

NOTE: The cover page of this standard has been changed for administrative reasons. There are no other changes to this document.

INCH-POUND

MIL-STD-1698
1 May 1978

DEPARTMENT OF DEFENSE
INTERFACE STANDARD
INSERT ARRANGEMENTS
FOR
MIL-C-28840(EC) HIGH DENSITY HIGH SHOCK CIRCULAR
ELECTRICAL CONNECTORS



MIL-STD-1698(EC)

DEPARTMENT OF DEFENSE
WASHINGTON, D.C. 20301

Insert Arrangements for MIL-C-28840(EC) (Classes D, DS, DJ and DJS)
High Density, High Shock, Circular, Electrical Connectors

MIL-STD-1698(EC)

1. This Military Standard is approved for use by the Naval Electronics Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Naval Electronic Systems Command, Department of the Navy, Washington DC 20360, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

MIL-STD-1698 (EC)

NOTICE 2

26 May 1981

MILITARY STANDARD

INSERT ARRANGEMENTS FOR
HIGH SHOCK CIRCULAR ELECTRICAL CONNECTORS

TO ALL HOLDERS OF MIL-STD-1698 (EC)

1. THE FOLLOWING PAGES OF MIL-STD-1698 (EC) HAVE BEEN REVISED AND SUPERSEDE THE PAGES LISTED:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
3	1 May 1978	(REPRINTED WITHOUT CHANGE)	
iii	26 May 1981	iii	1 May 1978
4	26 May 1981	4	1 May 1978
90.1	26 May 1981		

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-1698 (EC) will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the Military Standard is completely revised or canceled.

Review activities:

Navy - SH

User activities:

Navy - OS

Preparing activity:

Navy - EC
(Project 5935-N175)

MIL-STD-1698(EC)
NOTICE 1
16 March 1979

MILITARY STANDARD

INSERT ARRANGEMENTS FOR HIGH SHOCK CIRCULAR ELECTRICAL CONNECTORS

TO ALL HOLDERS OF MIL-STD-1698 (EC)

1. THE FOLLOWING PAGE OF MIL-STD-1698(EC) HAS BEEN REVISED AND SUPERSEDES THE PAGE LISTED

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
10.1	16 March 1979	10.1	1 May 1978

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

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Review activities:
Navy - SH

Preparing activities:
Navy - EC

User activities:
Navy - OS

(Project 5935-N123-7)

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2. The center of engaging end of each contact shall be located in true position within .018 dia. ±.018 dia.
- (e) Unless otherwise indicated, dimensions are symmetrical about centerline. \uparrow indicates C of insert arrangement.
 - (f) Each insert arrangement is shown in the "normal position" in the shell.
 - (g) Polarization shall be in accordance with MIL-C-28840.

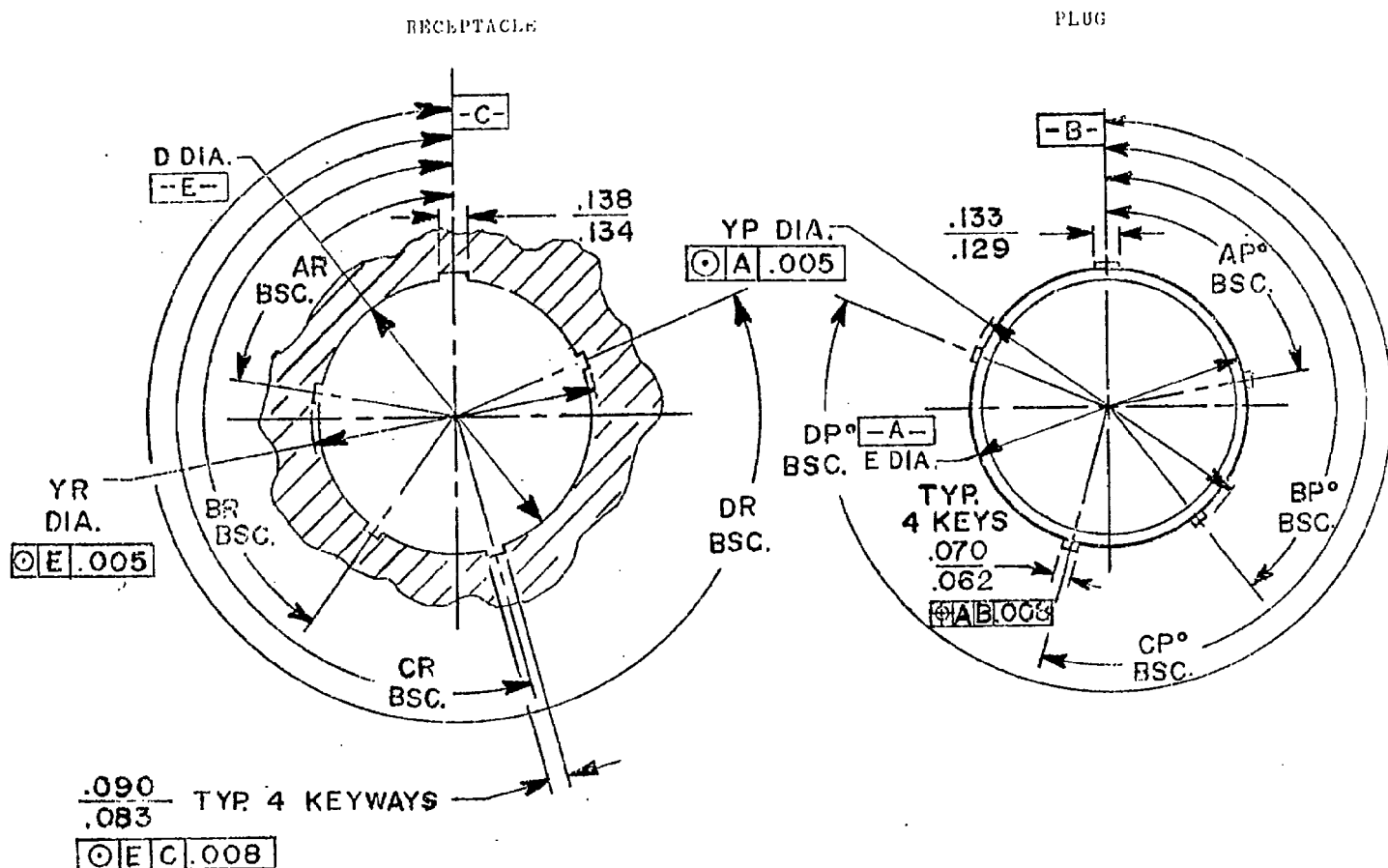
5.2 Main key or keyway polarization (see figure 1)

- (a) Each insert arrangement is shown in the "normal position" in the shell.
- (b) In "alternate keying position" the keys or keyways are positioned as indicated with reference to the master key or keyway.

5.3 Contacts. Contacts shall be in accordance with MIL-C-39029/83 and MIL-C-39029/84.

5.4 Marking. Marking shall be in accordance with MIL-C-28840 and as shown in the applicable section of this military standard.

Preparing activity:
Navy-EC
(Project 5935-N093)



INCHES	MM
.005	0.13
.008	0.20
.062	1.57
.070	1.78
.083	2.11
.090	2.29
.129	3.28
.133	3.38
.134	3.40
.138	3.50

Figure 1. Connector, electrical, position key and keyways, mating.

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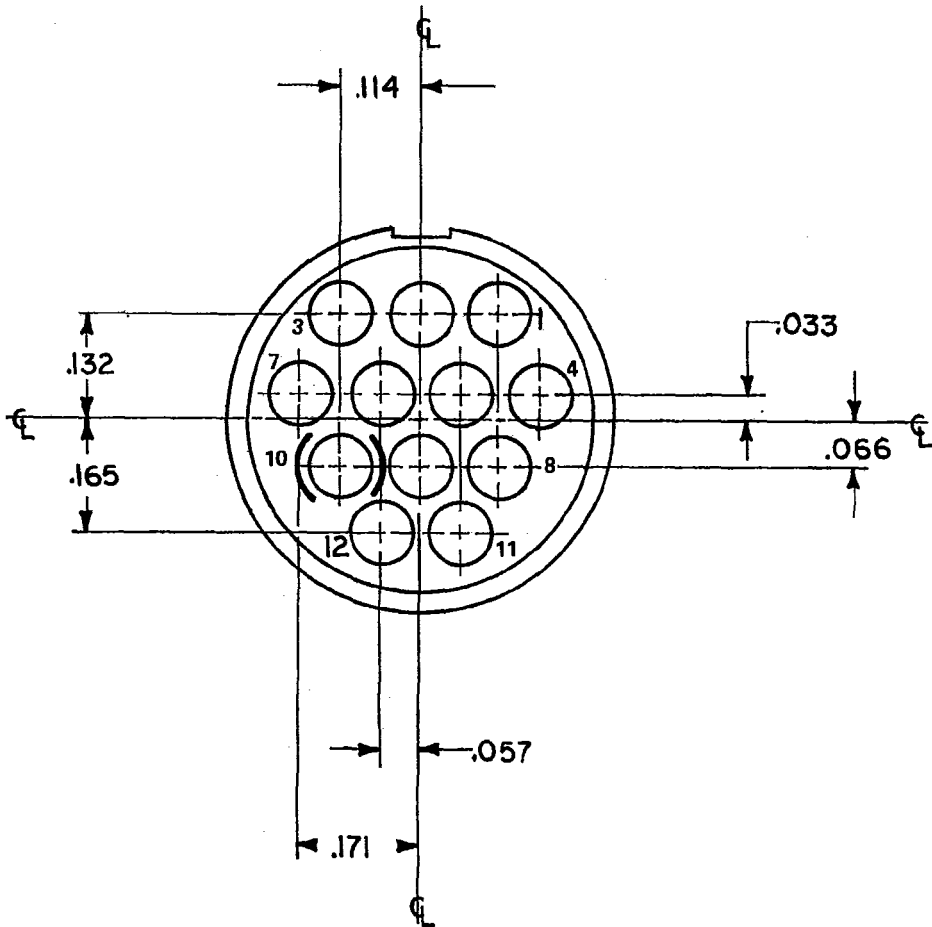
26 May 1981

DESIG- NATOR 1/	KEY & KEYWAY ARRANGE- MENT	AR or AP BSC	BR or BP BSC	CR or CP BSC	DR or DP BSC	YP DIA.	YR DIA.
A(11)	1	95	141	208	236	.559 (14.20)	.581 (14.76)
	2	113	156	182	292	.551 (14.00)	.569 (14.45)
	3	90	145	195	252		
B(13)	4	53	156	220	255	.683 (17.35)	.705 (17.91)
	5	119	146	176	298	.675 (17.14)	.693 (17.60)
	6	51	141	184	242		
C(15)	1	80	142	196	293	.855 (21.72)	.877 (22.28)
	2	135	170	200	310	.847 (21.51)	.865 (21.97)
	3	49	169	200	244		
D(17)	4	66	140	200	257	.925 (23.50)	.947 (24.05)
	5	62	145	180	280	.917 (23.29)	.935 (23.75)
	6	79	153	197	272		
E(19)	1	80	142	196	293	1.092 (27.74)	1.114 (28.30)
F(23)	2	135	170	200	310	1.084 (27.53)	1.102 (27.99)
						1.277 (32.44)	1.299 (32.99)
G(25)	3	49	169	200	244	1.269 (32.23)	1.287 (32.69)
						1.438 (36.52)	1.460 (37.08)
H(29)	4	66	140	200	257	1.430 (36.32)	1.448 (36.78)
						1.604 (40.74)	1.626 (41.30)
J(33)	5	62	145	180	280	1.596 (40.54)	1.614 (41.09)
						1.796 (45.62)	1.818 (46.18)
						1.788 (45.42)	1.806 (45.87)

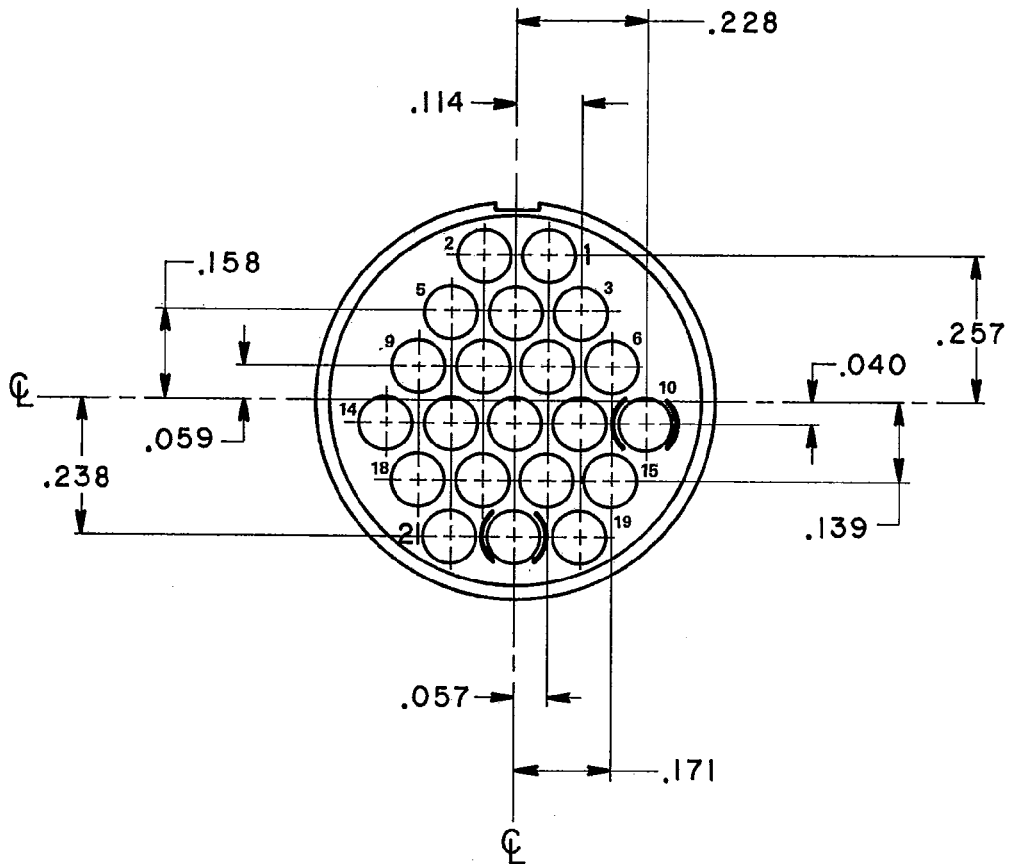
NOTES

1. Shell sizes are provided within parentheses for information and are not a part of the designator.
2. Dimensions are in inches.
3. Metric equivalents (to the Nearest .01 mm) are given for general information only and are based upon 1.0 inch equals 25.4 mm.
4. Dimensions apply after plating.

FIGURE 1. Connector, electrical, position key and keyways, mating

SECTION 10
SHELL SIZE 13

Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
B	1	13	12	20	A	All

SECTION 20
SHELL SIZE 15

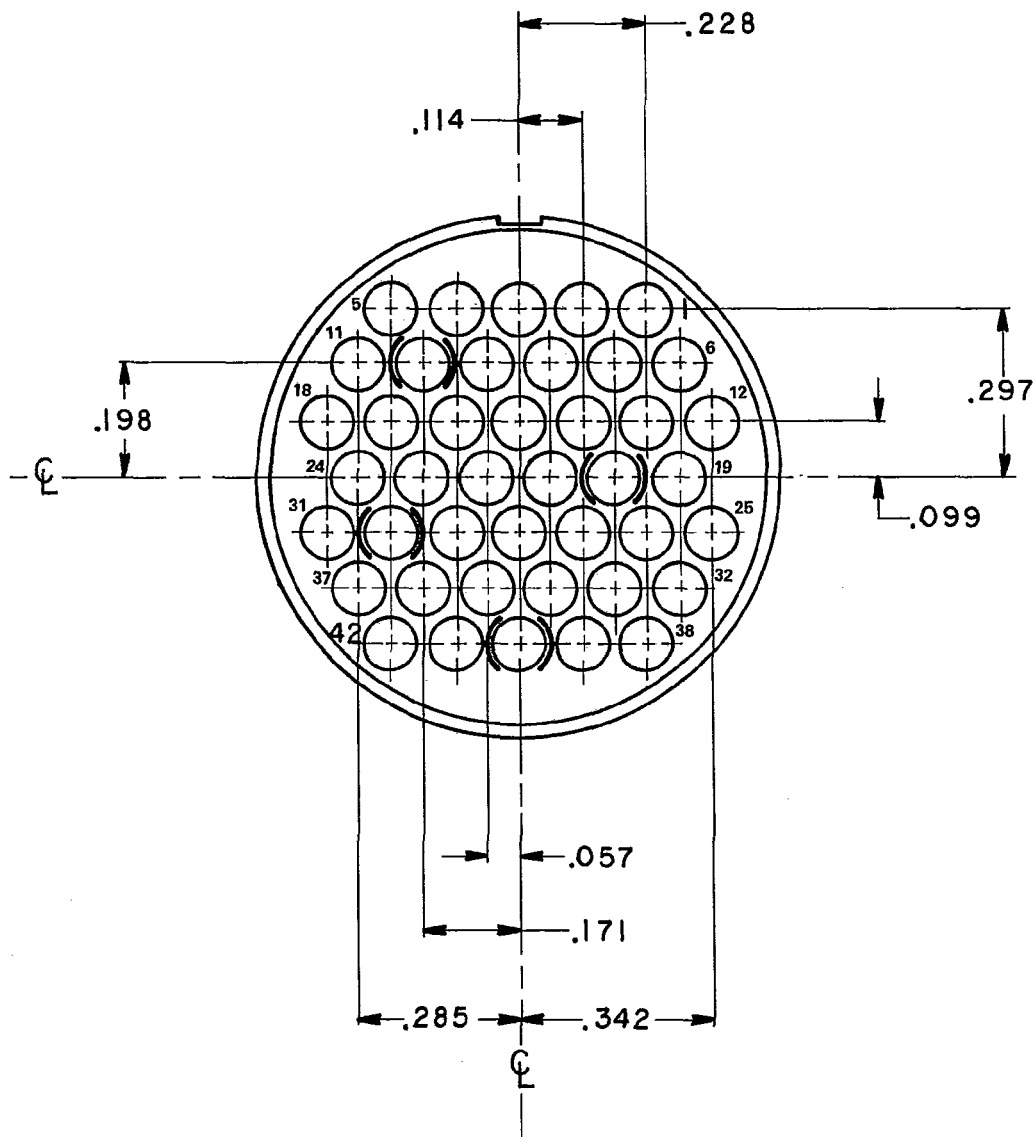
Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
C	1	15	21	20	A	A11

Technical drawing of a circular component, likely a manifold or plate, showing 31 holes arranged in a circular pattern. The drawing includes the following dimensions and features:

- Overall Diameter:** .285
- Center-to-Center (C-C) Distance (Top):** .228
- Center-to-Center (C-C) Distance (Bottom):** .171
- Center-to-Center (C-C) Distance (Left):** .114
- Center-to-Center (C-C) Distance (Right):** .099
- Vertical Dimension (Left):** .198 (from top hole center to horizontal centerline)
- Vertical Dimension (Left):** .297 (from bottom hole center to horizontal centerline)
- Vertical Dimension (Right):** .099 (from horizontal centerline to top hole center)
- Horizontal Dimension (Bottom):** .057 (from vertical centerline to right hole center)
- Hole Numbering:** 1 through 31, arranged in a circular pattern around the perimeter.
- Centerlines:** Indicated by dashed lines with 'C' at the ends.

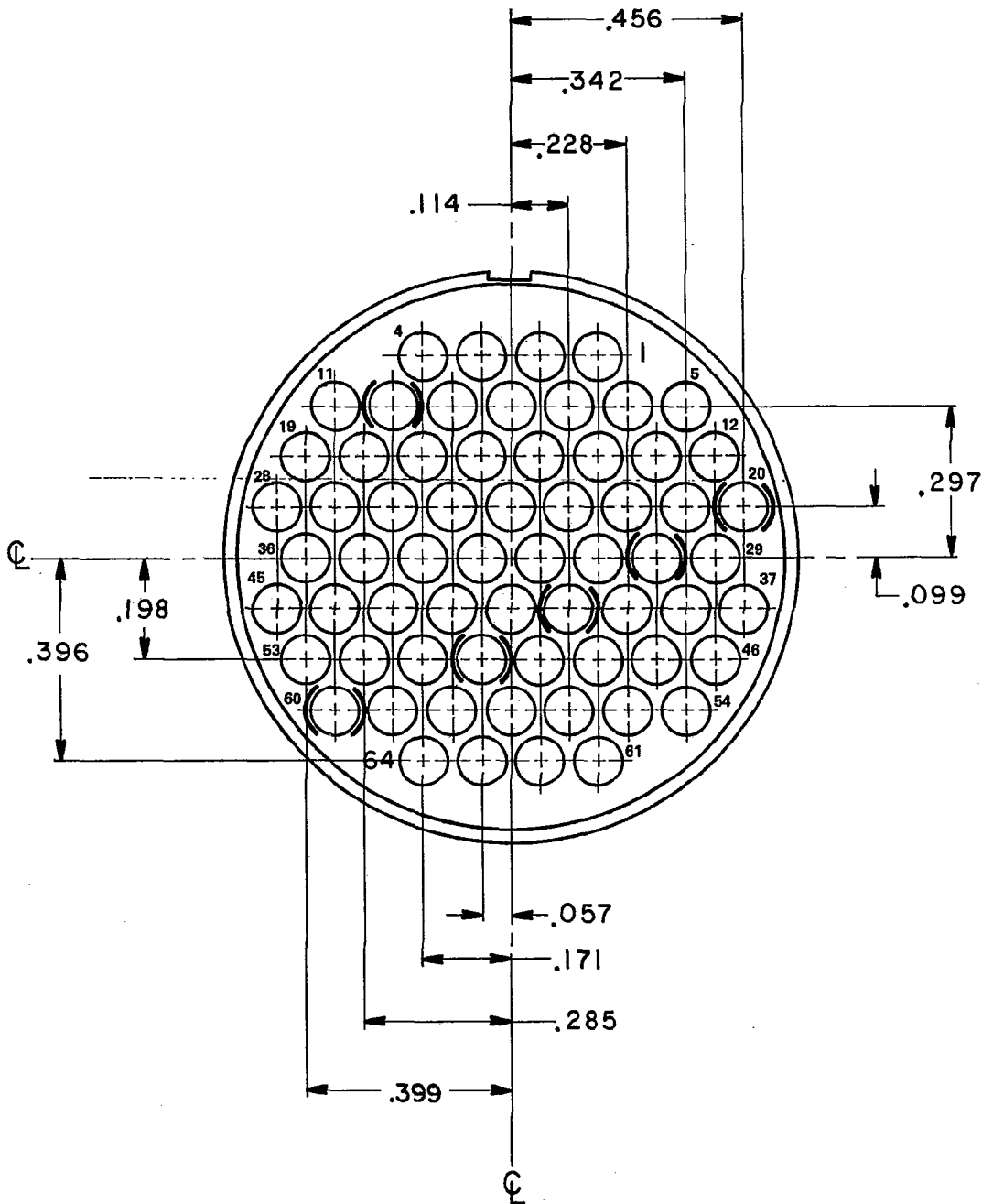
Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
D	1	17	31	20	A	A11

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SECTION 40
SHELL SIZE 19

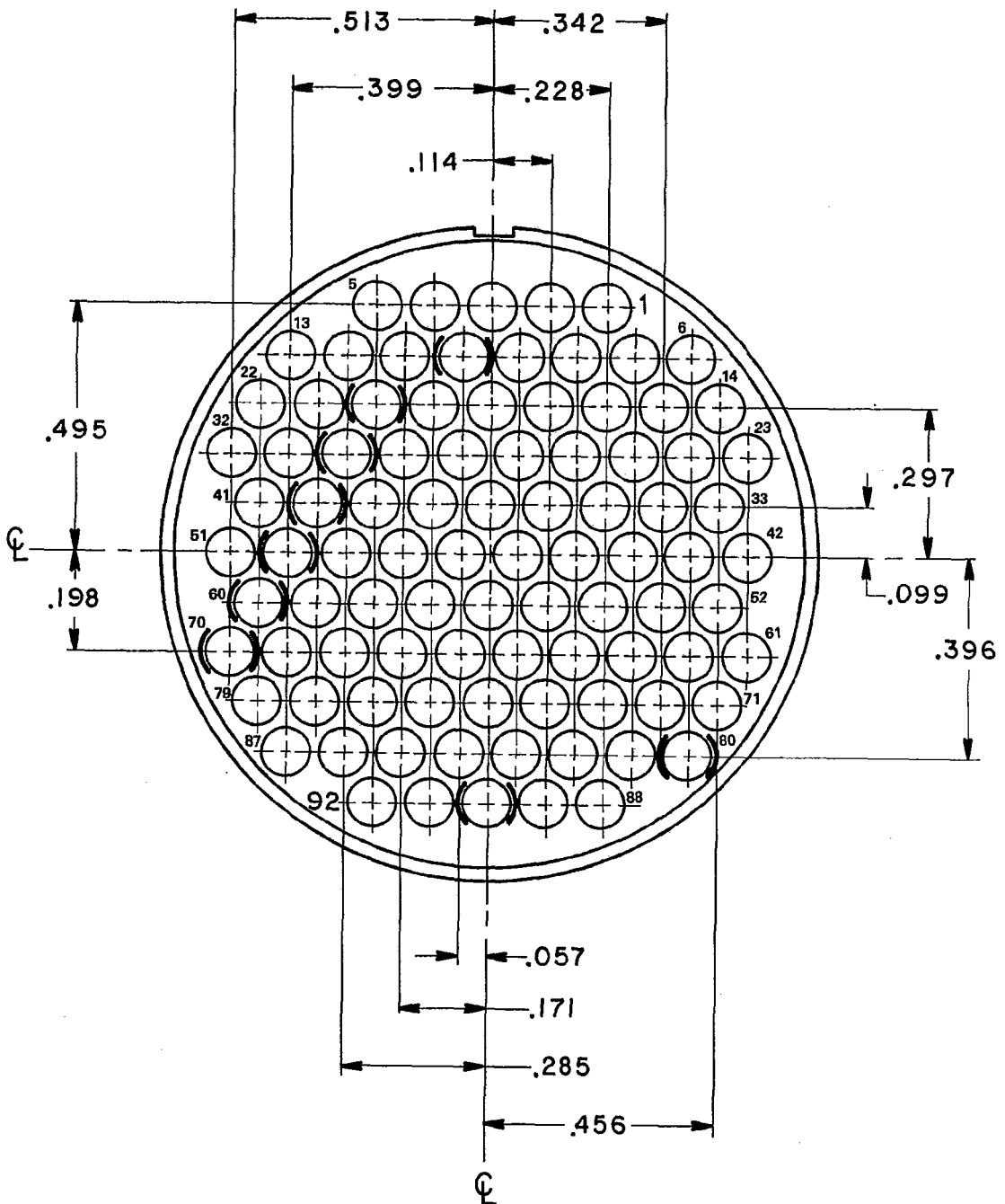
Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
E	1	19	42	20	A	A11

SECTION 50
SHELL SIZE 23



Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
F	1	23	64	20	A	A17

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SECTION 60
SHELL SIZE 25

Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
G	1	25	92	20	A	A11

Technical drawing of a circular plate with 121 holes. The plate has a diameter of 1.170. The holes are arranged in a grid, with some holes numbered 1 through 121. The drawing includes dimensions for the plate and the holes, and a list of dimensions for the holes.

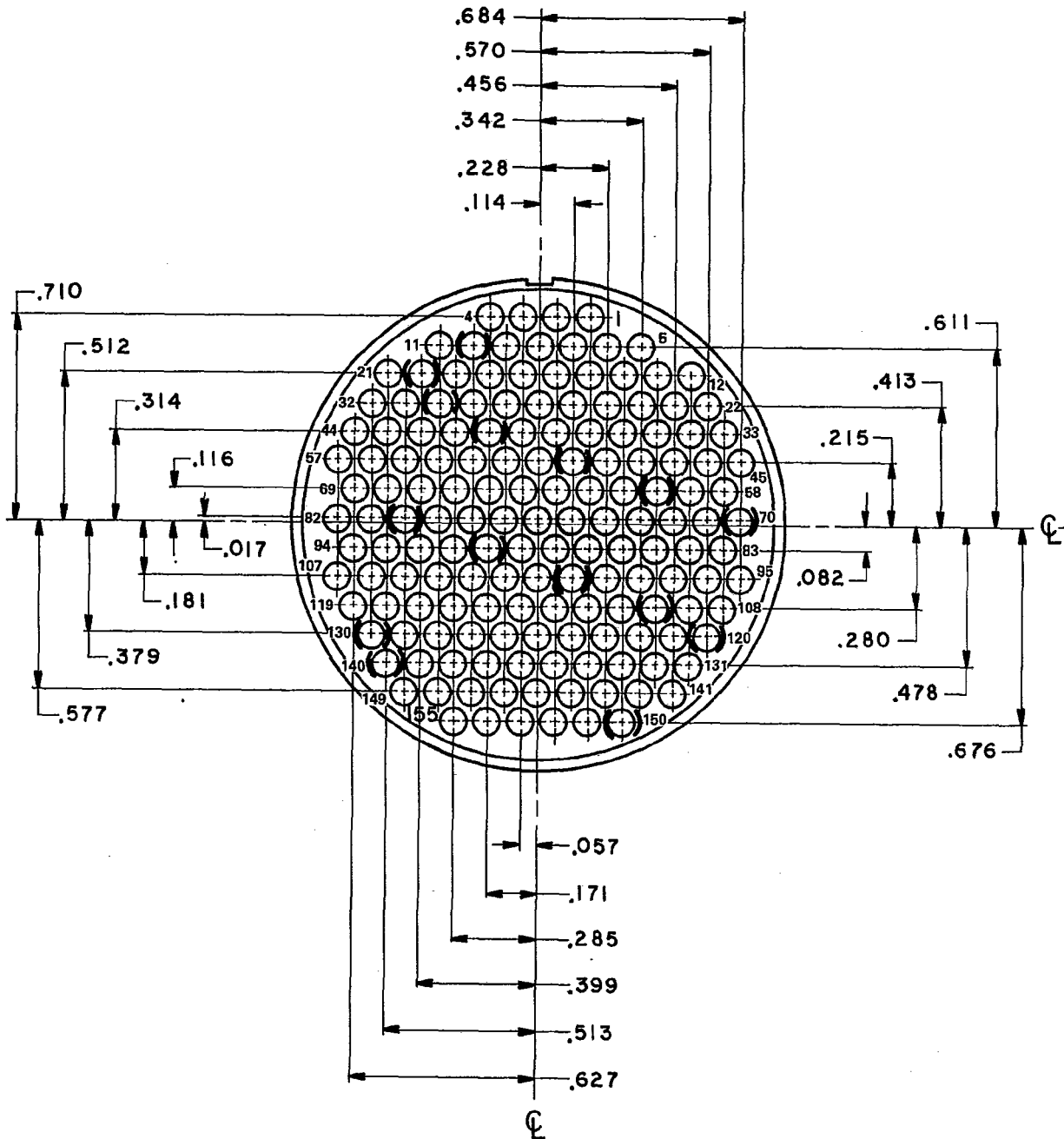
Dimensions (in inches):

- Plate diameter: 1.170
- Plate thickness: .099
- Distance from center to outer edge: .594
- Distance from center to inner edge: .570
- Distance from center to hole center: .513
- Distance from center to hole center (horizontal): .456
- Distance from center to hole center (vertical): .399
- Distance from center to hole center (diagonal): .342
- Distance from center to hole center (diagonal): .285
- Distance from center to hole center (diagonal): .228
- Distance from center to hole center (diagonal): .171
- Distance from center to hole center (diagonal): .114
- Distance from center to hole center (diagonal): .057

Hole numbering (1 through 121):

- 1, 5, 6, 13, 14, 22, 23, 32, 33, 43, 44, 55, 56, 66, 67, 78, 79, 89, 90, 99, 100, 108, 109, 118, 119, 121

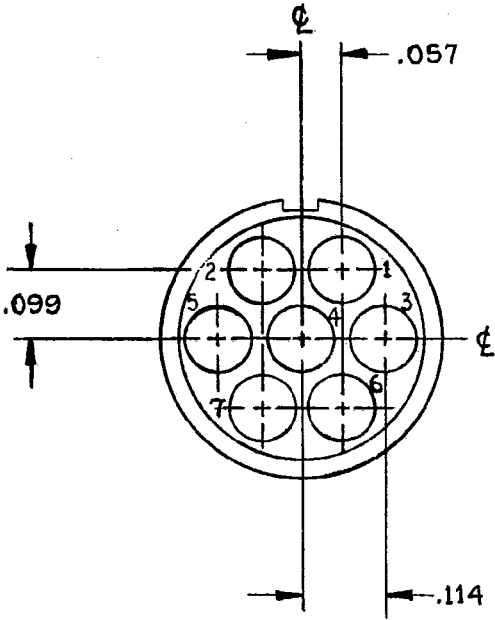
Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
H	1	29	121	20	A	A11

SECTION 80
SHELL SIZE 33

Shell Size Designator	Arrangement Number	Shell Size	Number of Contacts	Size Contacts	Service Rating	Contact Location
J	1	33	155	20	A	A11

SECTION 90

SHELL SIZE 11



SHELL SIZE DESIGNATOR	ARRANGEMENT NUMBER	SHELL SIZE	NUMBER OF CONTACTS	SIZE CONTACT	SERVICE RATING	CONTACT LOCATION
A	1	11	7	20	A	ALL