62 GB- Series Plugs

CE-2Pa

Miniature Bayonet Lock Connectors Complies with MIL-C-26482



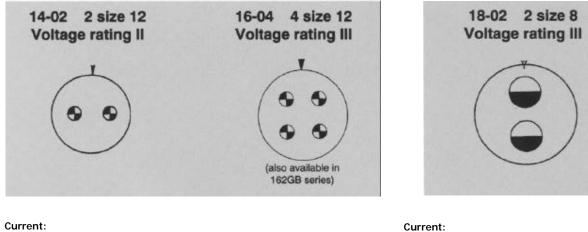
This miniature bayonet lock connector series offers designers important features not found in any other range of connectors.

They are developed and manufactured entirely in the U.K. by AMPHENOL Ltd., and have full qualification approval to British Standards Specification BS 9522 F0017 and British Defence Specification DEF STAN 59-35 (Part 3) Sec. 7.

This catalogue to be used in conjunction with Catalogues: CE-2Ra – 62GB Series Receptacles CE-2Aa – 62GB Series Accessories

Amphenol

62GB and Pattern 608 **New Planforms**



Maximum current per individual contact (in isolation)* at ambient (a) temperature of 85°C

Contact size 12: 23 A

Maximum current per contact through all contacts simultaneously at (b) an ambient temperature of 85°C

Contact size 12: 20 A

(a) Maximum current per individual contact (in isolation)* at ambient temperature of 85°C

Contact size 8: 45 A

(b) Maximum current per contact through all contacts simultaneously at an ambient temperature of 85°C

Contact size 8: 40 A

	Sea level		8500m (27,900ft)		21,340m (70,000ft)				
	1	013 mbar	á		320 mbar			44 mbar	
Voltage rating		11	111	I	11			11	
Working voltages ** (nominal)	700	1200	1500	550	650	800	330	380	450
d.c. or a.c. peak Voltage proof d.c. or a.c. peak	2100	3000	3000	1100	1300	1300	660	760	750

* i.e. when only one contact per connector is electrically loaded.

- 1 mbar=10² N/m²=100 Pa á
- ** Establishment of electrical safety factors is the responsibility of the user

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This catalogue to be used in conjunction with Catalogues: CE-2Ra – 62GB Series Receptacles CE-2Aa – 62GB Series Accessories

This miniature bayonet lock connector series offers designers important features not found in any other range of connectors. The range has full qualification approval to British Standards Specification BS 9522 FOO 17 and British Defence Specification DEF STAN 59-35 (Part 3) Sec. 7.

62GB Series connectors - developed and manufactured entirely in the United Kingdom by Amphenol Limited. They are the first and only British connectors to have achieved this. A doubly strong position which Amphenol are well geared to handle. The manufacturing facilities of the Whitstable plant have been cited as exemplary in Europe. Certainly the layout is extensive and extremely efficient; safety awards have been attained every time returns have been submitted to the British Safety Council.

62GB Series connectors have been well established with Government authorities on an international scale and users can be found in Sweden, Denmark, Norway, Finland, Germany, Spain, Holland, India, Canada and Italy.

Derating

Connectors must be derated under the following operating conditions:

- At elevated ambient temperatures, the current ratings are reduced so that total maximum hot spot temperature of 125°C is not exceeded.
- 2. At high altitudes, revised voltage ratings become effective as shown on page 7.
- When connectors to different specifications are intermated (e.g. BS 9522 FOO 17 and MIL-C26482), the combination must not be operated under conditions more severe than the less stringent clause of either specification.

Amphenol 62GB connectors are designed to meet the most stringent requirements of both specifications.

Military Specifications

British Standards Specification BS 9522 FOO 17 closely corresponds to the United States Military Specification MIL-C-26482 solder terminations. Certain differences exist between the schedules which can be seen on pages 2 and 3.

Approved gauges are used to check interchangeability of 62GB series with other connectors manufactured to BS 9522 FOO 17 or MIL-C-26482.

Amphenol ® 62GB solder connectors

Basic Construction

Connector shells are machined from solid aluminium bar stock - not forged or extruded as in competitive designs. Machining has inherent advantages in terms of strength and adaptability. 62GB Series can be supplied in brass or stainless steel, for instance.

The normal shell finish used, which has a high resistance to corrosion, is zinc cobalt olive drab. Other finishes may be supplied to special order, such as cadmium plate which is available by adding deviation (714) to the end of part number.

Inserts are of polychloroprene rubber compounded to an Amphenol specification. Operating temperature range is -55°C to 125°C, and the connectors have gold-plated contacts designed for soldered connections. Configurations for size 20 contacts range between 2 contacts in the size 8 12.7mm (0.5in diameter) shell up to a maximum of 61 contacts in the size 2436.1 mm (1.5in diameter) shell. Intermediate sizes, and contact data for heavier current ratings are shown in the insert availability chart on page 6 and 7.

Hermetic connectors with glass sealed dialectric are manufactured with mild steel shells and nickel iron contacts plated tin over copper.

* Other finishes are available on request.

Protection Against Mis-Mating or Cross-Plugging

In BS 9522 FOO 17 positive shell-to-shell keying is provided with keys and keyways in a choice of either the normal (N) or any of the four preferred alternate positions: B, C, E and F. This prevents mismating between shells of different orientations and overcomes the difficulties associated with rotated inserts and a standard key-keyway orientation. In the latter system, damage to the inserts or contacts can result if excessive force is used to engage non-mating pairs.

Rotated inserts are, however, permissible in BS 9522 FOO 17 connectors if required to mate with or replace units to MIL-C-26482 mounted in existing equipment. Connectors have normal orientations manufactured to BS 9522 FOO 17 or MIL-C-26482 are fully intermateable as also are connectors with inserts in positions W, X, Y or Z.

Schedule of Tests Required for Qualification Approval

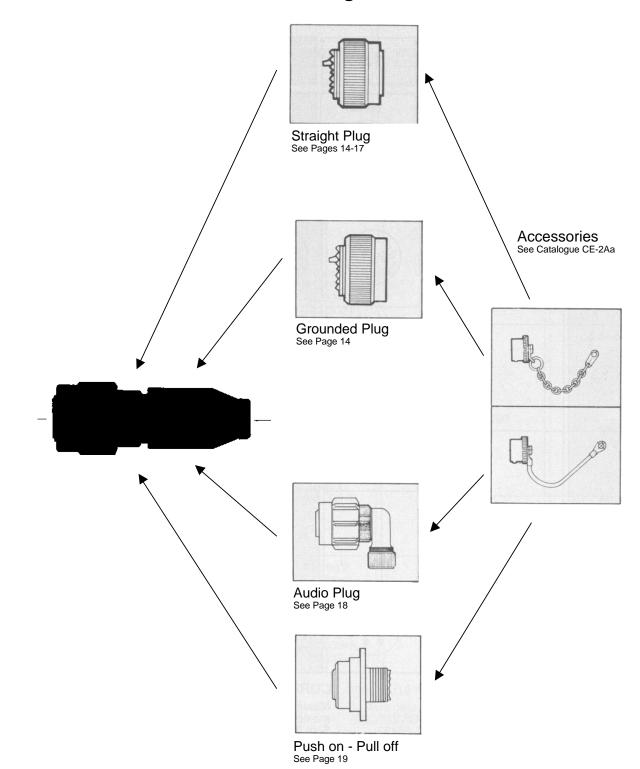
	Brief Description
Visual Examination	
Dimensions, outline mass(including contacts) Compatability Gauging procedure	
Polarization	
Engaging and separating force, connector	Engagement max: 0,90 Nm (8.0 lbf.in.) to 4,97 Nm (44 lbf.in.) according to shell size. Separation min: 0,22 Nm (2.0 lbf.in.) to 1,58 Nm (14.0 lbf.in.) according to shell size.
Contact Holding Force	0,21 N (0.047 lbf) min.size 20 0,56 N (0.126 lbf)min. size 16
Sealing (air pressure)	Max leakage 28,53 uNm/s (1 cm3/h), 1 bar (14.5 p.s.i.) differential.
Sealing Hermetic	Hermetic receptacles have a max leak of 0.1 micron cubic foot per hour (1 x 10-6Cm3/s)
Contact Resistance	5 milliohms max.
Housing (Shell) Continuity	200 milliohms max. 5 milliohms max. grounding spring styles.
Insulation Resistance	5,000 Megaohms at 500 - 50 V d.c.
Voltage Proof	See page 7. Duration 1 minute
Soldering	As BS 9520: 1974, Clause 1.2.6.6, Method 2.
Bumping	As BS 9520: 1974, Clause 1.2.6.1. 4,000 -10 bumps / 390m / s2 (40 gn).
Vibration	As BS 9520: 1974, Clause 1.2.6.2.1. Procedure A. 10 Hz to 5000 Hz, 0.75 mm / 10 gn.
Shock	As BS 9520: 1974, Clause 1.2.6.3. 981 m/s2 (100 g n).
Acceleration (Steady State)	As BS 9520: 1974, Clause 1.2.6.4. 490 m/s2 (50 gn).
Rapid Change of Temperature	As BS 9520: 1974, Clause 1.2.6.7550 C to - 1250 C.
Climatic Sequence	As BS 9520: 1974, Clause 1.2.6.11. Severity 55/125/56.
Flammability	As BS 9520: 1974, Clause 1.2.6.8. Direct flame applied, duration 1 minute.
Damp Heat (Steady State)	As BS 9520: 1974, Clause 1.2.6.14. Severity 56 days.

Schedule of Tests Required for Qualification Approval

Tests	Brief Description
Immersion (at low air pressure)	3 cycles at 30 mins each cycle, total immersion in water at pressure 44 m bar.
Mechanical Endurance	500 operations minimum
High Temperature Endurance	Long term: 1,000 hrs. at 850 C ambient carrying the specified current. Short term: 250 hrs at 1250 C, no current.
Mould Growth	As BS 9520: 1974, Clause 1.2.6.15. 28 days duration.
Salt Mist	As BS 9520: 1974, Clause 1.2.6.16. Severity 1.
Dust	As BS 9520: 1974, Clause 1.2.6.17 Exposure 30 minutes.
Robustness of Terminations	44,5 N (101bf) size 16 22,2 N (5 lbf) size 20
Contact Retention (in insert)	67,0 N (15 lbf) min. size 20 112,0 N (25 lbf) min. size 16
Insert Retention (in shell)	517 KN1m2 (751bf/in2) min.
Test Prod Damage	Moment: 0,056 Nm (0.5 lbf in) size 20 0,225 Nm (2 lbf in) size 16
Impact	Five impacts, drop height 1 m (3ft.3 in.).
Grounding Spring Holding Force Plugs with grounding springs only.	1,17 N (0.263 lbf) to 2,74 N (0.616 lbf) according to size.
Fluid Resistance	Immersion in 4 solvents and 9 fluids including aircraft fuels, lubricating oils and hydraulic fluids.
Compass Safe Distance	As BS 9520: 1974, Clause 1.2.5.11. 127 mm (5.0 in) min.

Connector Styles Available

Plugs



Insert Availability

8	10	12	14	16	18	20
8-2*	10–6	12-10	14-12 †	16-23*	18-32	20-41
				10-23 Q=000 00000 0000 0000 0000 0000 0000 0000 0000 0000 0000 000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000000000000000000000000000000000000
8–3*	10–7		14–15	16-26		
		/	$\begin{array}{c} \overset{L}{N} \overset{L}{O} \overset{O}{O} \overset{O}{\mathsf$	00000 000000 00000000 0000000000000000		
8-33			14–19			
			(A) (A) (A) (A) (A) (A) (A) (A)			
8-4*						
8-98	10-2	12–3	14–5	16–8	18–11	20-16

NOTES

- * This insert arrangement is not included in B.S. spec., but is available and. listed in MIL-C-26482.
- á Due to the arrangement of contacts in the 14-12 insert arrangement it is classified, for current derating, in the shell size range 18-24.

Lettering of inserts shown above corresponds to view of front (mating surface of pin inserts or rear face (cable accessory end) of socket inserts.

KEY No 16 size contacts O No 20 size contacts

CURRENT RATING

Maximum current per individual contact (in isolation) at a maximum ambient temperature of 85°C: Size 20 contact 7.5A Size 16 contact 13-OA The performance of 62GB Series connectors at all times exceeds the maximum continuous bunched rating of the appropriate size wire, or cable of equivalent temperature rating. This bunched rating is therefore the determining factor. In the case of mixed loadings, the greatest individual load shall be the bunched loading. In any combination of ambient temperature plus temperature rise due to current flow through the contacts, the maximum connector internal hot spot temperature of 125°C must not be exceeded.

That is, when only one contact per connector is loaded.

Insert Availability

		VOLTAGE RATINGS				
22	24	ALTITUDE	D.C. WORKING VOLTAGE	A.C. WORKING VOLTAGE R.M.S.	PROOF VOLTAGE D.C. OR A.C. PEAK	
22-55	24-61					
10000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Rating 1 Sea level	700	500	2100	
		300 mb at 20°C 8,500m (27,800 ft)	550	390	1100	
		44 mb at 20°C 20,000m (66,000 ft)	330	230	660	
22-21		Rating 2 Sea level	120	850	3000	
		300 mb at 20°C 8,500m (27,800 ft) 44 mb at	650	460	1300	
† Available to special		20"C 20,000m (66,000 ft)	380	270	760	
order only						

Rating 2 (1200V d.c. working at sea-level) Applicable to the inserts shown in the lower section of the insert availability diagram.

Altitude derating. Information on voltage derating for operation at altitudes above sea-level can be obtained from the flashover voltage altitude curves on the left.

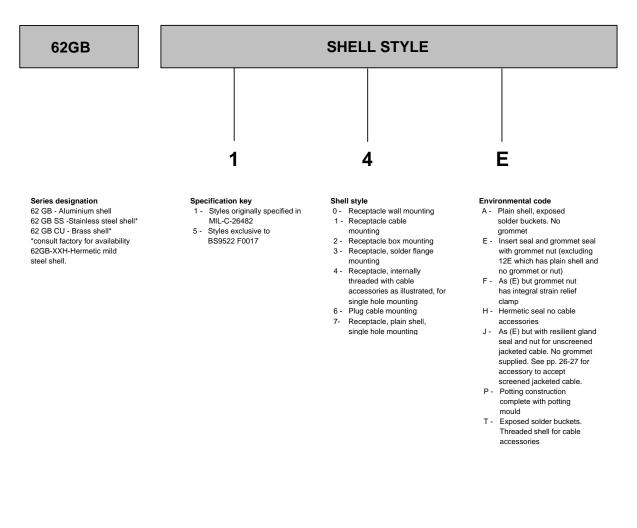
40 60 80 100 120 140 (12) (18) (24) (30) (36) (42)

160 (48) 108 (54)

20 (6)

Ordering 62GB Series Connectors

To obtain the specific connector required write down the connector number from the typical example below. Only inserts shown in the availability chart on p. 10&11 can be specified. All connectors are delivered with protective dust covers

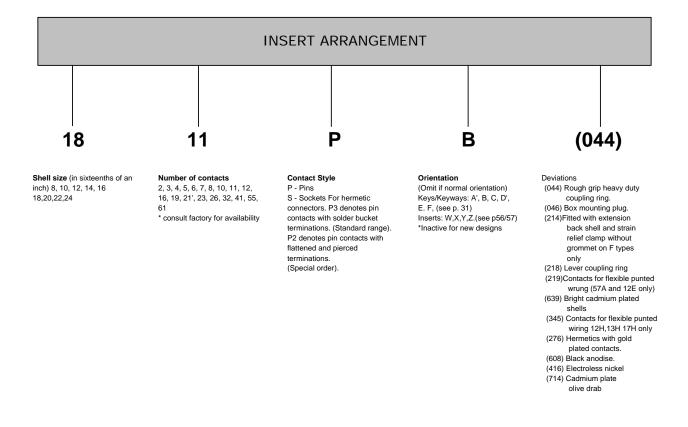


HOW TO ORDER FROM MS CONNECTOR NUMBERS

Connector numbers in the AMPHENOL and MS numbering systems. Only alternative insert orientations are specified in MIL-C-26482 which does not include alternative key/keyway orientations.

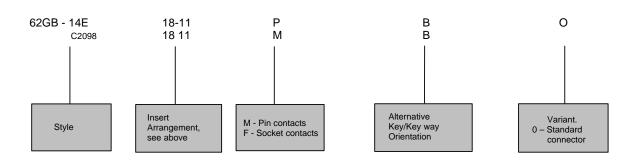
MS31	-	14	E	18 -11	Р	Х
62GB	-	14	E	18 -11	Р	Х

Ordering 62GB Series Connectors



HOW TO ORDER FROM B.S. CONNECTOR NUMBERS

Select the connector style by reference to BS9522 F0017 using the code below for identification. Note that the B.S. Specification includes only certain connectors from the table of styles as shown on pp. 8 & 9. Alternative key/keyway orientations are preferred in the BS9522 F0017 Specification to prevent mis-mating. However, rotated inserts are permissible where connectors are required to mate with or replace items to MIL-C-26482 on existing equipment.



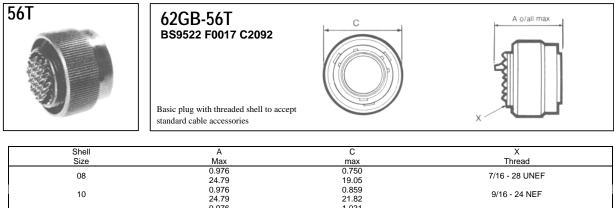
Plugs Table of Styles

		 Page No.
62GB-56T		14
62GB-56TG		14
62GB-16A		15
62GB-56T (046)		15
62GB-16E		16
62GB-16F		16
62GB-16P	1)	17

Plugs Table of Styles

		Page No.
62GB-16J		17
62GB-5039-10		18
62GB-5055-10		18
62GB-5056-10		18
62GB-5074		19

Plugs

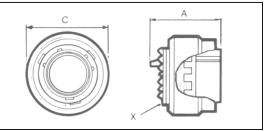


10	24.79	21.82	9/10-24 NEF
12	0.976	1.031	11/16 -24NEF
12	24.79	26.19	11/10-24NEF
14	0.976	1.156	13/16 - 20 UNEF
14	24.79	29.36	13/16 - 20 UNEF
16	0.976	1.281	15/16 - 20 UNEF
10	24.79	32.54	15/16 - 20 UNEF
18	0.976	1.391	1.1 /16 - 18 NEF
18	24.79	35.33	1.1/10-10 NEF
20	&976	1.531	1.3/16 - 18 NEF
20	24.79	38.89	1.3/10 - 10 NEF
22	0.976	1.656	1.5/16 - 18 NEF
22	24.79	42.06	1.5/10 - 16 NEF
24	0.976	1.777	1.7/16 - 18 NEF
24	24.79	45.14	1.7/10 - 10 NEF



62GB-56TG BS9522 F001 7 C2093

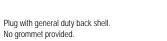
Basic plug with threaded shell to accept standard cable accessories. Has shell grounding spring fingers



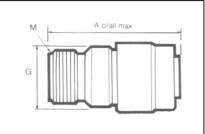
Shell	A	С	Х
Size	max	max	Thread
08	0.976	0.750	7/16 - 28 UNEF
08	24.79	19.05	7/10-20 UNEF
40	0.976	0.859	
10	24.79	21.82	9/16 - 24 NEF
40	0.976	1.031	
12	24,79	26.19	11/16 – 24 NEF
14	0.976	1.156	13/16 – 20 UNEF
14	24.79	29.36	13/16 - 20 UNEF
40	0.976	1.281	
16	24.79	32.54	15/16 - 20 UNEF
40	0.976	1.391	
18	24.79	35.33	1.1 /16 - 18 NEF
20	0.976	1.531	
20	24.79	38.89	1.3/16 - 18 NEF
22	0.976	1.656	
22	24.79	42.06	1.5/16 - 18 NEF
24	0.976	1.777	
24	24.79	45.14	11/16 - 18 NEF



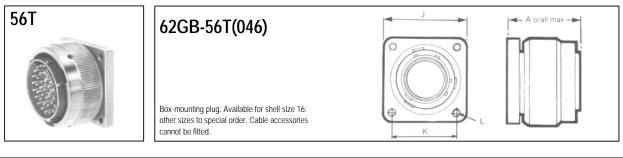
62GB-1 6A







Shell	Α	С	G	Μ
Size	max	max	max	Thread
68	1.614	0.750	0.561	
08	41.00	19.05	14.25	1/2 - 28 UNEF
10	1.614	O.859	0,686	5/8 - 24 NEF
10	41.00	21.82	17.43	5/6 - 24 NEF
12	1.614	1.031	0.811	3/4 - 20 UNEF
12	41.00	26.19	20.60	3/4 - 20 UNEF
14	1.614	1,156	0.936	7/8 - 20 UNEF
14	41.00	29.36	23.78	778 - 20 UNEF
16	1.614	1.281	1.061	1 - 20 UNEF
10	41.00	32.54	26.95	I - 20 UNEF
18	1.614	1.391	1.186	1.3/16 -18 NEF
10	41.00	35.33	30.13	1.3/10-10 NEF
20	1.614	1.531	1.311	1.3/16 - 18 NEF
20	41.00	38-89	33.30	1.3/10 - 10 NEF
22	1.614	1.656	1.436	1.7/16 - 18 NEF
22	41.00	42.06	36.75	1.7/10 - 10 NEF
24	1.658	1.777	1.561	1.7116 - 18 NEF
24	42.11	45.14	39.65	1.7110 - 10 NEF

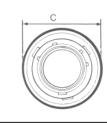


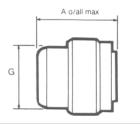
Shell	А	J	к	L
Size	max	max		
16	1.042	1.317	1,000	6.32 NC
10	26.47	33.45	25.40	0.32 NC
20	1.042	1.625	1.250	6.22 NC
20	26.47	41.28	31.75	6.32 NC
22	1.042	1.625	1.250	6.32 NC
22	26.47	41.28	31.75	0.32 NC

Plugs



62GB-16E MIL - C26482 MS3116E



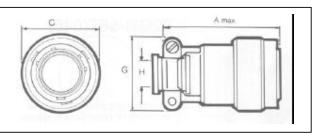


Plug with grommet and grommet nut

Shell	А	С	G	
Size	max	max	max	
0.9	1.281	0.750	0.561	
08	32.54	1.05	14.25	
10	1.281	0.859	0.686	
10	32.54	21.82	17.431	
10	1.281	1.031	0.811	
12	32.54	26.19	20.60	
14	1.281	1.156	0.936 I	
14	32.54	29.36	23.78	
16	1.281	1.281	1.061	
16	32.54	32.54	26.95	
40	1.281	1.391	1.186	
18	32.54	35.33	30.13	
20	1.281	1.531	1.311	
20	32.54	38.89	33.30	
22	1.281	1.656	1.436	
22	32.54	42.06	36.75	
0.4	1.281	1.777	1.561	
24	32.54	45.14	39.65	

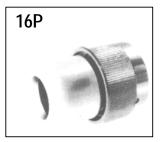


62GB-16F MIL - C26482 MS3116F

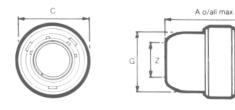


Plug with grommet and grommet nut fitted with integral strain relief clamp.

Shell	A	С	G	Н	
Size	max	dia	dia	± 0.005	
		max	max	(± 0.13)	
08	1.752	0.750	0.828	0.156	
08	44.50	19.05	21.03	3.96	
10	1.752	0.859	0.891	0.188	
10	44.50	21.82	22.63	4.78	
40	1.752	1.031	1.016	0.312	
12	44.50	26.19	25.81	7.93	
4.4	1.726	1.156	1.141	0.375	
14	43.84	29.36	28.97	9.53	
40	1.866	1.281	1.203	0.500	
16	47.40	32.54	30.56	12.70	
18	1.866	1.391	1.426	0.625	
18	47.40	35.33	36.22	15.88	
00	2.040	1.531	1.426	0.625	
20	51 .81	38.89	36.22	15.88	
00	2.040	1.656	1.567	0.750	
22	51.81	42.06	39.80	19.05	
04	2.178	1.777	1.735	0.800	
24	55.32	45.14	44.07	20.32	



62GB-16P MIL-C26482 MS3116P



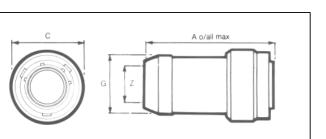
For potted seal. Supplied complete with detachable potting mould and location ring.

Shell	А	С	G	Z
Size	max	max	max	min
	1.306	0.750	0.572	0.260
08	33.17	19.05	14.53	6.60
	1.415	0.859	0.666	0.463
10				
	35.94	21.82	16.92	11.76
12	1.384	1.031	0.822	0.557
	35.15	26.19	20.88	14.14
14	1.384	1.156	0.907	0.590
	35.15	29.36	23.04	14.99
16	1.384	1.281	1.040	0.713
10	35.15	32.54	26.41	18.11
18	1.384	1.391	1.165	0.835
10	35.15	35.33	29.59	22.21
20	1.539	1.531	1.285	1.015
20	39.09	38.89	32.64	25.78
22	1.539	1.656	1.400	1.015
22	39.09	42.06	35.56	25.78
01	1.602	1.777	1.540	1265
24	40.69	45.14	39.12	32.13



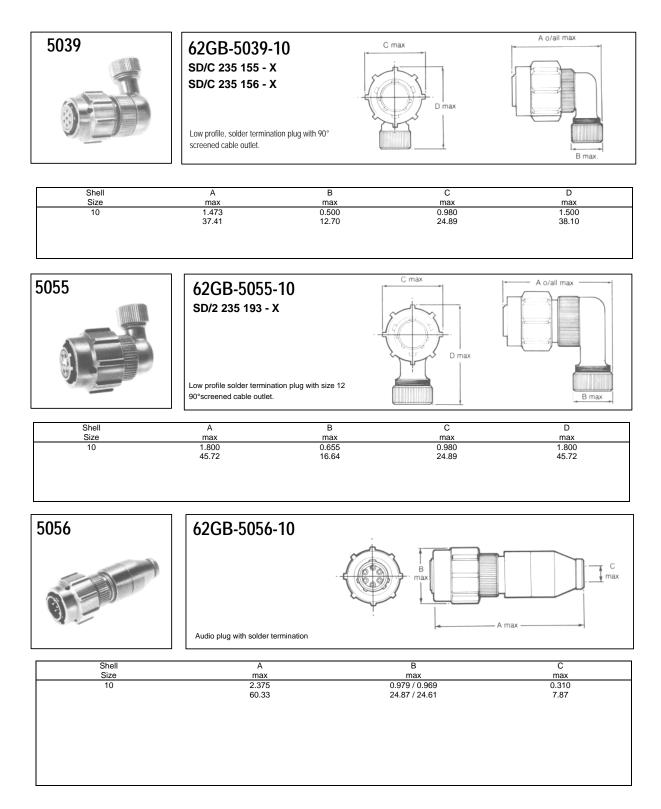
62GB - 16J

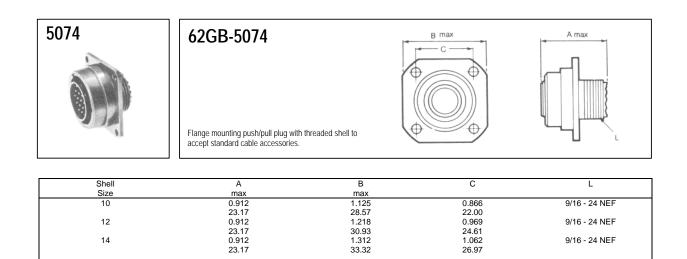
Plug with cable clamp for unscreened jacketed cable. No grommet supplied.



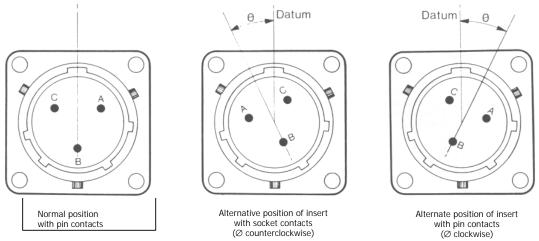
Shell	A	С	G	Z	
Size	max	max	max	min	max
08	1.836	0.750	0.561	0.168	0.230
08	46.64	19.05	14.25	4.28	5.84
10	1.836	0.859	0.686	0.205	0.312
10	46.64	21.82	17.43	5.21	7.93
10	1.937	1.031	0.811	0.388	0.442
12	49.20	26.19	20.60	8.59	11.23
	2.137	1.156	0.936	0.416	0.539
14	54.28	29.36	23.78	10.57	13.69
10	2.337	1.281	1.061	0.550	0.616
16	59.36	32.54	26.95	13.97	15.65
10	2.537	1.391	1.186	0.600	0.672
18	64.45	35.33	30.13	15.24	17.07
22	2.758	1.531	1.311	0.635	0.747
20	70.05	38.89	33.30	16.13	18.98
22	2.958	1.656	1.436	0.670	0.846
22	75.13	42.06	36.75	17.02	21.49
01	3.002	1.777	1.561	0.740	0.894
24	76.25	45.14	39.65	18.80	22.71

Plugs





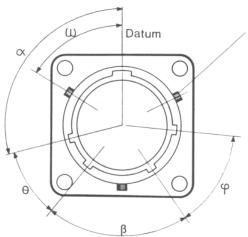
Insert Orientations For MIL-C-26482 and for replacement purposes in BS9522 FOO 17



Each diagram	shows	mating	face	of i	nsert
Lacin ulagram	3110113	manny	race	01 1	13011.

Insert Arrangement	Normal	W	Х	Y	Z
8-2	0	58	122	-	-
8-3	0	60	210	-	-
8-33	0	90	-	-	-
8-4	0	45	-	-	-
8-98	0	-	-	-	-
10-2	0	-	-	-	-
10-6	0	90	-	-	-
10-7	0	-	-	-	-
12-3	0	-	-	180	-
12-10	0	60	155	270	295
14-5	0	40	92	184	273
14-12	0	43	90	-	-
14-15	0	17	110	155	234
14-19	0	30	165	315	-
16-18	0	54	152	180	331
16-23	0	158	270	-	-
16-26	0	60	-	275	338
18-11	0	62	119	241	340
18-32	0	85	138	222	265
20-16	0	238	318	333	347
20-41	0	45	126	225	-
22-21	0	16	135	175	349
22-55	0	30	142	226	314
24-61	0	90	180	270	324

Key/Keyway Orientations For BS9522 F0017



3 Pins spaced 120° apart

> Datum is always taken from major key or keyway. In receptacles the major keyway always remains fixed in relation to the mounting flange. For the A',B,C,D',E and F orientations, the three bayonet locations and associated minor keyways are rotated complete, in accordance with the table below.

N.B.- The accompanying diagram shows a receptacle shell, with keyways. Corresponding key orientations for a mating plug shell are therefore always clockwise.

Shell Size				alues fo degree:				Values for θ (degrees)					Values for β (degrees)								
	Ν	A*	В	С	D*	Е	F	Ν	A*	В	С	D*	Е	F	Ν	A*	В	С	D*	Е	F
8	105	92	-	-	118	118	82	35	35	-	-	35	30	50	75	75'	-	-	75	100	75
10	105	95	85	125	115	115	85	35	35	35	35	35	30	50	75	75	75	75	75	100	75
12	105	97	89	121	113	115	85	35	35	35	35	35	30	50	75	75	75	75	75	100	75
14	105	98	91	119	112	75	120	35	35	35	35	35	30	50	75	75	75	75	75	100	75
16	105	99	93	117	111	75	120	35	35	35	35	35	30	50	75	75	75	75	75	100	75
18	105	100	95	115	110	75	120	35	35	35	35	35	30	50	75	75	75	75	75	100	75
20	105	100	95	115	110	75	120	35	35	35	35	35	30	50	75	75	75	75	75	100	75
22	105	101	97	113	109	7S	120	35	35	35	35	35	30	50	75	75	75	100	75	75	75
24	105	101	97	113	109	75	120	35	35	35	35	35	30	50	75	75	75	75	75	100	75

Shell Size		Values for φ (degrees) Orientation								Values for ω (degrees) Orientation				
	N	A*	В	С	D*	Е	F	Ν	A*	В	С	D*	Е	F
8	50	50	50	50	50	30	45	60	47	-	-	73	73	47
10	50	50	50	50	50	30	45	60	50	40	80	70	70	50
12	50	50	50	50	50	30	45	60	52	44	76	68	70	50
14	50	50	50	50	50	30	35	60	53	46	74	67	30	75
16	50	50	50	50	50	30	35	60	54	48	72	66	30	75
18	50	50	50	50	50	30	35	60	55	50	70	65	30	75
20	50	50	50	50	50	30	35	60	55	50	70	65	30	75
22	50	50	50	50	50	30	35	60	56	52	68	64	30	75
24	50	50	50	50	50	30	35	60	56	52	68	64	30	75

* now inactive for new designs but available for replacement purposes. Superseded in BS9522 F0017 by orientations E and F.