

MESSAGE WAITING SERVICE IDENTIFICATION, INSTALLATION, AND GENERAL CONNECTING INFORMATION

1. GENERAL

1.01 This section covers the identification, installation, and general connecting information of various consoles, cabinets, and equipments that may be used to supply message waiting service for telephone systems on customer premises.

2. IDENTIFICATION

2.01 Fig. 1, 2, and 3 show views of the console and cabinet, while Table A lists their capacity.

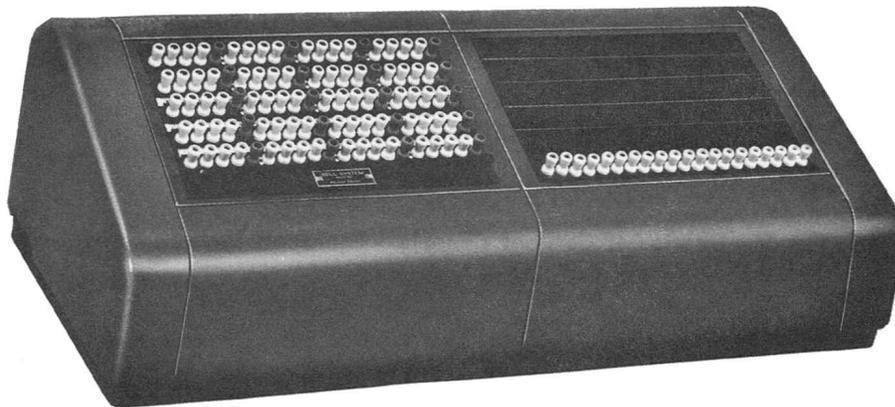


Fig. 1 — Two-Module Console — Equipped for 120 Lines
J58834E (AT&TCo Std) or J58834A (A&M Only)

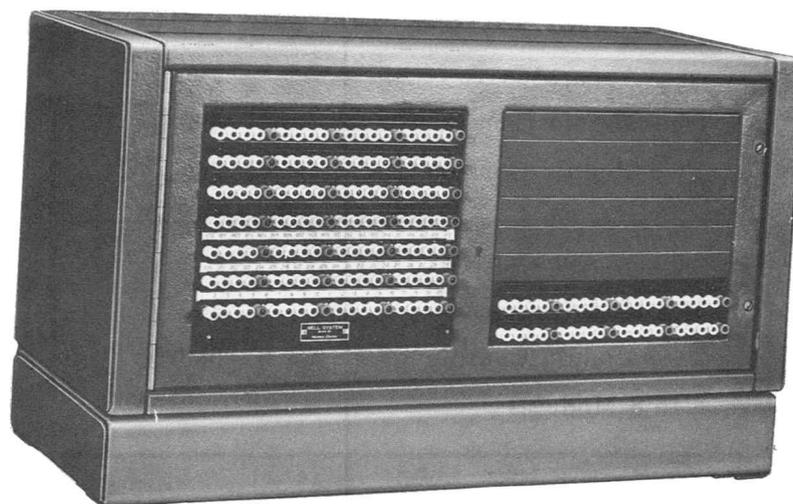


Fig. 2 — Cabinet Console — Equipped for 180 Lines
J58834F (AT&TCo Std) or J58834B (A&M Only)

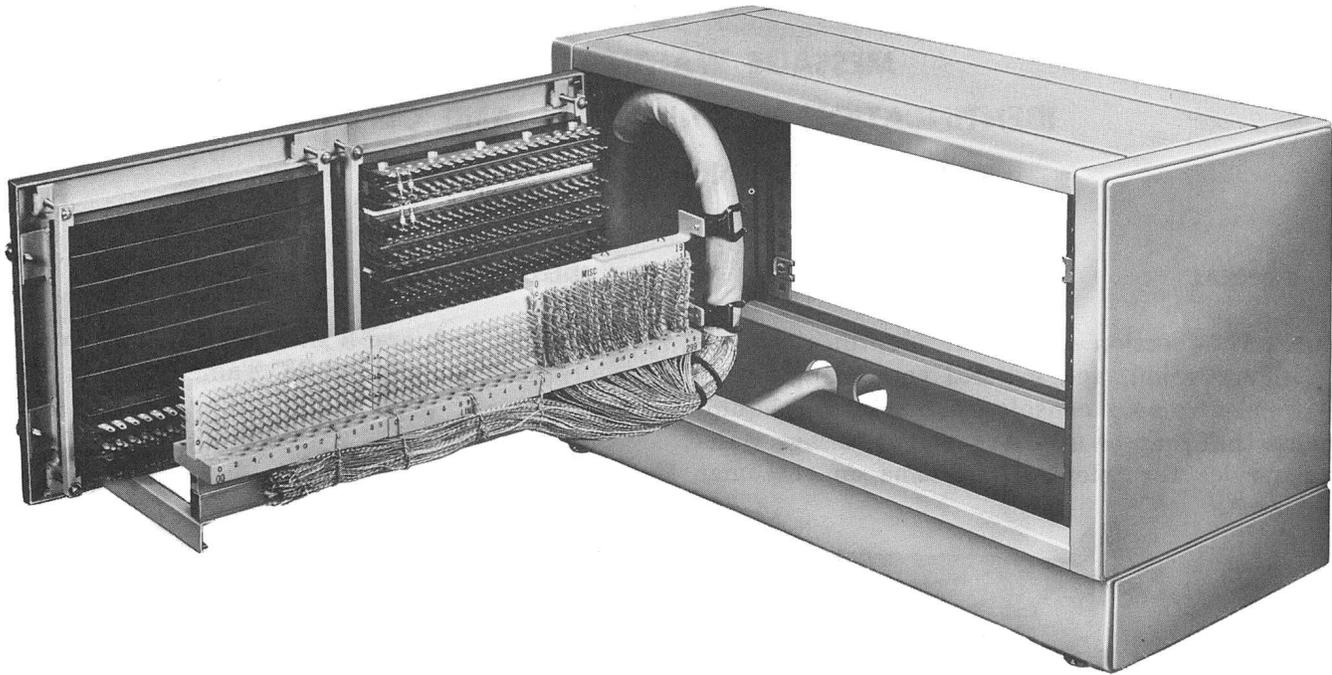


Fig. 3 — Interior of Cabinet Console — Equipped for 180 Lines

TABLE A — CAPACITY OF MESSAGE WAITING CONSOLES	
Console	Station Capacity
Cases, Apparatus	
One-Module Console	120
Two-Module Console	260
Cabinets, Apparatus	
One-Module Console	300
Two-Module Console	600
3 to 8 Modules	900—2400
PBX Switchboards	
Per Key Mounting	20

Description

2.02 The message waiting service facility provides means of indicating that a message awaits one at a predesignated point such as a reception desk, a hotel message center, or with a secretary. It may also be used to indicate a pre-arranged signal, the arrival of visitors, the beginning of a conference, etc. This facility may be applied to or furnished with any PBX installation and was developed principally for hotel and motel use. Its features are as follows:

- (a) The station signal consists of a flashing red light, located in the upper left quadrant of the message waiting telephone set and is visible from every direction except from the rear.
- (b) The signal is established by an attendant operating a key individual to each station. It can be set up while the station is in use, canceled at any time, or permanently retired only by restoration of the above key. The signal light appears only under an on-hook condition.
- (c) Maintenance facilities are provided at the attendant or originating location to permit routine checks for power, interrupter cycling, and signal light illumination.
- (d) Except for ground, power requirements are independent of the PBX.
- (e) Switches are provided in the power unit to supply steady lamp signaling to the stations in the event of interrupter failure.

2.03 To provide maximum efficiency, the circuitry divides the load into A and B station line groups. Local house, 115-volt, 60-cycle ac current is required for prime power to drive a built-in commercial, semiconductor dc supply (70 ma at 150 volts) and interrupter which, together with the test maintenance key and lamp equipment, is required 1 per 300 station lines maximum. Connection to PBX line circuits is effected, through blocking networks, at the station line jack and lamp appearance or at the line (L) and cutoff (CO) relays when equipped.

2.04 The station line keys, test keys, and lamps are, or may be, equipped as follows:

- (a) In a sloping face, die-cast aluminum case, as shown in Fig. 1, accommodating 60 to 120 or 140 to 260 stations, desk or external wall mounted, as illustrated in Fig. 4 and 5.
- (b) In an upright face, sheet-steel cabinet, as shown in Fig. 2 and 3, accommodating 140 to 300 stations, desk or external wall mounted, as illustrated in Fig. 6; 600 to 1200 stations, desk mounted, as covered in Fig. 7 to 10; and 900 to 2400 stations, external wall mounted, as shown in Fig. 11 to 14.
- (c) In an open, box-type, sheet-steel framework providing a basic structure supporting a gated key and lamp unit accommodating 140 to 300 stations, internal wall (flush, with metal or wood trim) or wood panel housing, as shown in Fig. 15 and 21; and 600 to 2400 stations, internal wall mounted (with trim), as suggested in Fig. 16 to 20.
- (d) In a wood cabinet supporting a gated key and lamp unit accommodating 140 to 300 stations, desk or external wall mounted, as suggested in Fig. 22.
- (e) In PBX switchboard station line face equipment accommodating 20 stations per key mounting.

2.05 The original console color, gray-green "Armorhide" textured vinyl finish, has been rated "A&M Only" and replaced with a new light gray textured vinyl finish being standardized for all cabinets and metal housing to be located on customer premises. However, optional arrangements, set up on an ED-coded basis, provide an unfinished apparatus case and cabinet which may be painted on a job basis to blend with customer decor. The keys (20 per strip) are equipped with white handles except for key positions 5, 10, 15, and 20 which are furnished with red handles to sectionalize line groups for ease of reference.

2.06 The associated power pack, interrupter, and basic group of networks (1 to 120 stations) are supplied as a unit, 23 by 10 inches high, arranged for mounting on relay rack, and in floor or wall supported cabinets having drillings on 1-inch centers. Networks for stations 1 to 300

are available in 20-circuit modules, with each network mounting unit consisting of a 260A terminal strip with the varistor-capacitor network arranged to permit either soldered (without heat sink) or solderless-wrapped external connections. Three network mounting frameworks are offered accommodating: (a) one or two modules (1 to 40 stations), (b) seven modules, front RR mounted (1 to 140 stations), (c) seven modules, front or rear mounted networks (1 to 140 stations). Typical equipment arrangements are suggested in Fig. 23 through 28.

Equipment

2.07 The following information is provided to assist in the identification of frameworks, cabinets, key and lamp consoles, panels, power supply, interrupter and network units, and PBX face equipment.

ED-66077-50 — Case, Cabinet, and Framework Assemblies (See Note A)

- Group 1* — One unfinished apparatus case for 20- to 120-station console. See Note B.
- Group 2* — One unfinished supplementary apparatus case required in addition to group 1 for 140- to 260-station console. See Note B.
- Group 3* — One unfinished key and lamp unit framework for 20- to 300-station console. See Note C.
- Group 4* — One unfinished metal framework (open, box-type), details and hardware to provide a basic structure, supporting a key and lamp unit for 20 to 300 stations, arranged to build up: (a) metal paneled (groups 5 through 10) modules or consoles, (b) wood paneled modules or consoles, (c) wood (box or cabinet) consoles, and (d) internal wall or column (flush with metal or wood trim) mounted modules.
- Group 5* — One unfinished base and hardware required in addition to group 4 to enclose the bottom of cabinet, desk mounted.
- Group 6* — One unfinished panel (with external cable holes) and hardware

required in addition to group 4 to enclose the bottom, external wall or column mounted.

- Group 7* — One unfinished panel and hardware required in addition to group 4 to enclose the top, desk mounted.
 - Group 8* — One unfinished panel (with external cable holes) and hardware required in addition to group 4 to enclose the top, external wall or column mounted.
 - Group 9* — One unfinished panel and hardware required in addition to group 4 to enclose the rear, desk mounted.
 - Group 10* — One unfinished set of panels and hardware required in addition to group 4 to enclose the ends, desk and external wall or column mounted.
 - Group 11* — One set of adapters required when station line key, test keys, and lamp are mounted in a PBX switchboard having 12-inch panel sections.
 - Group 12* — Key and lamp mounting, cover assembly, and apparatus per SD-65784-01, Fig. 3 required to provide test feature per 300 stations maximum for PBX face equipment applications.
- Note A:* All items per groups 1 to 10 shall be finished, assembled, wired, and installed on a job basis.
- Note B:* One J58834E, or J58834A (A&M Only), List 4, and one list 5 are needed for groups 1 and 2, as required, to provide a local cable or cables and common equipment with wiring for 120 or 260 stations (circuits 00 through 259). One list 3 is required in addition to lists 4 and 5 to equip a group of 20 stations (circuits 00 through 19, 20 through 39, etc, 240 through 259). If desired, also obtain one list 6 to provide for wall or column mounting.
- Note C:* One J58834F, or J58834B (A&M Only), List 10, required for group 3 to provide a local cable and common equipment with wiring for 300 stations (circuits 00 through 299). One list 3 required in addition

to list 10 to equip a group of 20 stations (circuits 00 through 19, 20 through 39, etc, 280 through 299).

J58834A (A&M Only) — Key and Lamp Console, 60 to 120 or 60 to 260 Stations

- List 1* — Same as J58834E, except for color, thru
List 6 which is gray-green.

J58834B (A&M Only) — Key and Lamp Console, 140 to 300 Stations or 300-Station Module

- List 1* — Same as J58834F, except for color, thru
List 10 which is gray-green.

J58834C (AT&TCo Standard) — Power Supply, Interrupter, and Network Unit

- List 1* — Assembly, wiring, and equipment for one power supply, interrupter, and network unit per SD-65784-01, Fig. 2, providing power capacity for 300 stations, network capacity for 120 stations. See Note A.

Note A: Provide supplementary network units per J58834D, Lists 1 to 4, as required, as illustrated by Fig. 23 through 28 (circuits 00 to 19, 20 to 39, etc, 280 through 299).

J58834D (AT&TCo Standard) — Network Unit, 20-Station Module

- List 1* — Assembly, wiring, and equipment for one network unit per SD-65784-01, Fig. 4 equipped for 20 stations. See Note A.
- List 2* — Mounting bar required in addition to list 1 to equip one or two supplementary network units. See Note A.
- List 3* — Framework assembly required in addition to list 1 to equip one to seven supplementary network units, front or rear RR, or cabinet mounted. See Note A.
- List 4* — Framework assembly required in addition to list 1 to equip one to seven supplementary network units, front RR mounted, back to back with list 3. See Note A.

Note A: The J58834C power supply, interrupter, and network unit provides mounting for six list 1 (circuits 00 through 119). Therefore, supplementary mountings per lists 2 through 4 need only be obtained as required for further expansion as illustrated in Fig. 23 through 28 (circuits 120 through 299).

J58834E (AT&TCo Standard) — Key and Lamp Console, 60 to 120 or 60 to 260 Stations

- List 1* — Assembly, wiring, and equipment for one key and lamp console per SD-65784-01, Fig. 1 and 3, wired for 120 but equipped only for 60 stations (circuits 00 through 59), light gray textured vinyl finish, desk mounted.

- List 2* — Assembly and wiring for one supplementary key and lamp module per SD-65784-01, Fig. 1 required in addition to list 1 to arrange for 260 stations (circuits 120 through 259).

- List 3* — Apparatus per SD-65784-01, Fig. 1 required in addition to list 1 or 2 to equip a supplementary group of 20 stations (circuits 60 through 79, 80 through 99, etc, 240 through 259).

- List 4* — Local cable and common equipment per SD-65784-01, Fig. 1 and 3, with wiring for 120 stations (circuits 00 through 119) for use with console (customer specified finish) per ED-66077-50, Group 1.

- List 5* — Local cable per SD-65784-01, Fig. 1 required in addition to list 4 to arrange a console per ED-66077-50, Groups 1 and 2 for 260 stations (stations 120 through 259).

- List 6* — One set of brackets required in addition to list 1 or lists 1 and 2 to provide for wall or column mounting.

J58834F (AT&TCo Standard) — Key and Lamp Console, 140 to 300 Stations or 300-Station Module

- List 1* — Assembly, wiring, and equipment for one key and lamp unit per SD-65784-01, Fig. 1 and 3, wired for 300 but equipped only for 140 stations (circuits 00 through 139), light gray textured vinyl finish.

- List 2** — Apparatus per SD-65784-01, Fig. 1 required in addition to list 1 to equip a supplementary group of 20 stations (circuits 140 through 159, 160 through 179, etc, 280 through 299).
- List 3** — Framework (open, box-type) required in addition to list 1 to provide a basic metal housing structure, light gray textured vinyl finish, desk and external wall or column mounted.
- List 4** — Base and hardware required in addition to list 3 to enclose the bottom of the cabinet, light gray textured vinyl finish, desk mounted.
- List 5** — Panel (with external cable holes) and hardware required in addition to list 3 to enclose bottom, light gray textured vinyl finish, external wall or column mounted.
- List 6** — Panel and hardware required in addition to list 3 to enclose top, light gray textured vinyl finish, desk mounted.
- List 7** — Panel (with external cable holes) and hardware required in addition to list 3 to enclose the top, external wall or column mounted.
- List 8** — Panel and hardware required in addition to list 3 to enclose rear, light gray textured vinyl finish, desk mounted.
- List 9** — Panels and hardware required in addition to list 3 to enclose ends, light gray textured vinyl finish.
- List 10** — Local cable and common equipment per SD-65784-01, Fig. 1 and 3, with wiring for 300 stations (circuits 00 through 299) for use with key and lamp unit framework (customer specified finish) per ED-66077-50, Group 3.

PBX Switchboard Equipment

2.08 For PBX face equipment applications, one ED-66077-50, Group 12 (test feature 7/8 inch high) per 300 stations maximum, and one J58834E, or J58834A (A&M Only), List 3 (line key equipment 13/16 inch high) is required for each group of 20 stations. The latter provides 490C keys in a 339-type mounting in combination with a 54F designation strip, which is equipped with 20 standoff terminals used to anchor one lead of the pigtail resistor associated with each line key. When mounted in switchboards having 12-inch sections, one set of adapters per ED-66077-50, Group 11 is required for the above key and lamp mounting and each group of 20-station key equipments.

General Information

2.09 Five sizes of equipment cabinets are suggested by Fig. 23 through 27. These cabinets provide mounting space equivalent to 6, 9, 15, 23, and 40 2- by 23-inch mounting plates respectively.

2.10 A 3-conductor power cord, to be furnished locally, is required for each J58834C power supply, interrupter, and network unit. See Sections 167-400-200 and 167-400-210.

2.11 When key and lamp units for consoles per Fig. 4 through 6 are equipped to capacity they require 127, 153, and 312 conductors respectively to provide external connections. It is recommended that typical cabling patterns shown in ED-66078-20 be followed when placing cable in the modules, for network units mounted back to back as shown in Fig. 28, and cable clearances indicated in Fig. 15 through 22.

2.12 Tables B and C are provided to assist in the identification of J-coded equipment arrangements covered in Fig. 4 through 20 and in Fig. 23 through 28.

TABLE B — KEY AND LAMP EQUIPMENT																				
CONSOLE CODES	FIG. NO.	MAX. NO. OF STA	COMMON EQPT			MOUNTING														
						DESK						WALL OR COLUMN								
			LIST NO.															EXT	INT	
			1	2	3	4	5	6	8	9	4	5	6	7	9					
J58834E or J58834A (A&M Only)	4	60	1												1		✓			
		120	1		3										1		✓			
	5	200	1	1	7										1		✓			
		260	1	1	10										1		✓			
J58834F or J58834B (A&M Only)	6	140	1		1	1			1	1	1			1		1	1	✓		
		300	1	8	1	1			1	1	1			1		1	1	✓		
	7	600	2	16	2	1			1	1	1			1		1	1	✓		
			2	16	2	2			2	2	1			2		2	1	✓		
	9	900	3	24	3	2			2	3	2			2		2	2	✓		
	10	1200	4	32	4	2			2	4	2			2		2	2	✓		
	11	900	3	24	3									1		1	3	✓		
	12	1200	4	32	4									1		1	4	✓		
	13	1800	6	48	6									2		2	4	✓		
	14	2400	8	64	8									2		2	4	✓		
	15	140	1																✓	
		300	1	8															✓	
	16	600	2	16															✓	
	17	900	3	24															✓	
	18	1200	4	32															✓	
	19	1800	6	48															✓	
20	2400	8	64															✓		

Notes:

- List 1 of both codes is furnished equipped for 60 or 140 stations as indicated. If the maximums shown are not required, omit one list 3 (J58834E) or J58834A (A&M Only), or list 2 (J58834F) or J58834B (A&M Only) per group of 20 stations.
- For Fig. 15 one list 3 or ED-66077-50, Group 4 basic framework per list 1 is required.
- For Fig. 7 through 14 use four P-160191 (1/4"-20 by 1-3/4") Hex H cap screws, P-94442 Hex H nuts, and P-382825 internal tooth lockwashers for joining vertically mounted basic frameworks, and four P-125616 (1/4"-20 by 3/4") Hex H cap screws, P-94442 Hex H nuts, and P-382825 internal tooth lockwashers for joining horizontally mounted frameworks.

TABLE C – CABINET OR RELAY RACK EQUIPMENT										
UNIT CODES	FIG. NO.	MAX. NO. OF STA	COMMON EQPT	MOUNTING						
				CABINET			RELAY RACK			
			LIST NO.							
			1	2	3	2	3	4		
J58834C	23	60	1							
		120	1							
		140	1							
	24	160	1							
		200	1							
		260	1							
	25	300	1							
		600	2							
		900	3							
28	1200	4								
J58834D	23	60	3							
		120	6							
		140	7	1						
	24	160	8	1						
		200	10	2						
		260	13		1					
	25	300	15	1	1					
		600	30	2	2					
		900	45	3	3	3	3			
28	1200	60					3	3		

Note: If the maximums shown are not required, omit one list 1 (J58834D) per group of 20 stations.

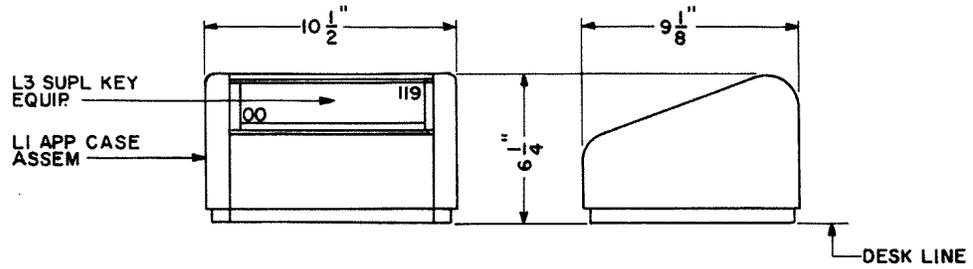


Fig. 4 - One-Module Console - Equipped for 60 to 120 Station Lines

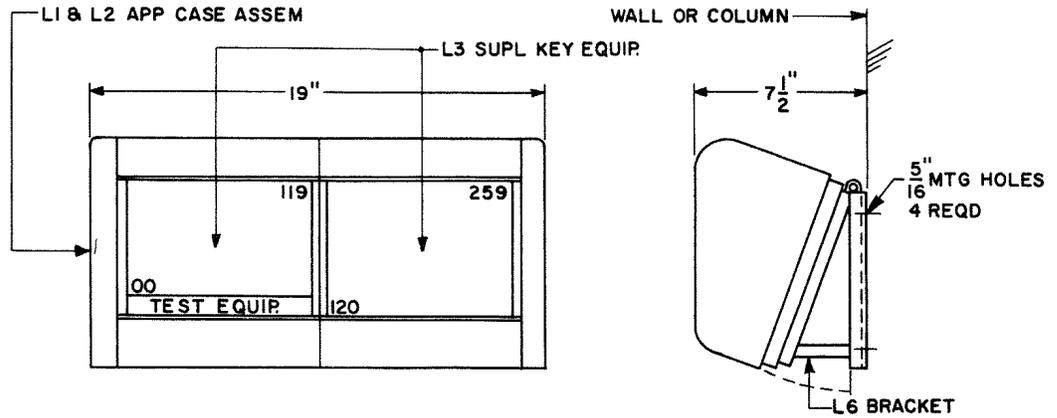


Fig. 5 - Two-Module Console - Equipped for 140 to 260 Station Lines

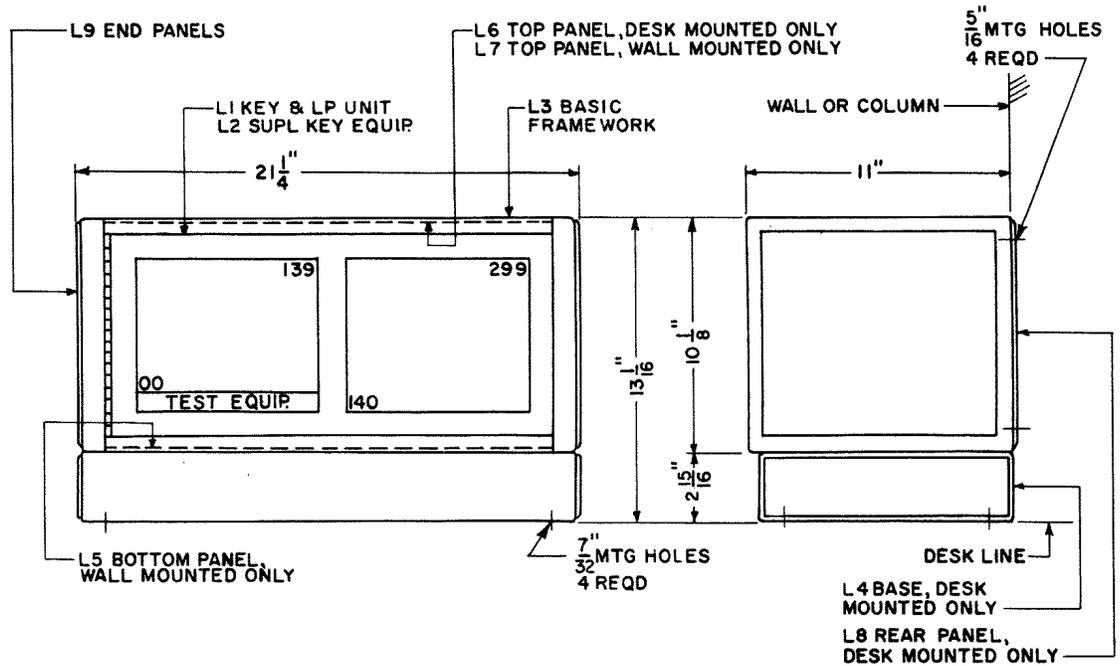


Fig. 6 - Single Cabinet, Desk or External Wall Mounted - Equipped for 140 to 300 Station Lines

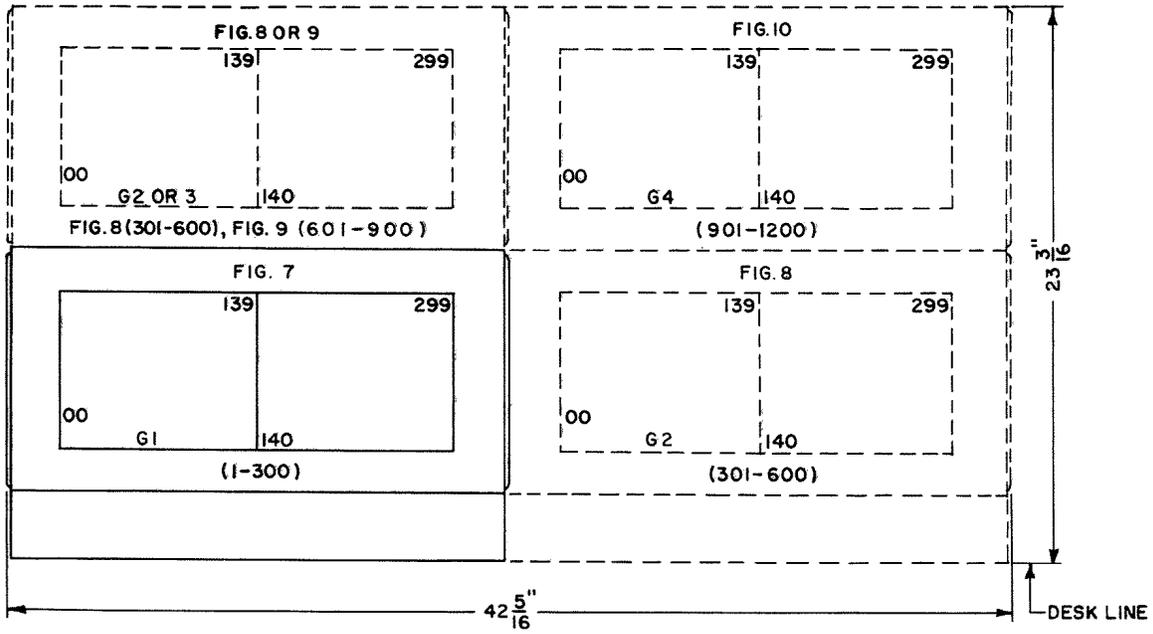


Fig. 7 to 10 — Multiple Cabinets, Desk Mounted — Equipped for 300, 600, 900, or 1200 Station Lines

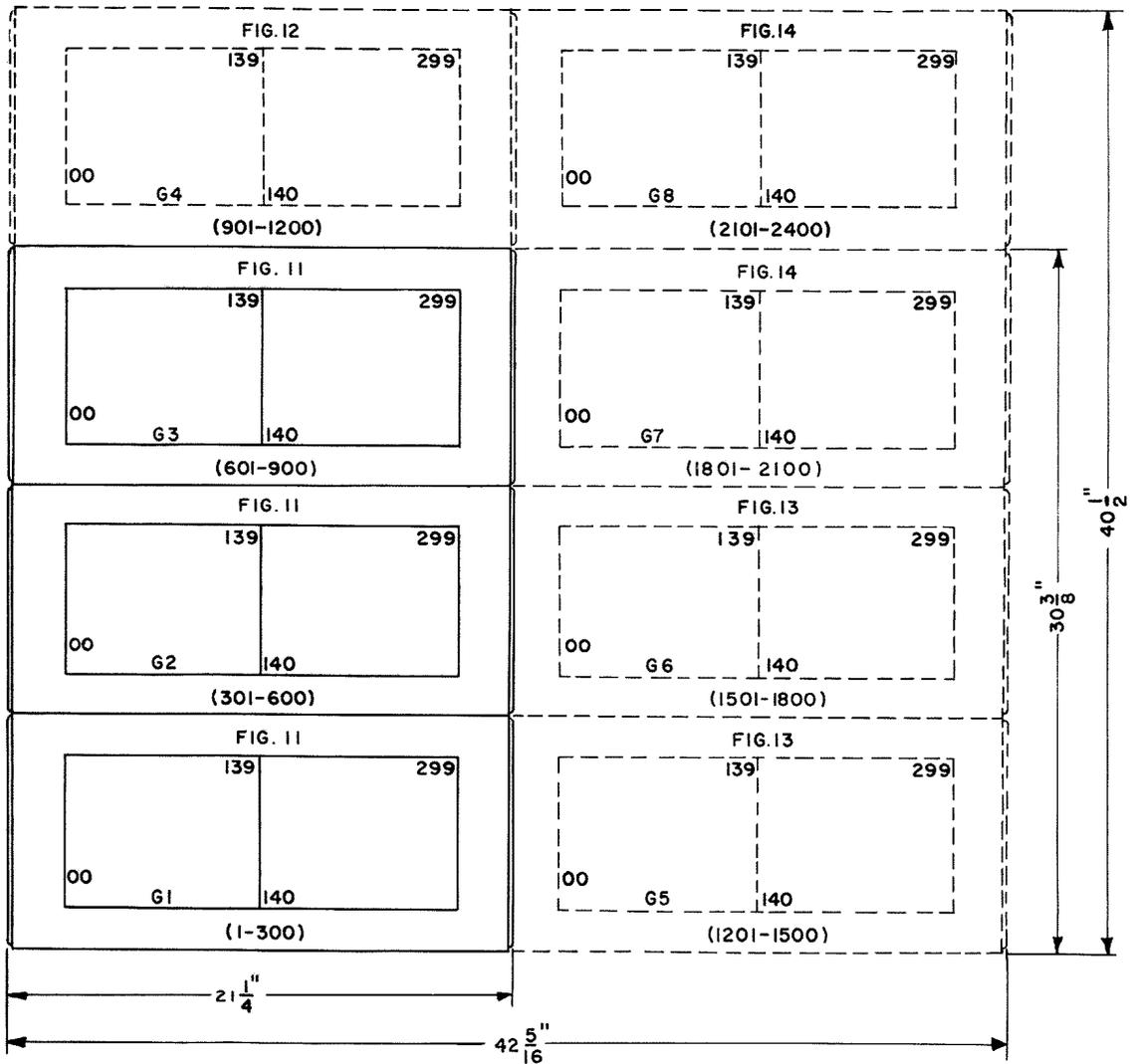


Fig. 11 to 14 — Multiple Cabinets, External Wall Mounted — Equipped for 900, 1200, 1800, or 2400 Station Lines

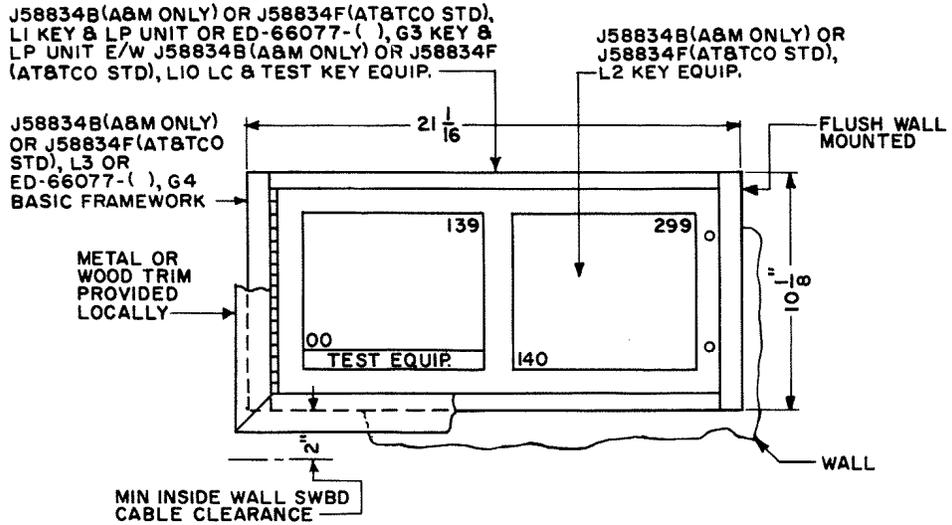


Fig. 15 – Single Framework, Flush Mounted – Equipped for 140 to 300 Station Lines

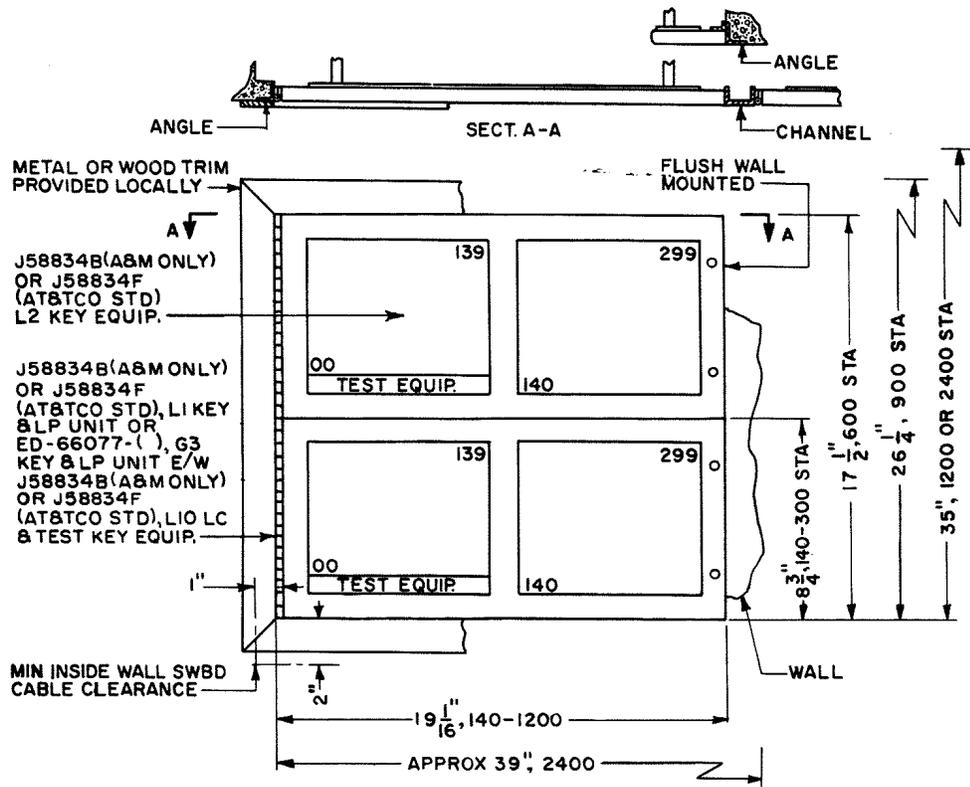


Fig. 16 to 20 – Multiple Framework, Flush Mounted – Equipped for 140 to 2400 Station Lines

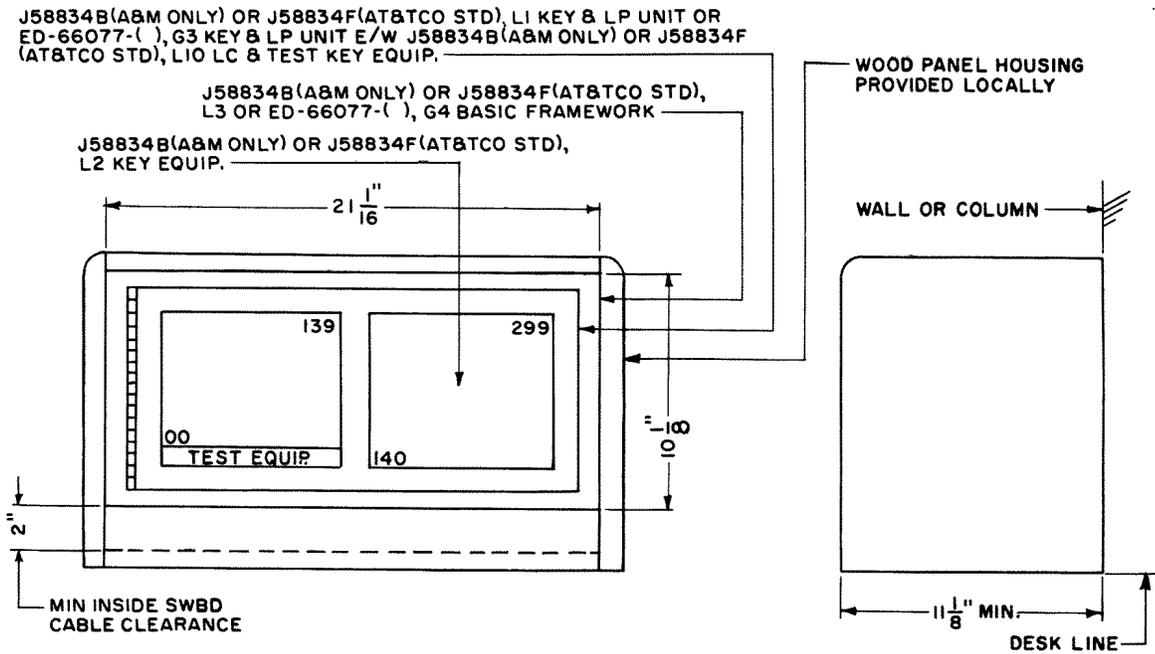


Fig. 21 — Single Framework with Locally Provided Wood Panel Housing — Equipped for 140 to 300 Station Lines

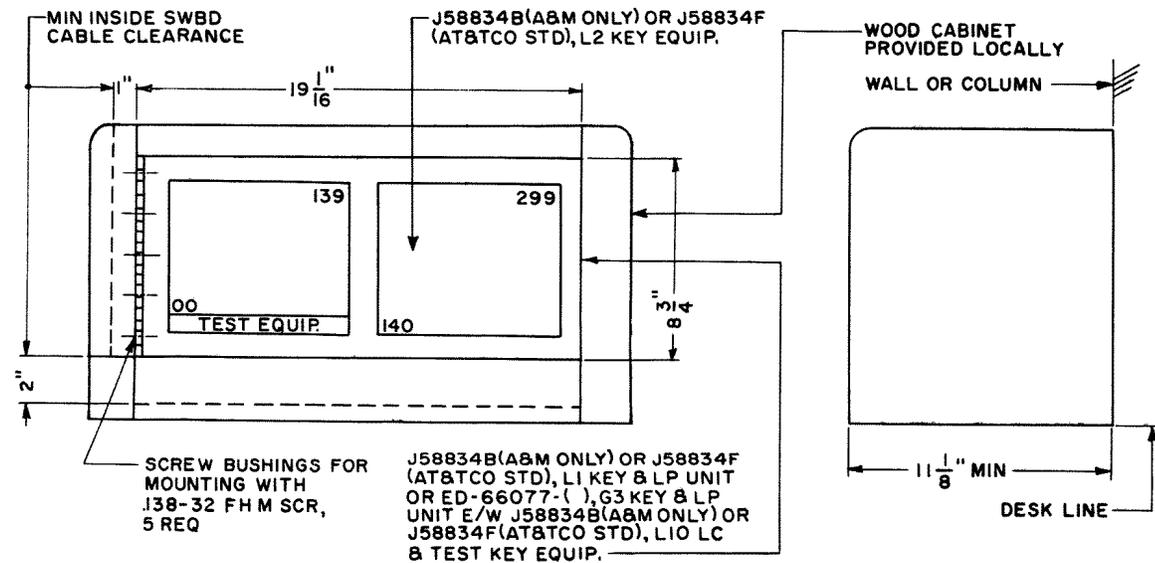


Fig. 22 — Single Framework with Locally Provided Wood Cabinet — Equipped for 140 to 300 Station Lines

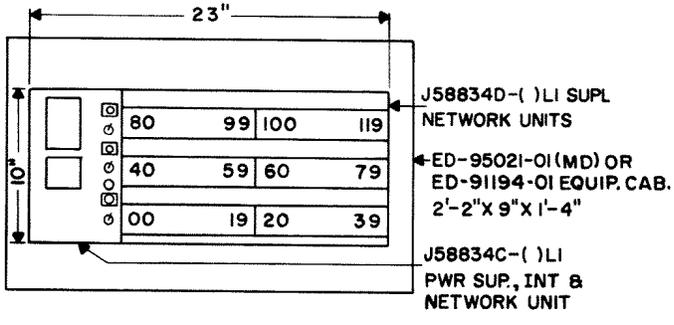


Fig. 23 – Power Supply, Interrupter, and Network Unit – Equipped for 20 to 120 Station Lines

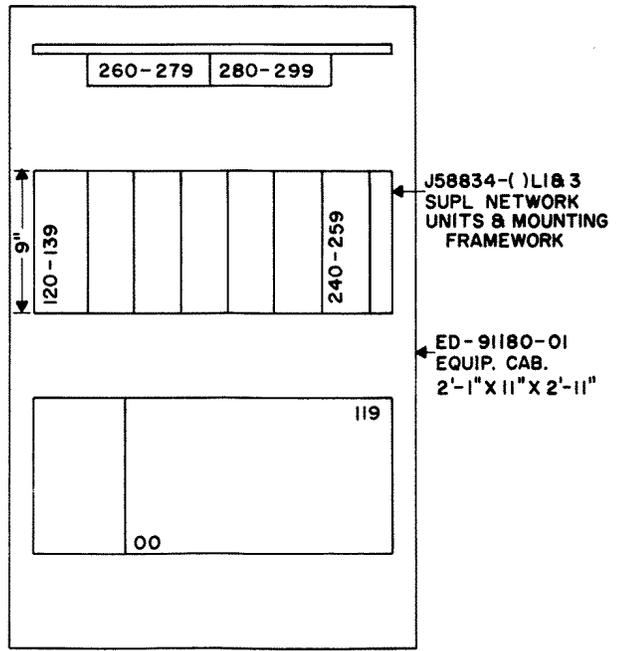


Fig. 25 – Power Supply, Interrupter, and Network Unit – Equipped for 260 to 300 Station Lines

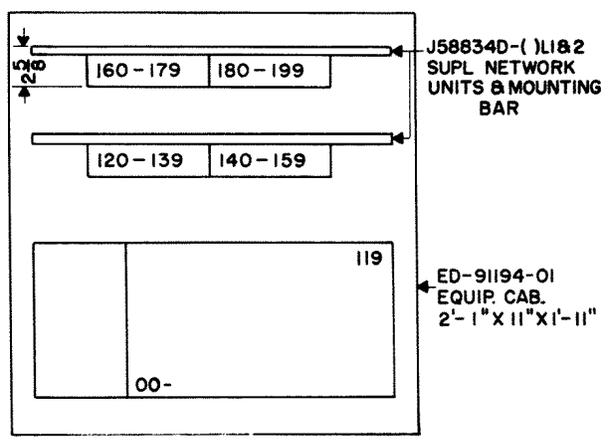
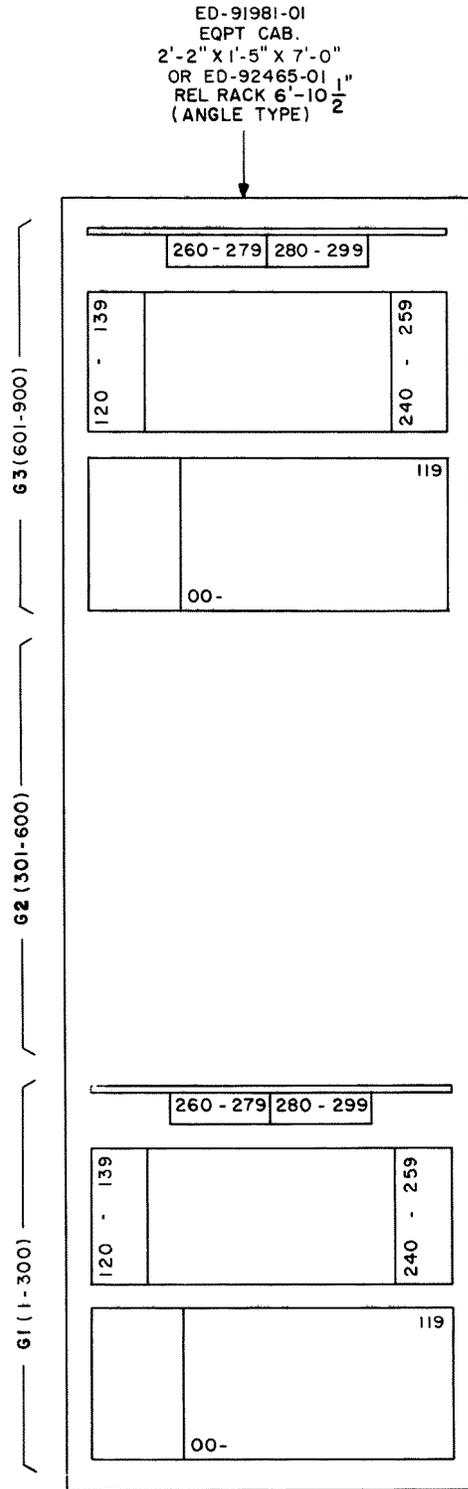


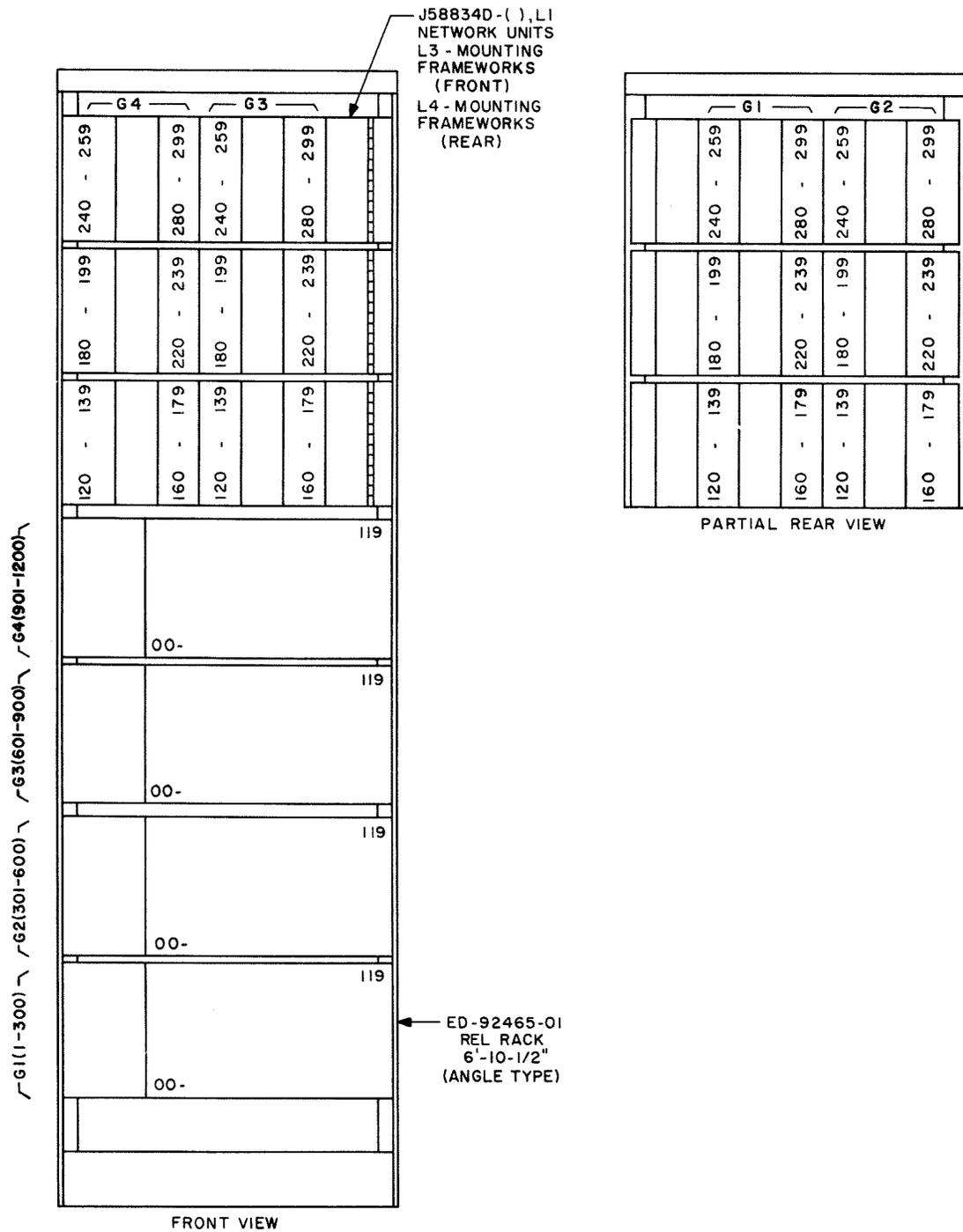
Fig. 24 – Power Supply, Interrupter, and Network Unit – Equipped for 140 to 200 Station Lines



Fig. 26 – Power Supply, Interrupter, and Network Unit – Equipped for 600 Station Lines



**Fig. 27 — Power Supply, Interrupter, and Network Unit
— Equipped for 900 Station Lines**



**Fig. 28 – Power Supply, Interrupter, and Network Unit
– Equipped for 1200 Station Lines**

3. INSTALLATION

3.01 Install the console selected in an approved manner and with reference to Fig. 4 through 22.

3.02 In all cases of desk or tabletop installation of the 300-station cabinet, it shall be fastened to the surface by screws to prevent tilting when the hinged front is opened.

3.03 Station lines assigned for message waiting service are divided into two groups, A and B, to equalize and reduce the load on the rectifier. See Table D. One rectifier and interrupter will supply power for up to 300 station lines. Additional rectifier and interrupter units will be required for each additional group of 300 station lines.

GROUP A STATIONS	GROUP B STATIONS
0 - 19	20 - 39
40 - 59	60 - 79
80 - 99	100 - 119
120 - 139	140 - 159
160 - 179	180 - 199
200 - 219	220 - 239
240 - 259	260 - 279
280 - 299	

3.04 The key and lamp, and the test equipment, may also be mounted in the face of a cord switchboard. Where the PBX panels are 12 inches in width, one set of adapters per ED-66077-50, Group 11 is required for each mounting strip.

3.05 The power supply, interrupter, and network units may be relay rack or cabinet mounted. When relay rack mounted and more than 120 lines are to be terminated, additional mounting bars per J58834D, List 2 are required for mounting additional network units. A 6-plate apparatus cabinet will provide space for the power supply, interrupter, and network units for a maximum of 120 lines.

3.06 Install the power supply, interrupter, and network units, either relay rack or cabinet mounted, in accordance with Fig. 23 through 28. Provide access to a commercial power outlet of 115-volt, 60-cycle ac. See Section 167-400-200.

4. GENERAL CONNECTING INFORMATION

4.01 When the message waiting facility is provided for any manual or dial PBX system, other than the 756A PBX, the station line circuit must be modified in accordance with the SD drawing for that circuit to provide the message waiting option for the L and R leads.

4.02 One copy each of schematic drawing SD-65784-01 and associated wiring diagrams T-65784- () shall be ordered for each installation.

4.03 Message waiting connecting information for the 756A PBX is contained in Section 551-110-210.

4.04 Inside wiring cable may be used for connecting small systems; however, in larger applications consideration should be given to the use of switchboard cable as covered in T-65784.

4.05 Fig. 29 shows a typical wiring arrangement for 80 station lines. Where additional consoles or cabinets are required, see T-65784 for method of providing multiple to succeeding console or cabinet.

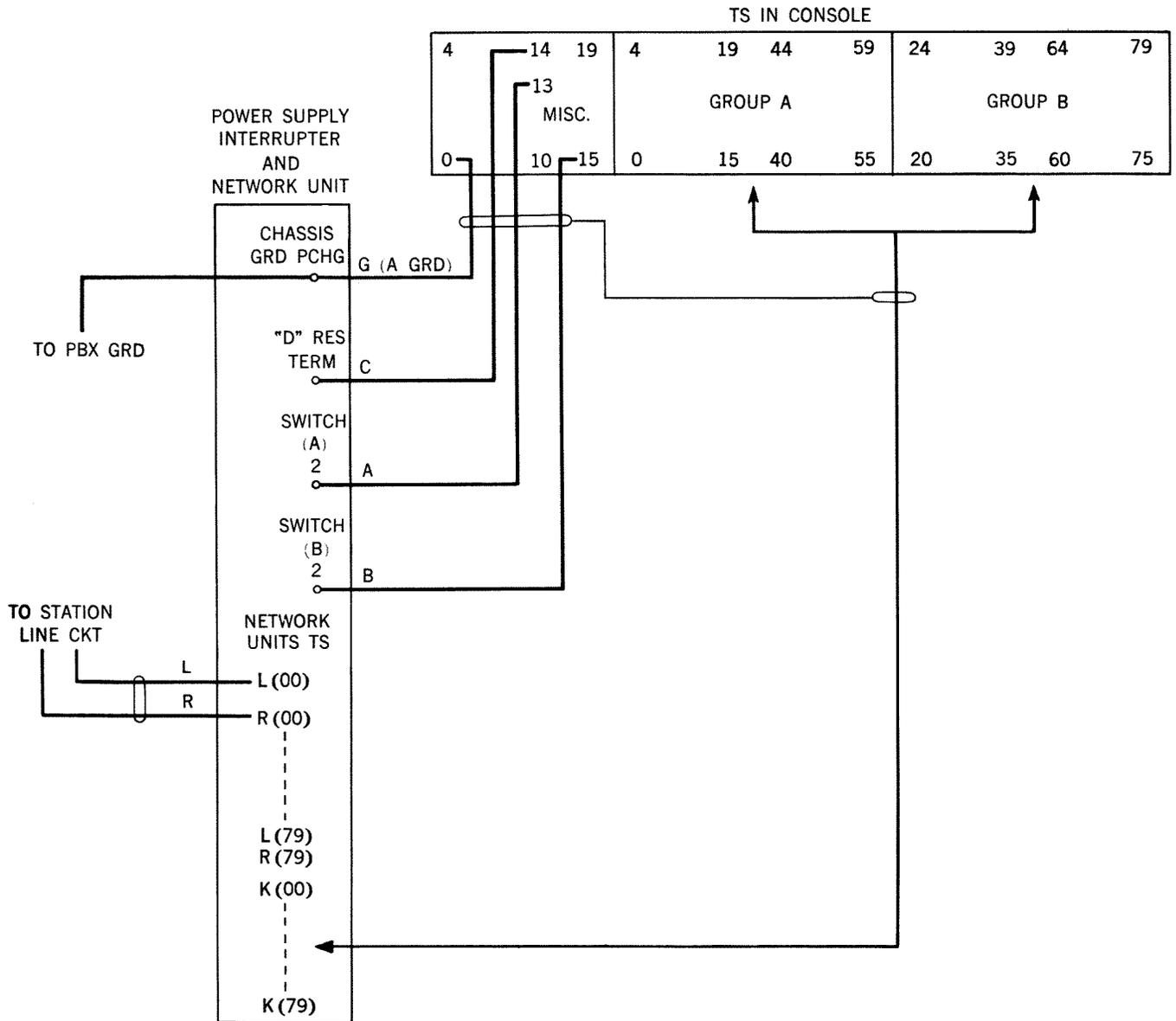


Fig. 29 – Typical Wiring Arrangement for 80 Station Lines