

**SPECIFIC REQUIREMENTS FOR  
APPARATUS AND EQUIPMENT — A TO E  
(APPARATUS CODED PANELS TO EQUALIZERS)  
NUMBERING AND LETTERING  
GENERAL EQUIPMENT REQUIREMENTS**

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. SPECIFIC REQUIREMENTS FOR APPARATUS AND EQUIPMENT — A TO E . . . . .	1
A. Apparatus Panels on Relay Racks . . . . .	1
B. Balancing Networks . . . . .	1
C. Banks . . . . .	2
Panel-Type Multiple Banks . . . . .	2
Selector-Type Banks . . . . .	2
D. Bells and Buzzers . . . . .	2
E. Capacitors . . . . .	3
F. Combined Jacks and Signals . . . . .	12
G. Commutators . . . . .	12
H. Connecting Blocks . . . . .	12
I. Connectors . . . . .	12
J. Cord Fasteners . . . . .	12
K. Cord Hooks . . . . .	13
L. Designation Cards for Step-by-Step and PBX Systems . . . . .	14
M. Drops . . . . .	14
N. Equalizers . . . . .	14
REASONS FOR REISSUE . . . . .	17

**1. GENERAL**

**Scope**

1.01 This section covers the specific requirements for numbering and lettering apparatus and equipment classified alphabetically from A to E, exclusive of apparatus used only in the power plant in Section 800-613-160 and supplements the common requirements covered in Section 800-613-150.

1.02 This section is reissued to make changes which are listed under reasons for reissue at the end of this section.

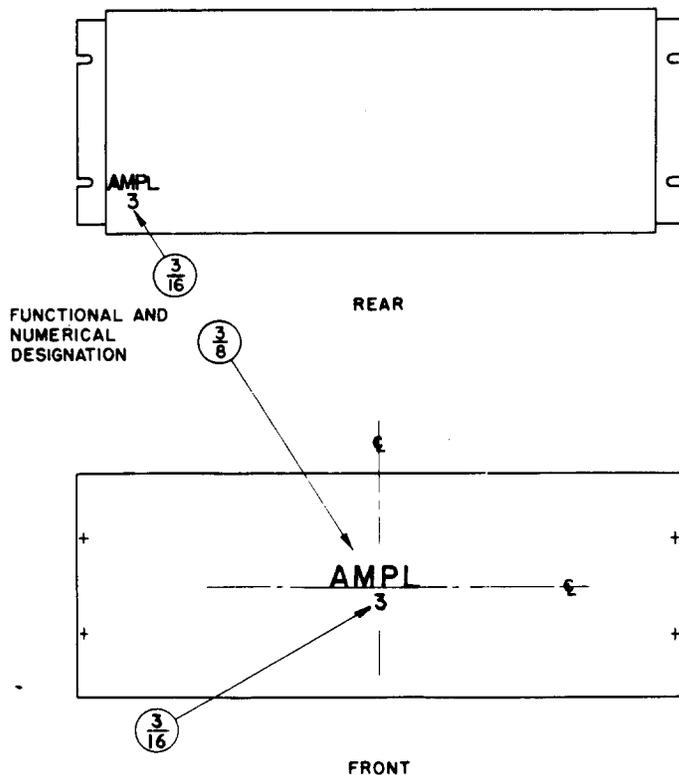
**2. SPECIFIC REQUIREMENTS FOR APPARATUS AND EQUIPMENT — A TO E**

**A. Apparatus Panels on Relay Racks**

2.01 Panel-mounted apparatus coded units shall be stamped as shown in Fig. 1. Designation stamping applicable to panels or units identified by equipment codes is covered in Section 800-613-159.

**B. Balancing Networks**

2.02 Stamping requirements for designating networks are covered in Section 800-613-153.



**Fig. 1 — Typical Apparatus Coded Panel Assembly**

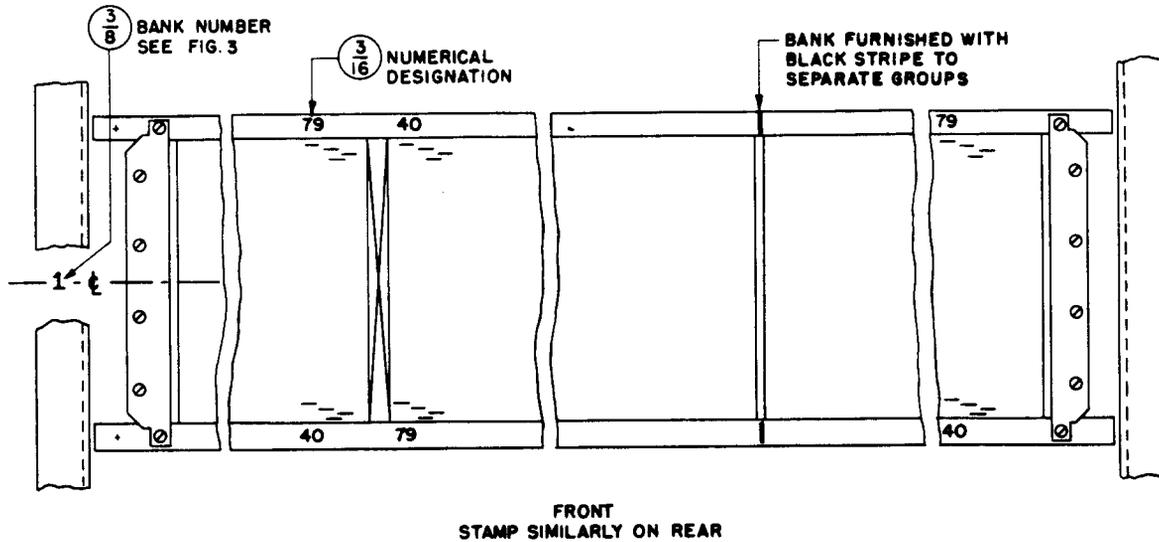


Fig. 2 - Banks - 8 and Similar Types

C. Banks

2.03 Panel-Type Multiple Banks

(a) Multiple banks, such as the 8 and similar types shall be stamped as shown in Fig. 2. Numerical designations for the first and last circuits at each side of a reversal shall be stamped on the front and rear of the top and bottom horizontal members directly in line with the vertical row of soldering terminals (tip or ring row) nearest the associated selectors.

(b) On frames where designation strips and cards are not provided, as in the case of line finder frames, the multiple bank number shall be stamped on the inside face of the angle framework as shown in Fig. 3.

2.04 Selector-Type Banks: Designate 26- and similar-type selector banks as shown in Fig. 4. For sets of selectors requiring numerical designations, stamp in accordance with Section 800-613-159. When a selector which would normally carry the group or subgroup designation is wired for but not equipped, stamp this designation on the front of the 56A apparatus blank provided.

D. Bells and Buzzers

2.05 Designations for bells and buzzers shall be placed on the mounting boards or details rather than on the apparatus. However, where space will not permit placing these designations on the mounting boards or details, they may be stamped on some suitable surface of the bell or buzzer.

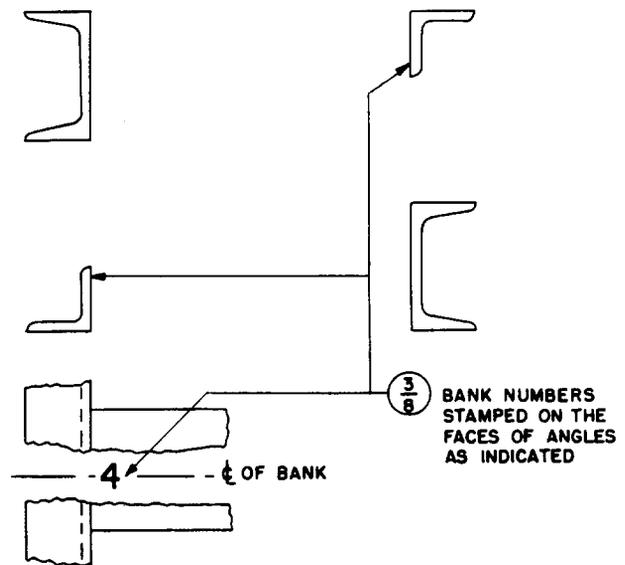


Fig. 3 - Multiple Bank Numbers When Stamped on the Framework

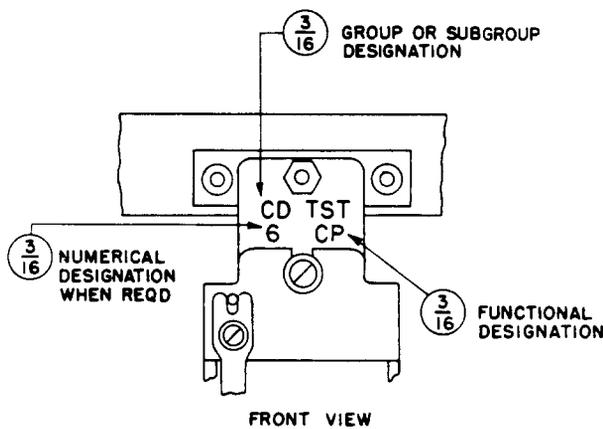
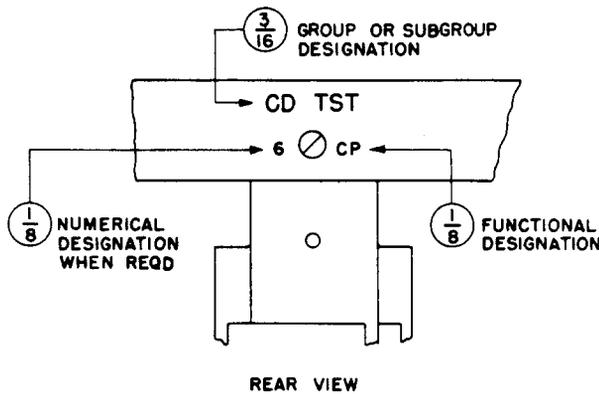


Fig. 4 - Banks - 26 and Similar Types

**E. Capacitors**

**2 06** *The various types of capacitors* shall be stamped in accordance with the respective figures listed in Table A.

(a) When two or more capacitors are required to make up the value of a single-circuit element, the complete functional designation required for each of the two or more capacitors is composed of the basic functional designation shown on the circuit drawing and a numerical suffix (beginning with 1) separated therefrom by a period. For example, designations TR.1, TR.2, and TR.3 would be used for three capacitors required to make up the capacity shown for capacitor "TR" on the circuit drawing. When mounted in the same row, stamping TR.1 and TR.3 is provided for the first and last, respectively.

(b) Capacitors used in electronic equipment such as radio, video, and similar installations are generally designated C1, C2, C3, etc. However, on capacitors such as the KS-14067, which are wired from both front and rear, the reference or functional designations shall be stamped at the terminals on both sides (see Fig. 20).

(c) Electrolytic capacitors such as KS-16512 and similar types shall be stamped in accordance with Fig. 21.

**Table A - Figure References for Various WECo Coded Capacitors**

TYPE	FIG.	TYPE	FIG.	TYPE	FIG.
133	5	357	10	492	17
152	5	364	9	493	17
153	7	376	9	507	9
155	7	398	9	508	9
157	7	424	13	511	6*
158	7	425	13	513	6*
170	5	426	13	518	6*
187	8	427	13	520	6*
226	9	432	10	525	19
227	9	436	11	534	6*
228	9	437	6*	547	6*
229	9	439	6*	AB	5
230	9	440	6*	AC	5
231	9	441	6*	AD	5
232	9	442	6*	AE	5
233	5	444	6*	AF	5
234	9	445	14 & 15	AG	5
267	9	447	14 & 15	AJ	5
268	9	449	14 & 15	AK	5
287	9	473	6*	AL	5
288	9	475	6*	AN	5
289	9	476	6*	AP	5
290	9	479	5	AR	5
293	9	480	5	AS	5
294	9	481	9	AT	5
304	9	482	9	AU	5
306	9	483	9	CA	5
310	12	484	9	CE	5
312	5	485	9	CF	5
313	5	486	9	CG	5
314	12	489	6*	CH	5
330	9	491	9		

\*When mounted on SXS switch unit mounting plates, see Fig. 16. When mounted on 24-type brackets, see Fig. 18.

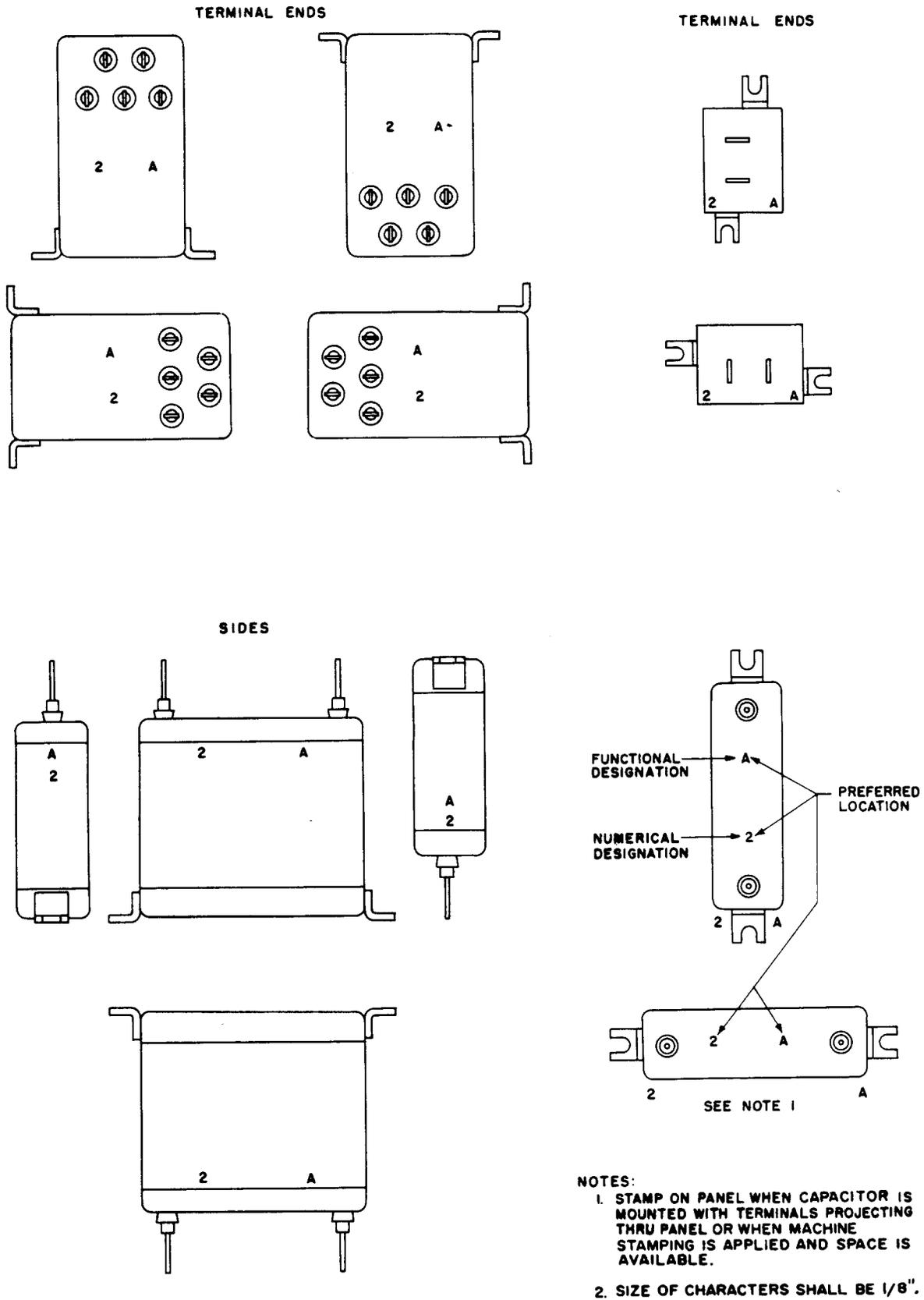
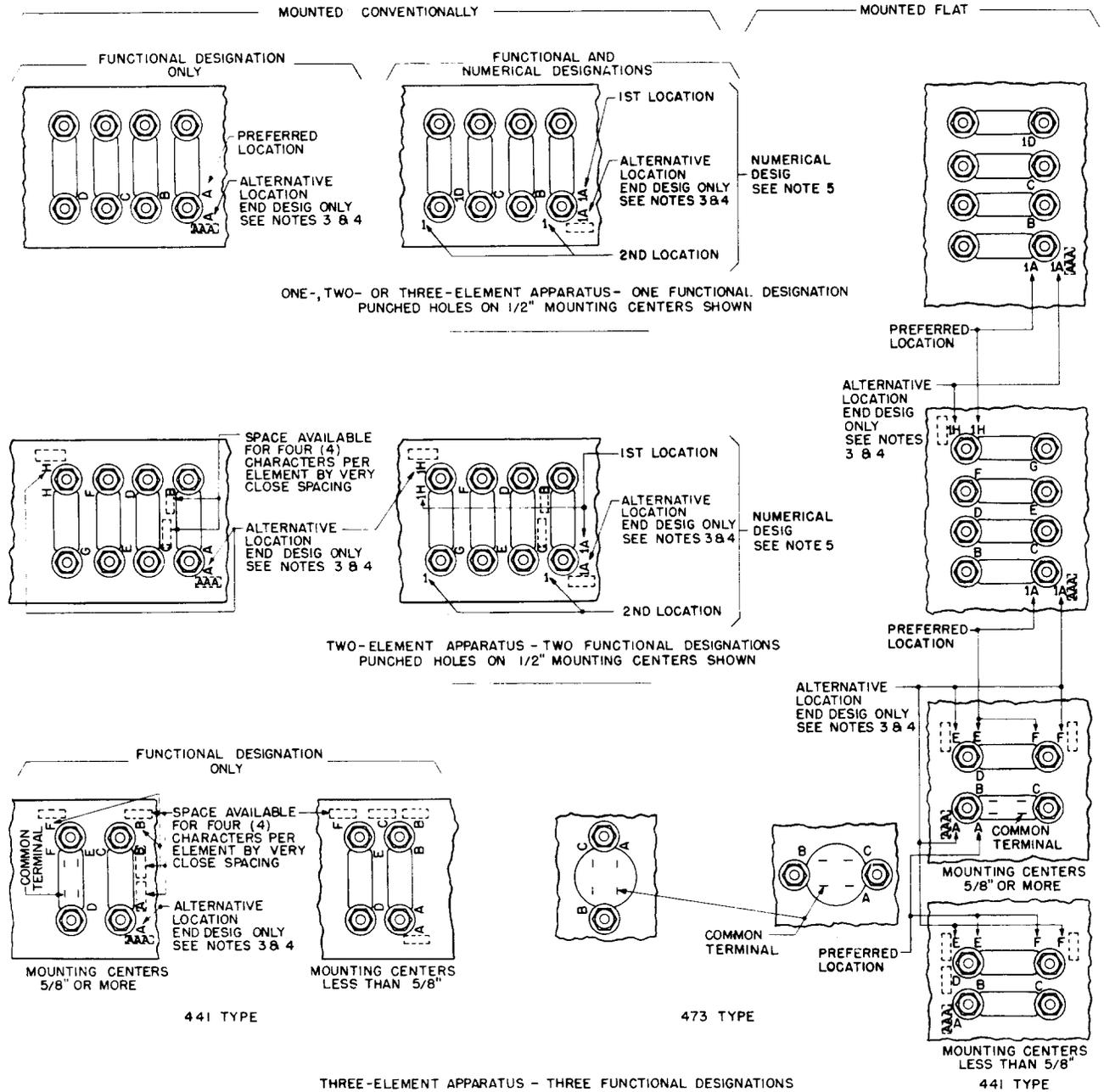


Fig. 5 - Capacitors - 170 and Similar Types - Lug Mounted



NOTES:

1. THIS SYSTEM OF DESIGNATING IS SUITABLE FOR INTERCHANGEABLE USE OF TIN-PLATE CAN APPARATUS (141 TYPE CAP) AND THE REPLACING EXTRUDED-ALUMINUM CAN APPARATUS (441 TYPE CAP).
2. SIZE OF CHARACTERS SHALL BE 1/8"
3. WHEN PROXIMITY OF OTHER APPARATUS PREVENTS STAMPING DESIGNATIONS FOR AN END CAPACITOR IN PREFERRED LOCATION, ALTERNATIVE LOCATION SHALL BE USED AT THAT END ONLY.

4. ON 1 3/4" MOUNTING PLATES, STAMP IN SPACE INDICATED BY ---- IF MORE THAN TWO CHARACTERS ARE REQUIRED IN ALTERNATIVE LOCATION.
5. TWO LOCATIONS OF NUMERICAL DESIGNATIONS ARE SHOWN FOR CONVENTIONALLY MOUNTED APPARATUS. USE 1ST LOCATION WHEN BOTH NUMERICAL AND FUNCTIONAL DESIGNATIONS ARE REQUIRED AT CAPACITORS AND THEN ONLY WHEN CAPACITORS ARE AT BOTH ENDS OF THE SET OF APPARATUS NUMBERED. IN ALL OTHER CASES, AND WHEN NUMBERING FOR CAPACITORS ESTABLISHES 4-CORNER NUMBERING, USE 2ND LOCATION.

Fig. 6 - Capacitors - 441 and Similar Types - Stud Mounted

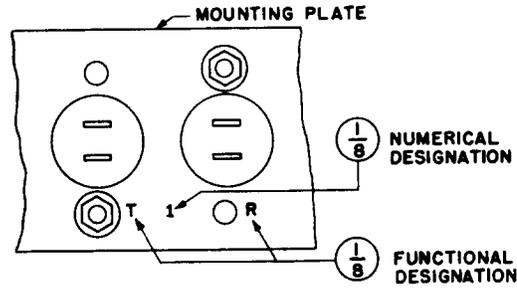


Fig. 7 - Capacitors - 153 and Similar Types

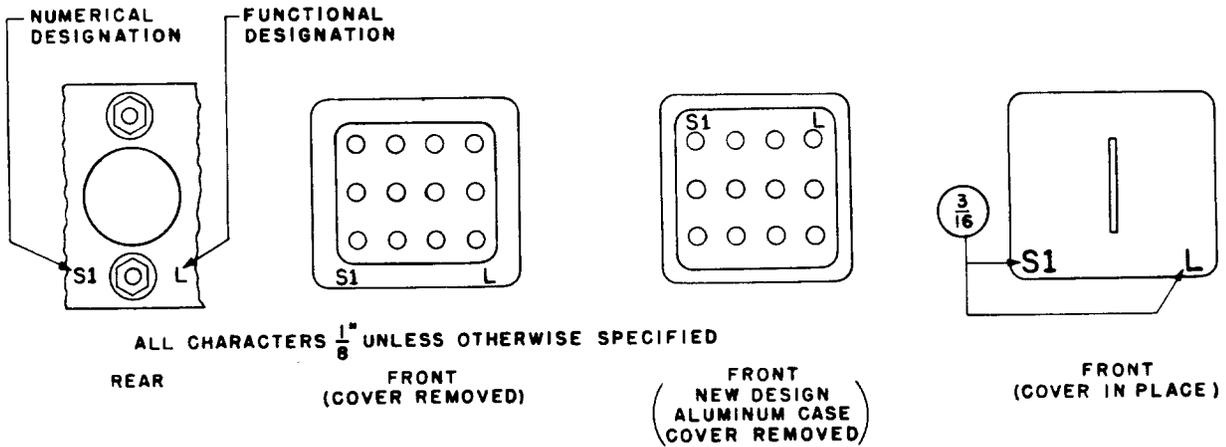
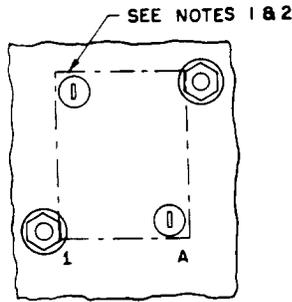


Fig. 8 - Capacitors - 187 and Similar Types



NOTE:  
 1. STAMP DESIGNATIONS BELOW THE TERMINAL CUTOUT (OR AN IMAGINARY RECTANGLE EMBRACING THE SEVERAL TERMINALS WHEN MORE THAN ONE HOLE IS REQUIRED) PLACING THE FUNCTIONAL DESIGNATION AT THE RIGHT AND NUMERICAL AT THE LEFT AS SHOWN.  
 2. SIZE OF CHARACTERS SHALL BE 1/8".

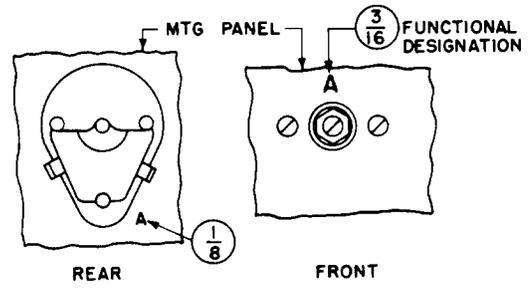


Fig. 10 – Capacitors – 357 and Similar Types

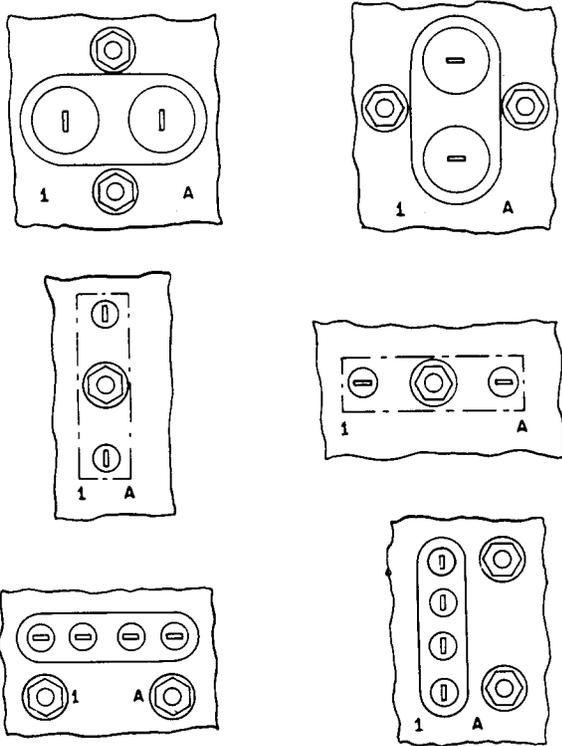


Fig. 9 – Capacitors – 227 and Similar Types – Stud Mounted

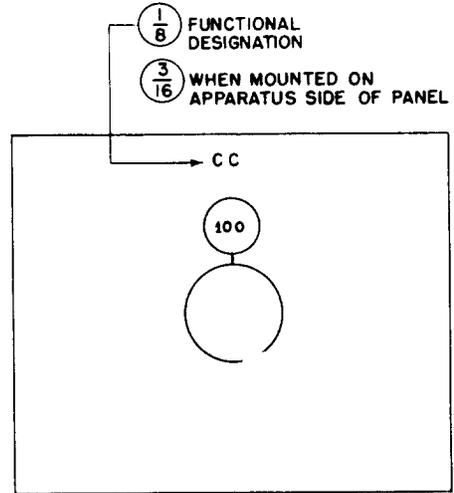


Fig. 11 – Capacitors – 436 and Similar Types

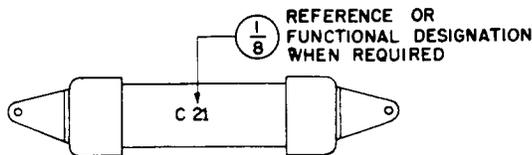


Fig. 12 – Capacitors – 310 and Similar Types

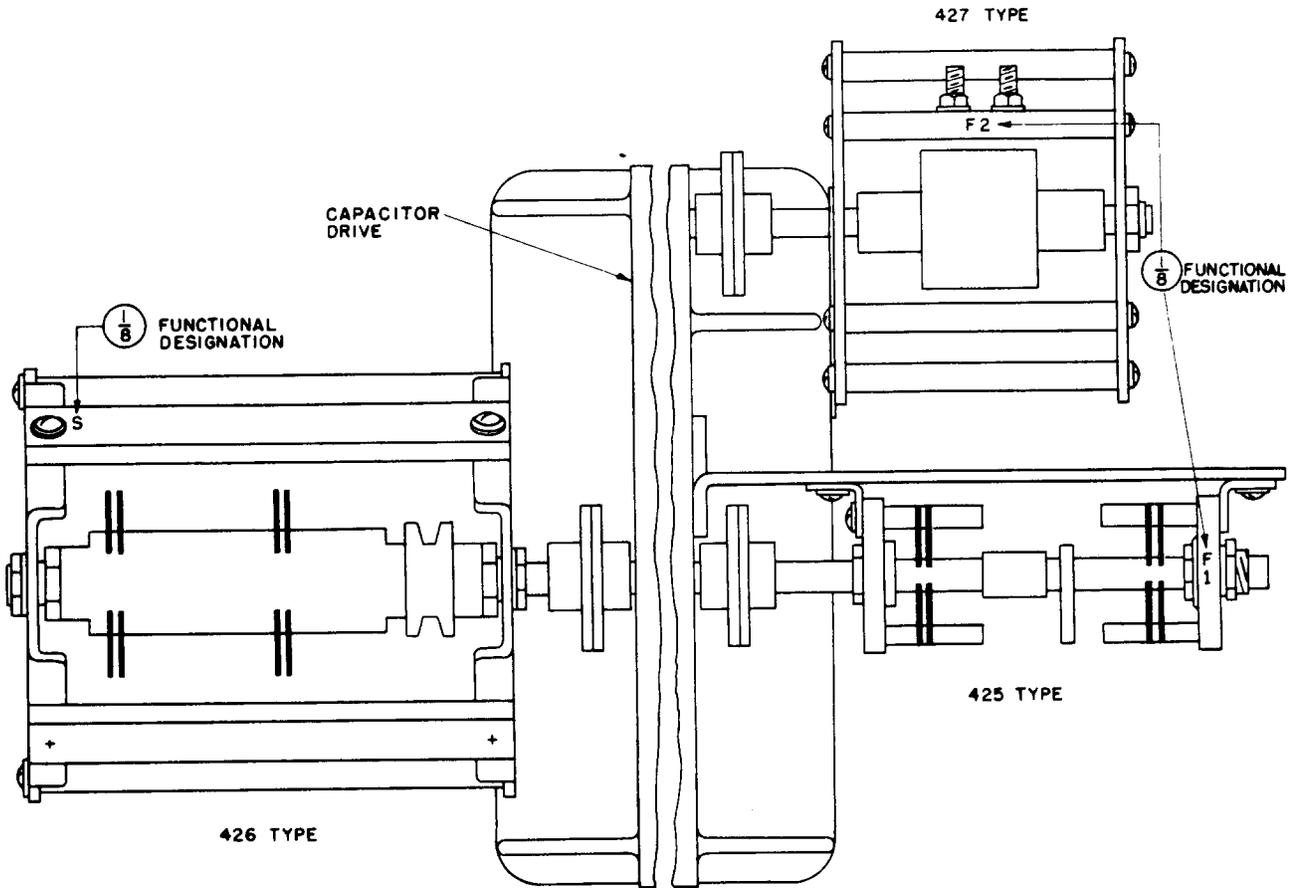


Fig. 13 – Capacitors – 425 and Similar Types

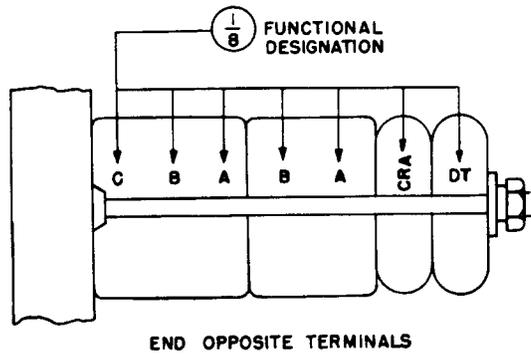


Fig. 14 – Capacitor – Strap Mounted for Step-by-Step Switch Unit Back Covers

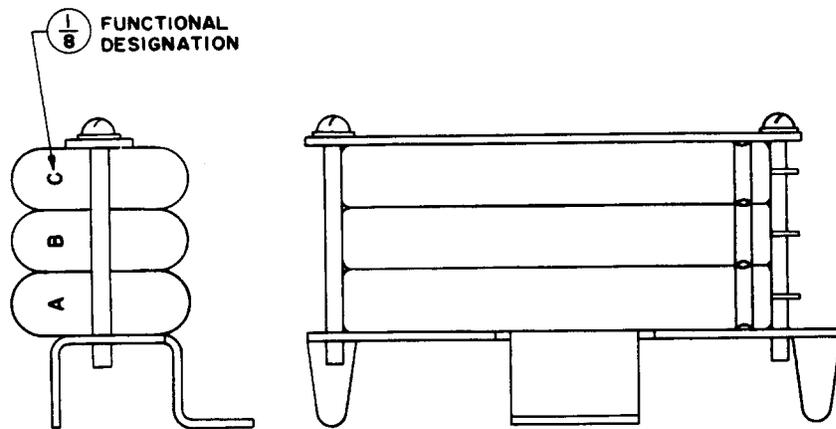


Fig. 15 - Capacitors - Mounted on 49A Bracket on Step-by-Step Switch Unit Mounting Plates

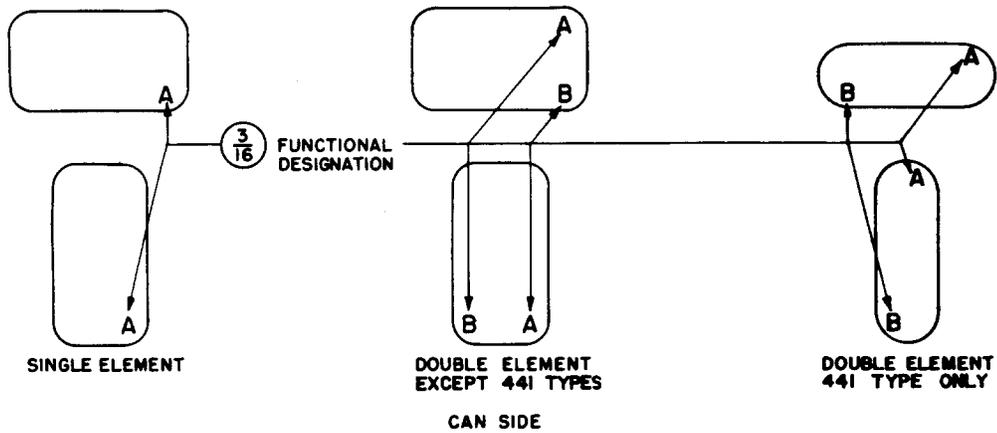


Fig. 16 - Capacitors - Stud Mounted for Step-by-Step Switch Unit Mounting Plates

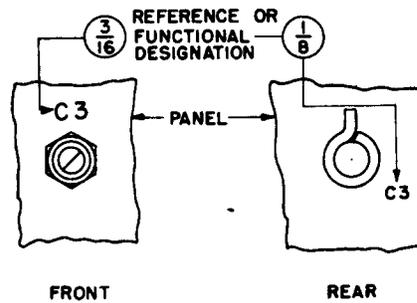


Fig. 17 - Capacitors - 492 and Similar Types

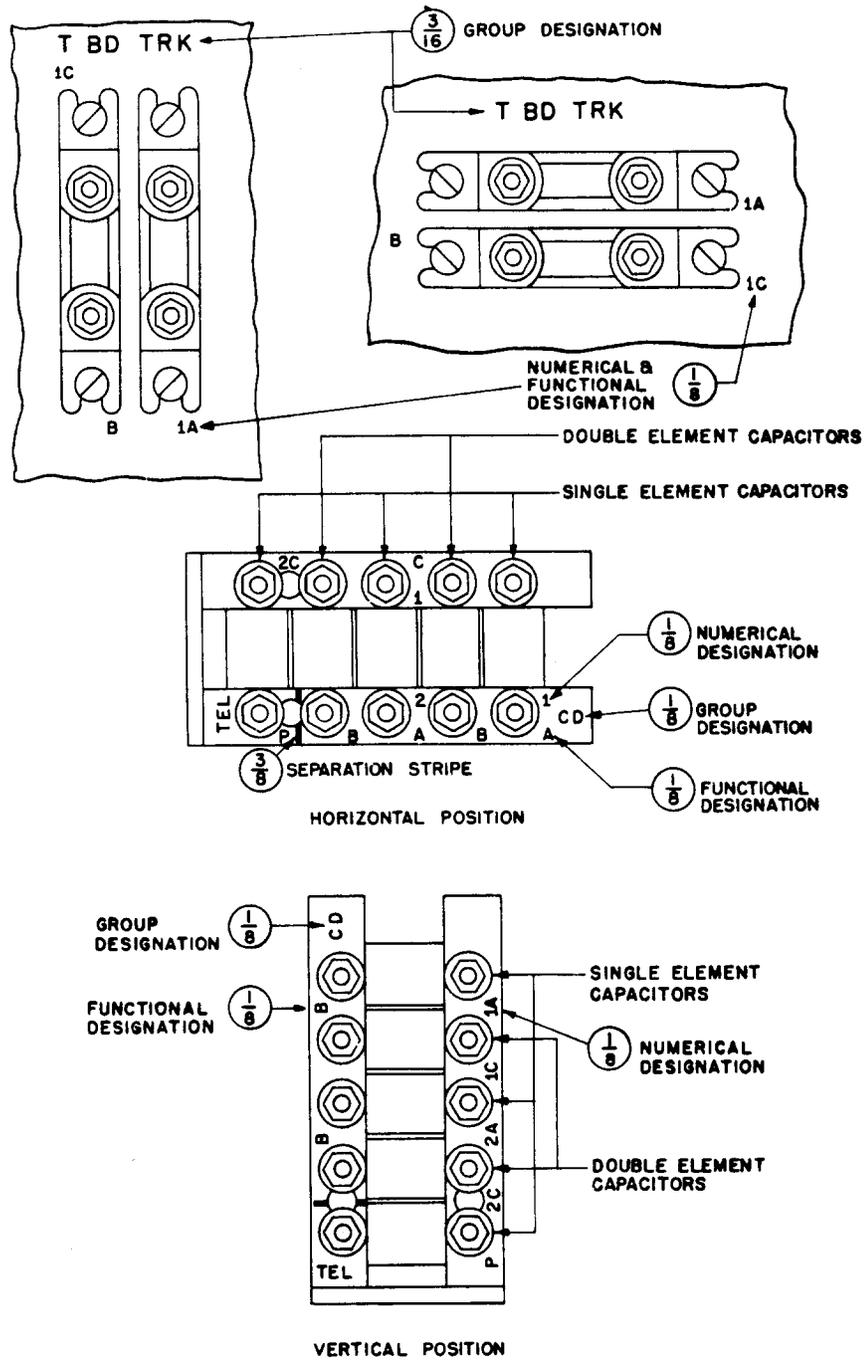


Fig. 18 - Capacitors - Mounted on 24-Type Brackets

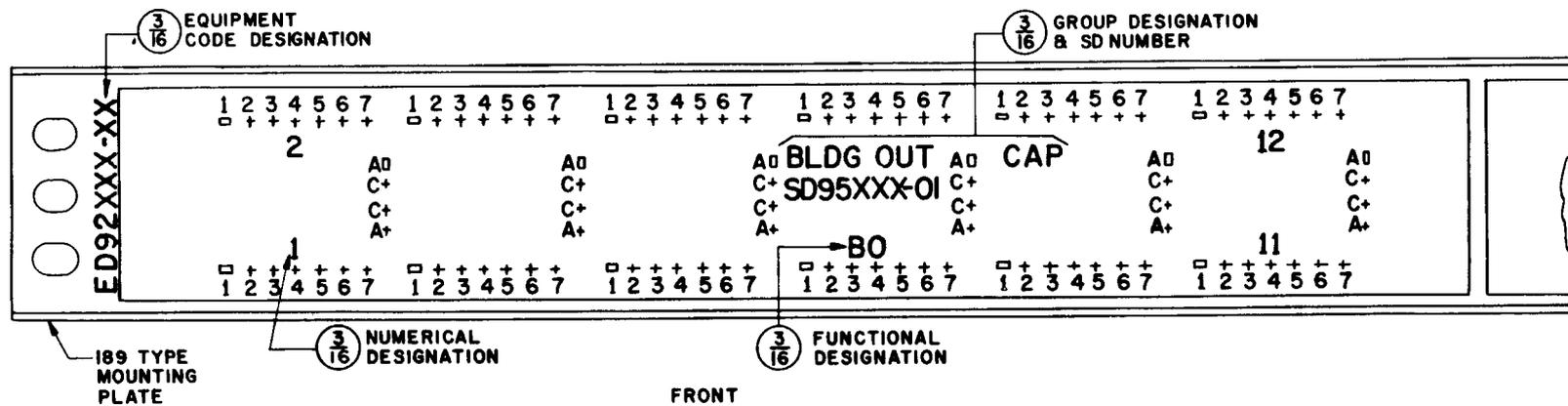
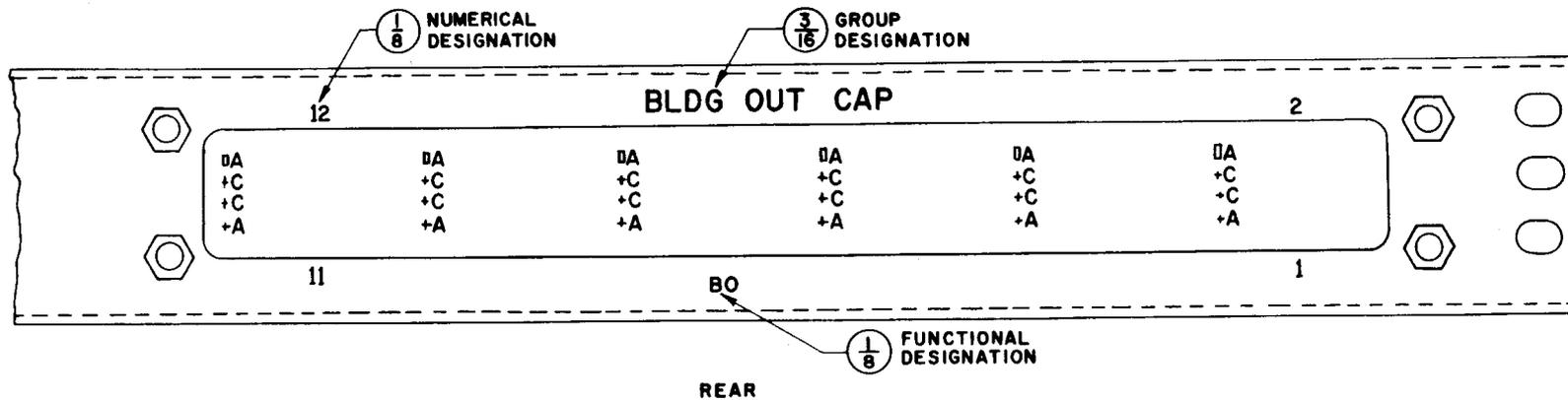


Fig. 19 - Capacitors - 525 Type - Stud Mounted

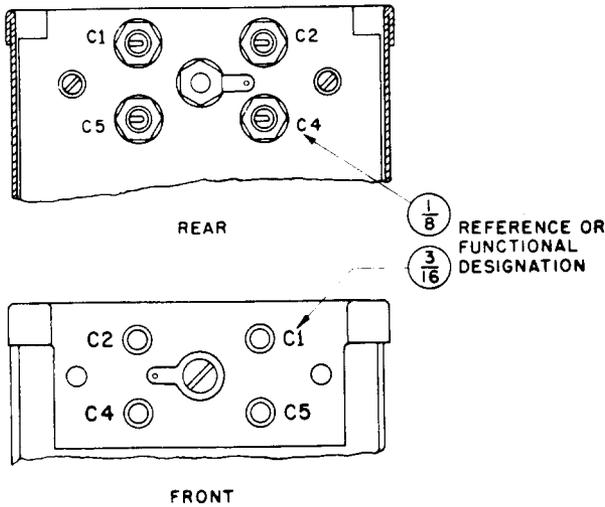


Fig. 20 - Capacitors - KS-14067 and Similar Types

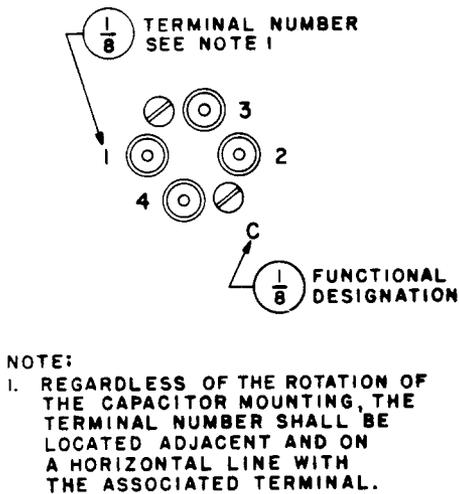


Fig. 21 - Electrolytic Capacitors - KS-16512 and Similar Types

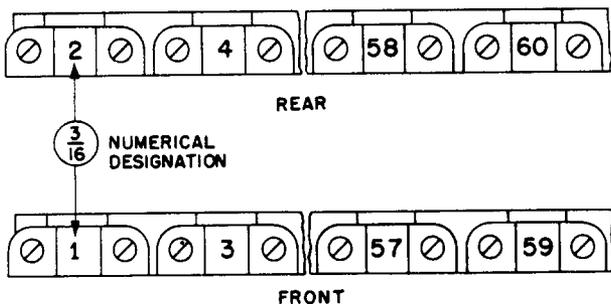


Fig. 22 - Commutator Top Locating Plate

**F. Combined Jacks and Signals**

2.07 Designations for combined jacks and signals shall be stamped as covered in Section 800-613-153.

**G. Commutators**

2.08 Designate on the commutator top locating plate as shown in Fig. 22.

**H. Connecting Blocks**

2.09 Designations for 18-, 26-, and similar-type connecting blocks, used with plug-in type relays and interrupters, shall be stamped in accordance with the requirements for the associated apparatus as covered in other sections of the numbering and lettering practices.

2.10 Connecting blocks, such as the 50 type, shall be stamped as shown in Fig. 23.

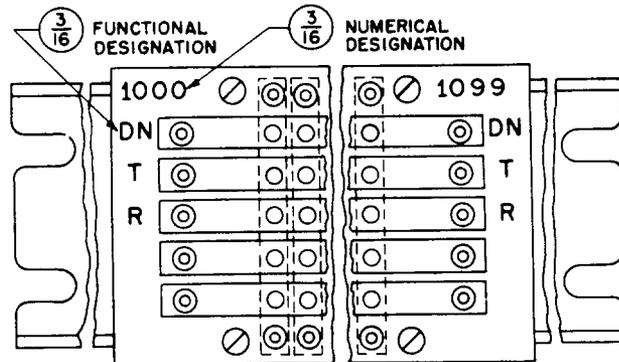


Fig. 23 - Connecting Block - 50 Type

**I. Connectors**

2.11 Designations for connectors such as the 204 type shall be stamped as shown in Fig. 24.

**J. Cord Fasteners**

2.12 Designate as shown in Fig. 25.

2.13 Where cord fasteners are located adjacent to their associated hooks and the cord hooks are designated to show the numbering and other necessary circuit arrangements, the designations shown for the cord hooks need not be duplicated for the cord fasteners. However, where

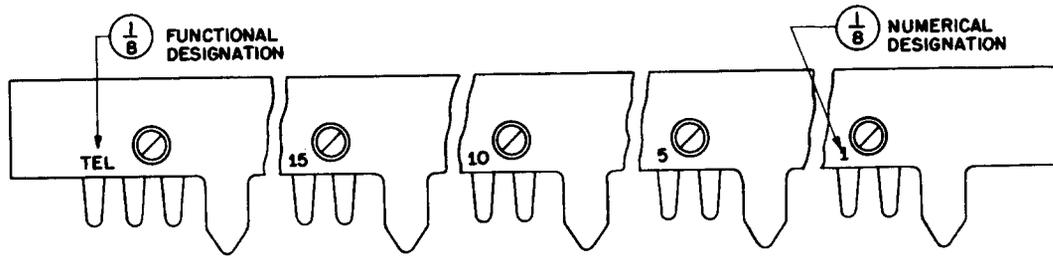


Fig. 24 – Connector – 204 Type

cord hooks are not designated, the designations normally placed for cord hooks shall be placed adjacent to the cord fasteners so that they may be readily identified as shown in Fig. 25.

**2.14 The functional designations, such as T, R, and S, which are the same throughout their respective rows of cord fasteners, shall be stamped opposite each row at the right end when facing the cord shelf from the rear of the switch-board. When space is insufficient at the right end, designations shall be stamped at the left end.**

**K. Cord Hooks**

**2.15 Designations on strip-type cord hooks shall be 1/8-inch steel die stamped characters filled with black. Use rubber-stamped\* characters for designating screw-type cord hooks. See Fig. 26.**

(a) If, in designating strip-type cord hooks, the designation falls between hooks where the space is partially occupied by the mounting screw hole near the top edge of the strip, place the entire designation below the hole. In all other cases, place the designations near the top edge of the strip.

**2.16 Where cord hooks are mounted in consecutively numbered circuits of more than one hook per circuit, designate each set of hooks associated with the first, last, and each intermediate circuit, whose number is a multiple of five, with its associated circuit number and place the functional designations such as C and A on each set so numbered as shown in Fig. 26.**

**2.17 Cord hooks associated with miscellaneous circuits, such as emergency call circuits (EC CKT) are designated by indicating the names of their associated circuits, provided the**

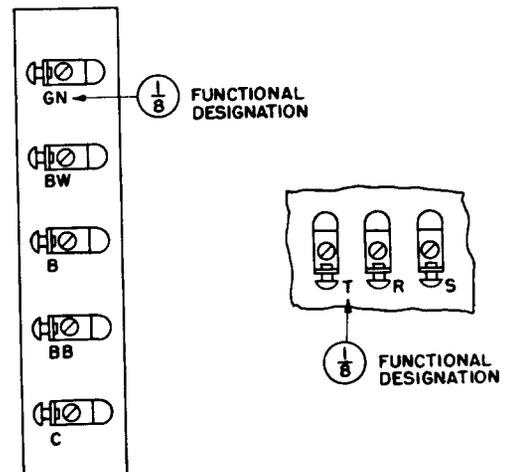
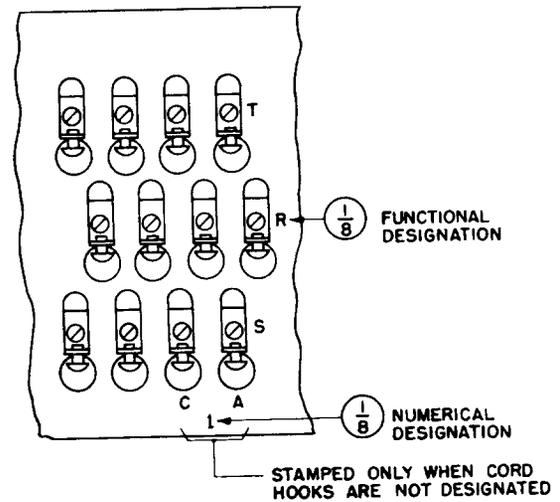


Fig. 25 – Cord Fasteners – 9 Type – Not on Cord Shelves

associated circuits do not constitute the major groups of circuits in the position. See Fig. 26.

**2.18 Cord hooks when mounted on the underside of a horizontal cord shelf or the lower edge of a vertical cord shelf are not designated.**

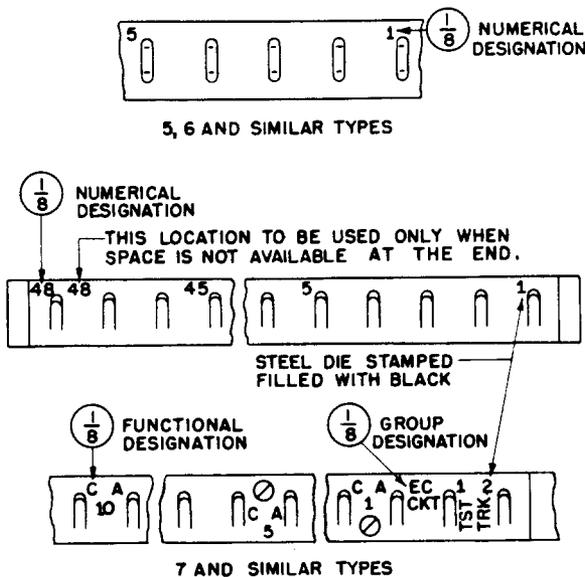


Fig. 26 – Cord Hooks – 5, 6, 7, and Similar Types

**L. Designation Cards for Step-by-Step and PBX Systems**

**2.19 Entries on selector bank multiple designation cards** per E-2139 used for tabulation of forward tracing information by half shelves shall be made as shown typically in Fig. 27 with black India ink or with permanent-type black or blue-black ink. Entries on cards per P-30B490 and P-30B492 used for tabulation of forward tracing information by levels shall be typewritten as shown typically on ED-31284-01, or where local conditions make it desirable, hand-lettered entries shall be made using an American Pencil Company Venus Unique Ultramarine 1236 Pencil, unless in any specific case the telephone company specifies the use of black India ink.

(a) **Entries on switch-type designation cards** used for forward and/or backward tracing information shall be made as shown typically in Fig. 27 for trunks and repeaters with black India ink or permanent type blue-black

Ink. In cases where space is insufficient for entering all the data on the front of the card, the card may be reversed and the remaining data shown on the rear. In such cases the word (over) shall be printed in small characters on the front of the card adjacent to the trunk or repeater number for maintenance reference. In the case of relay rack mounted repeaters and trunks, a new designation card sheet per P-40D989 for 80 cards is available without repeater or trunk numbers printed thereon. The repeater or trunk number on these cards shall be entered, as required, using ink described above. Detailed tracing information for selector, connector, etc, switch designation cards is covered on associated equipment drawings.

**M. Drops**

**2.20** Each drop shall be designated on the face either with rubber-stamped characters or number plates, as shown in Fig. 28. Supervisory drops, when stamped on the face, shall be designated with red characters.

**2.21** *The first, last, and each intermediate drop whose number is a multiple of five*, on each mounting, shall be designated on the rear with designations corresponding to the designations on the face of the drop.

**N. Equalizers**

**2.22** *Designations for equalizers* shall be stamped in accordance with the respective figures listed in Table B or C.

**Table B – Figure References for Various Types of Equalizers Other Than Full Bay Width**

TYPE	FIG.	TYPE	FIG.	TYPE	FIG.
17	31	51	31	315	29
19	32	53	30	316	29
23	29	54	29	319	29
36	29	200	29	320	29
37	29	201	29	322	29
38	29	205	29	323	29
39	29	208	29	324	29
40	29	209	29	330	29
42	29	214	29	334	29
43	29	218	29	335	29
45	29	219	29	338	29
46	30	226	29	340	29
47	29	301	29	342	29
48	30	308	29	344	29

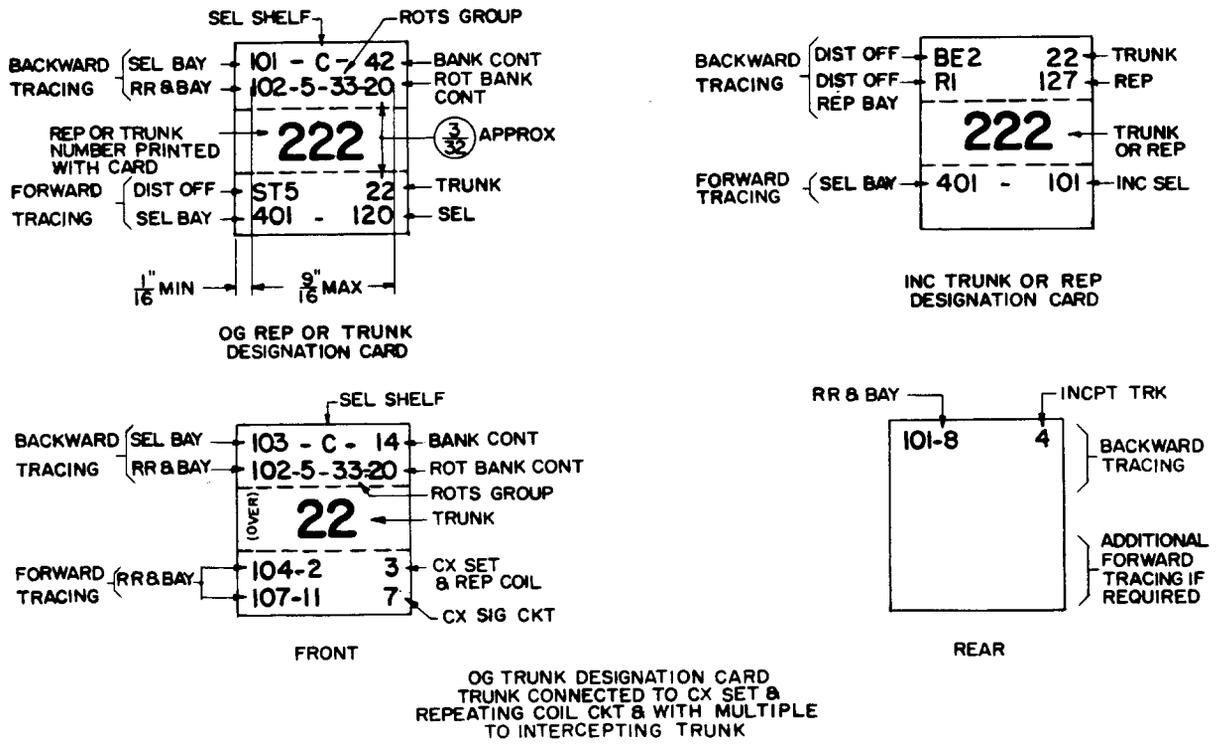
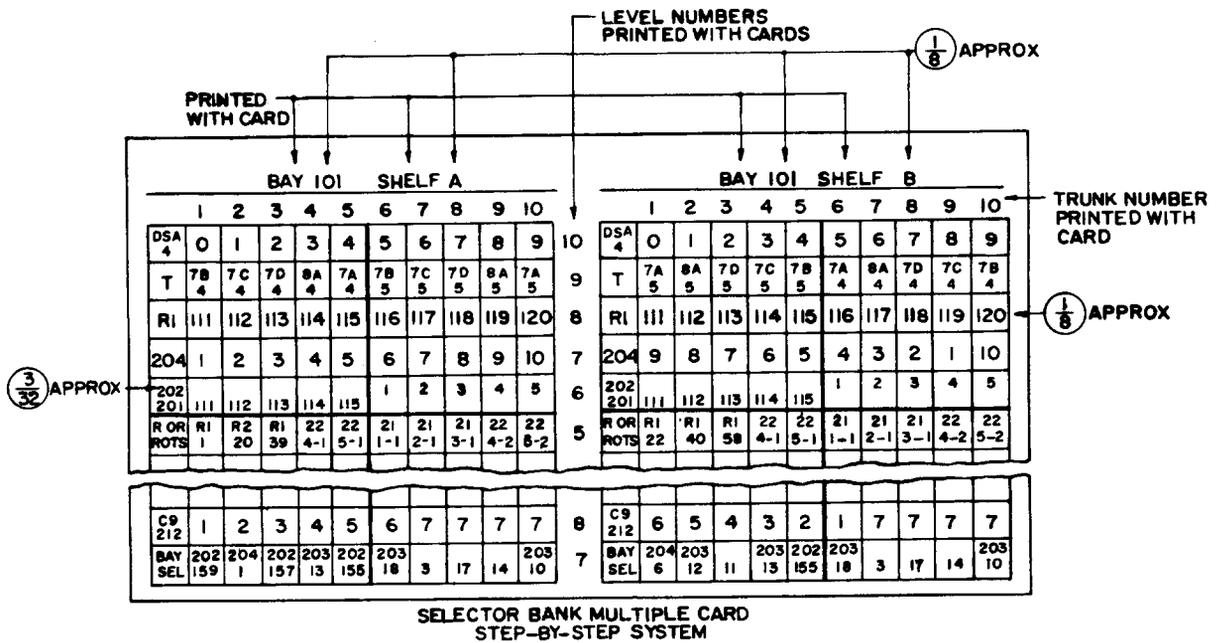


Fig. 27 - Designation Cards for Step-by-Step and PBX Systems - the Switch-Type Designation Cards Illustrated Are For Trunks and Repeaters Only

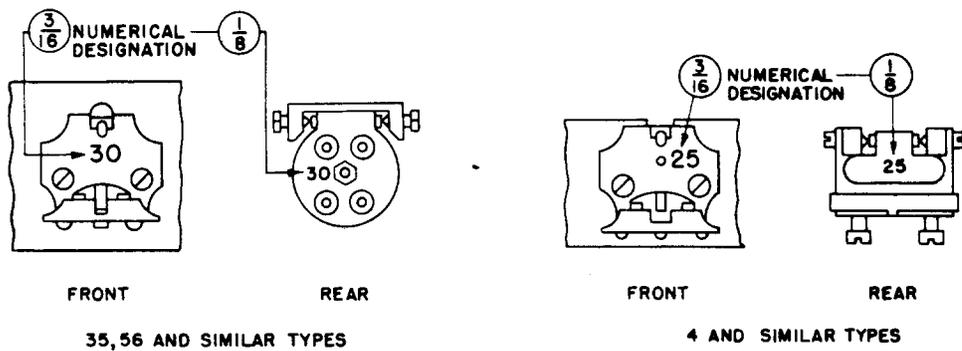


Fig. 28 - Drops - 4, 35, 56, and Similar Types

Table C - Figure Reference for Full Bay Width Mounted-Type Equalizers

TYPE	FIG.	TYPE	FIG.
18	1	307	1
49	1	314	1
52	1	318	1
303	1	325	1
304	1	326	1
305	1	327	1
306	1	328	1

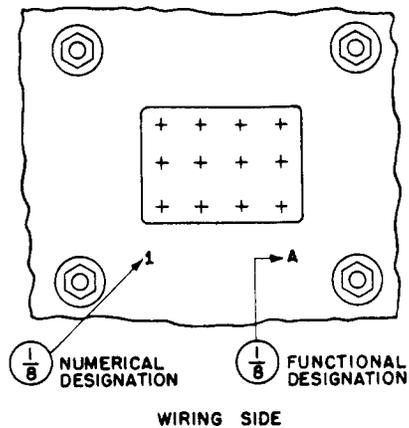


Fig. 29 - Equalizers - 23 and Similar Types

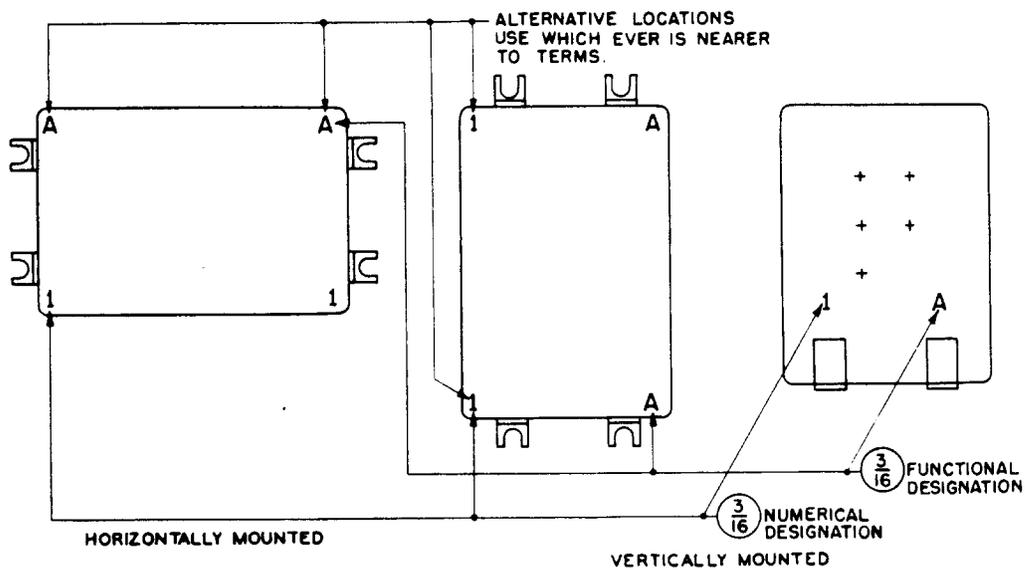
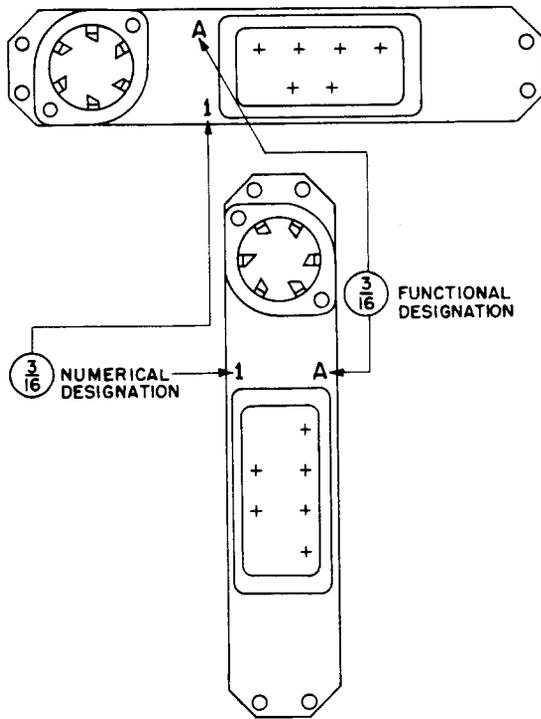
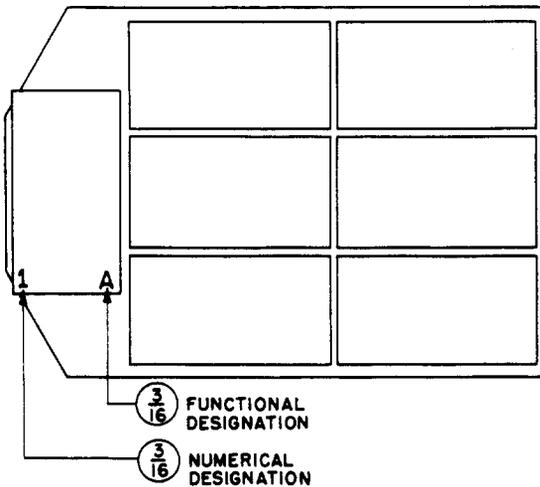


Fig. 30 - Equalizers - 46 and Similar Types



**Fig. 31 - Equalizers - 17 and Similar Types**



**Fig. 32 - Equalizers - 19 and Similar Types**

**REASONS FOR REISSUE**

1. In 2.01, reference to code of manufacture discontinued apparatus was removed.

2. Title of Fig. 1 was changed to remove reference to specific type of apparatus, and to generalize title to include all apparatus coded panel assemblies that are mounted on relay racks as units.
3. 2.04 was revised to specify BSP section applicable to stamping numerical designations required for sets of selectors.
4. 2.06 (c) and Fig. 21 were added to show stamping for KS- coded electrolytic capacitors.
5. Table A was revised to show up-to-date information.
6. Fig. 8 was revised to add front view stamping for capacitors of new design (cover removed).
7. In Fig. 9, a reference to note 2 was added.
8. In Fig. 12 and 17, information pertaining to designation was revised to include reference-type designations.
9. 2.19 was revised to specify color and type of ink and to include optional use of a special pencil or India ink for entries on P-30B490 and P-30B492 cards when necessitated by local conditions.
10. Table B was revised to show up-to-date information for equalizers less than full bay width.
11. Table C was added to show codes and associated figure reference for full bay width mounted-type equalizers.
12. Former Fig. 29 showing stamping of 28- and similar-type equalizers was removed.
13. Former Fig. 33 and associated figure references in Table B were removed and replaced by Fig. 1 and Table C.