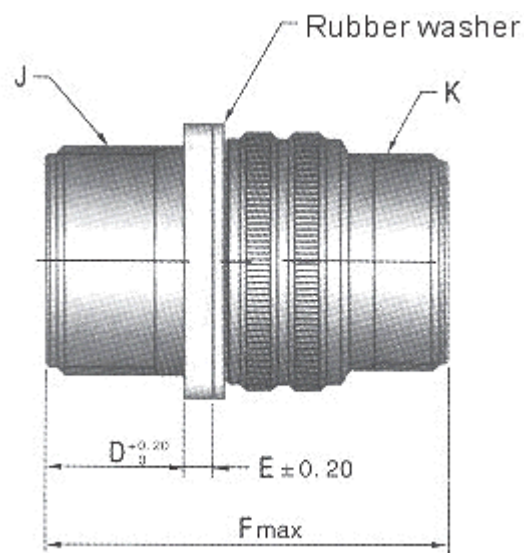
18	18-1 <td>18-3 <td>18-4 <td>18-5 <td>18-6 <td>18-7 </td></td></td></td></td>	18-3 <td>18-4 <td>18-5 <td>18-6 <td>18-7 </td></td></td></td>	18-4 <td>18-5 <td>18-6 <td>18-7 </td></td></td>	18-5 <td>18-6 <td>18-7 </td></td>	18-6 <td>18-7 </td>	18-7
	18-8 <td>18-9 <td>18-10 <td>18-11 <td>18-12 <td>18-13 </td></td></td></td></td>	18-9 <td>18-10 <td>18-11 <td>18-12 <td>18-13 </td></td></td></td>	18-10 <td>18-11 <td>18-12 <td>18-13 </td></td></td>	18-11 <td>18-12 <td>18-13 </td></td>	18-12 <td>18-13 </td>	18-13
	18-14 <td>18-15 <td>18-16 <td>18-22 <td></td><td></td></td></td></td>	18-15 <td>18-16 <td>18-22 <td></td><td></td></td></td>	18-16 <td>18-22 <td></td><td></td></td>	18-22 <td></td> <td></td>		
20	20-2 <td>20-3 <td>20-4 <td>20-7 <td>20-8 <td>20-9 </td></td></td></td></td>	20-3 <td>20-4 <td>20-7 <td>20-8 <td>20-9 </td></td></td></td>	20-4 <td>20-7 <td>20-8 <td>20-9 </td></td></td>	20-7 <td>20-8 <td>20-9 </td></td>	20-8 <td>20-9 </td>	20-9
	20-14 <td>20-15 <td>20-16 <td>20-17 <td>20-18 <td>20-19 </td></td></td></td></td>	20-15 <td>20-16 <td>20-17 <td>20-18 <td>20-19 </td></td></td></td>	20-16 <td>20-17 <td>20-18 <td>20-19 </td></td></td>	20-17 <td>20-18 <td>20-19 </td></td>	20-18 <td>20-19 </td>	20-19
	20-20 <td>20-21 <td>20-22 <td>20-23 <td>20-24 <td>20-27 </td></td></td></td></td>	20-21 <td>20-22 <td>20-23 <td>20-24 <td>20-27 </td></td></td></td>	20-22 <td>20-23 <td>20-24 <td>20-27 </td></td></td>	20-23 <td>20-24 <td>20-27 </td></td>	20-24 <td>20-27 </td>	20-27
	20-29 <td>20-33 <td></td><td></td><td></td><td></td></td>	20-33 <td></td> <td></td> <td></td> <td></td>				

From the direction of pin inserting



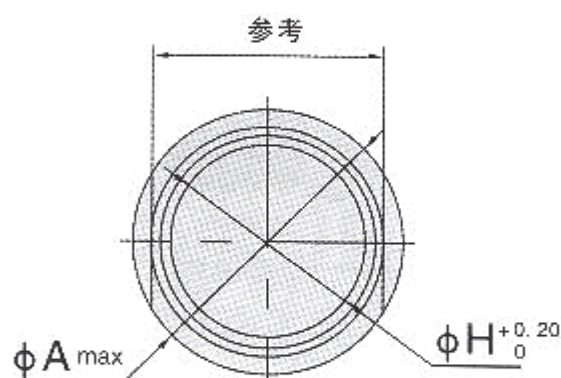
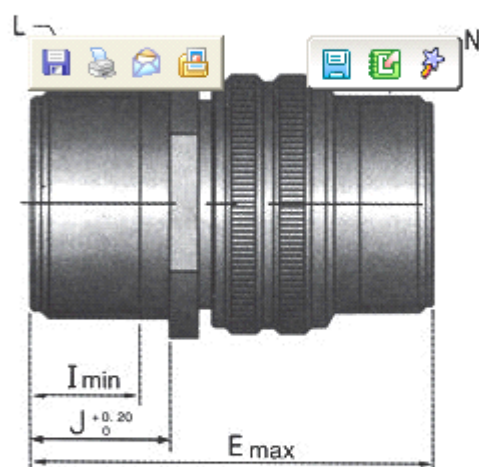
22	22-2  D 3-8 ^a	22-4  A 4-16 ^a	22-5  D 4-16 ^a , 2-12 ^a	22-6  D 1-16 ^a , 2-8 ^a	22-7  E 1-0 ^a	22-9  E 3-12 ^a
	22-10  E 4-16 ^a	22-11  B 2-16 ^a	22-12  D 3-16 ^a , 2-8 ^a	22-13  D(B) A(其余全部) 1-16 ^a 4-12 ^a	22-14  A 19-16 ^a	22-15  E(D) A(其余全部) 1-16 ^a 5-12 ^a
	22-17  D(A) A(其余全部) 8-16 ^a 1-12 ^a	22-18  A(C,D,E) D(其余全部) 8-16 ^a	22-19  A 14-16 ^a	22-20  A 9-16 ^a	22-21  A 2-16 ^a , 1-10 ^a	22-22  A 4-8 ^a
	22-23  D(H) A(其余全部) 8-12 ^a	22-27  D(J) A(其余全部) 8-16 ^a 1-8 ^a	22-28  A 7-12 ^a	22-36  D(H) A(其余全部) 8-12 ^a		
24	24-2  D 7-12 ^a	24-4  D 3-16 ^a , 1-0 ^a	24-5  A 16-16 ^a	24-6  D(A,G,H) A(其余全部) 8-12 ^a	24-7  A 14-16 ^a , 2-12 ^a	24-10  A 7-8 ^a

24	24-11  A 6-12 ⁺ 3-8 ⁺	24-12  A 3-12 ⁺ 2-4 ⁺	24-16  D(A, B, F, G) 3-16 ⁺ A(其余全部) 3-12 ⁺ 1-8 ⁺	24-20  D 9-16 ⁺ 2-12 ⁺	24-21  D 9-16 ⁺ 1-8 ⁺	24-22  D 4-8 ⁺
	24-27  E 7-16 ⁺	24-28  仪器 24-16 ⁺	24-80  仪器 23-16 ⁺			
	28-1  D(A, E, J) 6-12 ⁺ A(其余全部) 3-8 ⁺	28-2  D 12-16 ⁺ 2-12 ⁺	28-3  E 3-8 ⁺	28-4  E(G, P, S) 7-16 ⁺ D(其余全部) 2-12 ⁺	28-5  D 1-12 ⁺ 2-4 ⁺	28-7  A 2-4 ⁺
28	28-8  E(L, M) 10-16 ⁺ D(B) 2-12 ⁺ A(其余全部) 2-12 ⁺	28-9  D 6-16 ⁺ 6-12 ⁺	28-10  D(G) 3-12 ⁺ A(其余全部) 2-8 ⁺ 2-4 ⁺	28-11  A 18-16 ⁺ 4-12 ⁺	28-12  A 26-16 ⁺	28-15  A 35-16 ⁺
	28-16  A 20-16 ⁺	28-17  B(R) 15-16 ⁺ D(MNP) 15-16 ⁺ A(其余全部) 15-16 ⁺	28-18  C(M) 12-16 ⁺ A(A, B) 12-16 ⁺ 仪器(C, D, E, F) 12-16 ⁺ D(其余全部) 12-16 ⁺	28-19  B(H, M) 6-16 ⁺ D(A, B) 4-12 ⁺ A(其余全部) 4-12 ⁺	28-20  A 4-16 ⁺ 10-12 ⁺	28-21  A 37-16 ⁺
	28-22  D 3-16 ⁺ 3-4 ⁺	28-23  仪器 21-16 ⁺ 3-8 ⁺ (屏蔽)				

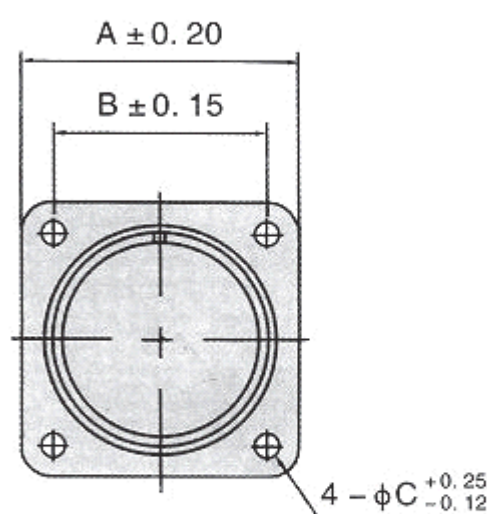
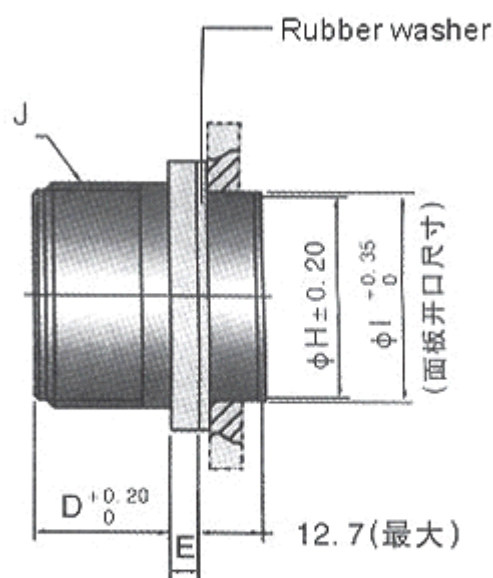


Shell size	A	B	C	D	E	F	G	J	K
105	25.40	18.26	11.6	14.3	3.00	38.88	3.05	5 / 8 -24 UNEF -2A	1 / 2 -28 UNEF -2A
105L	25.40	18.26	11.6	14.3	3.00	38.88	3.05	5 / 8 -24 UNEF -2A	5 / 8 -24 UNEF -2A
125	27.79	20.62	14.4	14.3	3.00	42.87	3.05	3 / 4 -20 UNEF -2A	5 / 8 -24 UNEF -2A
12	27.79	20.62	14.4	19.05	3.00	52.37	3.05	3 / 4 -20 UNEF -2A	5 / 8 -24 UNEF -2A
145	30.18	23.01	17.45	14.3	3.00	42.87	3.05	7 / 8 -20 UNEF -2A	3 / 4 -20 UNEF -2A
14	30.18	23.01	17.45	19.05	3.00	52.37	3.05	7 / 8 -20 UNEF -2A	3 / 4 -20 UNEF -2A
165	32.54	24.61	20.75	14.3	3.00	42.87	3.05	1-20 UNEF -2A	7 / 8 -20 UNEF -2A
16	32.54	24.61	20.75	19.05	3.00	52.37	3.05	1-20 UNEF -2A	7 / 8 -20 UNEF -2A
18	32.54	26.97	23.9	19.05	4.00	52.37	3.05	1 1 / 8 -18 UNEF -2A	1-20 UNEF -2A

18	32.54	26.97	23.9	19.05	4.00	52.37	3.05	1 1 / 8 -18 UNEF -2A	1-20 UNEF -2A
20	38.10	29.36	26.95	19.05	4.00	55.57	3.05	1 1 / 4 -18 UNEF -2A	1 3 / 16 -18 UNEF -2A
22	41.28	31.75	30.15	19.05	4.00	55.57	3.05	1 3 / 8 -18 UNEF -2A	1 3 / 16 -18 UNEF -2A
24	44.45	34.93	33.3	20.63	4.00	58.72	3.73	1 1 / 2 -18 UNEF -2A	1 7 / 16 -18 UNEF -2A
28	50.80	39.67	38.9	20.63	4.00	58.72	3.73	1 3 / 4 -18 UNEF -2A	1 7 / 16 -18 UNEF -2A

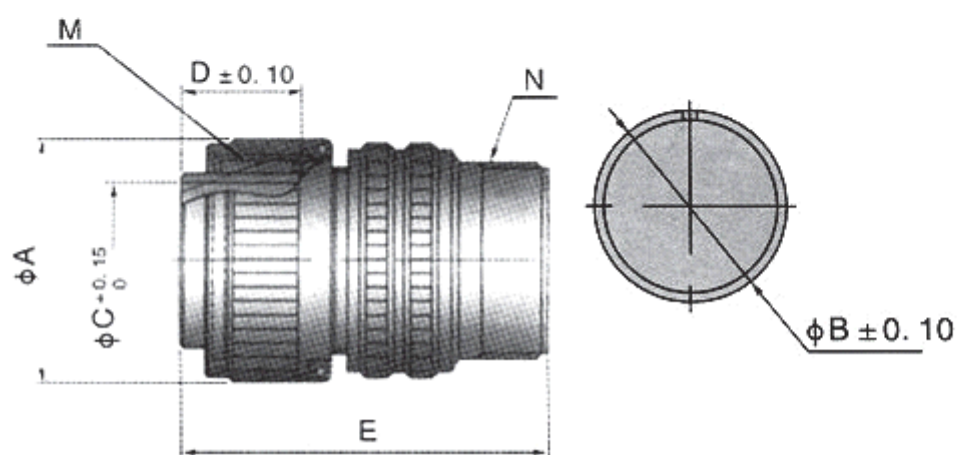


Shell size	A	E	φ H	I	J	L Screwthread	N Screwthread
105	24.61	38.88	11.6	9.53	14.3	5 / 8 -24 UNEF -2A	1 / 2 -28 UNEF -2A
105L	24.61	38.88	11.6	9.53	14.3	5 / 8 -24 UNEF -2A	5 / 8 -24 UNEF -2A
125	26.97	42.87	14.4	9.53	14.3	3 / 4 -20 UNEF -2A	5 / 8 -24 UNEF -2A
12	26.97	52.37	14.4	15.88	19.05	3 / 4 -20 UNEF -2A	5 / 8 -24 UNEF -2A
145	29.36	42.87	17.45	9.53	14.3	7 / 8 -20 UNEF -2A	3 / 4 -20 UNEF -2A
14	29.36	52.37	17.45	15.88	19.05	7 / 8 -20 UNEF -2A	3 / 4 -20 UNEF -2A
165	31.75	42.87	20.75	9.53	14.3	1-20 UNEF -2A	7 / 8 -20 UNEF -2A
16	31.75	52.37	20.75	15.88	19.05	1-20 UNEF -2A	7 / 8 -20 UNEF -2A
18	34.13	52.37	23.9	15.88	19.05	1 1 / 8 -18 UNEF -2A	1-20 UNEF -2A
20	37.31	55.57	26.95	15.88	19.05	1 1 / 4 -18 UNEF -2A	1 3 / 16 -18 UNEF -2A
22	40.48	55.57	30.15	15.88	19.05	1 3 / 8 -18 UNEF -2A	1 3 / 16 -18 UNEF -2A
24	43.66	58.72	33.3	15.88	20.63	1 1 / 2 -18 UNEF -2A	1 7 / 16 -18 UNEF -2A
28	50.01	58.72	38.9	15.88	20.63	1 3 / 4 -18 UNEF -2A	1 7 / 16 -18 UNEF -2A

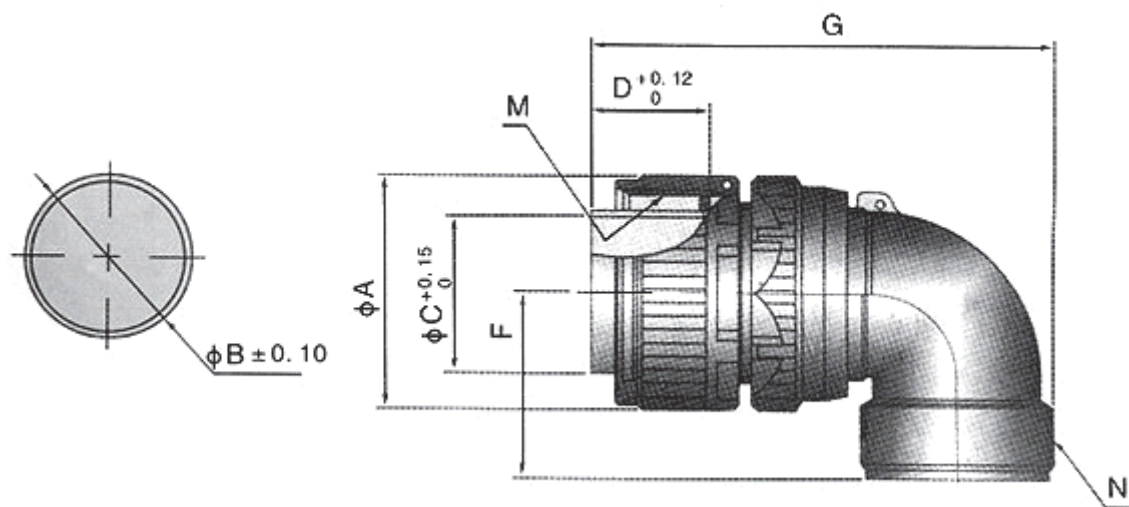


Shell size	A	B	φ C	D	E	φ H (HMS3102)	φ I (HMS3102)	φ H (HMS3102E)	φ I (HMS3102E)	J Screwthread
105	25.40	18.26	3.05	14.28	3.00	16.66	17.47	14	14.8	5 / 8 -24 UNEF -2A
105L	25.40	18.26	3.05	14.28	3.00	16.66	17.47	16	16.8	5 / 8 -24 UNEF -2A
125	27.80	20.62	3.05	14.28	3.00	19.35	20.62	17	17.8	3 / 4 -20 UNEF -2A

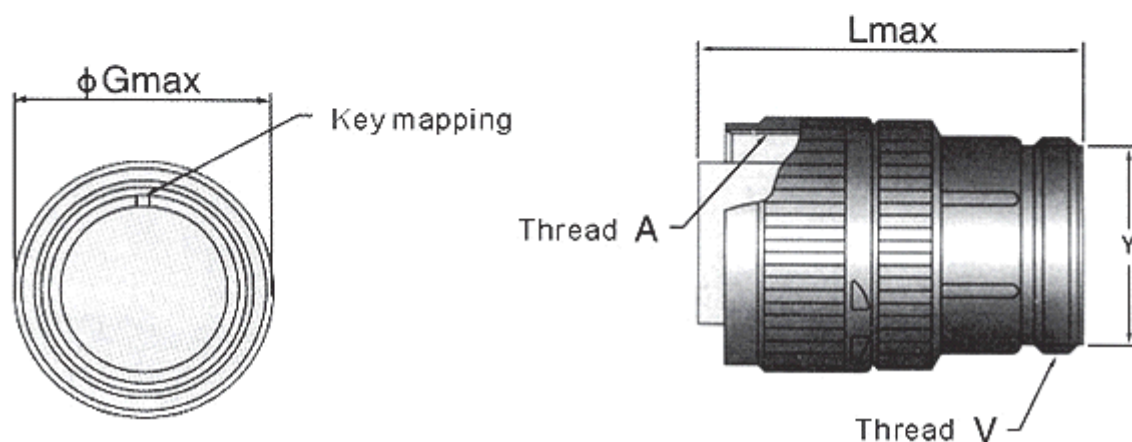
12	27.80	20.62	3.05	19.05	3.00	19.35	20.62	17	17.8	3 / 4 -20 UNEF -2A
145	30.20	23.01	3.05	14.28	3.00	23.01	23.83	21	21.8	7 / 8 -20 UNEF -2A
14	30.20	23.01	3.05	19.05	3.00	23.01	23.83	21	21.8	7 / 8 -20 UNEF -2A
165	32.50	24.61	3.05	14.28	3.00	26.21	26.97	24	24.8	1-20 UNEF -2A
16	32.50	24.61	3.05	19.05	3.00	26.21	26.97	24	24.8	1-20 UNEF -2A
18	34.90	26.97	3.05	19.05	4.00	29.36	30.18	25.1	26	1 1 / 8 -18 UNEF -2A
20	38.10	29.36	3.05	19.05	4.00	32.56	33.32	29.3	30	1 1 / 4 -18 UNEF -2A
22	41.30	31.75	3.05	19.05	4.00	35.71	36.53	32.1	33	1 3 / 8 -18 UNEF -2A
24	44.50	34.93	3.73	20.63	4.00	38.91	39.67	37	37.8	1 1 / 2 -18 UNEF -2A
28	50.80	39.67	3.73	20.63	4.00	45.26	46.02	43	43.8	1 3 / 4 -18 UNEF -2A



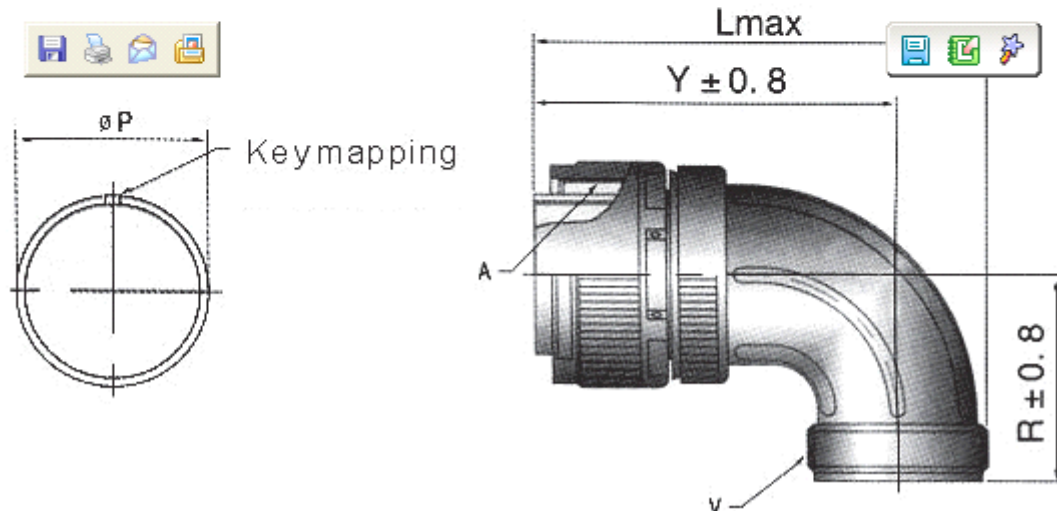
Shell size	ψ A	ψ B	ψ C	D	E	Scerwthread	Scerwthread
85	21.43	9.3	6.41	13.49	37.30	1 / 2 -28 UNEF-2B	1 / 2 -28 UNEF -2A
105	24.61	11.17	8.21	13.49	38.88	5 / 8 -24 UNEF-2B	1 / 2 -28 UNEF -2A
105L	24.61	11.33	9.6	13.49	38.88	5 / 8 -24 UNEF-2B	5 / 8 -24 UNEF -2A
125	26.97	14.10	11.43	13.49	42.87	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
12	29.36	14.10	11.43	18.26	52.37	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
145	29.36	17.15	13.37	13.49	42.87	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
14	29.36	17.15	13.37	18.26	52.37	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
165	31.75	20.45	16.54	13.49	42.87	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
16	31.75	20.45	16.54	18.26	52.37	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
18	34.13	23.62	19.72	18.26	52.37	1 1 / 8 -18 UNEF-2B	1-20 UNEF -2A
20	37.31	26.67	23.68	18.26	55.57	1 1 / 4 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
22	40.48	29.85	26.07	18.26	55.57	1 3 / 8 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
24	43.66	33.02	29.24	18.26	58.72	1 1 / 2 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A
28	50.01	39.61	34.80	18.26	58.72	1 3 / 4 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A



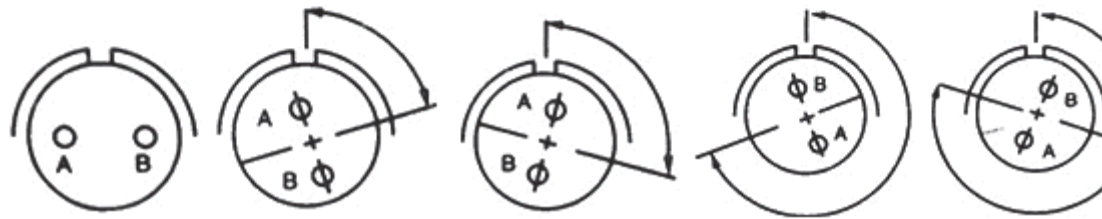
Shell size	ψA	ψB	ψC	D	F	G	M	N
							Scerwthread	Scerwthread
85	21.43	9.3	6.41	13.49	23.77	44.45	1 / 2 -28 UNEF-2B	1 / 2 -28 UNEF -2A
105	24.61	11.17	8.21	13.49	25.40	44.45	5 / 8 -24 UNEF-2B	1 / 2 -28 UNEF -2A
105L	24.61	11.33	9.6	13.49	25.40	46.02	5 / 8 -24 UNEF-2B	5 / 8 -24 UNEF -2A
125	26.97	14.10	11.43	13.49	26.97	50.80	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
12	26.97	14.10	11.43	18.26	26.97	57.15	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
145	29.36	17.15	13.37	13.49	28.57	53.97	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
14	29.36	17.15	13.37	18.26	28.57	58.72	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
165	31.75	20.45	16.54	13.49	30.17	60.32	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
16	31.75	20.45	16.54	18.26	30.17	65.07	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
18	34.13	23.62	19.72	18.26	33.32	68.27	1 1 / 8 -18 UNEF-2B	1-20 UNEF -2A
20	37.31	26.67	23.68	18.26	34.92	76.98	1 1 / 4 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
22	40.48	29.85	26.07	18.26	34.92	86.51	1 3 / 8 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
24	43.66	33.02	29.24	18.26	39.67	86.51	1 1 / 2 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A
28	50.01	38.61	34.80	18.26	39.67	93.98	1 3 / 4 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A



Shell size	G	L	A	V
85	21.43	37.30	1 / 2 -28 UNEF-2B	1 / 2 -28 UNEF -2A
105	24.61	38.88	5 / 8 -24 UNEF-2B	1 / 2 -28 UNEF -2A
10L	24.61	38.88	5 / 8 -24 UNEF-2B	5 / 8 -24 UNEF -2A
125	26.97	42.87	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
12	26.97	52.37	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
145	29.36	42.87	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
14	29.36	52.37	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
165	31.75	42.87	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
16	31.75	52.37	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
18	34.13	52.37	1 1 / 8 -18 UNEF-2B	1-20 UNEF -2A
20	37.31	55.57	1 1 / 4 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
22	40.48	55.57	1 3 / 8 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
24	43.66	58.72	1 1 / 2 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A
28	50.01	58.72	1 3 / 4 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A



Shell size	L	P	R	Y	A	V
					Scerwthread	Scerwthread
85	44.45	21.43	23.77	38.1	1 / 2 -28 UNEF-2B	1 / 2 -28 UNEF -2A
105	44.45	24.61	25.4	38.1	5 / 8 -24 UNEF-2B	5 / 8 -28 UNEF -2A
105L	46.02	24.61	25.4	38.1	5 / 8 -24 UNEF-2B	5 / 8 -24 UNEF -2A
125	50.08	26.97	26.97	42.87	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
12	57.15	26.97	26.97	49.22	3 / 4 -20 UNEF-2B	5 / 8 -24 UNEF -2A
145	53.97	29.36	28.57	44.45	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
14	58.72	29.36	28.57	49.22	7 / 8 -20 UNEF-2B	3 / 4 -20 UNEF -2A
165	60.32	31.75	30.17	49.22	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
16	65.07	31.75	30.17	53.97	1-20 UNEF-2B	7 / 8 -20 UNEF -2A
18	68.27	34.13	33.32	55.57	1 1 / 8 -18 UNEF-2B	1-20 UNEF -2A
20	76.98	37.31	34.92	61.92	1 1 / 4 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
22	86.51	40.48	34.92	61.92	1 3 / 8 -18 UNEF-2B	1 3 / 16 -18 UNEF -2A
24	86.51	43.66	39.67	68.27	1 1 / 2 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A
28	93.98	50.01	39.67	68.27	1 3 / 4 -18 UNEF-2B	1 7 / 16 -18 UNEF -2A



Insert amang ement	Rank	Number of contacts	Contact specification				Revolving angle			
			0	4	8	12	W	X	Y	Z
28-1	D/A	9			3	6	80	110	250	280
28-2	D	14				2	35	110	250	325
28-3	E	3			3		70	145	215	290
28-4	E/D	9				2	80	110	250	280
28-5	D	5		2		1	35	110	250	325
28-7	D	2		2			35	110	250	325
28-8	E/D/A	12				2	80	110	250	280
28-9	D	12				6	80	110	250	280
28-10	D/A	7		2	2	3	80	110	250	280
28-11	A	22				4	80	110	250	280
28-12	A	26					90	180	270	-
28-15	A	35					80	110	250	280
28-16	A	20					80	110	250	280
28-17	B/D/A	15					80	110	250	280
28-18	C/D/A/ Instrument	12					70	145	215	290
28-19	B/D/A	10				4	80	110	250	280
28-20	A	14				10	80	110	250	280
28-21	A	37					80	110	250	280
28-22	D	6		3			70	145	215	290
28-23	Instrument	24			3		-	-	-	-

Insert amangement	Rank	Number of contacts	Contact specification					Revolving angle			
			0	4	8	12	16	W	X	Y	Z
105-2	A	1					1				
105L-3	A	3					3			215	290
125-3	A	2					2	70	145	215	290
125-4	D	1					1				
12-5	D	1				1					
145-2	Instrument	4					4		120	240	
145-5	Instrument	5					5		110		
145-6	Instrument	6					6				
145-7	A	3					3	90	180	270	
145-9	A	2					2	70	145	215	290
14-3	A	1			1						
165-1	A	7					7	80			280
165-3	B	1					1				
165-4	D	2					2	35	110	250	325
165-5	A	3					3	70	145	215	290
165-6	A	3					3	90	180	270	
165-8	A	5					5		170	265	
16-2	E	1				1					
16-7	A	3			1		2	80	110	250	320
16-9	A	4				2	2	35	110	250	325
16-10	A	3				3		90	180	270	
16-11	A	2				2		35	110	250	325
16-12	A	1		1		2		35	110	250	325
16-13	A	2					10	70	145	215	290
18-1	Instrument	10				2		35	110	250	325
18-3	D	2				4	4	35	110	250	325
18-4	D	4									
18-5	D	3				2	1	80	110	250	280
18-6	D	1									
18-7	B	1			1						
18-8	A	8				1	7	70			290
18-9	Instrument	7				2	5	80	110	250	280
18-10	A	4				4			120	240	
18-11	A	5					5		170	200	
18-12	A	6					6	80			280
18-13	A	4			1	3		80	110	250	280

18-14	A	2		1		1	80	110	250	280
18-15	A	4			4			120	240	
18-16	C	1			1					
18-22	D	3				3	70	145	215	290
20-2	D	1	1							
20-3	D	3			3		70	145	215	290
20-4	D	4			4		45	110	250	
20-7	D/A	8				8	80	110	250	280
20-8	Instrument	6			2	4	80	110	250	280
20-9	D/A	8			1	7	80	110	250	280
20-14	A	5			2	3	80	110	250	280
20-15	A	7				7	80			280
20-16	A	9				2	7	80	110	250
20-17	A	6				5	1	90	180	270
20-18	A	9				3	6	35	110	250
20-19	A	3				3		90	180	270
20-20	A	4		1		3				
20-21	A	9				1	8	35	110	250
20-22	A	6			3		3	80	110	250
20-23	A	2			2			35	110	250
20-24	A	4			2		2	35	110	250
20-27	A	14					14	35	110	250
20-29	A	17					17	80		280
20-33	A	11					11			
22-2	D	3			3			70	145	215
22-4	A	4			2	2	2	35	110	250
22-5	D	6				2	4	35	110	250
22-6	D	3			2		1			
22-7	E	1	1							
22-9	E	3				3		70	145	215
22-10	E	4					4	35	110	250
22-11	B	2					2	35	110	250

22-12	D	5			2		3	80	110	250	280
22-13	D/A	5				4	1	35	110	250	325
22-14	A	19					19	80			280
22-15	E/A	6				5	1	80	110	250	280
22-17	D/A	9				1	8	80	110	250	280
22-18	A/D	8					8	80	110	250	280
22-19	A	14					14	80	110	250	280
22-20	A	9					9	35	110	250	325
22-21	A	3	1				2	80	110	250	280
22-22	A	4			4				110	250	
22-23	D/A	8				8		35		250	
22-27	D/A	9			1		8	80		250	280
22-28	A	7				7		80			280
22-36	A	8				8		90		270	
24-2	D	7				7		80			280
24-4	D	4	1				3	80	110	250	280
24-5	A	16					16	80	110	250	280
24-6	D/A	8				8		80	110	250	280
24-7	A	16				2	14	80	110	250	280
24-10	A	7			7			80			280
24-11	A	9			3	6		35	110	250	325

24-12	A	5		2		3		80	110	250	280
24-16	A	5		2		3		80	110	250	280
24-20	D	11				2	9	80	110	250	280
24-21	D	10			1		9	80	110	250	280
24-22	D	4			4			45	110	250	
24-27	E	7					7	80			
24-28	Instrument	24					24	80	110	250	280
24-80	Instrument	23					23	35	145	240	300