AMP INCORPORATED
Harrisburg, Pa. 17105

AMP★ FRONT-RELEASE ARINC RACK-AND-PANEL CONNECTORS: AA, AM, AD, AND ADS SERIES

Instruction Sheet
IS 7407
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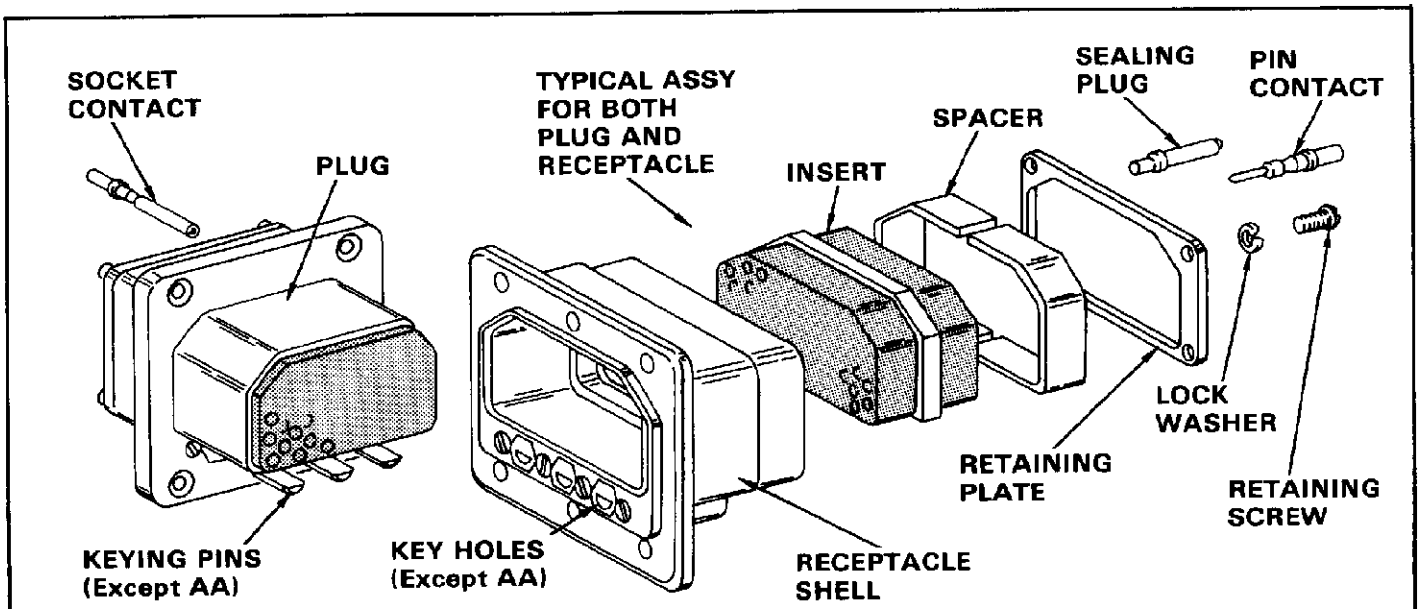
REDUCED FOR PACKAGING



CONT SIZE & COLOR	PART NO.		WIRE OR CABLE SIZE	INSUL DIA (Max)	STRIP LENGTH	HAND TOOL		POSITIONER		INSERT-TION TOOL	EXTRAC-TION TOOL	SEAL PLUG & COLOR
	PIN	SKT				AMP	MIL-SPEC	AMP	MIL-SPEC			
20 (Green)	203840	203841	24-20	.072	3/16	601967-1	M22520/1-01	601967-2	M22520/1-02	91039-1	91040-1	26522-1 (Red)
16 (Blue)	203884	203885	20-16	.103	1/4	601967-1	M22520/1-01	601967-2	M22520/1-02	91039-3	91040-3	26523-1 (Blue)
0 Coaxial	--	51781-1	RG-214/U	--	*	69646	--	--	--	--	91040-7	--
	--	51781-2	MI-5224	--	*	69646	--	--	--	--	91059-8	--

* SEE IS 2333.

Fig. 1

1. INTRODUCTION

This instruction sheet covers ARINC front-release rack-and-panel connectors, AA, AM, AD, and ADS Series. The contacts release from the front or mating face of the connector. This sheet provides information on mounting the connectors and on inserting and extracting contacts. Read these instructions thoroughly before beginning connector assembly.

Series AA and AM connectors are intermateable with other connectors meeting ARINC Specification 404 and having similar shell sizes and contact arrangements. Series AD and ADS connectors, which are special high-density connectors, will only mate with other AMP Series AD and ADS connectors.

NOTE *All dimensions on this sheet are in inches.*

2. DESCRIPTION

Figure 1 shows a typical connector. It also lists the contacts, hand tools used to crimp them, and the tools used to insert contacts into the connector and to extract them.

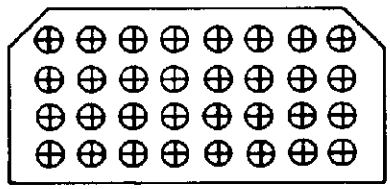
The connectors are available in four series: AA, AM, AD, and ADS. The series are distinguished as follows:

- AA: miniature, environmentally sealed
- AM: standard
- AD: miniature, high-density, environmentally sealed
- ADS: miniature, high-density

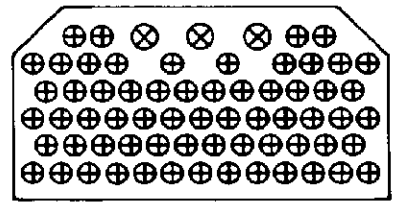
Contacts are held by an insert that is held inside a shell by a retaining plate. Shells are available to accept one, two, three, four, or six inserts. Different inserts allow the use of Size 20 or Size 16 signal contacts or Size 0 coaxial contacts. Figure 2 shows the different inserts which are available.

Sealing plugs are used to seal unused cavities. Using an unwired contact in the cavity before inserting the sealing plug ensures a good seal. The plug is inserted tapered end first. To allow the plug to be removed, it should stick out the back of the cavity about 1/32 in.

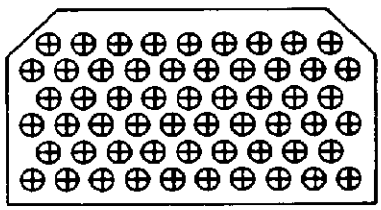
A triple-gland wire-sealing grommet ensures environmental sealing. Those connectors not having environmental sealing use a single-gland grommet.



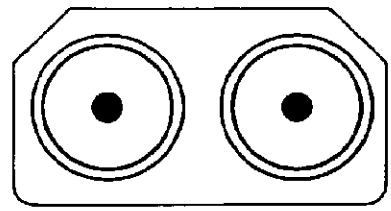
ARRANGEMENT 32
32 SIZE 20 CONTACTS
(AA Series)



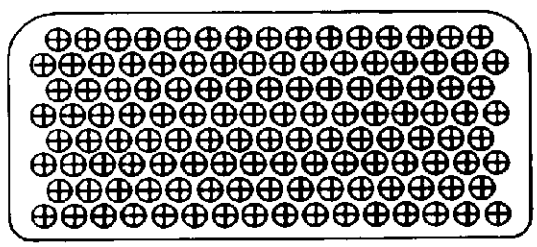
ARRANGEMENT 67
64 SIZE 20 CONTACTS
3 SIZE 16 CONTACTS
(AM Series)



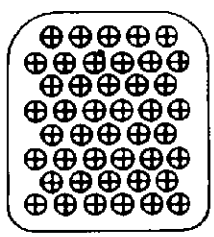
ARRANGEMENT 57
57 SIZE 20 CONTACTS
(AM Series)



ARRANGEMENT C2
2 SIZE 0 COAXIAL CONTACTS
(AM Series)



ARRANGEMENT 124
124 SIZE 20 CONTACTS
(AD and ADS Series)



ARRANGEMENT 44
44 SIZE 20 CONTACTS
(AD and ADS Series)

⊕ SIZE 20 CONTACT CAVITIES
⊗ SIZE 16 CONTACT CAVITIES
◉ COAXIAL CONTACT CAVITIES

NOTE: MATING FACE ON PIN INSERT SHOWN. SOCKET FACE IS MIRROR IMAGE.

Fig. 2

Each connector is keyed by three keying posts in the plug connector and three keying inserts in the receptacle connector. (AA Series connectors cannot be keyed.) The hexagonal shape of the keys allows each key to be installed in one of six positions. There are 100 standard keying configurations (including no keying). Figure 3 shows the keying combinations and the keying code used for each combination. (When a connector is ordered with keying parts, but without a keying code, the connector is shipped keyed to 01. The key code is not marked on the connector or on the package.) The hexagonal end of the keying post fits into the connector shell. Retaining screws secure the keying elements in both the plug and receptacle. The edges of the screws seat on the tapered edges of the inserts and posts.

Because of the variety of configurations in which the connectors can be ordered, no part numbers are included on this sheet. Consult AMP Incorporated for specific ordering information.

DARK PORTION INDICATES POSITION OF POST; LIGHT PORTION INDICATES POSITION OF INSERT.

KEY CODE	PLUG KEYING POST †			KEY CODE	RECEPTACLE KEYING INSERT			KEY CODE	PLUG KEYING POST †			KEY CODE	RECEPTACLE KEYING INSERT		
	L	C	R		L	C	R		L	C	R		L	C	R
00				00				50	2	2	5	50	6	3	3
01	1	1	1	01	4	4	4	51	3	2	5	51	6	3	2
02	2	1	1	02	4	4	3	52	4	2	5	52	6	3	1
03	3	1	1	03	4	4	2	53	5	2	5	53	6	3	6
04	4	1	1	04	4	4	1	54	6	2	5	54	6	3	5
05	5	1	1	05	4	4	6	55	1	2	4	55	1	3	4
06	6	1	1	06	4	4	5	56	2	2	4	56	1	3	3
07	1	1	6	07	5	4	4	57	3	2	4	57	1	3	2
08	2	1	6	08	5	4	3	58	4	2	4	58	1	3	1
09	3	1	6	09	5	4	2	59	5	2	4	59	1	3	6
10	4	1	6	10	5	4	1	60	6	2	4	60	1	3	5
11	5	1	6	11	5	4	6	61	1	2	3	61	2	3	4
12	6	1	6	12	5	4	5	62	2	2	3	62	2	3	3
13	1	1	5	13	6	4	4	63	3	2	3	63	2	3	2
14	2	1	5	14	6	4	3	64	4	2	3	64	2	3	1
15	3	1	5	15	6	4	2	65	5	2	3	65	2	3	6
16	4	1	5	16	6	4	1	66	6	2	3	66	2	3	5
17	5	1	5	17	6	4	6	67	1	2	2	67	3	3	4
18	6	1	5	18	6	4	5	68	2	2	2	68	3	3	3
19	1	1	4	19	1	4	4	69	3	2	2	69	3	3	2
20	2	1	4	20	1	4	3	70	4	2	2	70	3	3	1
21	3	1	4	21	1	4	2	71	5	2	2	71	3	3	6
22	4	1	4	22	1	4	1	72	6	2	2	72	3	3	5
23	5	1	4	23	1	4	6	73	1	3	1	73	4	2	4
24	6	1	4	24	1	4	5	74	2	3	1	74	4	2	3
25	1	1	3	25	2	4	4	75	3	3	1	75	4	2	2
26	2	1	3	26	2	4	3	76	4	3	1	76	4	2	1
27	3	1	3	27	2	4	2	77	5	3	1	77	4	2	6
28	4	1	3	28	2	4	1	78	6	3	1	78	4	2	5
29	5	1	3	29	2	4	6	79	1	3	6	79	5	2	4
30	6	1	3	30	2	4	5	80	2	3	6	80	5	2	3
31	1	1	2	31	3	4	4	81	3	3	6	81	5	2	2
32	2	1	2	32	3	4	3	82	4	3	6	82	5	2	1
33	3	1	2	33	3	4	2	83	5	3	6	83	5	2	6
34	4	1	2	34	3	4	1	84	6	3	6	84	5	2	5
35	5	1	2	35	3	4	6	85	1	3	5	85	6	2	4
36	6	1	2	36	3	4	5	86	2	3	5	86	6	2	3
37	1	2	1	37	4	3	4	87	3	3	5	87	6	2	2
38	2	2	1	38	4	3	3	88	4	3	5	88	6	2	1
39	3	2	1	39	4	3	2	89	5	3	5	89	6	2	6
40	4	2	1	40	4	3	1	90	6	3	5	90	6	2	5
41	5	2	1	41	4	3	6	91	1	3	4	91	1	2	4
42	6	2	1	42	4	3	5	92	2	3	4	92	1	2	3
43	1	2	6	43	5	3	4	93	3	3	4	93	1	2	2
44	2	2	6	44	5	3	3	94	4	3	4	94	1	2	1
45	3	2	6	45	5	3	2	95	5	3	4	95	1	2	6
46	4	2	6	46	5	3	1	96	6	3	4	96	1	2	5
47	5	2	6	47	5	3	6	97	1	3	3	97	2	2	4
48	6	2	6	48	5	3	5	98	2	3	3	98	2	2	3
49	1	2	5	49	6	3	4	99	3	3	3	99	2	2	2

† L = LEFT
C = CENTER
R = RIGHT

Fig. 3

3. KEYING (Figure 4)

The following is the procedure for installing keying posts and inserts. Use Figure 3 to select the keying code required.

1. Place the plug connector on a suitable work surface with the top up.
2. Install each keying post in the connector so that the post matches the required keying code.
3. Install the four retaining screws. Tighten each screw a little at a time to ensure that each post seats properly.
4. Place the receptacle connector on the work surface with the top up.
5. Position each keying insert in the keying track so that each meets the required keying code.

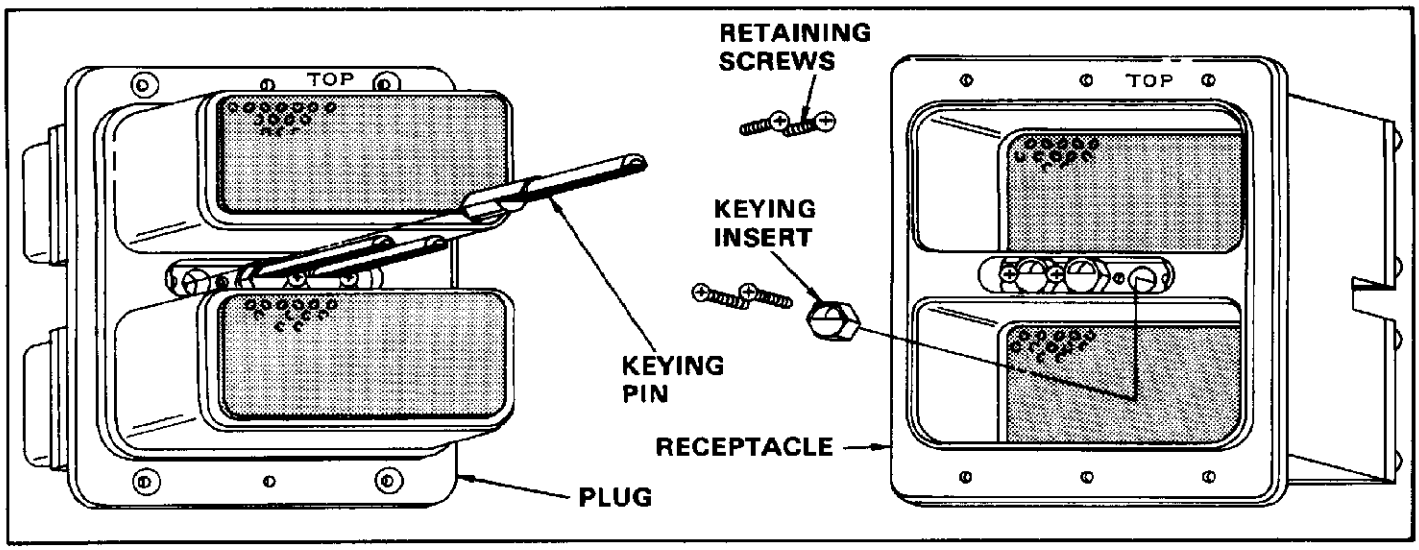


Fig. 4

6. Install the four retaining screws. Tighten each screw a little at a time to ensure that each insert seats properly.

4. PANEL CUTOUT

The connectors are designed for rack-and-panel mounting. Normally, the plug is front-mounted to the rack, and the receptacle is back-mounted to the panel. Panel thickness should not exceed 1/8 in.

Figure 5 shows the recommended cutout dimensions.

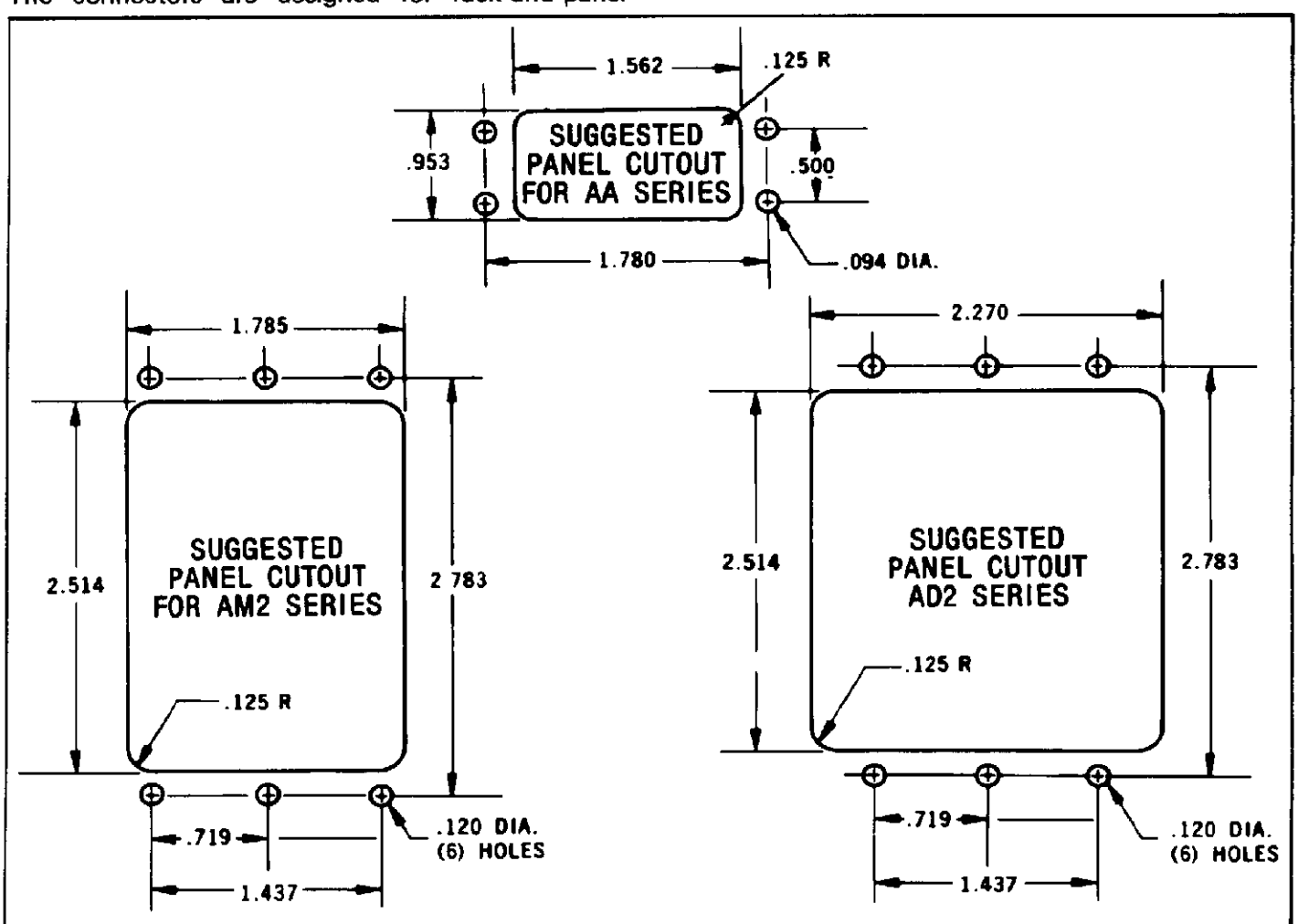
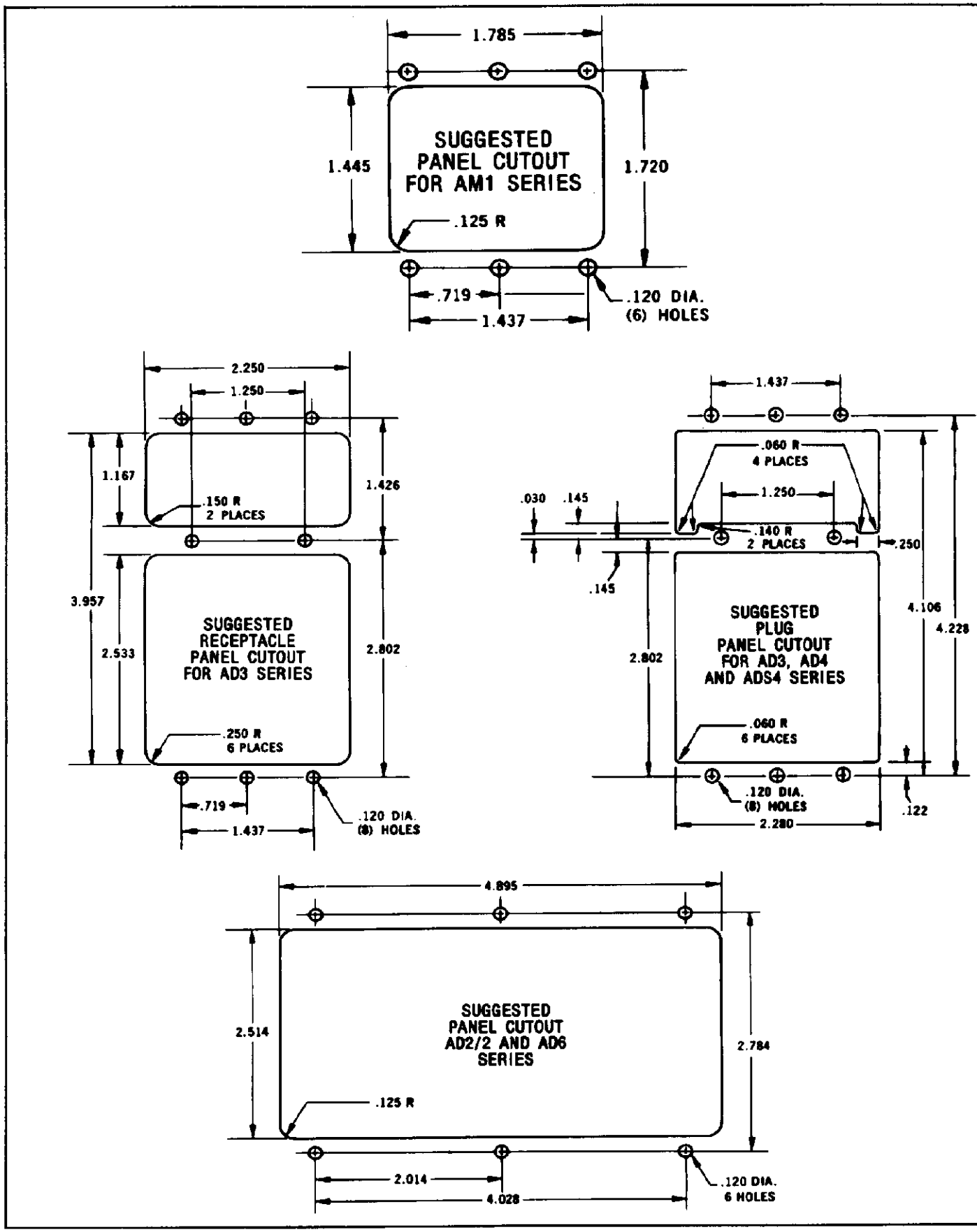


Fig. 5


1.785
1.445
SUGGESTED
PANEL CUTOUT
FOR AM1 SERIES
1.720
.125 R
.719
1.437
.120 DIA.
(6) HOLES
2.250
1.250
1.167
.150 R
2 PLACES
1.426
3.957
2.533
SUGGESTED
RECEPTACLE
PANEL CUTOUT
FOR AD3 SERIES
2.802
.250 R
6 PLACES
.719
1.437
.120 DIA.
(8) HOLES
1.437
.060 R
4 PLACES
.030
.145
1.250
.140 R
2 PLACES
.250
.145
2.802
SUGGESTED
PLUG
PANEL CUTOUT
FOR AD3, AD4
AND ADS4 SERIES
4.106
4.228
.060 R
6 PLACES
.120 DIA.
(8) HOLES
2.280
.122
4.895
2.514
SUGGESTED
PANEL CUTOUT
AD2/2 AND AD6
SERIES
2.784
.125 R
2.014
4.028
.120 DIA.
6 HOLES

5. CONTACT INSERTION (Figure 6)

Size 20 and 16 contacts can be inserted into the connector with the aid of the insertion tool listed in Figure 1. Size 0 coaxial contacts do not require the use of an insertion tool. They are simply inserted into the back of the insert until they latch. The following is the procedure for using Insertion Tool 91039.

1. Place the contact into the tool tip so that the shoulder of the contact butts against the end of the tip as shown in Figure 6.
2. While holding the wire in the slot, push the contact into the insert cavity until it bottoms. Make sure the tool is centered over the cavity while inserting the contact.
3. Pull the tool straight out of the cavity.
4. Pull back lightly on the wire to ensure that the contact has properly engaged the retaining spring of the insert.

For further information on Insertion Tool 91039, see IS 7371.

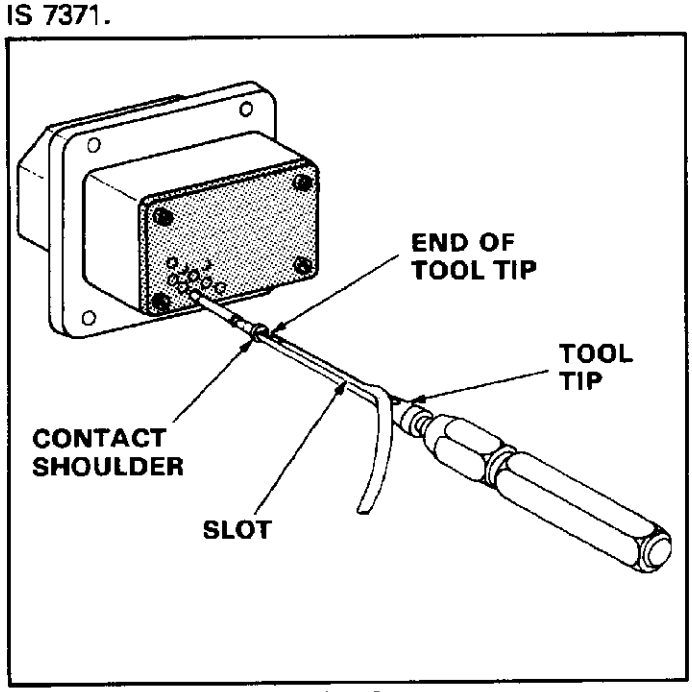


Fig. 6

6. CONTACT EXTRACTION (Figure 7)

Contacts are released from the front or mating face of the connector. Contacts (except for Coaxial Socket Contact 51781-2) can be extracted with Extraction Tool 91040. Figure 1 lists the specific tool used for each contact type. The following is the procedure for using the extraction tool.

1. Place the tool tip over the end of the contact to be extracted. Make certain that the tool is centered over the cavity.
2. Insert the tool tip into the cavity by pushing on the tool plunger.
3. Depress the tool handle, and the contact will back out of the cavity.

For further information on Extraction Tool 91040, see IS 7370.

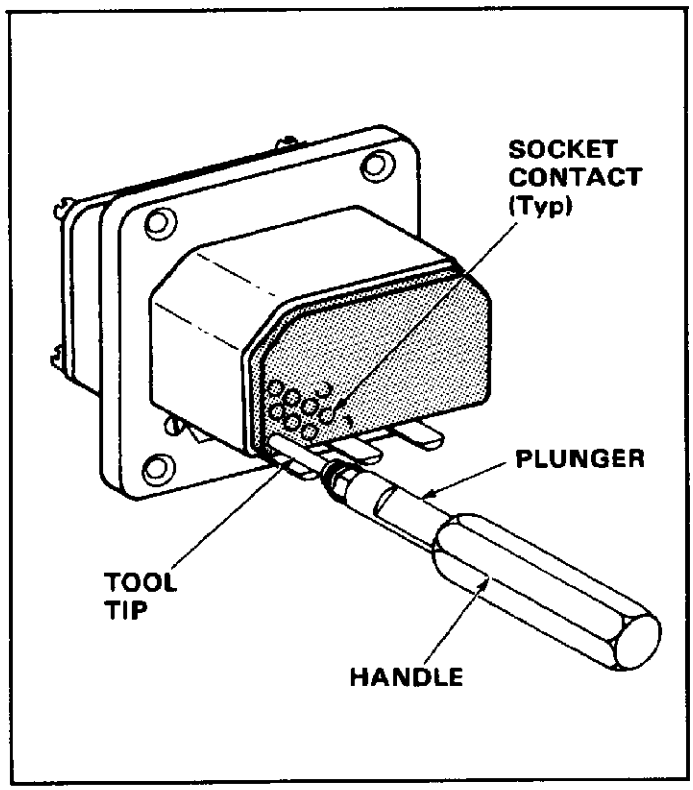


Fig. 7