

AIR PUBLICATION

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**CONNECTORS, HELLERMANN
DEUTSCH**

DBA 30 SERIES

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

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AMENDMENT RECORD SHEET

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1 Connectors, Hellermann Deutsch DBA30 series

Chapter 1

CONNECTORS, HELLERMANN DEUTSCH DBA30 SERIES

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LEADING PARTICULARS

Current rating	Size 20 contacts 7.5A
	Size 16 contacts 25A
	Size 12 contacts 40A

LEADING PARTICULARS (Cont'd)

Voltage rating	500V d.c. working 900V a.c. working
Contact detail	Beryllium copper gold plated
Contact resistance	Size 20 15M/V at 7.5A Size 16 21M/V at 20A
Temperature range	-55°C to +200°C
Lubricant	M.S.4 33C/9424829

INTRODUCTION

1. Connectors in the Hellermann Deutsch DBA30 series have hard faced plastic inserts with snap-in contacts which can be inserted and removed from the rear of the connector with the appropriate tool.

SIGNIFICANCE OF CODE NUMBERS

2.

DBA	30	22	55	P	N	*	
							Modification state
							Orientation position:- Available in
							N = Normal or 1, 2, 3, 4 & 5
							Denotes (P) Pins (S) Sockets
							Shell size
							Contact arrangement
							Shell style i.e. 0 Flange mount
							4 Single hole mount
							6 Straight plug
							Identifies miniature threaded coupling connector

DESCRIPTION

SQUARE FLANGE RECEPTACLE

3.

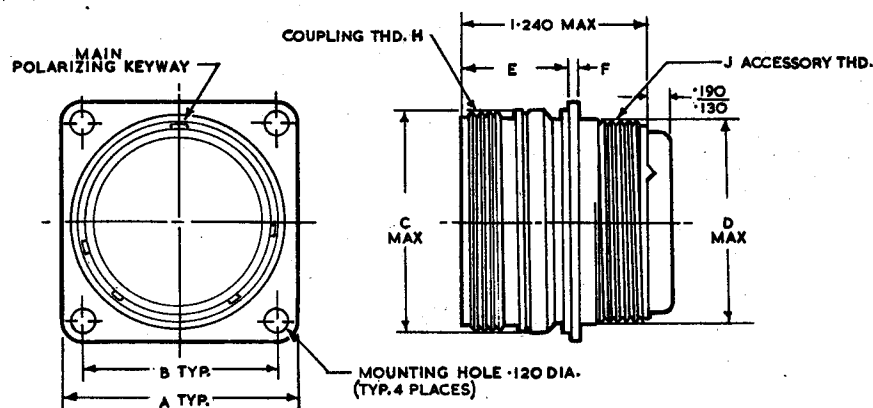


Fig. 1. Square flange receptacle

TABLE 1
Square flange receptacle details

PART NO	A	B	C MAX	D MAX	E ⁺ .010	F ⁺ .010	H	THREAD	J	THREAD	WEIGHT IN LBS
38041-10-x P/S x	0.937	0.719	0.696	0.625	0.718	0.062	$\frac{11}{16}$	-24 UNEF-2A	$\frac{3}{8}$	-24 UNEF-2A	
38041-12-x P/S x	1.031	0.812	0.875	0.750	0.718	0.062	$\frac{7}{8}$	-20 UNEF-2A	$\frac{3}{4}$	-20 UNEF-2A	
38041-14-x P/S x	1.125	0.906	0.936	0.875	0.718	0.062	$\frac{15}{16}$	-20 UNEF-2A	$\frac{7}{8}$	-20 UNEF-2A	
38041-16-x P/S x	1.250	0.969	1.062	1.000	0.718	0.062	$1\frac{1}{16}$	-18 UNEF-2A	1"	-20 UNEF-2A	
38041-18-x P/S x	1.343	1.062	1.187	1.062	0.718	0.062	$1\frac{3}{16}$	-18 UNEF-2A	$1\frac{1}{16}$	-18 UNEF-2A	
38041-22-x P/S x	1.562	1.250	1.437	1.312	.718	.062	$1\frac{7}{16}$	-18 UNEF-2A	$1\frac{5}{16}$	-18 UNEF-2A	

SINGLE HOLE MOUNTING RECEPTACLE

4.

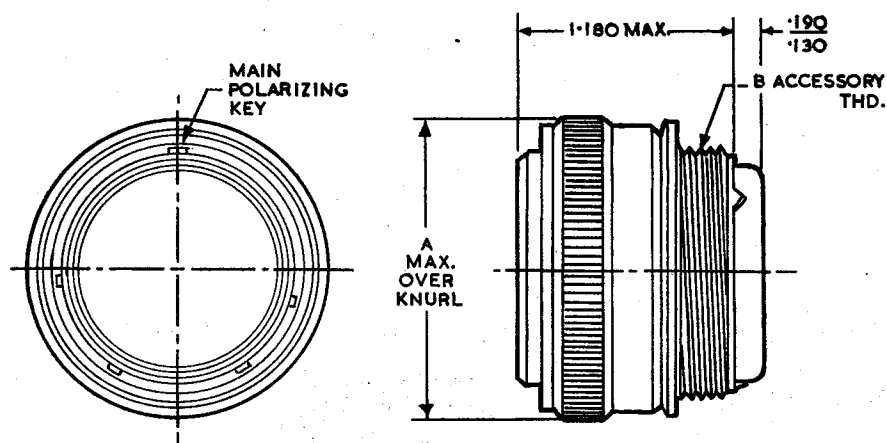


Fig. 2. Single hole mounting receptacle

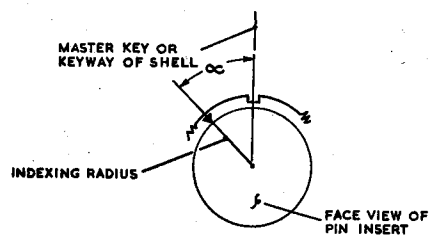
TABLE 2

Single hole mounting receptacle details

PART NO.	A MAX.	B	THREAD	WEIGHT IN LBS
38043-10- κ P/S κ	0.906	$\frac{5}{8}$	-24UNEF-2A	
38043-12- κ P/S κ	1.078	$\frac{3}{4}$	-20UNEF-2A	
38043-14- κ P/S κ	1.141	$\frac{7}{8}$	-20UNEF-2A	
38043-16- κ P/S κ	1.266	1"	-20UNEF-2A	
38043-18- κ P/S κ	1.375	$1\frac{1}{16}$	-18UNEF-2A	
38043-22- κ P/S κ	1.625	$1\frac{5}{16}$	-18UNEF-2A	

PLUG COUPLING

5.



INSERT ARRANGE	INSERT POSITION DEGREES					
	NORMAL	1	2	3	4	5
22-55	0°	10°	20°	30°	40°	50°
SHOWN FOR REFERENCE POSITION ONLY. FOR ORIENTATION POSITION SEE INSERT ARRANGEMENT SHEETS						

Fig. 3. Plug coupling

TABLE 3

Plug coupling details

PART NO.	A MAX.	B MAX.	C	THREAD	WEIGHT LBS
DBA36-10- $\pi^P/S \pi$	·906	0·734	$\frac{5}{8}$	-24UNEF-2A	
DBA36-12- $\pi^P/S \pi$	1·078	0·858	$\frac{3}{4}$	-20UNEF-2A	
DBA36-14- $\pi^P/S \pi$	1·141	0·984	$\frac{7}{8}$	-20UNEF-2A	
DBA36-18- $\pi^P/S \pi$	1·375	1·218	$1\frac{1}{16}$	-18UNEF-2A	
DBA36-22- $\pi^P/S \pi$	1·625	1·468	$1\frac{5}{16}$	-18UNEF-2A	

ORIENTATION FEATURES

Insert orientation 1, 2, 3, 4 and 5

6. In the normal position the indexing radius coincides with the master key or keyway of

the shell. In alternate orientated positions the pin insert is rotated α degrees counter clockwise relative to the master key or keyway (fig. 4) and therefore the socket insert is rotated α degrees clockwise relative to the key or keyway.

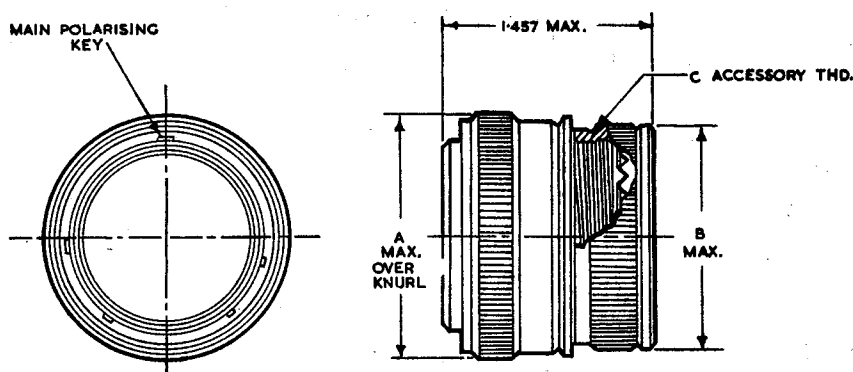


Fig. 4. Insert orientation

TABLE 4
Orientation arrangements

Insert arrangement No.	Insert position degrees				
	1	2	3	4	5
10-5	-	-	-	40	-
12-12	-	20	-	-	-
14-7	10	20	30	40	-
14-4	10	20	30	40	-
16-24	10	20	30	40	-
18-31	10	20	30	40	50
22-55	10	20	30	40	-
22-19	10	20	30	40	-

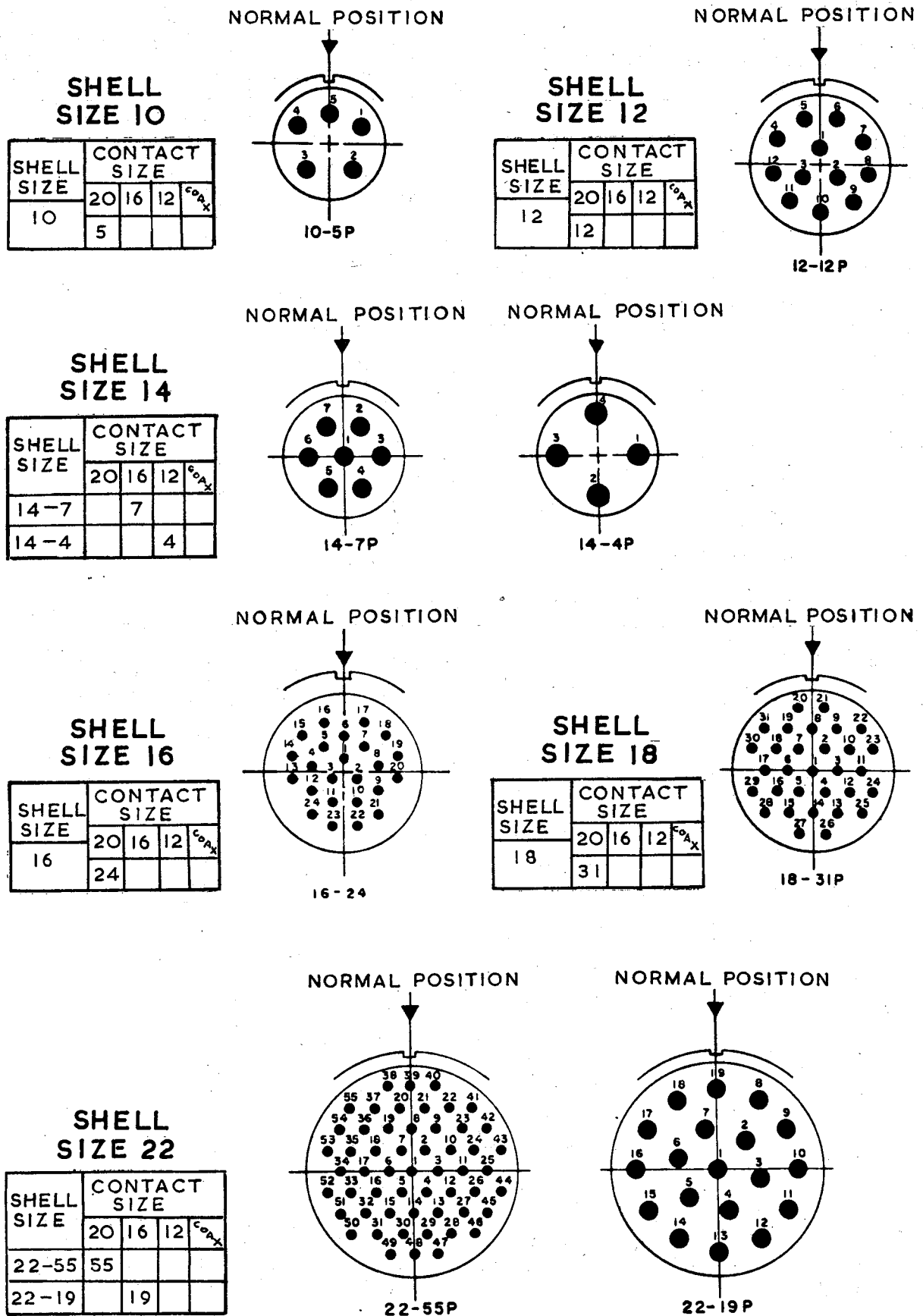


Fig. 5. Contact arrangements shell size 10 to 22

PROTECTIVE CAPS AND DUMMY STOWAGES

required for the DBA30 series connectors which is given in Table 5.

Note . . .

To be issued at a later date.

CRIMPING TOOLS

8. The appropriate crimping tool will be

Note . . .

The insertion and removal tools are of the fail/safe construction and are supplied with each connector.

TABLE 5

Tools

Ref. No.	Pt. No.	Description	Size
1H/279		Crimp tool	-
1H/414		Locator	20
1H/415		Locator	16
1H/416		Locator	12
1H/549	M15570-12	Insertion/extraction	12
1H/1300387	M15570-16	Insertion/extraction	16
1H/491	M15570-20	Insertion/extraction	20

CONTACTS

9. The contacts are of a high grade con-

ductive material, gold plated and are available in three sizes. Contact description and part numbers are given in Table 6.

TABLE 6

Contacts

Ref. No.	Pt. No.	Description	Size
	0602-18-1259	Socket	12
	0602-11-2059	Socket	20
	0602-16-1659	Socket	16
	0641-3-1259	Pin	12
	0641-1-2059	Pin	20
	0641-2-1659	Pin	16

PRESSURE SEAL

10. The sealing effect of the assembled connector ensures that the maximum leakage rate through the seal at 30 lb/in² differential is less than 1 cc./hr.

FILLER PLUGS

11. It is necessary to assemble all contacts even though they may not be connected to conductors. For the unconnected contacts, filler plugs of the appropriate size are

pressed into the insulator by hand pressure behind the contacts. They can be removed

when required using the appropriate extraction tool.

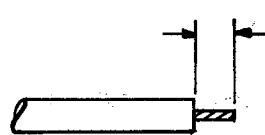
TABLE 7
Filler plugs

Ref. No.	Part No.	Contact size
	419206	20
	0613-1-1601	16

ASSEMBLY INSTRUCTIONS

PREPARATION

12. Strip the cable to the dimensions shown in Fig. 6.



$\frac{1}{8}$ " TO $\frac{3}{16}$ " FOR SIZE 20 SHORT BUCKET
 $\frac{3}{8}$ " TO $\frac{7}{16}$ " FOR SIZE 20 LONG BUCKET
 $\frac{7}{32}$ " TO $\frac{9}{32}$ " FOR SIZE 16 SHORT BUCKET
 $\frac{3}{8}$ " TO $\frac{7}{16}$ " FOR SIZE 16 LONG BUCKET

Fig. 6. Stripping dimensions

(3) Insert the prepared end of the conductor into the contact crimp bucket and depress the tool lever. The lever will not release until the crimping cycle has been completed.

(4) Note that there are eight separate

CONTACT CRIMP (PIN OR SOCKET)

13. (1) Check correct crimp tool setting for contact, also correct locator Table 5.

(2) Drop contact into crimp tool.

indents securing the wire in the contact.

(5) Visibility of the wire through the contact inspection hole indicates that it is correctly located.

(6) Fig. 7 illustrates the crimp indents and the inspection hole.

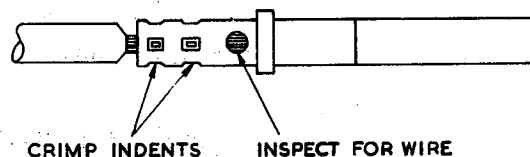


Fig. 7. Inspection of contact after crimp

CONTACT INSERTION

14. (1) Remove the follower and retaining nut or other accessories and thread them along the cable form.

(2) To load the wire into the appropriate insertion tool (Table 5), place the wire into the slot provided and apply pressure

with the thumb as shown in fig. 8; care must be taken to prevent damage to the cable insulation.

(3) Draw the tool back along the wire until it is correctly positioned as shown in Fig. 8 then push the tool forward until it locates on the shoulder of the contact.

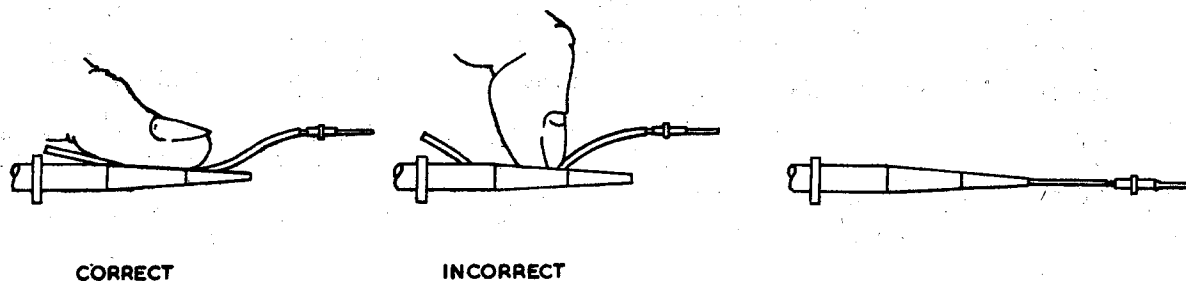


Fig. 8. Contact insertion into tool

(4) Slowly push the contact into the rear insert ensuring that the contact and insertion tool are correctly aligned as shown in fig. 9.

(5) When the contact is fully inserted a positive stop will be encountered and

the tool should then be removed by withdrawing in the opposite direction.

Note . . .

No undue pressure should be applied to the tool when inserting or removing contacts otherwise damage to the tool and possibly the contact will result.

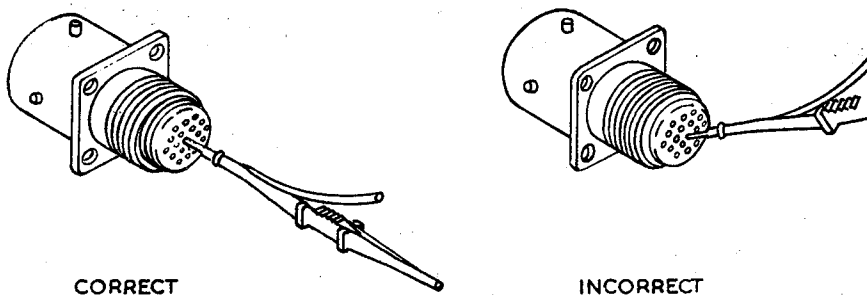


Fig. 9. Contact insertion into insert

CONTACT REMOVAL

15. Contacts are removed from the rear (wire entry side). Load the tool (Table 5) onto the wire using the same procedure as outlined in para. 14 sub-paragraph (2). Push the tool along the wire into the insert cavity

until it engages the contact retaining clip and a positive stop is encountered. The contact retaining clip is now in the unlocked position. Maintaining the pressure on the wire against the serrations of the removal tool, withdraw the tool together with the wire and contact assembly.

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