

# Insertion and Extraction Tools

Please Contact AB Connectors Sales Office

Contact		Insertion Tool	
Size	Cat No.	Cat No.	Colour
22D	523/4/18219/000	558/1/05267/000	Black
	523/4/18241/000		
20	523/4/18225/000	558/1/05253/000	Red
	523/4/18242/000		
16	523/4/18227/000	558/1/05251/000	Blue
	523/4/18243/000		
12	523/4/18229/000	558/1/05251/001	Yellow
	523/4/18244/000		

Contact		Extraction Tool	
Size	Cat No.	Cat No.	Colour
22D	523/4/18219/000	558/1/05254/002	Black/ White
	523/4/18241/000		
20	523/4/18225/000	558/1/05254/000	Red/ White
	523/4/18242/000		
16	523/4/18227/000	558/1/05252/000	Blue/ White
	523/4/18243/000		
12	523/4/18229/000	558/1/05252/001	Yellow/ White
	523/4/18244/000		

## Crimping Tools

Tools conforming to MIL-C-22520 can be used to crimp Mk. 38 connector contacts.

Recommendation for the various contact types and sizes are as follows:

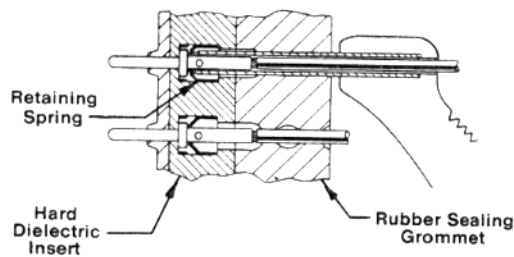
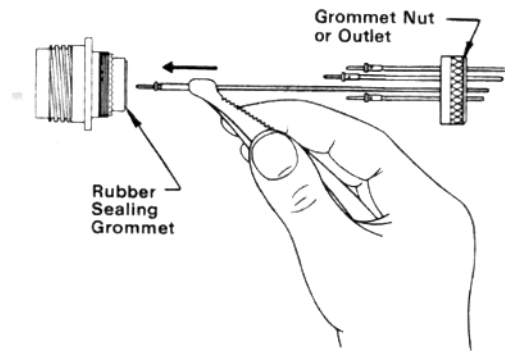
Crimping Tool	Positioner or Turret Die	Contact Type/Size
M22520/2-01 M22520/7-01	M22520/2-09 M22520/7-07	22D, Pins
M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05	22D, Socket
M22520/1-01 M22520/2-01 M22520/7-01	M22520/1-04 M22520/2-10 M22520/7-08	20 Pin 20 Socket
M22520/1-01 M22520/7-01	M22520/1-04 M22520/7-04	16 Pin 16 Socket
M22520/1-01	M22520/1-04	12 Pin 12 Socket

The above crimp tools are all available from the approved MIL. Spec. tool manufacturers.

# Contact Insertion

## Preparation for Insertion

1. Remove grommet nut or outlet from the connector and place over the wires to be installed.
2. Insert the crimped contact/wire assembly between the tool tips, making sure that contact shoulder is butted against tips.



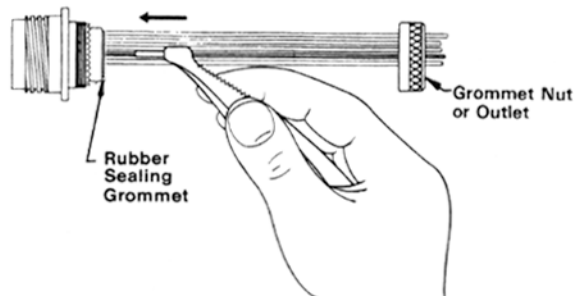
## Insertion Procedure

3. Align contact and tool with the selected hole in the connector as nearly perpendicular to the grommet face as possible.
4. Carefully push the contact into the rubber grommet hole and hard dielectric insert body until the contact shoulder stops against the insert. The contact retaining spring will then be felt or heard locking into place (Fig. 3).
5. Withdraw the tool completely from the connector by sliding it back along the wire insulation. Remove tool and apply a gentle pull on the wire to confirm that the contact is properly locked into place.
6. Install all other wired contacts in the same manner. Unused holes must be filled with an un-wired contact followed by a sealing plug.
7. Reassemble grommet nut or outlet.

# Contact Extraction

## Preparation for Extraction

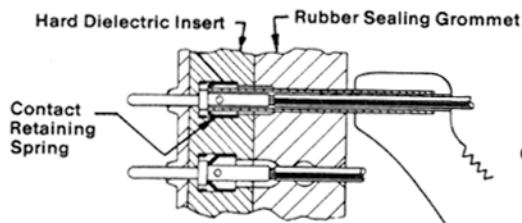
1. Disassemble grommet nut or outlet from the connector, allowing it to hang on the wire bundle.
2. Insert the wire of the contact to be extracted between the tool tips.



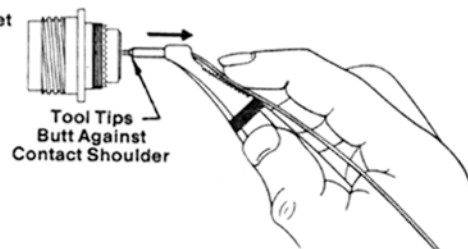
## Extraction Procedure

3. Slide the tool tips down the wire insulation into the rubber sealing grommet and hard dielectric insert body until they stop against the contact shoulder (Fig. 3A) If tips catch on wire barrel and will not enter to full depth, remove tool completely and open and close handles to realign tips.
4. With the tool tips firmly butted against the contact shoulder, grip the wire insulation against the serrated tool surface without permitting any slack, and exert a light pull on the tool and wire to extract the contact (Fig. 4A) Do not increase pull if contact does not slide out easily – tool tips were not butted properly and excessive tension will damage the contact retaining spring – Remove tool completely and repeat extraction procedure.
5. If wired contact is not replaced, fill unused hole with an unwired contact followed by a sealing plug.
6. Reassemble grommet nut or outlet.

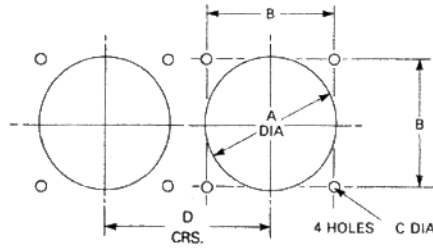
**Fig. 3A**



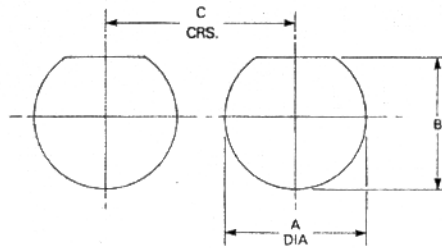
**Fig. 4A**



# Panel Cutout Dimensions



Shell Size	A Dia Min		B CRS		C Hole Dia Tolerance		D CRS MIN	
	mm	ins	mm	ins	mm	ins	mm	ins
9	16.66	.656	18.26	.719	3.38 3.12	.133 .123	25.91	1.020
11	20.22	.796	20.62	.812	3.38 3.12	.133 .123	27.69	1.090
13	23.42	.922	23.01	.906	3.38 3.12	.133 .123	32.51	1.280
15	26.59	1.047	24.61	.969	3.38 3.12	.133 .123	35.31	1.390
17	30.96	1.219	26.97	1.062	3.38 3.12	.133 .123	40.64	1.600
19	32.94	1.297	29.36	1.156	3.38 3.12	.133 .123	44.20	1.740
21	36.12	1.422	31.75	1.250	3.38 3.12	.133 .123	47.24	1.860
23	39.29	1.547	34.93	1.375	3.94 3.68	.155 .145	50.29	1.980
25	42.47	1.672	38.10	1.500	3.94 3.68	.155 .145	53.09	2.090



Shell Size	A Dia		B Dim		C CRS MIN	
	mm	ins	mm	ins	mm	ins
9	17.95 17.70	.707 .697	16.99 16.74	.669 .659	30.48	1.200
11	21.13 20.88	.832 .822	19.53 19.28	.768 .759	35.31	1.390
13	25.83 25.58	1.017 1.007	24.26 24.01	.955 .945	38.35	1.510
15	29.05 28.80	1.144 1.134	27.53 27.28	1.084 1.074	41.86	1.640
17	32.23 31.98	1.269 1.259	30.68 30.43	1.208 1.198	44.70	1.760
19	35.40 35.15	1.394 1.384	33.86 33.61	1.333 1.323	49.53	1.950
21	38.53 38.28	1.517 1.507	37.06 36.81	1.459 1.449	52.83	2.080
23	41.75 41.50	1.644 1.634	40.24 39.99	1.584 1.574	55.88	2.200
25	44.93 44.68	1.769 1.759	43.41 43.16	1.709 1.699	62.23	2.450

## Note

An allowance must be made on the above recommended minimum spacings in the vertical plane when a combination of straight and angled outlets are used.

## Customer Service

Plessey Connectors produce a range of service tools and test equipment for cable assembly. Ring Northampton Sales Office for details.

# INFORMATION ON PRODUCT SAFETY

## Products: Electrical Connectors and Accessories System's Test Equipment

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 molded 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 Plessey Connectors Limited) are employed for crimping and that connectors are assembled and wired by properly trained personnel.

### 3. 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 for 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.

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

#### SAFETY RULES

1. FOLLOW THESE GUIDELINES.
2. ALWAYS PROTECT LIVE CIRCUITS AND NEVER DEMATE A LIVE CONNECTOR.
3. NEVER USE A DAMAGED CONNECTOR.
4. NEVER BURN DISCARDED CONNECTORS.

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