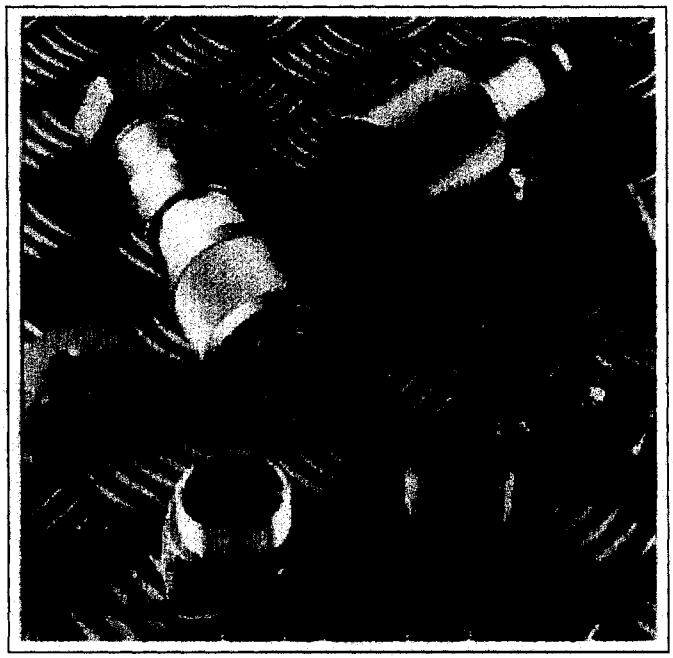
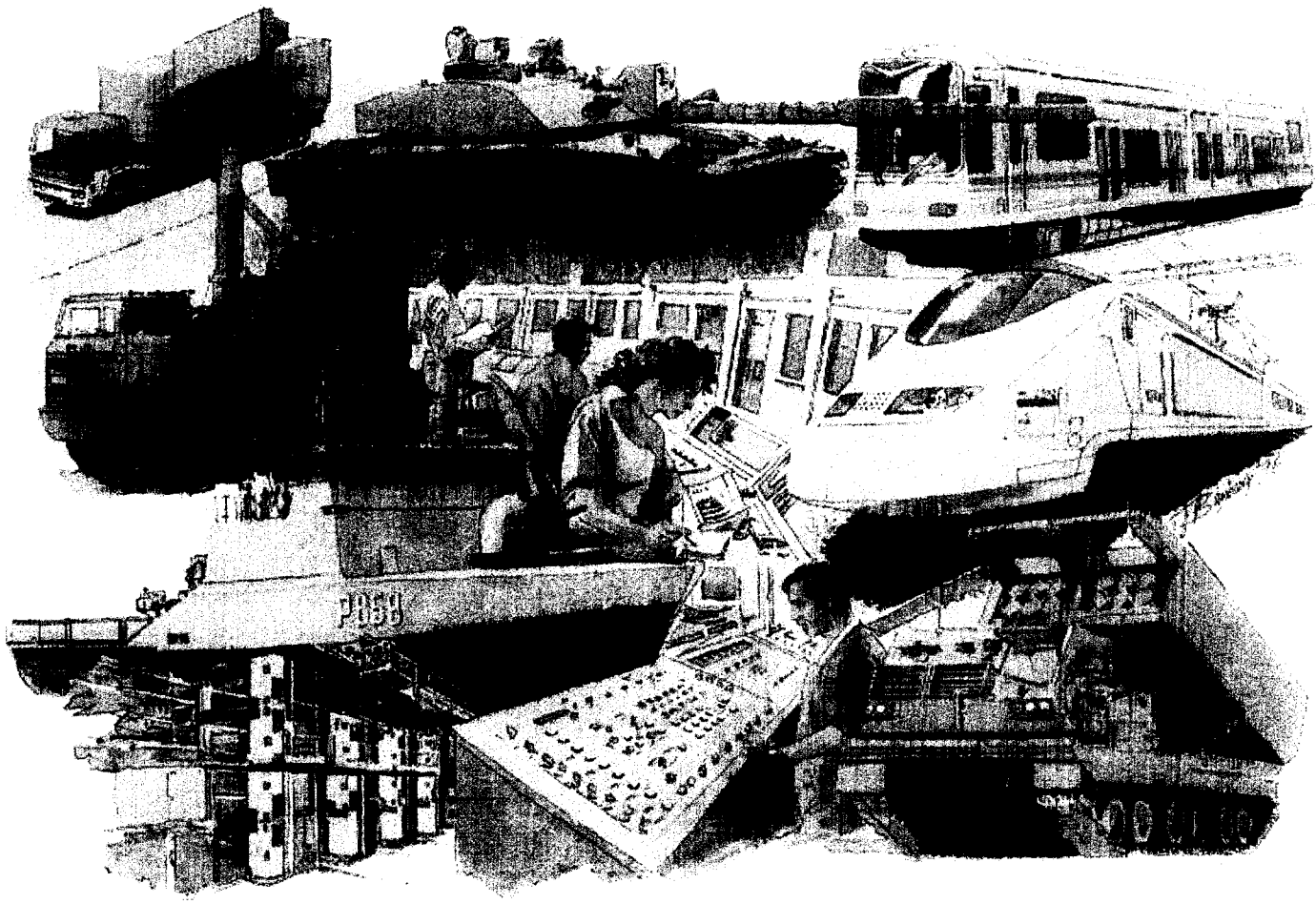
Connectors



Mk 22 Connectors



Index

CIRCULAR CONNECTORS MARK 22

CIRCULAR CONNECTORS

MARK 22

Mark 22 Connectors

The Mk. 22 range of connectors and cable outlets was designed specifically for Marine applications. Materials, finishes and construction have been engineered to meet the severe environmental and mechanical demands encountered in above and below deck shipborne equipment applications.

Manufactured to meet the current AB 0088861 specification requirements, the connector accepts a wide range of metric cables. A feature of the range is a two piece outlet fitting which simplifies wiring of multicore jacketed screened cables.

Coupling and uncoupling is by hand via a fine thread which gives positive sealing and screen continuity.

The current range covers 25 contact arrangements, 8 shell sizes and 5 shell styles. Male and female contacts are available in either the fixed or free styles.

Polarisation of the connector utilises a single key/keyway system.

FEATURES

- ★ **Aluminium alloy connector with superior quality cadmium plating and olive drab chromate finish.**
- ★ **Removable contacts for power or signal applications.**
- ★ **Watertight under pressure.**
- ★ **Long coupling nut for ease of handling.**
- ★ **Two piece outlet simplifies cable installation.**
- ★ **Outlets to suit heat shrinkable fittings.**
- ★ **Screened cable termination gives 360° shielding.**
- ★ **Protective caps and complete range of installation tools available.**

MARK 22-2 NOW AVAILABLE IN A COMBINATION OF STAINLESS STEEL AND HARD ANODISED ALUMINIUM ALLOY FOR ABOVE DECK APPLICATION.
Contact our Sales Office for Information.

Mechanical Characteristics

Shells, protective caps, chains, rivets and washers:

Material & Finish:	High strength wrought aluminium alloy, cadmium plate with olive drab chromate passivation.
Contact Insulator:	Polychloroprene.
'O' Rings:	Polychloroprene.
Stabilising Discs:	(Sizes 8, 4 & 0 contacts only) Glass reinforced polyester.
Contact Types:	Sizes 16-20, 16-16 & 15 are intended for crimp termination, Sizes 12, 8, 4 & 0 are solder types. Material is copper alloy with a gold plated finish.

All contacts are supplied separately from connector assemblies for subsequent fitting by the user.

Environmental Characteristics

Salt Spray Corrosion:	V.G. 95 319 Test 5.34 200 hrs (MIL-STD-202 Method 101D)
Mechanical Endurance:	V.G. 95 319 Test condition 5.29 (MIL-STD-202 Method 206 Test Condition A) 500 mating cycles.
Watertightness:	Proof against 1 bar water pressure for 12 hrs at 25°C V.G. 95 319 Test 5.9.2.
Temperature Severity:	−55°C to + 125°C
Vibration Severity:	10-2000 Hz V.G. 95 319 Test 5.16 (MIL-STD-202 Method 204C)
Humidity Severity:	V.G. 95 319 Test 5.21 Damp Heat Accelerated MIL-STD-202 Method 106D Moisture Resistance V.G. 95 319 Test 5.28 Damp/heat, long term. MIL-STD-202 Method 103B Humidity (Steady State)
Impact:	V.G. 95 319 Test 5.39.

Electrical Characteristics

Current loadings and resistance values of contacts:	See page 13
Working Voltage:	Dependant upon contact arrangement – See pages 4 & 5.
Insulation Resistance:	5,000 MΩ minimum @ 500 volts d.c. (25 ± 5°C)
Screen continuity through mated connectors:	20 mΩ max cable screen to panel. V.G. 95 319 Test 5.11.

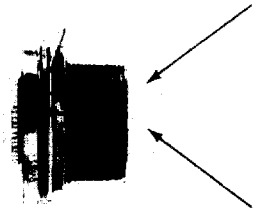
CIRCULAR CONNECTORS

MARK 22

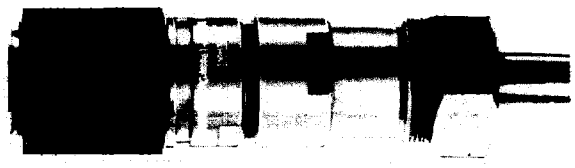
The MK.22 Connector Family

The Mark 22 connector family comprises one fixed style and four free styles, each available with either pin or socket contacts. Polarisation of the mating items is achieved via a single key/keyway system. The fixed item is fitted with a pin which provides an anti-rotational location when fitted to a panel.

To differentiate between connectors of identical contact arrangements in a given shell size, the connectors may be obtained with the insulator orientated to a maximum of seven positions with respect to the master key.



Fixed Unit
Style B



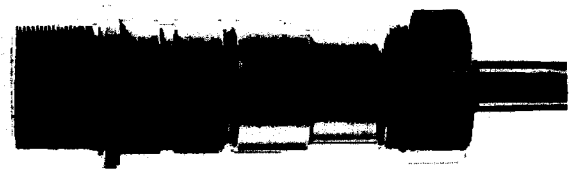
Free Unit Cable Clamping **Style A**

Free Unit with Shrink Sleeve Outlet **Style G**

A two piece outlet fitting facilitates installation of cables, particularly those with an overall screen. The numerical size of the connector is equal in millimeters to the maximum cable diameter which may, under normal circumstances, be fitted into the outlet Outlets are available to suit heat shrink fittings or for direct clamping to a cable. The latter provides mechanical retention and sealing of the cable into the outlet by controlled compression of a seal to suit the diameter of cable in use.

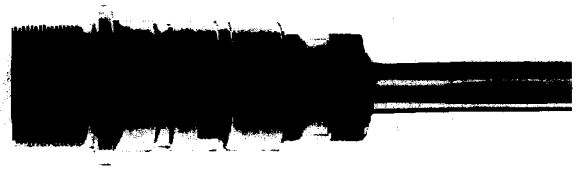
Protective caps are available for fixed and free items.

Free Unit Cable Clamping **Style A**



Free Unit Coupler – Cable Clamping **Style F**

Free Unit with Shrink Sleeve Outlet **Style G**



Free Unit Coupler – with Shrink Sleeve Outlet
Style H

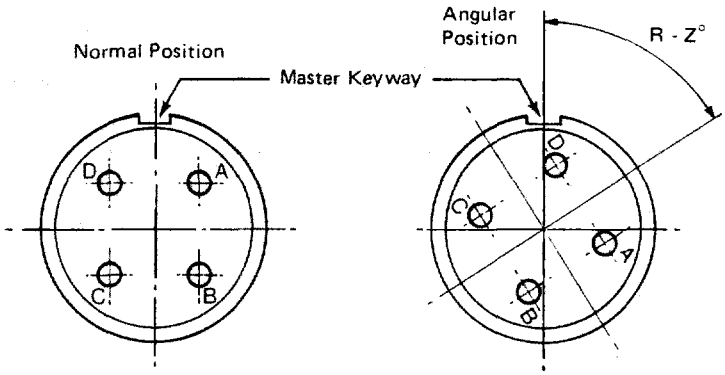
Contacts for this range of connectors are all removable, wiring instructions for cable termination are included with connector assemblies. Dummy contacts can be supplied for circumstances where wired contacts are not required. A stabilising disc is supplied with those connectors where contacts sizes 0, 4 and 8 are employed to give positive location of the contacts when terminated with heavy cables.

The product range also includes a comprehensive range of tools and a complete tool kit for installation of these connectors.

For ordering procedure see page **15.**

Orientation (Insulator)

The angular positions R - Z° are used when polarisation is required for connectors of the same size and contact arrangement.



Shell Size/ Contact Arrangement	Size & Number of Contacts						Contact type	Insulator Orientation (Degrees)							
	0	4	8	12	15	Either 16/16 or 16/20	L/K	R	S	T	U	W	X	Y	Z
12 - 4					4		K	–	–	–	–	35	110	250	325
12 - 5				5			L	–	–	–	–	–	170	265	–
15 - 7				7			L	–	–	–	–	80	–	–	280
15 - 11					11		K	–	–	–	–	80	150	220	280
15 - 24						24	K	–	–	–	–	80	110	250	280
18 - 1	1						L	–	–	–	–	–	–	–	–
18 - 8				8			L	–	–	–	–	35	–	250	–
18 - 8A						8	K	–	–	–	–	80	110	250	280
18 - 19					19		K					80	110	190	280
21 - 2	1			1			L					80	110	250	280
21 - 4			4				L					45	110	250	–
24 - 2		2					L					35	110	250	325
24 - 16						16	K					80	110	250	280
24 - 26					26		K					90	180	270	315
24 - 35						35	K					80	110	250	280
24 - 64						64	K	250	290	340		30	60	90	150
30 - 2	2						L					35	110	250	325
30 - 4		4					L					45	110	250	–
30 - 47						47	K					80	125	235	280
38 - 3	3						L					80	160	–	–
38 - 4	4						L					–	120	240	–
38 - 18				18			L					80	110	250	280
38 - 27				27			L					80	110	250	280
38 - 35					35		K	45	90	180	255	–	–	–	–
42 - 4	4						L					45	120	190	255

L = SOLDER K = CRIMP

CIRCULAR CONNECTORS

MARK 22

Shell Size/Contact Arrangements AB 0088861

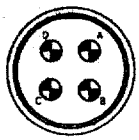
Each contact position is identified by a raised moulded character on front and rear face of insulators. The views shown are of the front face of pin insulators, front face of socket insulators is a mirror image.

For contact sizes in each arrangement, refer to table on Page 3.

Contact arrangement numbers

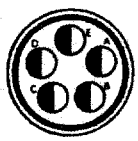
The first 2 digits define the shell size, the third/fourth define the number of contacts in the connector.

MIL-C-5015 equivalents are shown in brackets ( ).



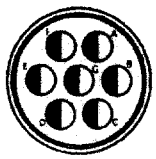
Voltage Rating D

12-4 (18-4)



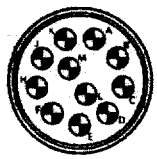
A

12-5 (18-11)



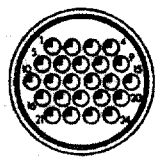
A

15-7 (20-15)



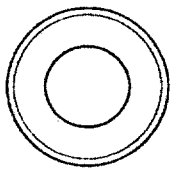
A

15-11 (20-33)



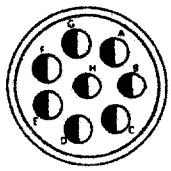
I

15-24



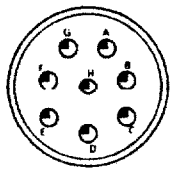
Voltage Rating E

18-1 (22-7)



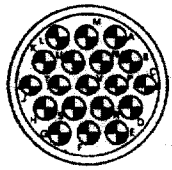
D = Contact H only
A = All others

18-8 (22-23)



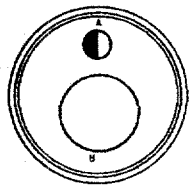
A

18-8A (22-18)



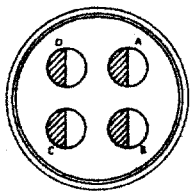
A

18-19 (22-14)



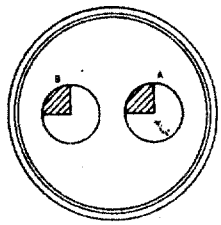
D

21-2 (24-1)



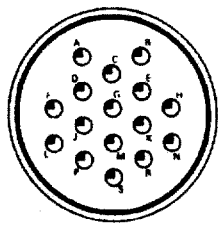
Voltage Rating D

21-4 (24-22)



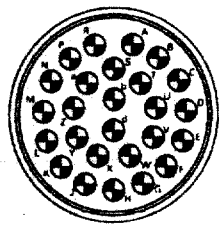
D

24-2 (28-7)



A

24-16



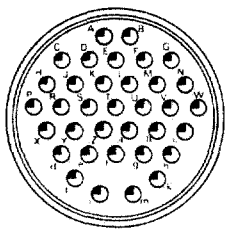
A

24-26 (28-12)

Voltage Ratings	d.c. or a.c. peak		a.c. (RMS)	
	IEC 130-1	VDE 0110	IEC 130-1	VDE 0110
I	500	150	350	125
A	700	450	530	380
D	1200	600	850	500
E	2100	900	1500	750
B	2800	1200	2000	1000

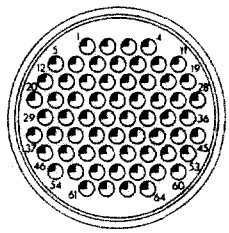
Shell Size/Contact Arrangements

Voltage Rating



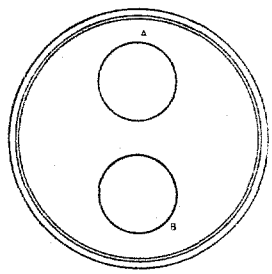
A

24-35 (28-15)



I

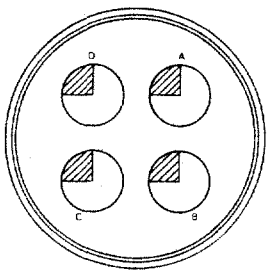
24-64



D

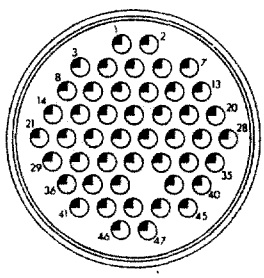
30-2 (32-5)

Voltage Rating



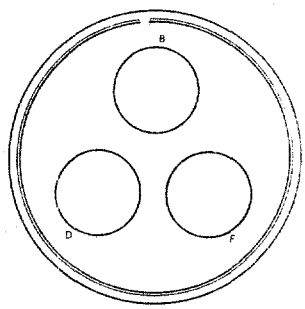
D

30-4 (32-17)



A

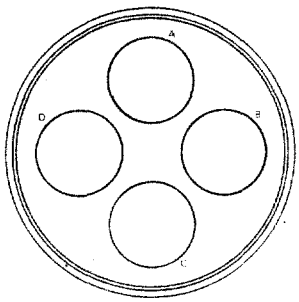
30-47



B

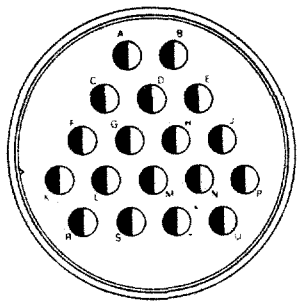
38-3

Voltage Rating



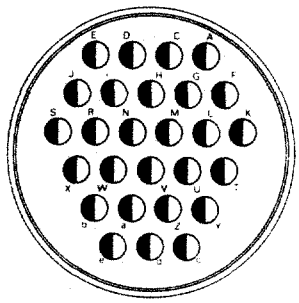
A

38-4 (36-5)



A

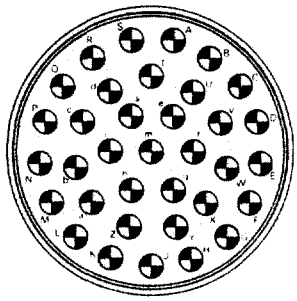
38-18



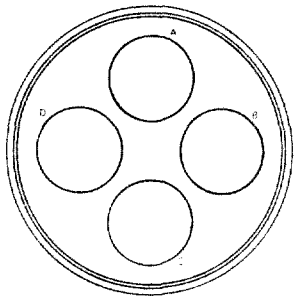
A

38-27

Voltage Rating

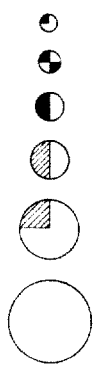


D = Contact m only
A = All others
38-35 (36-15)



A

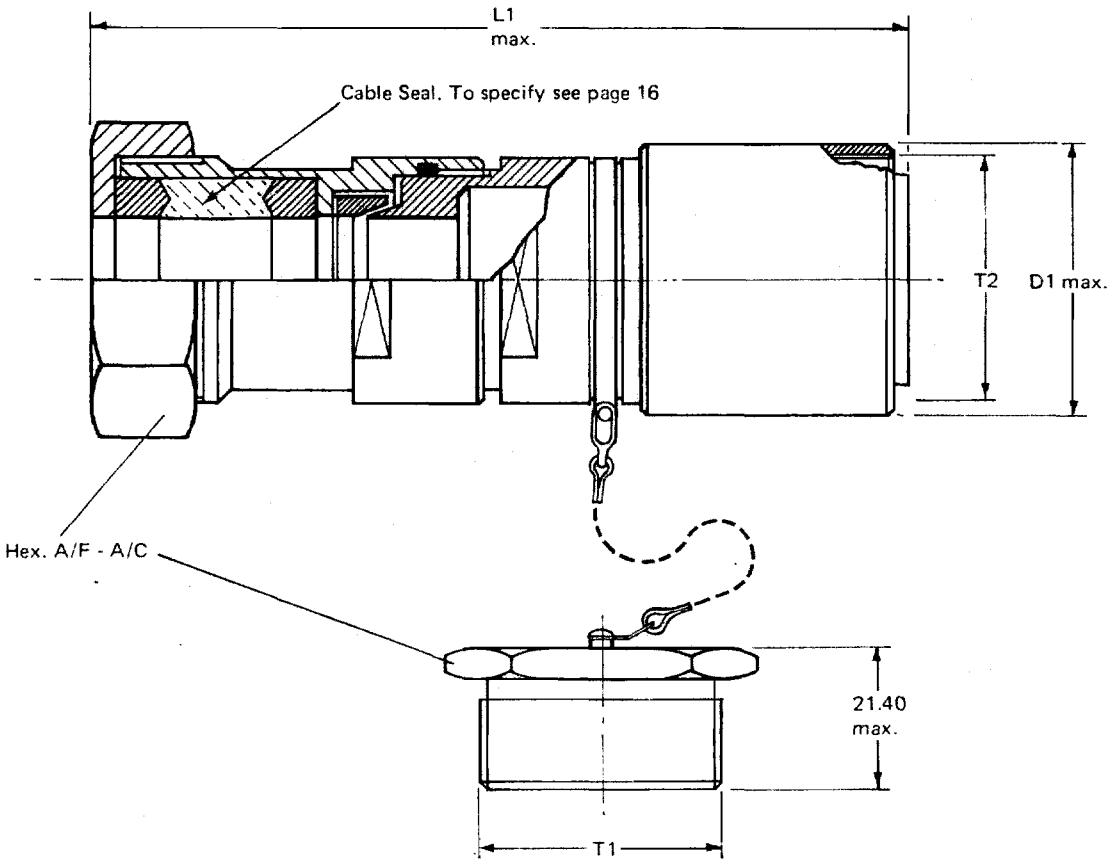
42-4



= Size 16
= Size 15
= Size 12
= Size 8
= Size 4
= Size 0

FREE UNIT CABLE CLAMPING

STYLE A

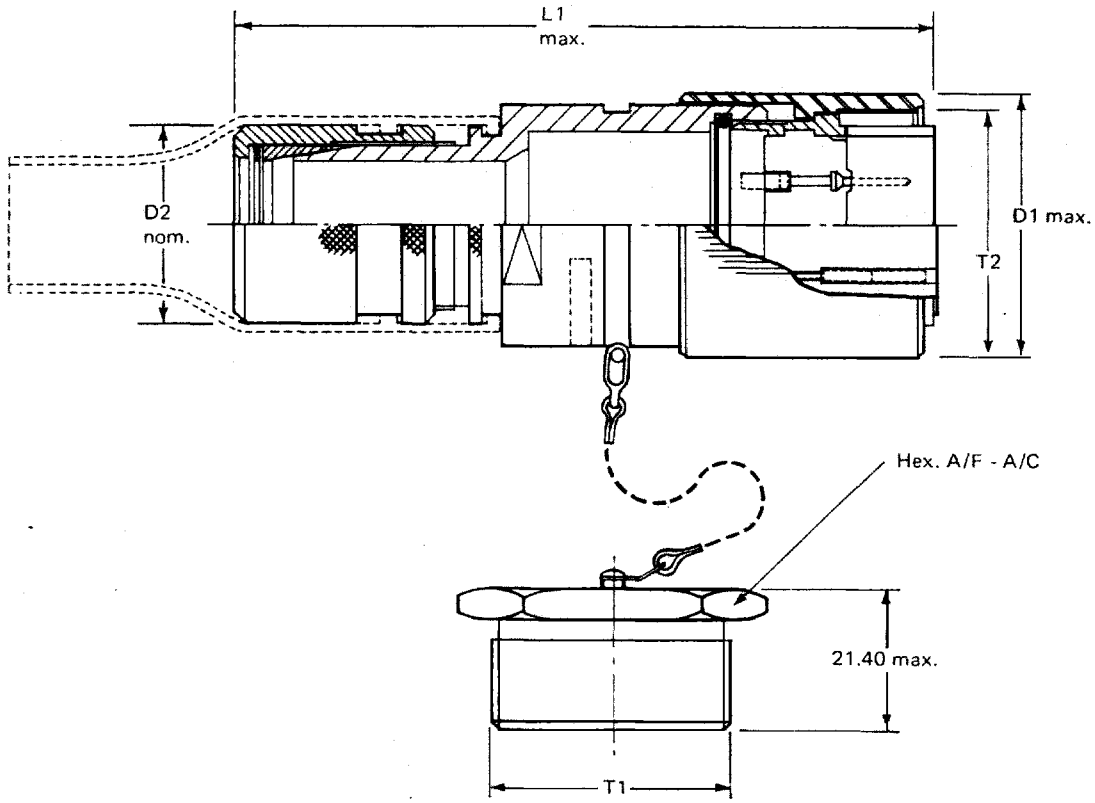


Shell Size and Cable Diameter in mm	D1 mm	L1 mm	T1 inch	T2 inch	Hex. Max. mm	
					A/F	A/C
12	35.00	163.00	1⅛-18 UNEF-2A	1⅛-18 UNEF-2B	36.00	41.58
15	38.00	163.00	1¼-18 UNEF-2A	1¼-18 UNEF-2B	41.00	47.35
18	41.00	169.00	1⅜-18 UNEF-2A	1⅜-18 UNEF-2B	41.00	47.35
21	44.00	169.00	1½-18 UNEF-2A	1½-18 UNEF-2B	46.00	53.12
24	51.00	169.00	1¾-18 NS-2A	1¾-18 NS-2B	50.00	57.74
30	57.00	169.00	2-18 NS-2A	2-18 NS-2B	60.00	69.29
38	64.00	169.00	2¼-16 UN-2A	2¼-16 UN-2B	65.00	75.06
42	73.00	169.00	2½-16 UN-2A	2½-16 UN-2B	70.00	80.84

Ordering Procedure: For Free Unit Cable Clamping, with or without protective end cap, see page 15

FREE UNIT WITH SHRINK SLEEVE OUTLET

STYLE G

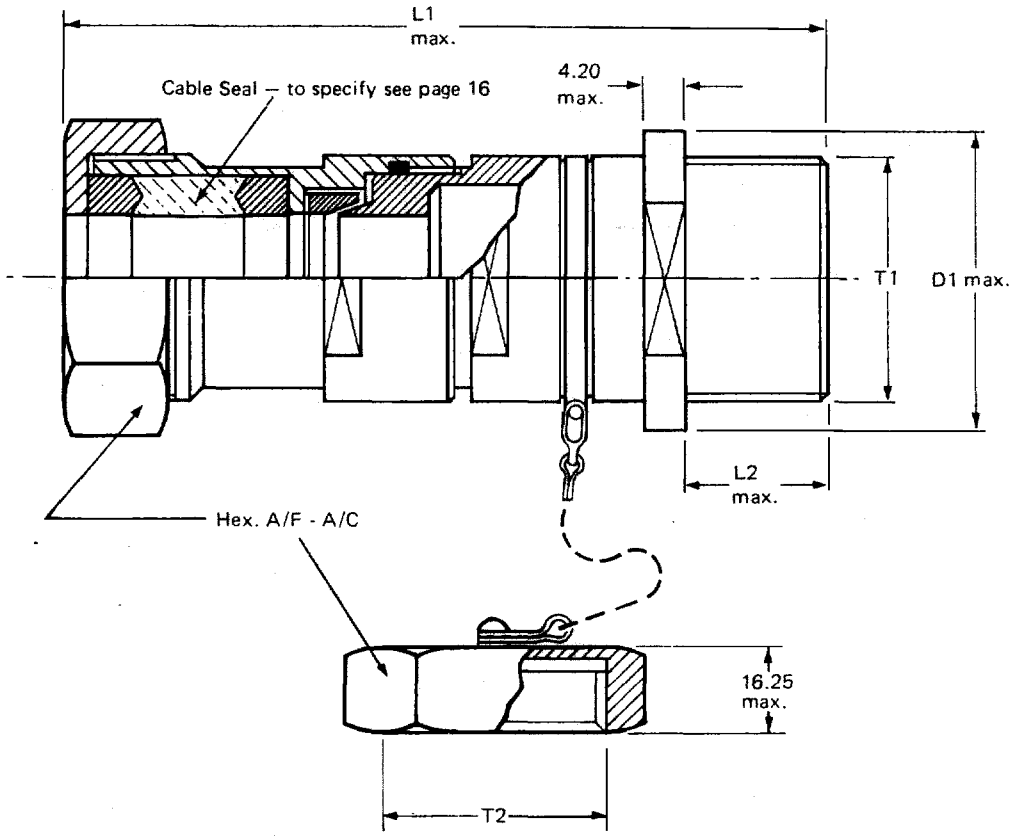


Shell Size and Cable Diameter in mm	D1 mm	D2 mm	L1 mm	T1 inch	T2 inch	Hex. Max. mm	
						A/F	A/C
12	35.00	23.00	112.00	1 -18 UNEF-2A	1⅛-18 UNEF-2B	36.00	41.58
15	38.00	29.00	118.00	1¼-18 UNEF-2A	1¼-18 UNEF-2B	41.00	47.35
18	41.00	31.00	126.00	1⅜-18 UNEF-2A	1 -18 UNEF-2B	41.00	47.35
21	44.00	33.00	130.00	1½-18 UNEF-2A	1½-18 UNEF-2B	46.00	53.12
24	51.00	38.00	133.00	1¾-18 NS-2A	1¾-18 NS-2B	50.00	57.74
30	57.00	46.00	123.00	2-18 NS-2A	2-18 NS-2B	60.00	69.29
38	64.00	51.00	131.00	2¼-16 UN-2A	2¼-16 UN-2B	65.00	75.06
42	73.00	62.00	143.00	2½-16 UN-2A	2½-16 UN-2B	70.00	80.84

Ordering Procedure: For Free Unit with Shrink Sleeve Outlet, with or without protective end cap, see page 15

FREE UNIT COUPLER CABLE CLAMPING

STYLE F

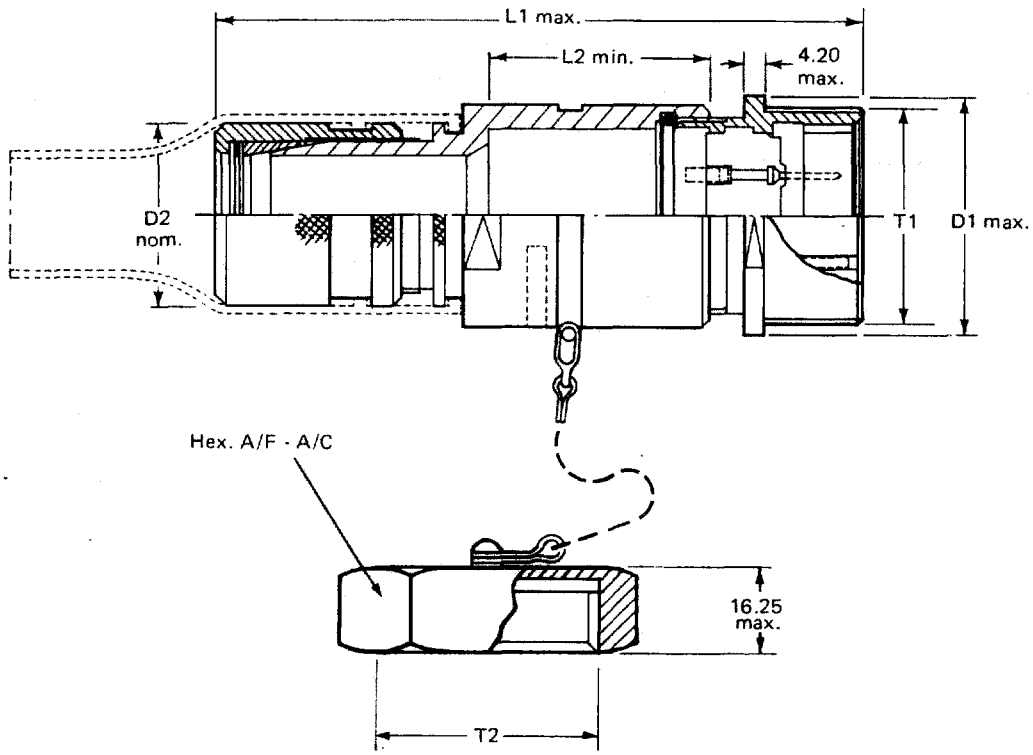


Shell Size and Cable Diameter in mm	D1 mm	L1 mm	L2 mm	T1 inch	T2 inch	Hex. Max. mm	
						A/F	A/C
12	34.10	165.00	19.40	1⅛-18 UNEF-2A	1⅛-18 UNEF-2B	36.00	41.58
15	37.30	165.00	19.40	1¼-18 UNEF-2A	1¼-18 UNEF-2B	41.00	47.35
18	40.50	171.00	19.40	1⅜-18 UNEF-2A	1⅜-18 UNEF-2B	41.00	47.35
21	43.40	171.00	21.00	1½-18 UNEF-2A	1½-18 UNEF-2B	46.00	53.12
24	50.00	171.00	21.00	1¾-18 NS-2A	1¾-18 NS-2B	50.00	57.74
30	56.40	171.00	22.50	2-18 NS-2A	2-18 NS-2B	60.00	69.29
38	62.70	171.00	22.50	2¼-16 UN-2A	2¼-16 UN-2B	65.00	75.06
42	69.10	171.00	23.00	2½-16 UN-2A	2½-16 UN-2B	70.00	80.84

Ordering Procedure: For Free Unit Coupler Cable Clamping, with or without protective end cap, see page 15.

FREE UNIT COUPLER WITH SHRINK SLEEVE OUTLET

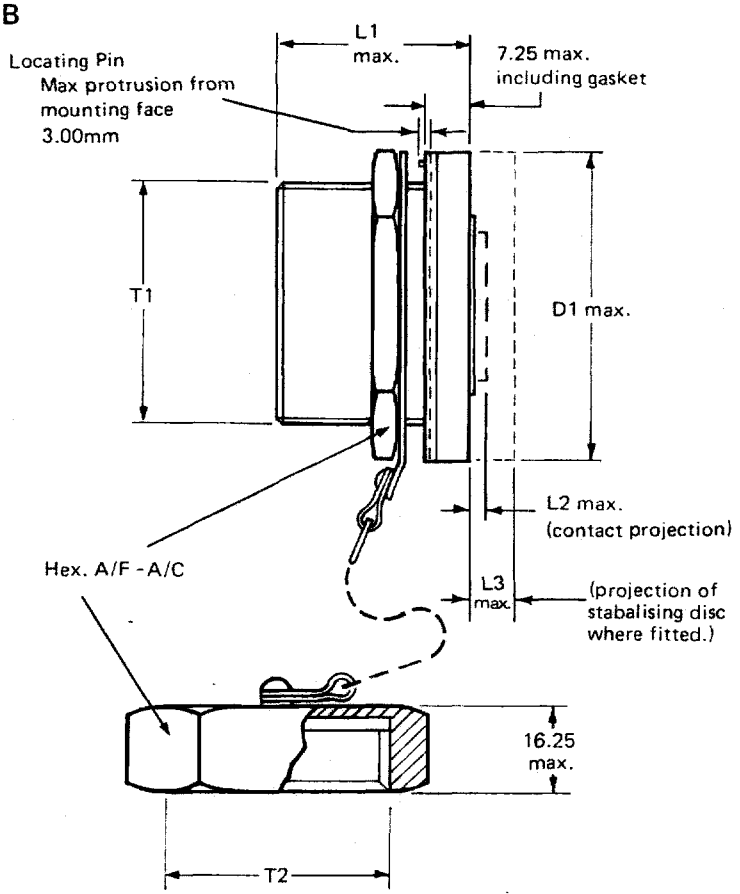
Style H



Shell Size and Cable Diameter in mm	D1 mm	D2 mm	L1 mm	L2 mm	T1 inch	T2 inch	Hex. Max. mm	
							A/F	A/C
12	34.10	23.00	114.00	29.05	1⅛-18 UNEF-2A	1⅛-18 UNEF-2B	36.00	41.58
15	37.30	29.00	120.00	36.35	1¼-18 UNEF-2A	1¼-18 UNEF-2B	41.00	47.35
18	40.50	31.00	128.00	44.05	1⅜-18 UNEF-2A	1⅜-18 UNEF-2B	41.00	47.35
21	43.40	33.00	132.00	48.05	1½-18 UNEF-2A	1½-18 UNEF-2B	46.00	53.12
24	50.00	38.00	135.00	39.95	1¾-18 NS-2A	1¾-18 NS-2B	50.00	57.74
30	56.40	46.00	125.00	38.05	2-18 NS-2A	2-18 NS-2B	60.00	69.29
38	62.70	51.00	133.00	46.25	2¼-16 UN-2A	2¼-16 UN-2B	65.00	75.06
42	69.10	62.00	145.00	47.05	2½-16 UN-2A	2½-16 UN-2B	70.00	80.84

Ordering Procedure: For Free Unit Coupler with Shrink Sleeve Outlet, with or without protective end cap, see page 15.

FIXED UNIT
STYLE B

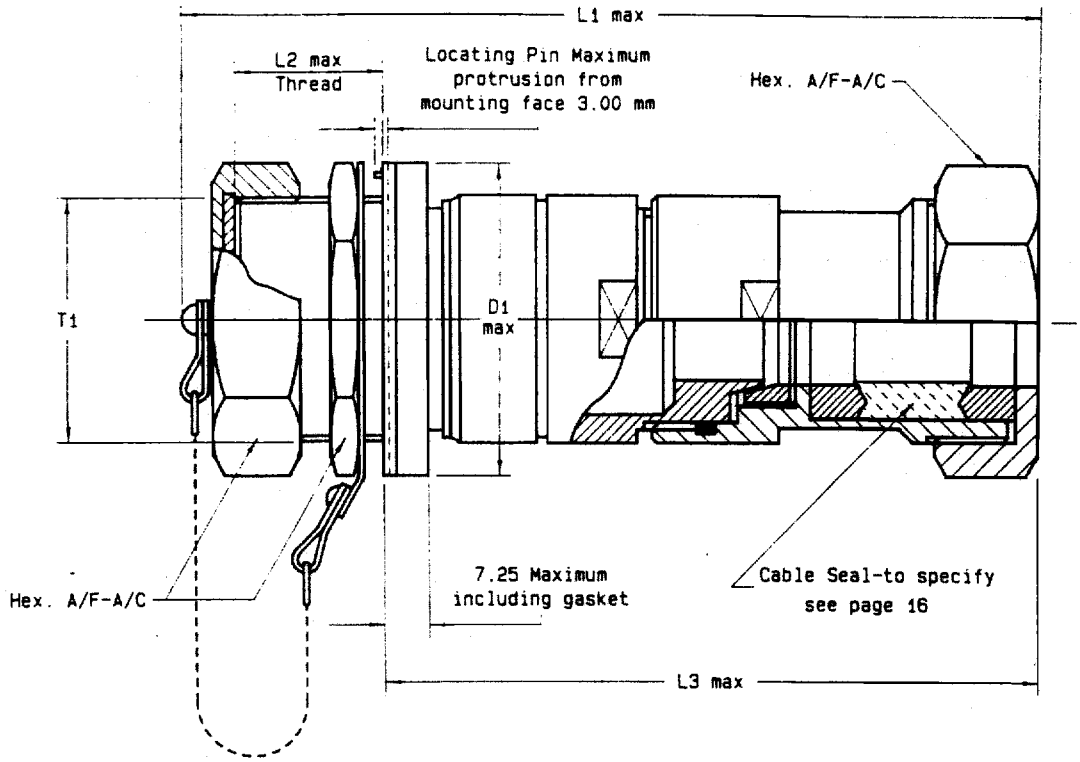


Contact Size	L2 mm
16/20 16/16 15	4.56
12	6.16
8 4	7.7
0	11.9

Shell Size and Cable Diameter in mm	D1 mm	L1 mm	L3 mm	T1 inch	T2 inch	Hex. Max. mm	
						A/F	A/C
12	41.30	38.11		1⅛-18 UNEF-2A	1⅛-18 UNEF-2B	36.00	41.58
15	45.30	38.11		1¼-18 UNEF-2A	1¼-18 UNEF-2B	41.00	47.35
18	48.30	38.11	8.11	1⅜-18 UNEF-2A	1⅜-18 UNEF-2B	41.00	47.35
21	51.30	38.11	8.11	1½-18 UNEF-2A	1½-18 UNEF-2B	46.00	53.12
24	57.30	38.11		1¾-18 NS-2A	1¾-18 NS-2B	50.00	57.74
30	64.30	38.11	8.11	2-18 NS-2A	2-18 NS-2B	60.00	69.29
38	70.30	38.11	8.11	2¼-16 UN-2A	2¼-16 UN-2B	65.00	75.06
42	76.30	38.11	8.11	2½-16 UN-2A	2½-16 UN-2B	70.00	80.84

Ordering Procedure: For Fixed Unit with or without protective end cap, see page 15

FIXED UNIT CABLE CLAMPING
STYLE D

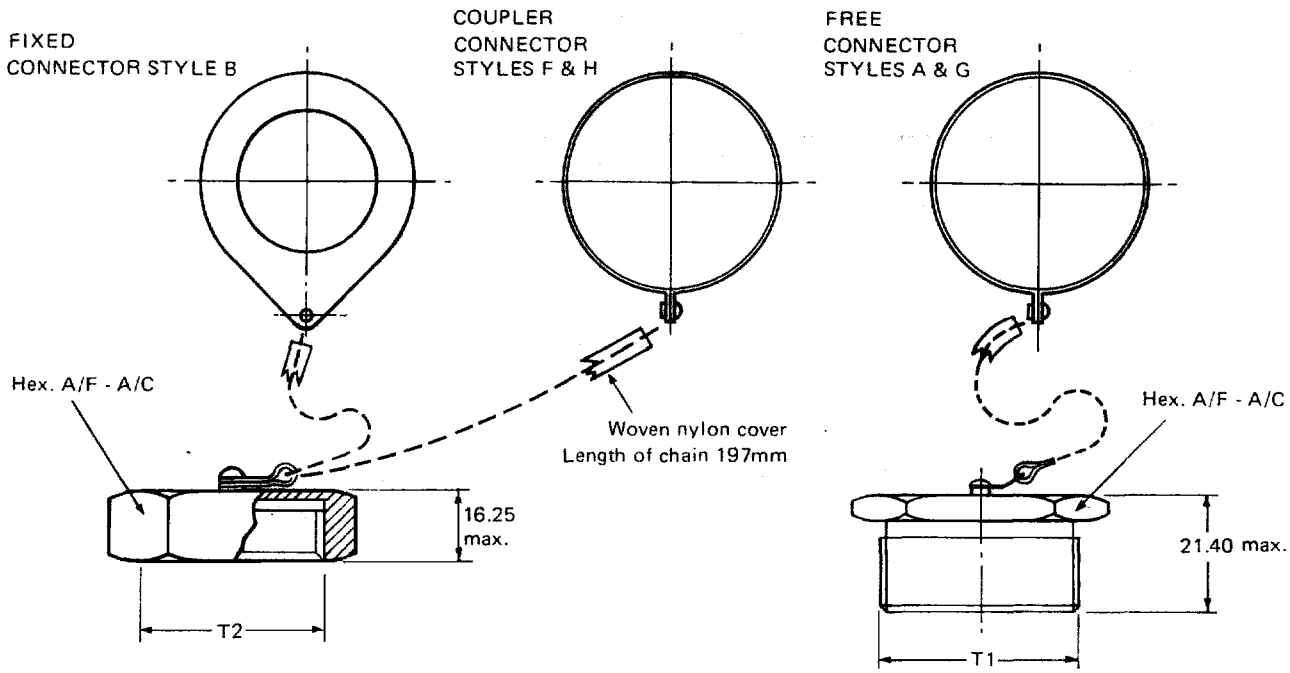


NOTE: When ordering protective end caps separately only specify part numbers for Fixed Units on page 11

Shell Size and cable Diameter in mm	D1 mm	L1 mm	L2 mm	L3 mm	T1 inch	Hex. Max. mm	
						A/F	A/C
12	41.30	190.00	31.00	146.00	1⅛-18 UNEF-2A	36.00	41.58
15	45.30	190.00	31.00	146.00	1¼-18 UNEF-2A	41.00	47.35
18	48.30	195.00	31.00	151.00	1⅜-18 UNEF-2A	41.00	47.35
21	51.30	195.00	31.00	151.00	1½-18 UNEF-2A	46.00	53.12
24	57.30	195.00	31.00	151.00	1¾-18 NS-2A	50.00	57.74
30	64.30	195.00	31.00	151.00	2 -18 NS-2A	60.00	69.29
38	70.30	195.00	31.00	151.00	2¼-16 UN-2A	65.00	75.06
42	76.30	195.00	31.00	151.00	2½-16 UN-2A	70.00	80.84

Ordering Procedure: For Fixed Unit Cable Clamping with or without protective end cap the first digit of the Connector Code will be 'D' all other characters as specified on page 15

PROTECTIVE END CAPS



Shell Size and Cable Diameter in mm	Thread			Hex. Max. mm		PART NUMBERS		
	inch	T1	T2	A/F	A/C	Fixed	Coupler	Free
12	1⅛ - 18 UNEF -	2A	2B	36.0	41.58	523/1/50760/000	523/1/50944/000	523/1/50585/000
15	1¼ - 18 UNEF -	2A	2B	41.0	47.35	523/1/50761/000	523/1/50945/000	523/1/50586/000
18	1⅜ - 18 UNEF -	2A	2B	41.0	47.35	523/1/50762/000	523/1/50946/000	523/1/50587/000
21	1½ - 18 UNEF -	2A	2B	46.0	53.12	523/1/50763/000	523/1/50947/000	523/1/50588/000
24	1¾ - 18 NS -	2A	2B	50.0	57.74	523/1/50764/000	523/1/50948/000	523/1/50589/000
30	2 - 18 NS -	2A	2B	60.0	69.29	523/1/50765/000	523/1/50949/000	523/1/50590/000
38	2¼ - 16 UN -	2A	2B	65.0	75.06	523/1/50766/000	523/1/50950/000	523/1/50591/000
42	2½ - 16 UN -	2A	2B	70.0	80.84	523/1/50767/000	523/1/50951/000	523/1/50592/000

CONTACTS

Materials

All contacts are made of high conductivity wrought copper alloy, to satisfy the electrical and mehanical requirements.

Plating

High quality gold plate over a nickel under-plate ensures excellent corrosive resistance, electrical conductivity and reliability of solder and crimp joints.

Termination

Contacts, sizes 15, 16-16 and 16-20 are connected to conductors by crimping with a standard hand tool (M22520/1-01) all other sizes are intended for solder connection using conventional techniques.

Insertion & Removal

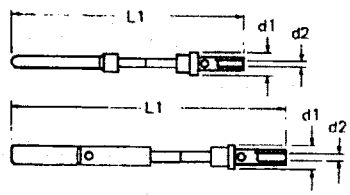
Contacts and Dummy Contacts require the use of the appropriate hand tools and Contact Leaders, listed on page 18

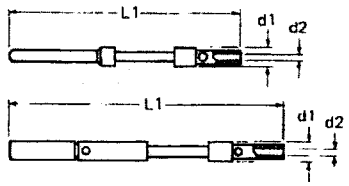
For economy and protection, contacts are normally supplied in pre-packed quantities, and ordered as listed below, the last 3 digits of the number define number of contacts in each pack.

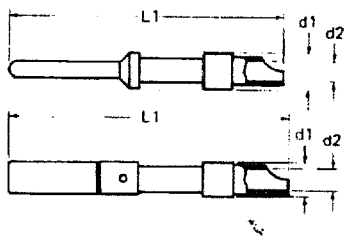
Contact Size	Small Pack No.	Large Pack No.
16-16 Pins	523/1/54092/100	523/1/54092/500
16-16 Skts.	523/1/54093/100	523/1/54093/500
16-20 Pins	523/1/54090/100	523/1/54090/500
16-20 Skts.	523/1/54091/100	523/1/54091/500
15 Pins	523/1/54096/100	523/1/54096/500
15 Skts.	523/1/54097/100	523/1/54097/500
12 Pins	523/1/50966/050	523/1/50966/250
12 Skts.	523/1/50967/050	523/1/50967/250
8 Pins	523/1/50968/004	523/1/50968/020
8 Skts.	523/1/50969/004	523/1/50969/020
4 Pins	523/1/50970/004	523/1/50970/020
4 Skts.	523/1/50971/004	523/1/50971/020
0 Pins	523/1/50972/004	523/1/50972/020
0 Skts.	523/1/50973/004	523/1/50973/020

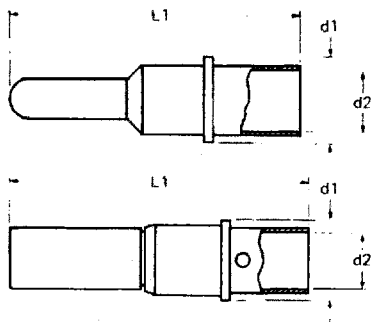
Contact Specification

Contact Size	Nom. Amps.	Mated Pairs	
		Voltage Drop at Nom. Amps.	Nominal Dry Circuit Resistance at 1mA and 20mV
16	13	20 mV	1.50mΩ
15	13	20 mV	1.50mΩ
12	23	20 mV	0.63mΩ
8	50	12 mV	0.39mΩ
4	100	10 mV	0.24mΩ
0	150	10 mV	0.22mΩ









CONTACTS

Note: Contacts must be ordered separately.

Plastic dummy contacts may be substituted for contacts. These are supplied in (1) a pack of 100 to replace contact sizes 16-16, 16-20 and 15. Part Number 523/1/50974/100, (2) a pack of 50 to replace contact size 12. Part Number 523/1/50975/050.

d1 max. mm	d2 min. mm	L1 max. mm	Pin/ Socket	Size	Part No.	AB Code	Recommended Nominal Conductor Sizes	
							A.W.G.	C.S.A. mm²
3.35	1.75	31.6	Pin	15	523/2/53887/002	KS 15 AB 88 861	16 and 18	1.5 and 1.0
3.35	1.75	37.9	Socket	15	523/1/53895/002	KB 15 AB 88 861		
2.8	1.65	31.6	Pin	16-16	523/2/53885/002	KS 16-16 AB 88 861	16 and 18	1.5 and 1.0
2.8	1.65	37.0	Socket	16-16	523/1/53893/002	KB 16-16 AB 88 861		
2.8	1.20	31.6	Pin	16-20	523/2/53884/002	KS 16-20 AB 88 861	20 22 and 24	0.75 0.50 and 0.40
2.8	1.20	37.0	Socket	16-20	523/1/53892/002	KB 16-20 AB 88 861		

							Maximum Conductor Sizes	
							A.W.G.	C.S.A. mm²
4.8	2.90	37.2	Pin	12	523/2/15053/002	LS 12 AB 88 861	12	2.50
4.8	2.9	38.2	Socket	12	523/1/15213/002	LB 12 AB 88 861	12	2.50
8.5	5.2	39.5	Pin	8	523/2/10143/002	LS 8 AB 88 861	8	10.00
8.5	5.2	39.5	Socket	8	523/1/10149/002	LB 8 AB 88 861	8	10.00
11.2	8.4	39.5	Pin	4	523/2/10142/002	LS 4 AB 88 861	4	16.00
11.2	8.4	39.5	Socket	4	523/1/10148/002	LB 4 AB 88 861	4	16.00
15.15	11.8	43.7	Pin	0	523/2/10141/002	LS 0 AB 88 861	0	50.00
15.15	11.8	41.3	Socket	0	523/1/10147/002	LB 0 AB 88 861	0	50.00

Note: L = Solder. B = Socket Contact. K = Crimp. S = Pin Contact.

All connector assemblies using contact sizes 8, 4 and 0 include contact stabilising Discs. Free assemblies include spacer sleeves.

How to order Connector Units

Note: This code does not include contacts, these must be ordered separately see page 13 and 14

Example: A 24 B W 64-08-02-[AB 88 861-AL-SPL] -P

A

A – Free unit cable clamping
B – Fixed unit
G – Free unit shrink sleeve
F – Coupler unit cable clamping
H – Coupler unit shrink sleeve

24

Shell Size (denotes max. overall dia. of cable in mm.)
12 - 15 - 18 - 21 - 24 - 30 - 38 - 42

B

Contact
B = Socket S = Pin See page 14

W

For orientation of insulator other than Normal Position, insert required code letter. R–Z., See page 3

64

Contact Arrangment
See page 3 and 4

08

Cable
Seal Size See page 17

02

Contact Type
01 = Solder
02 = Crimp

Standard Spec. Reference

P

Include suffix 'P' for connector with protective end cap.
Omit suffix 'P' when protective end cap is not required.

When protective end caps are ordered separately, use Plessey part numbers on page 12

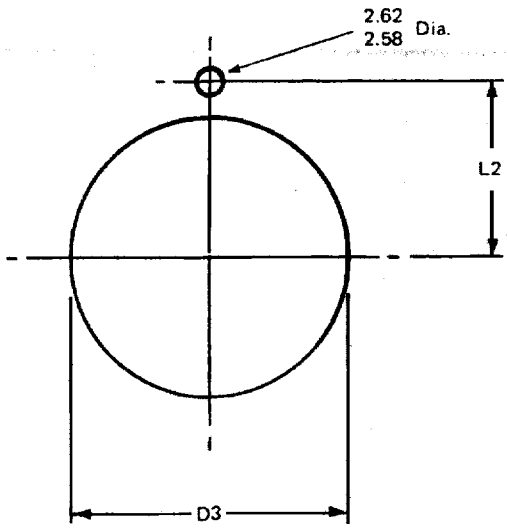
Free Units to accommodate Oversize Cables

When jacketed cables of larger outside diameter than normally accommodated by a given shell size are to be used, e.g. A24-B-64-42-02, assemblies may be supplied which include an adaptor between the connector shell and outlet. To obtain information and details of availability, etc., please contact the Sales Office.

PANEL PIERCING DATA

MARK 22 Fixed, Panel Mounting Units fit standard AB 88861 piercings.

The larger hole clears the connector thread and the locating pin fits into the smaller hole, ensuring that the connector cannot rotate from the set position, which is normally with the key on the vertical centre line.



Shell Size	D3 mm	L2 mm	Panel thickness mm	
			max.	min.
12	29.40 – 29.20	17.2 – 17.0	6.00	3.00
15	32.6 – 32.4	18.8 – 18.6	6.00	3.00
18	35.8 – 35.6	20.3 – 20.1	6.00	3.00
21	39.0 – 38.8	21.9 – 21.7	5.50	3.00
24	45.4 – 45.2	25.1 – 24.9	5.50	3.00
30	51.7 – 51.5	28.3 – 28.1	5.50	3.00
38	58.0 – 57.8	31.5 – 31.3	4.00	3.00
42	63.6 – 63.4	34.6 – 34.4	4.00	3.00

Cable Seal Sizes currently available

SEAL SIZE	SHELL OUTLET SIZE							
	12	15	18	21	24	30	38	42
06	●		●					
07	●	●	●					
08	●	●	●		●			
09	●	●	●		●			
10	●	●	●	●	●			
11	●	●	●	●	●			
12	●	●	●	●	●		●	
13	●	●	●	●	●			
14	●	●	●	●	●		●	
15		●	●	●	●	●		
16	●	●	●	●	●	●	●	
17	●	●	●	●	●	●	●	
18		●	●	●	●	●	●	
19		●	●	●	●	●	●	
20		●		●	●	●	●	
21				●	●	●	●	
22		●		●	●	●	●	
23		●		●	●	●	●	
24		●			●	●		
25					●	●	●	
26					●	●	●	
27					●	●	●	
28					●	●	●	
29					●	●	●	
30					●	●	●	
31					●		●	
32					●		●	
33							●	
34							●	
35							●	
36						●	●	
37					●		●	
38							●	
39								
40							●	
41							●	●
42								

To select correct cable seal, 'round up' cable diameter to nearest whole millimetre size.

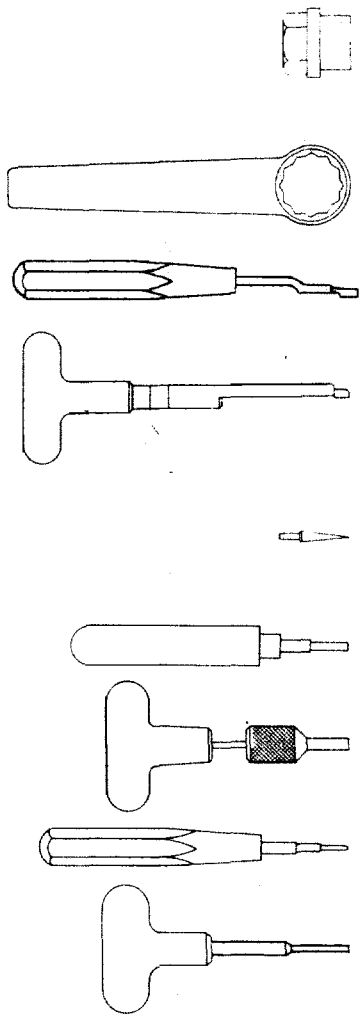
e.g. 13.6 Cable Max. Dia. uses Seal Size 14.

Note: If required seal size is not shown above, consult local sales office.

CIRCULAR CONNECTORS

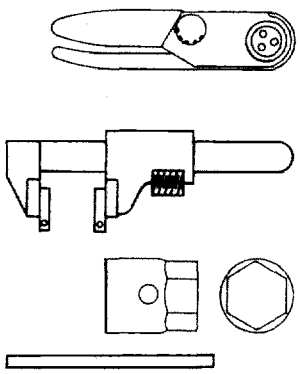
MARK 22

Tools



DESCRIPTION		PART NUMBER
Connector Holding Spanners		
Shell Size		
12		558/2/05090/000
15		558/2/05091/000
18		558/2/05092/000
21		558/2/05093/000
24		558/2/05094/000
30		558/2/05095/000
38		558/2/05096/000
42		558/2/05097/000
Holding Spanner Handle		558/2/05089/000
Contact Insertion Tool		
Contact Size		
16/20		558/1/05201/000
16/16		558/1/05200/000
15		558/1/05199/000
12		558/1/05115/000
8		558/1/05116/000
4		558/1/05117/000
0		558/1/05118/000
Contact Leader		
Size		
16 and 15		558/2/00045/000
12		558/2/05127/000
8		558/2/05128/000
Contact Removal Tool		
Contact Size		
16 and 15	Pin	558/1/05109/000
12	Pin	558/1/05119/000
8	Pin	558/1/05120/000
4	Pin	558/1/05121/000
0	Pin	558/1/05122/000
16 and 15	Socket	558/1/05085/000
12	Socket	558/1/05123/000
8	Socket	558/1/05124/000
4	Socket	558/1/05125/000
0	Socket	558/1/05126/000

Tools



Crimping Tools		
For Size 16 and 15 Contacts		
Crimp Tool	Daniels AF8 M22520/1-01	558/4/00792
Locator Turret	TH.348.SPL	558/4/00915/000
Socket Wrench		558/4/05008/000
In-service gauge		558/4/00903/000

Adaptor Spanner	558/1/05185/000

Box Spanner	558/2/05202/000 to 558/2/05208/000
Tommy Bar	558/2/05194

Tool Kit Inc. Box Comprising all Tools listed above	558/1/05150/000

INFORMATION ON PRODUCT SAFETY

This information is to be used in conjunction with the Product Catalogue and Product Specification. Products may be safely used in the applications for which they have been designed and within the specified ratings and environments. If products are exposed to conditions outside the performance ratings or specified environments they may constitute a hazard. In particular it should be noted that:—

1. Material Content of Products. Circular Connectors generally use metalwork parts made of copper, brass, aluminium, aluminium-bronze, phosphor-bronze or steel, which, dependant on the particular application, may be passivated and protected with cadmium or zinc plate — in conjunction with chromated or anodised surface finishes. The insulating materials can be either natural or synthetic rubber, together with plastic or glass filled plastic moulded parts. Contact materials vary with product type but are usually made of copper, brass, nickel, phosphor-bronze, alumel, chromel or steel.

2. Electric Shock, Burns and Fire. Hazard can occur if the product is used outside the specified parameters or if the product is damaged, wrongly wired or poorly assembled, or poorly integrated into larger equipments, or contaminated with conductive fluids. Live circuit terminations must be protected and live circuits never broken by demating products.

Hotspots may be created when resistance is increased due to damage or incorrect integration particularly soldering, crimping or loose terminations. Overheating can cause breakdown of insulation, electric shock, burns or, ultimately, fire. In the event of fire noxious and/or toxic fumes may be released and, in these circumstances, any fire involving the product should be dealt with by personnel properly equipped.

Connector products with exposed terminations or contacts should not be used on the current supply side of a circuit with exposed contacts on an unmated product. Before making a circuit live, the product and wiring should be checked to ensure that there is no damage and no electrically conducting debris present. Circuit resistance checks should also be conducted before making the circuit live. Always ensure that the correct tools, (specified by AB Connectors Ltd.) are employed for crimping and that connectors are assembled and wired by properly trained personnel.

3. Disposal of Products. Products should not be burnt.

4. Use Transport and Storage of Products. Care must be exercised to avoid damage to any part of the products during transporting, storage or use. The products, as manufactured, are free of sharp edges. Abnormal transit or storage conditions and abuse during installation can give rise to damage. Products should not be used in a damaged condition.

Improper storage (particularly of damaged products) can give rise to additional hazards particularly corrosion. Your attention is specifically drawn to the need of proper storage of products containing cadmium and you are advised to see the Guidance Note from the Health and Safety Executive on Cadmium — Health and Safety Precautions.

Safety Rules

1. Ensure all conductor wires are capable of withstanding the electrical and environmental conditions of the application.
2. Always use the correct assembly tools for cables, contacts and connectors.
3. Make circuit resistance checks before making a circuit live.
4. Always protect live circuits and never demate a live connector.
5. Never use a damaged connector.
6. Never burn discarded connectors or cable.
7. IF IN DOUBT, ASK.

N.B. Additional information on the products and the materials used in them may be obtained from the Sales Department of AB Connectors

AB Connectors Limited,
Abercynon,
Mountain Ash,
Mid. Glamorgan.
CF45 4SF
U.K.

Tel. #44 (0) 1443 740331
Fax. #44 (0) 1443 741676