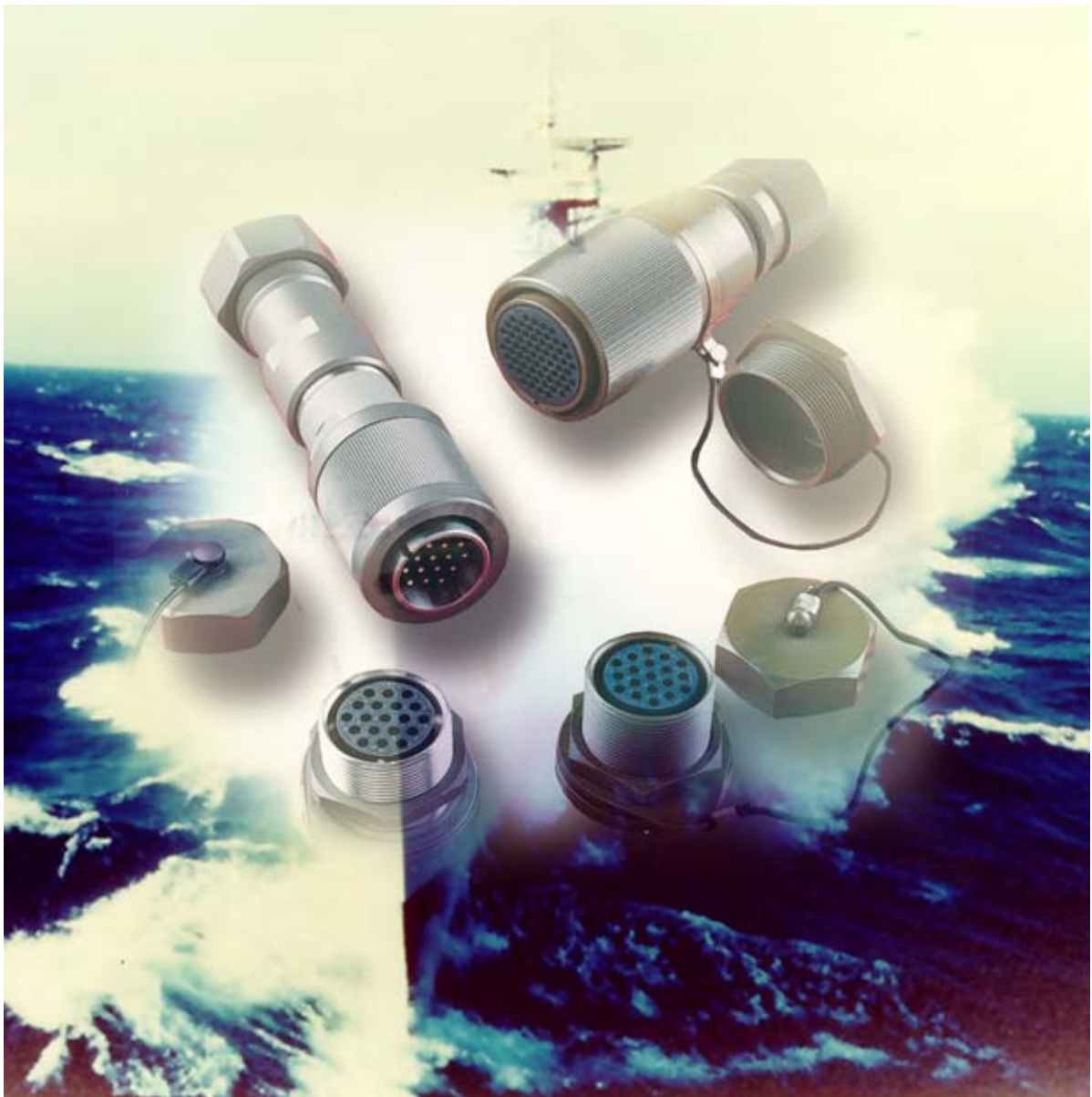




## ***AB22 Connector Series***





# AB22 Connector Series Index



## Index

### CIRCULAR CONNECTORS AB22 SERIES

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# AB22 Connector Series Introduction

## AB 22 Connectors

The AB 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 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.

### Mechanical Characteristics

Shells, protective caps, chains, rivets and washers:

Material & Finish:

Contact Insulator:

'O' Rings:

Stabilising Discs:

Contact Types:

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

### Environmental Characteristics

Salt Spray Corrosion:

Mechanical Endurance:

Watertightness:

Temperature Severity:

Vibration Severity:

Humidity Severity:

Impact:

### Electrical Characteristics

Current loadings and resistance values of contacts:

Working Voltage:

Insulation Resistance:

Screen continuity through mated connectors:

## 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.

**AB 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.**

High strength wrought aluminium alloy, cadmium plate with olive drab chromate passivation.

Polychloroprene.

Polychloroprene.

(Sizes 8, 4 & 0 contacts only) Glass reinforced polyester.

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.

V.G. 95 319 Test 5.34  
200 hrs (MIL-STD-202 Method 101D)

V.G. 95 319 Test condition 5.29 (MIL-STD-202 Method 206 Test Condition A) 500 mating cycles.

Proof against 1 bar water pressure for 12 hrs at 25°C V.G. 95 319 Test 5.9.2.

-55°C to +125°C

10-2000 Hz V.G. 95 319 Test 5.16 (MIL-STD-202 Method 204C)

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)

V.G. 95 319 Test 5.39.

See page 13

Dependant upon contact arrangement — See pages 4 & 5.

5,000 MΩ minimum @ 500 volts d.c. (25 ± 5°C)

20 mΩ max cable screen to panel. V.G. 95 319 Test 5.11.



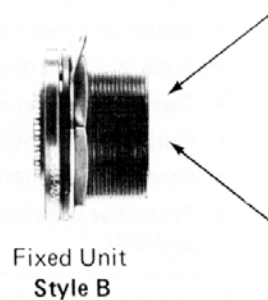


## AB22 Connector Series Shell Styles

### The AB22 Connector Family

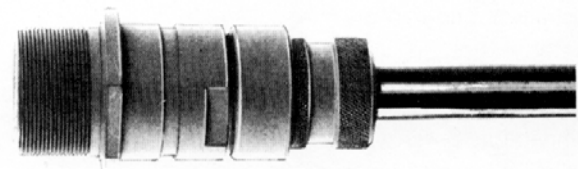
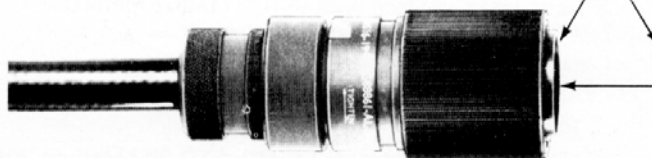
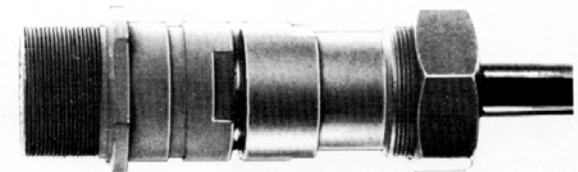
The AB22 connector family comprises one fixed style and four free styles, each available with either pin or socket contacts. Polarisation of the mating items is achieved via a single key/keyway system. The fixed item is fitted with a pin which provides an anti-rotational location when fitted to a panel.

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.



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.



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.

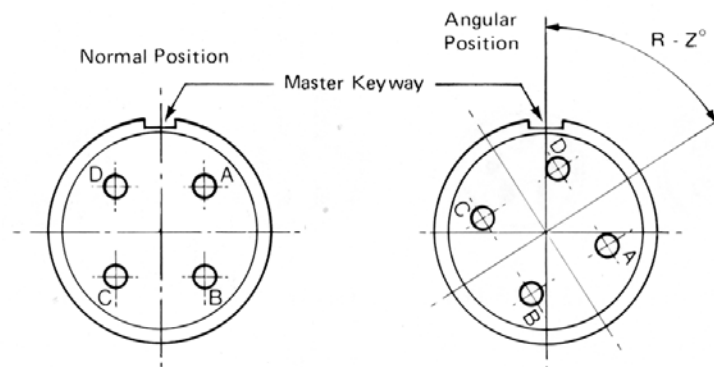
The product range also includes a comprehensive range of tools and a complete tool kit for installation of these connectors.



## AB22 Connector Series Insulator Orientation

### Orientation (Insulator)

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



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

L = SOLDER

K = CRIMP



# AB22 Connector Series Contact Arrangements

## Shell Size/Contact Arrangements AB0088861

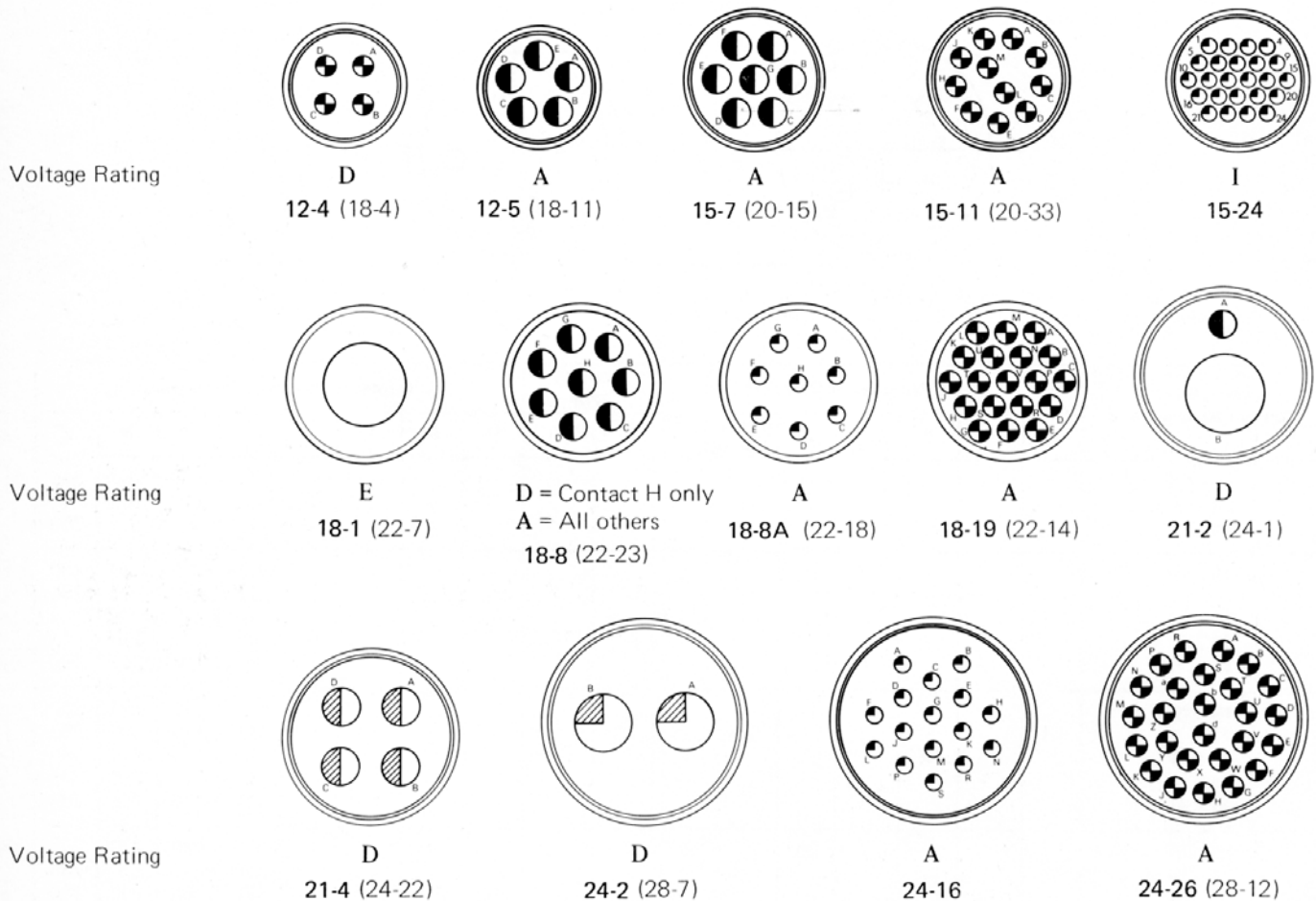
Each contact position is identified by a raised moulded character on front and rear face of insulators. The views shown are of the front face of pin insulators, front face of socket insulators is a mirror image.

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 ( ).



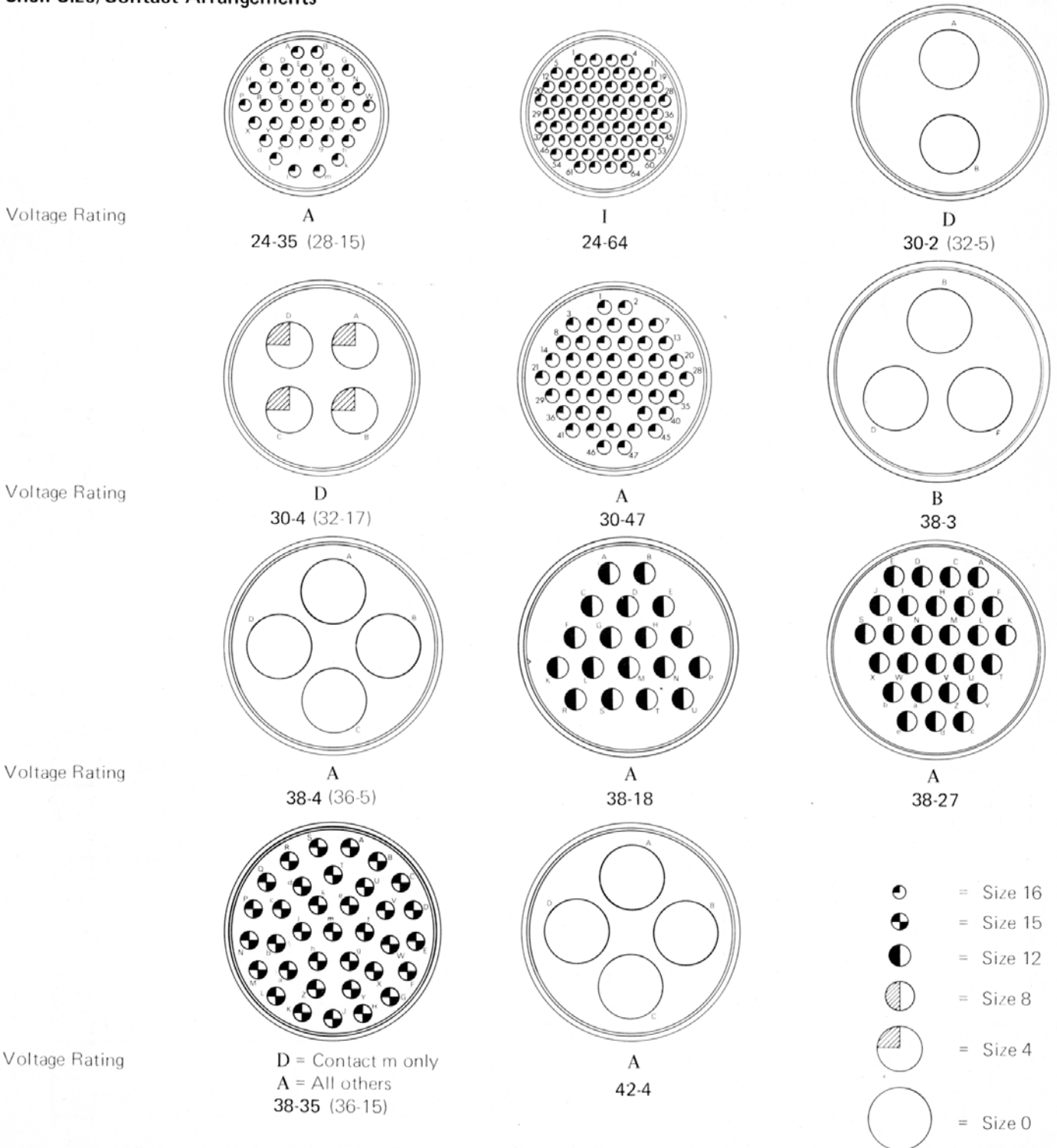
| Voltage Ratings | d.c. or a.c. peak |          | a.c. (RMS) |          |
|-----------------|-------------------|----------|------------|----------|
|                 | IEC 130-1         | VDE 0110 | IEC 130-1  | VDE 0110 |
| I               | 500               | 150      | 350        | 125      |
|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





# AB22 Connector Series Contact Arrangements

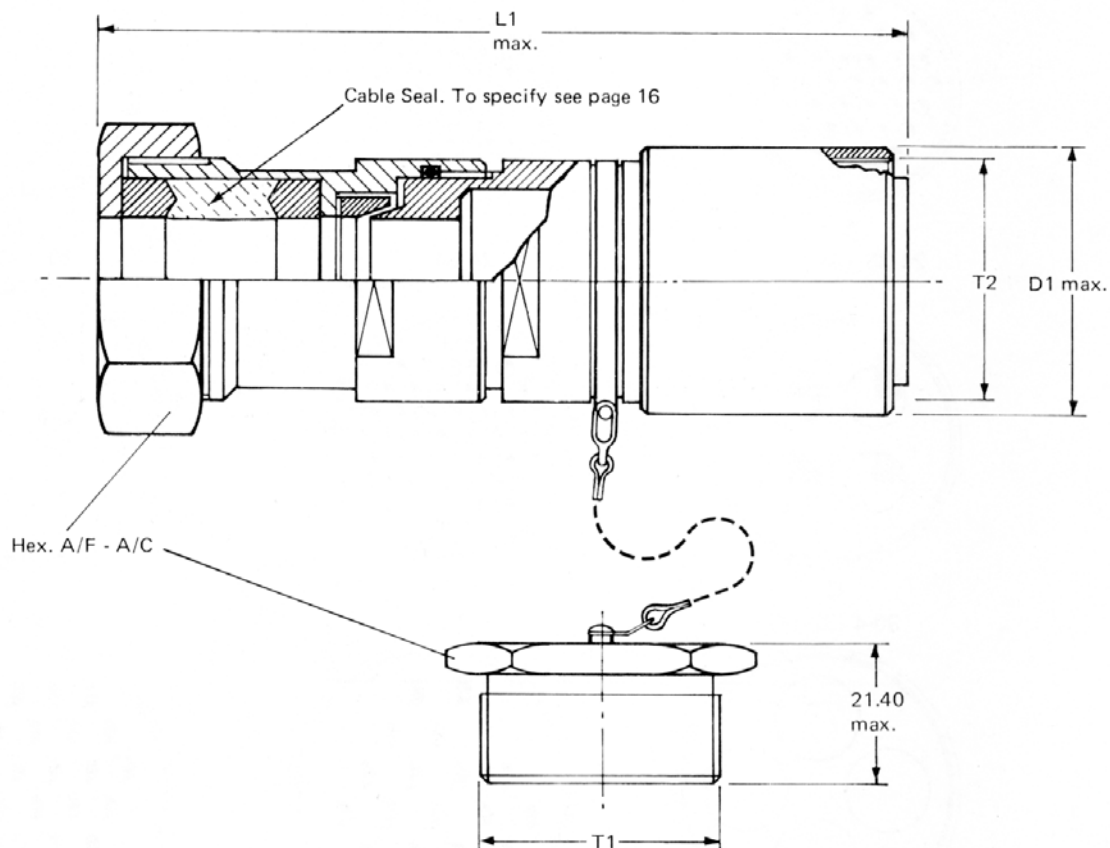
## Shell Size/Contact Arrangements





## AB22 Connector Series Style A - Free Unit, Cable Clamping

### 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 | 1/8-18 UNEF-2A | 1/8-18 UNEF-2B | 36.00        | 41.58 |
| 15                                  | 38.00 | 163.00 | 1/4-18 UNEF-2A | 1/4-18 UNEF-2B | 41.00        | 47.35 |
| 18                                  | 41.00 | 169.00 | 3/8-18 UNEF-2A | 3/8-18 UNEF-2B | 41.00        | 47.35 |
| 21                                  | 44.00 | 169.00 | 1/2-18 UNEF-2A | 1/2-18 UNEF-2B | 46.00        | 53.12 |
| 24                                  | 51.00 | 169.00 | 1 1/4-18 NS-2A | 1 1/4-18 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 | 2 1/4-16 UN-2A | 2 1/4-16 UN-2B | 65.00        | 75.06 |
| 42                                  | 73.00 | 169.00 | 2 1/2-16 UN-2A | 2 1/2-16 UN-2B | 70.00        | 80.84 |

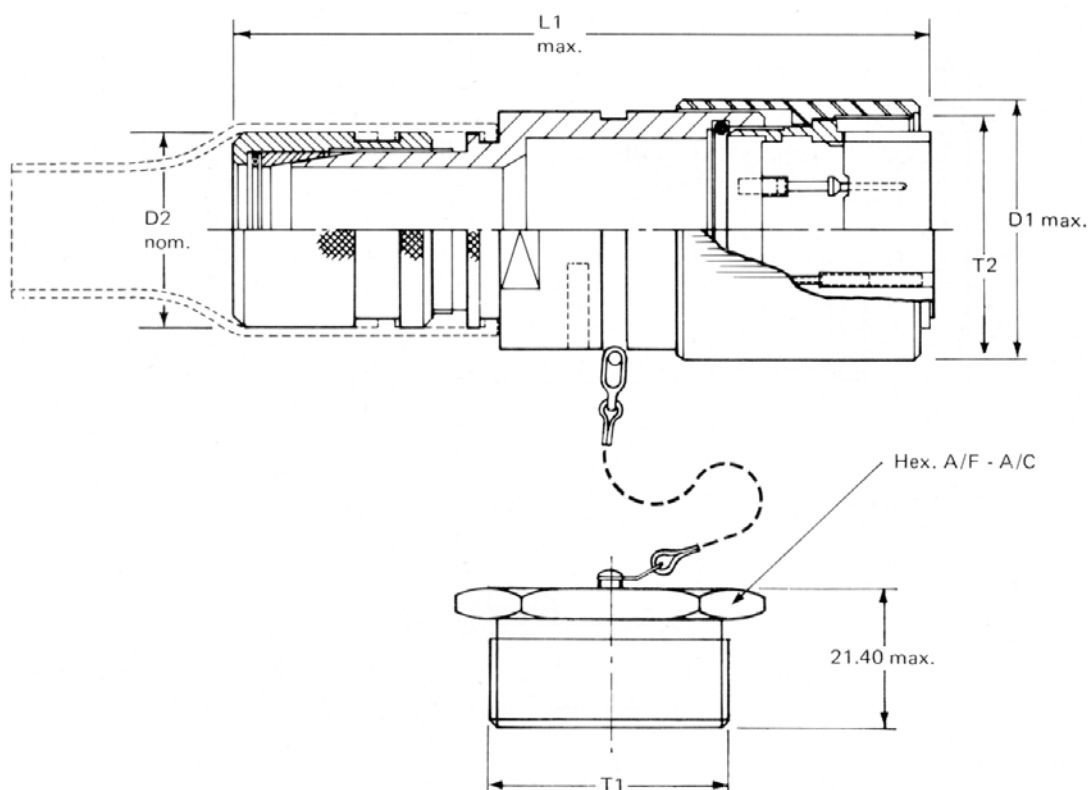
*Ordering Procedure:* For Free Unit Cable Clamping, with or without protective end cap, see page 15





## AB22 Connector Series Style G - Free Unit With Shrink Outlet

FREE UNIT WITH SHRINK SLEEVE OUTLET  
STYLE G



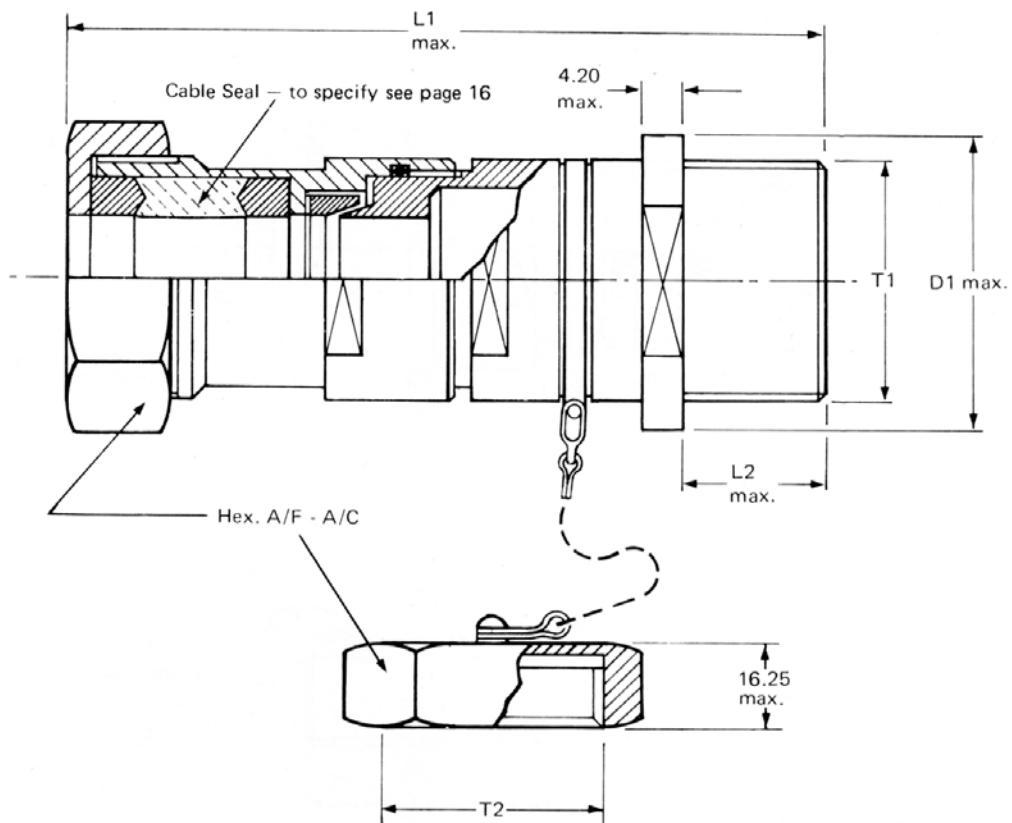
| Shell Size and Cable Diameter in mm | D1 mm | D2 mm | L1 mm  | T1 inch        | T2 inch        | Hex. Max. mm |       |
|-------------------------------------|-------|-------|--------|----------------|----------------|--------------|-------|
|                                     |       |       |        |                |                | A/F          | A/C   |
| 12                                  | 35.00 | 23.00 | 112.00 | 1 -18 UNEF-2A  | 1/8-18 UNEF-2B | 36.00        | 41.58 |
| 15                                  | 38.00 | 29.00 | 118.00 | 1/4-18 UNEF-2A | 1/4-18 UNEF-2B | 41.00        | 47.35 |
| 18                                  | 41.00 | 31.00 | 126.00 | 3/8-18 UNEF-2A | 1 -18 UNEF-2B  | 41.00        | 47.35 |
| 21                                  | 44.00 | 33.00 | 130.00 | 1/2-18 UNEF-2A | 1/2-18 UNEF-2B | 46.00        | 53.12 |
| 24                                  | 51.00 | 38.00 | 133.00 | 1/4-18 NS-2A   | 1/4-18 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 | 2/4-16 UN-2A   | 2/4-16 UN-2B   | 65.00        | 75.06 |
| 42                                  | 73.00 | 62.00 | 143.00 | 2/2-16 UN-2A   | 2/2-16 UN-2B   | 70.00        | 80.84 |

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



## AB22 Connector Series Style F - Free Unit Coupler, Cable Clamping

### 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 | 1 <sup>1</sup> / <sub>8</sub> -18 UNEF-2A | 1 <sup>1</sup> / <sub>8</sub> -18 UNEF-2B | 36.00        | 41.58 |
| 15                                  | 37.30 | 165.00 | 19.40 | 1 <sup>1</sup> / <sub>4</sub> -18 UNEF-2A | 1 <sup>1</sup> / <sub>4</sub> -18 UNEF-2B | 41.00        | 47.35 |
| 18                                  | 40.50 | 171.00 | 19.40 | 1 <sup>3</sup> / <sub>8</sub> -18 UNEF-2A | 1 <sup>3</sup> / <sub>8</sub> -18 UNEF-2B | 41.00        | 47.35 |
| 21                                  | 43.40 | 171.00 | 21.00 | 1 <sup>1</sup> / <sub>2</sub> -18 UNEF-2A | 1 <sup>1</sup> / <sub>2</sub> -18 UNEF-2B | 46.00        | 53.12 |
| 24                                  | 50.00 | 171.00 | 21.00 | 1 <sup>3</sup> / <sub>4</sub> -18 NS-2A   | 1 <sup>3</sup> / <sub>4</sub> -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 | 2 <sup>1</sup> / <sub>4</sub> -16 UN-2A   | 2 <sup>1</sup> / <sub>4</sub> -16 UN-2B   | 65.00        | 75.06 |
| 42                                  | 69.10 | 171.00 | 23.00 | 2 <sup>1</sup> / <sub>2</sub> -16 UN-2A   | 2 <sup>1</sup> / <sub>2</sub> -16 UN-2B   | 70.00        | 80.84 |

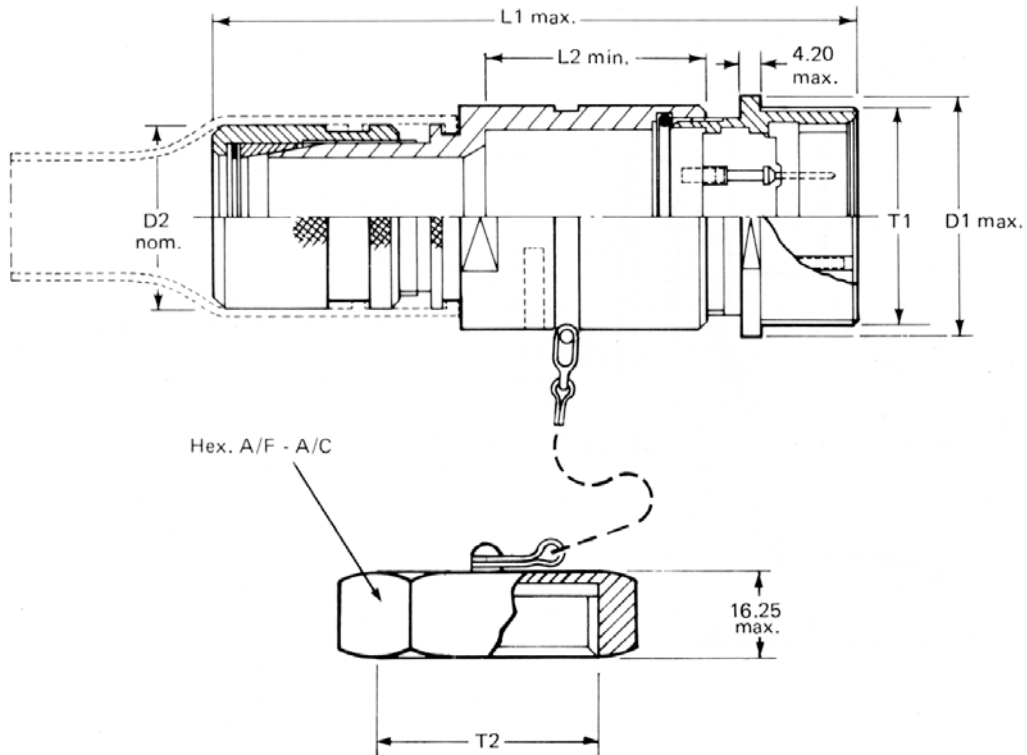
*Ordering Procedure:* For Free Unit Coupler Cable Clamping, with or without protective end cap, see page 15.



## AB22 Connector Series Style H - Free Unit Coupler With Shrink Outlet

### 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 | 1/8-18 UNEF-2A | 1/8-18 UNEF-2B | 36.00        | 41.58 |
| 15                                  | 37.30 | 29.00 | 120.00 | 36.35 | 1/4-18 UNEF-2A | 1/4-18 UNEF-2B | 41.00        | 47.35 |
| 18                                  | 40.50 | 31.00 | 128.00 | 44.05 | 3/8-18 UNEF-2A | 3/8-18 UNEF-2B | 41.00        | 47.35 |
| 21                                  | 43.40 | 33.00 | 132.00 | 48.05 | 1/2-18 UNEF-2A | 1/2-18 UNEF-2B | 46.00        | 53.12 |
| 24                                  | 50.00 | 38.00 | 135.00 | 39.95 | 1/4-18 NS-2A   | 1/4-18 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 | 2 1/8-16 UN-2A | 2 1/8-16 UN-2B | 65.00        | 75.06 |
| 42                                  | 69.10 | 62.00 | 145.00 | 47.05 | 2 1/2-16 UN-2A | 2 1/2-16 UN-2B | 70.00        | 80.84 |

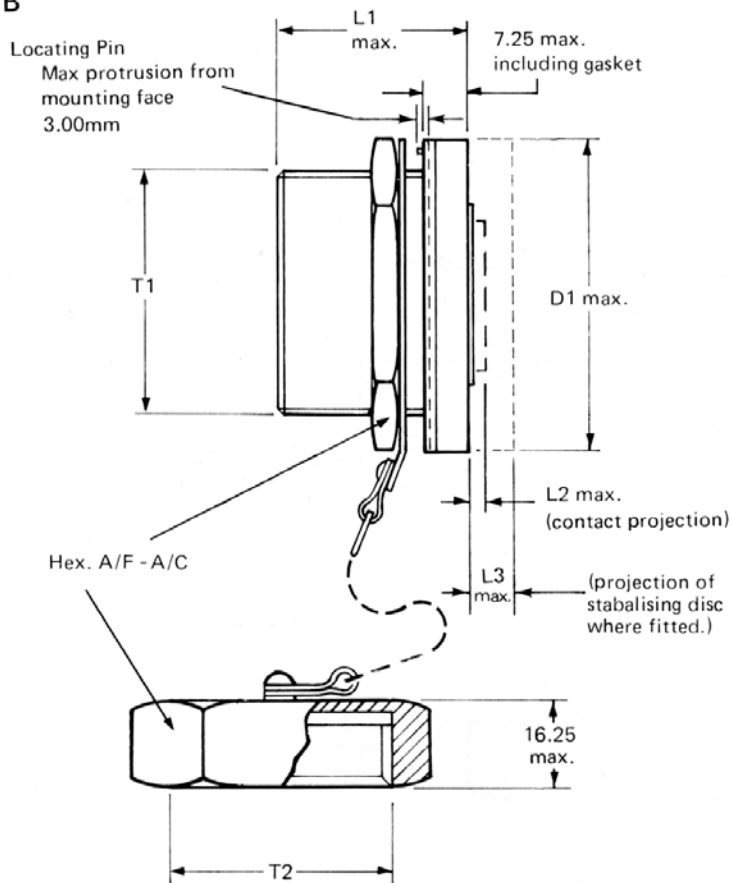
*Ordering Procedure:* For Free Unit Coupler with Shrink Sleeve Outlet, with or without protective end cap, see page 15.





## AB22 Connector Series Style B - Fixed Unit

### FIXED UNIT STYLE B



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

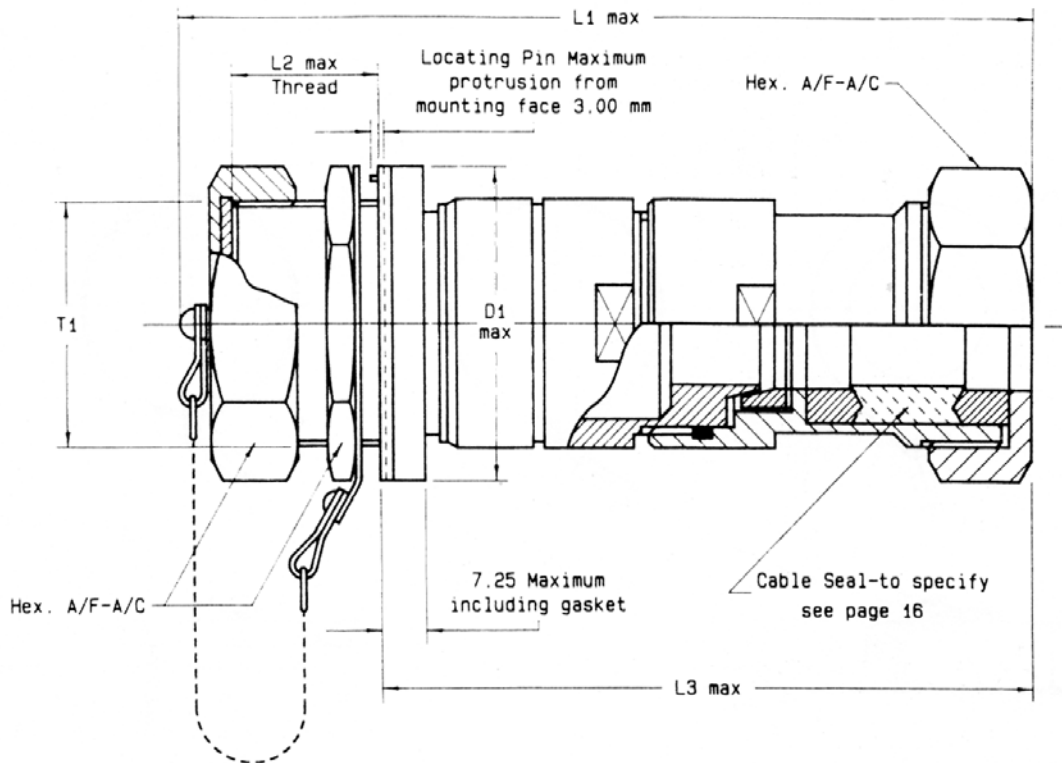
| Shell Size and Cable Diameter in mm | D1 mm | L1 mm | L3 mm | T1 inch        | T2 inch        | Hex. Max. mm |       |
|-------------------------------------|-------|-------|-------|----------------|----------------|--------------|-------|
|                                     |       |       |       |                |                | A/F          | A/C   |
| 12                                  | 41.30 | 38.11 |       | 1/8-18 UNEF-2A | 1/8-18 UNEF-2B | 36.00        | 41.58 |
| 15                                  | 45.30 | 38.11 |       | 1/4-18 UNEF-2A | 1/4-18 UNEF-2B | 41.00        | 47.35 |
| 18                                  | 48.30 | 38.11 | 8.11  | 3/8-18 UNEF-2A | 3/8-18 UNEF-2B | 41.00        | 47.35 |
| 21                                  | 51.30 | 38.11 | 8.11  | 1/2-18 UNEF-2A | 1/2-18 UNEF-2B | 46.00        | 53.12 |
| 24                                  | 57.30 | 38.11 |       | 3/4-18 NS-2A   | 3/4-18 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  | 2 1/4-16 UN-2A | 2 1/4-16 UN-2B | 65.00        | 75.06 |
| 42                                  | 76.30 | 38.11 | 8.11  | 2 1/2-16 UN-2A | 2 1/2-16 UN-2B | 70.00        | 80.84 |

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



## AB22 Connector Series Style D - Fixed Unit, Cable Clamping

### FIXED UNIT CABLE CLAMPING STYLE D



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

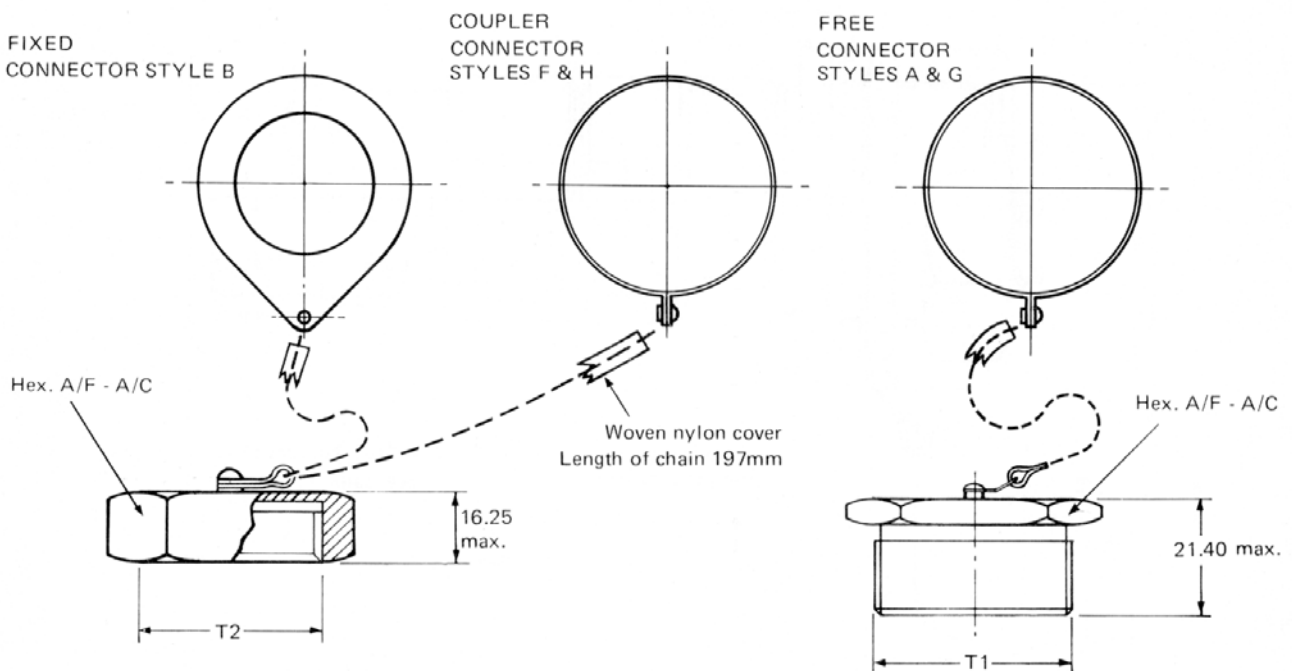
| Shell Size and cable Diameter in mm | D1 mm | L1 mm  | L2 mm | L3 mm  | T1 inch                                   | Hex. Max. mm |       |
|-------------------------------------|-------|--------|-------|--------|---|--------------|-------|
|                                     |       |        |       |        |   | A/F          | A/C   |
| 12                                  | 41.30 | 190.00 | 31.00 | 146.00 | 1 <sup>1</sup> / <sub>8</sub> -18 UNEF-2A | 36.00        | 41.58 |
| 15                                  | 45.30 | 190.00 | 31.00 | 146.00 | 1 <sup>1</sup> / <sub>4</sub> -18 UNEF-2A | 41.00        | 47.35 |
| 18                                  | 48.30 | 195.00 | 31.00 | 151.00 | 1 <sup>3</sup> / <sub>8</sub> -18 UNEF-2A | 41.00        | 47.35 |
| 21                                  | 51.30 | 195.00 | 31.00 | 151.00 | 1 <sup>1</sup> / <sub>2</sub> -18 UNEF-2A | 46.00        | 53.12 |
| 24                                  | 57.30 | 195.00 | 31.00 | 151.00 | 1 <sup>3</sup> / <sub>4</sub> -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 | 2 <sup>1</sup> / <sub>4</sub> -16 UN-2A   | 65.00        | 75.06 |
| 42                                  | 76.30 | 195.00 | 31.00 | 151.00 | 2 <sup>1</sup> / <sub>2</sub> -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



# AB22 Connector Series Metal Protective Caps

## 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                                  | 1/8 - 18 UNEF - | 2A | 2B           | 36.0 | 41.58        | 523/1/50760/000 | 523/1/50944/000 | 523/1/50585/000 |
| 15                                  | 1/4 - 18 UNEF - | 2A | 2B           | 41.0 | 47.35        | 523/1/50761/000 | 523/1/50945/000 | 523/1/50586/000 |
| 18                                  | 3/8 - 18 UNEF - | 2A | 2B           | 41.0 | 47.35        | 523/1/50762/000 | 523/1/50946/000 | 523/1/50587/000 |
| 21                                  | 1/2 - 18 UNEF - | 2A | 2B           | 46.0 | 53.12        | 523/1/50763/000 | 523/1/50947/000 | 523/1/50588/000 |
| 24                                  | 3/4 - 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                                  | 2 1/4 - 16 UN - | 2A | 2B           | 65.0 | 75.06        | 523/1/50766/000 | 523/1/50950/000 | 523/1/50591/000 |
| 42                                  | 2 1/2 - 16 UN - | 2A | 2B           | 70.0 | 80.84        | 523/1/50767/000 | 523/1/50951/000 | 523/1/50592/000 |





# AB22 Connector Series Contacts

## CONTACTS

### Materials

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

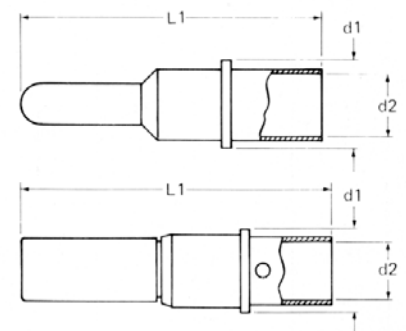
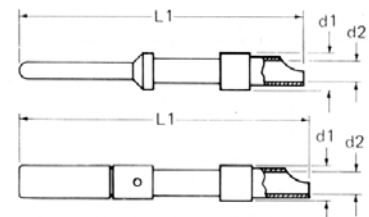
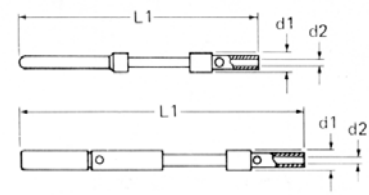
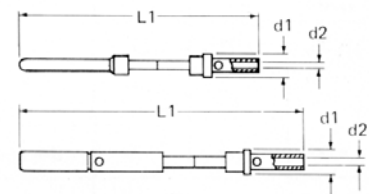
Contacts and Dummy Contacts require the use of the appropriate hand tools and Contact Leaders, listed on page 18

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   |





## AB22 Connector Series Contacts

### 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<br>max.<br>mm | d2<br>min.<br>mm | L1<br>max.<br>mm | Pin/<br>Socket | Size           | Part No.                           | VG Code                                  | Recommended Nominal<br>Conductor Sizes |                            |
|------------------|------------------|------------------|----------------|----------------|------------------------------------|--|--|----------------------------|
|                  |                  |                  |                |                |                                    |  | A.W.G.                                 | C.S.A. mm <sup>2</sup>     |
| 3.35             | 1.75             | 31.6             | Pin            | 15             | 523/2/50682/002                    | KS 15 VG 88 861                          | } 16<br>and                            | } 1.5<br>and               |
| 3.35             | 1.75             | 37.9             | Socket         | 15             | 523/1/50681/002                    | KB 15 VG 88 861                          |  |                            |
| 2.8              | 1.65             | 31.6             | Pin            | 16-16          | 523/2/50675/002                    | KS 16-16 VG 88 861                       | } 16<br>and                            | } 1.5<br>and               |
| 2.8              | 1.65             | 37.0             | Socket         | 16-16          | 523/1/50677/002                    | KB 16-16 VG 88 861                       |  |                            |
| 2.8<br>2.8       | 1.20<br>1.20     | 31.6<br>37.0     | Pin<br>Socket  | 16-20<br>16-20 | 523/2/50676/002<br>523/1/50678/002 | KS 16-20 VG 88 861<br>KB 16-20 VG 88 861 | } 20<br>22 and<br>24                   | } 0.75<br>0.50 and<br>0.40 |

|                |              |              |               |        |                                    |                                  | Maximum Conductor<br>Sizes |                        |
|----------------|--------------|--------------|---------------|--------|------------------------------------|----------------------------------|----------------------------|------------------------|
|                |              |              |               |        |                                    |                                  | A.W.G.                     | C.S.A. mm <sup>2</sup> |
| 4.8            | 2.90         | 37.2         | Pin           | 12     | 532/2/15053/002                    | LS 12 VG 88 861                  | 12                         | 2.50                   |
| 4.8            | 2.9          | 38.2         | Socket        | 12     | 523/1/15213/002                    | LB 12 VG 88 861                  | 12                         | 2.50                   |
| 8.5<br>8.5     | 5.2<br>5.2   | 39.5<br>39.5 | Pin<br>Socket | 8<br>8 | 523/2/10143/002<br>523/1/10149/002 | LS 8 VG 88 861<br>LB 8 VG 88 861 | 8<br>8                     | 10.00<br>10.00         |
| 11.2<br>11.2   | 8.4<br>8.4   | 39.5<br>39.5 | Pin<br>Socket | 4<br>4 | 523/2/10142/002<br>523/1/10148/002 | LS 4 VG 88 861<br>LB 4 VG 88 861 | 4<br>4                     | 16.00<br>16.00         |
| 15.15<br>15.15 | 11.8<br>11.8 | 43.7<br>41.3 | Pin<br>Socket | 0<br>0 | 523/2/10141/002<br>523/1/10147/002 | LS 0 VG 88 861<br>LB 0 VG 88 861 | 0<br>0                     | 50.00<br>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.



## AB22 Connector Series Part Number Explanation

### 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**

|           |   |
|-----------|---|
| <b>A</b>  | <p>A – Free unit cable clamping<br/>         B – Fixed unit<br/>         G – Free unit shrink sleeve<br/>         F – Coupler unit cable clamping<br/>         H – Coupler unit shrink sleeve</p> |
| <b>24</b> | <p>Shell Size (denotes max. overall dia. of cable in mm.)<br/>         12 - 15 - 18 - 21 - 24 - 30 - 38 - 42</p>  |
| <b>B</b>  | <p><b>Contact</b><br/>         B = Socket    S = Pin                      See page 14</p>   |
| <b>W</b>  | <p>For orientation of insulator other than Normal Position, insert required code letter. R–Z., See page 3</p>   |
| <b>64</b> | <p><b>Contact Arrangement</b>                      See page 3 and 4</p>   |
| <b>08</b> | <p><b>Cable</b><br/>         Seal Size                                      See page 17</p>   |
| <b>02</b> | <p><b>Contact Type</b><br/>         01 = Solder<br/>         02 = Crimp</p>   |
|           | <p><b>Standard Spec. Reference</b></p>  |
| <b>P</b>  | <p>Include suffix 'P' for connector with protective end cap.<br/>         Omit suffix 'P' when protective end cap is not required.</p>  |

When protective end caps are ordered separately, use AB 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.



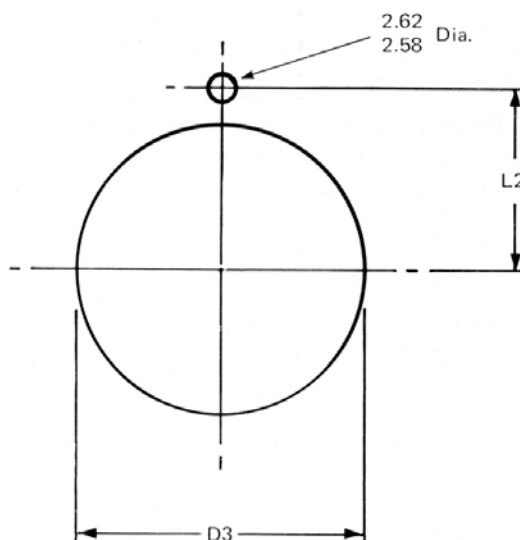


## AB22 Connector Series Panel Fixing Data

### PANEL PIERCING DATA

**MARK 22** Fixed, Panel Mounting Units fit standard AB88861 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 |



## AB22 Connector Series Cable Sealing

### 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        |                   |    |    |    |    |    |    |    |

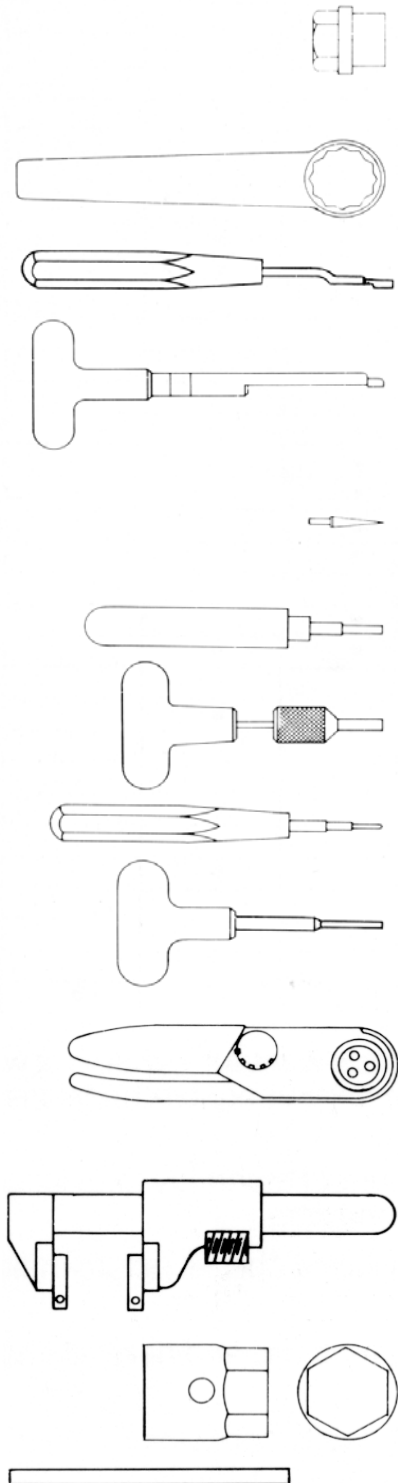
To select correct cable seal, 'round up' cable diameter to nearest whole millimetre size.

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

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



## AB22 Connector Series Assembly Tools



| DESCRIPTION                       | PART NUMBER                |                                       |
|-----------------------------------|----------------------------|---------------------------------------|
| <b>Connector Holding Spanners</b> |                            |                                       |
| <b>Shell Size</b>                 |                            |                                       |
| 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            |                                       |
| <b>Holding Spanner Handle</b>     | 558/2/05089/000            |                                       |
| <b>Contact Insertion Tool</b>     |                            |                                       |
| <b>Contact Size</b>               |                            |                                       |
| 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            |                                       |
| <b>Contact Leader</b>             |                            |                                       |
| <b>Size</b>                       |                            |                                       |
| 16 and 15                         | 558/2/00045/000            |                                       |
| 12                                | 558/2/05127/000            |                                       |
| 8                                 | 558/2/05128/000            |                                       |
| <b>Contact Removal Tool</b>       |                            |                                       |
| <b>Contact Size</b>               |                            |                                       |
| 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                       |
| <b>Crimping Tools</b>             |                            |                                       |
| For Size 16 and 15 Contacts       |                            |                                       |
| Crimp Tool                        | Daniels AF8<br>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                       |
| <b>Adaptor Spanner</b>            |                            | 558/1/05185/000                       |
| <b>Box Spanner</b>                |                            | 558/2/05202/000 to<br>558/2/05208/000 |
| <b>Tommy Bar</b>                  |                            | 558/2/05194                           |
| <b>Tool Kit Inc. Box</b>          |                            |                                       |
| Comprising all Tools listed above |                            | 558/1/05150/000                       |



## AB22 Connector Series Product Safety Information

### 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 either AB Connectors