SWITCHING SYSTEM NO. 400

INSTALLATION

1.00 GENERAL

1.01 This section covers the general requirements and methods to be followed in the installation of switching system No. 400.

1.02 For connecting information see section entitled Switching System No. 400, Connections and Maintenance.

2.00 TOOLS

In addition to standard tools required for installation work, the following tools or their equivalent are required:

- R-1257 adjustable bench level.
- R-2384 30-inch pinch bar.
- 19/32-inch wrench for removing nut holding L-shaped steel bracket attached to top front and bottom front of each slide.

3.00 PLANNING

3.01 Fig. 1 shows floor space requirements for the cabinet and required maintenance space.

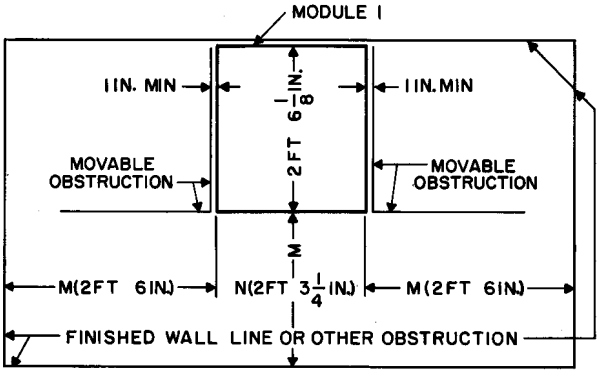
3.02 Inspect location and surrounding area in which the customer desires equipment.

3.03 Location should meet the following general requirements:

- Floor strong enough to support cabinet.
  - (1) Cabinet equipped with 20 lines weighs 740 pounds, and with 40 lines, 820 pounds.
- Accessible without difficulty.
  - (1) Dimensions of cabinet in crate are as follows: 40-1/2 inches deep, 35-1/2 inches wide, and 72 inches high.
- Dry and reasonably clean.
- Reasonably well lighted.

3.04 Avoid locations:

- Near windows, skylights, etc, where rain might enter.
- Near sweating water pipes, steam pipes, sprinkler systems, etc.
- Subject to extreme heat or cold.
- Near a hoist, stairway, trap door, pit, moving machinery, etc.
- In passageways used by trucks or other locations where traffic is heavy.
- Where oil mist from machinery, dust, corrosive fumes, exhaust from steam vents, etc, are present.
- Subject to excessive vibration due to operation of machinery or other causes.



NOTE 1: DIMENSION M IS AREA NEEDED DURING MAINTENANCE VISITS AND SHOULD NOT BE LESS THAN 2FEET 6INCHES.

NOTE 2: HEIGHT 5FEET 3-5/8INCHES, WITH TOP FULLY OPENED 7FEET 8-1/2INCHES.

Fig. 1 - Floor Space Requirements

3.05 Customer should provide commercial power wiring as follows:

- 105- to 125-volt 60-cycle ac service on a separate 15-amp fuse not controlled by a switch.
- 3-wire circuit with third wire grounded in distribution cabinet.
- Hubbell No. 5261 (3-wire) or equivalent receptacle.
- Receptacle should be located adjacent to cabinet and in a position readily accessible for removal of plug for maintenance purposes. (Locate receptacle at a height above normal to prevent accidental removal of power cord plug.) Where local regulations permit, an ES-528772 cord clamp bracket together with a Tinnerman cord clamp of proper size may be used to prevent accidental removal of power cord plug.

4.00 INSTALLATION OF CABINET

4.01 Uncrate cabinet as near as possible to its final location.

4.02 Level cabinet and if necessary, shim the base with hardwood or metal shims. Use a sufficient number of shims to ensure equal weight distribution at base.

4.03 To prevent damage to slides in shipping, a 2-inch-wide L-shaped steel bracket is attached to top and bottom front of the supporting framework of each slide. These brackets must be removed before slide can be opened. To remove bracket proceed as follows:

- Remove front panel.
- Remove 19/32-inch hex nut and washer holding bracket, see Fig. 2.

Remove bracket.

Avoid dropping nut, washer, or bracket inside equipment.

Turn bracket over (flange facing right) and remount for future shipping use. See Fig. 3.

4.04 To open a slide, the latch located at the top front edge must be released. Only one slide can be opened at a time.

4.05 Ground for the cabinet is normally furnished by the third wire in power cord. However, to ensure that the cabinet remains grounded should power cord be removed, a local ground must be provided. Connect a 14-gauge wire or equivalent from an approved ground to ground connector located in right front of crown.

4.06 To gain access to crown, raise hinged top cover and engage brace.

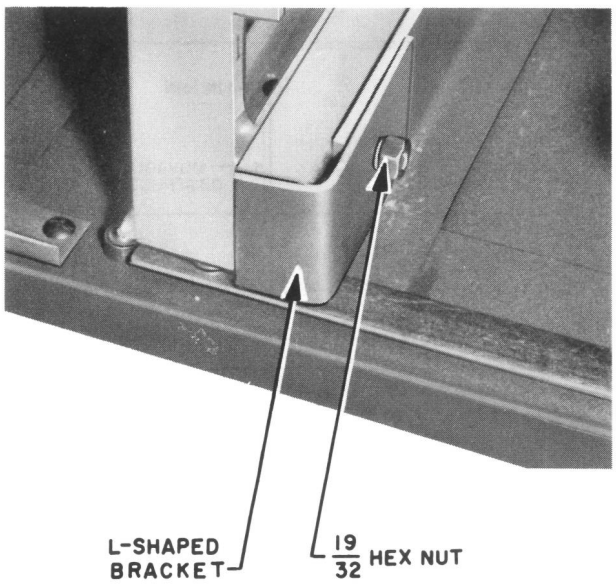


Fig. 2 - Bottom Bracket Holding Slide

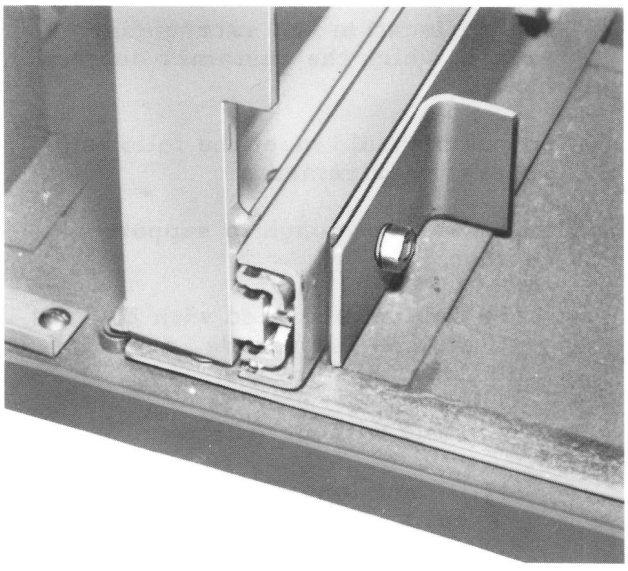


Fig. 3 - Position of Bracket for Future Shipping Use

5.00 CABLING AND WIRING

5.01 Place station cable and wire in accordance with existing practices.

5.02 Cables and wires enter cabinet at top rear, left or right. Wiring should be dressed along sides to the front and then to right or left side of appropriate connecting block.

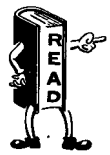
5.03 Raise hinged bracket holding connecting blocks and engage braces.

5.04 Use 714A tool to terminate wires in clips.

6.00 GENERAL INFORMATION FOR INITIAL INSTALLATION

6.01 All options for following equipment are shop wired:

- Universal line units.
- Add-on line units.
- Key telephone units.
- Auxiliary register unit for Direct Station Selection (DSS).
- Alarm Circuit



Only when placing these units in service do options not required have to be removed; see section entitled Switching System No. 400 Connections and Maintenance for specific equipment.

6.02 All station lines must be strapped for assigned or unassigned service.

6.03 Tens digits 4 to 0 are wired to busy-tone trunks. These digits are assigned for the following:

- 4 and 5 for station lines 40-49 and 50-59.
- 6, 7, and 8 for universal lines 6, 7, and 8.
- 9 and 0 unassigned.

To remove these digits from the busy condition, see section entitled Switching System No. 400, Connections and Maintenance, Line, Link, and Connector Units and Universal Lines.

6.04 All fuses are provided in fuse panel. Remove fuse and replace with dummy fuse in all unused circuits.

7.00 INSTALLATION OF AUXILIARY EQUIPMENT IN CABINET ASSEMBLY

Line, Link, and Connector Units

7.01 Mount line, link, and connector unit for station line group 40-49 on mounting spaces 1 through 6 of slide 1 with four mounting screws provided.

> Note: If mounting space 6 is occupied by a DSS unit, remove DSS unit and install in an external cabinet.

Attach shop-wired connectors 1, 2, and 3 to plugs 1, 2, and 3 located on left of switch as viewed from the rear. This connects line, link, and connector unit into the system and extends the necessary leads to the terminal field in crown.

7.02 Stamp designations on line, link, and connector unit as shown in Fig. 4.

7.03 Mount line, link, and connector unit for station line group 50-59, on mounting spaces 7 through 12 and stamp designations as covered in 7.01 and 7.02, respectively.

> Note: When this unit is added, all DSS units must be installed in an external cabinet.

Auxiliary Register and Relay Units for DSS

List 1 Cabinet Assembly

7.04 The list 1 cabinet assembly is not equipped with internal wiring or connecting blocks in crown for internal mounting of J53035BC, List 1 auxiliary relay units associated with direct station selection. These units should be mounted externally.

7.05 The J53035CB, List 1 auxiliary register unit, however, must be mounted in slide No. 2, mounting space 10, if DSS is desired. Local cabling is provided to wire the unit into the system and extend the necessary leads to externally mounted auxiliary relay units via DSS register connecting block in crown of cabinet.

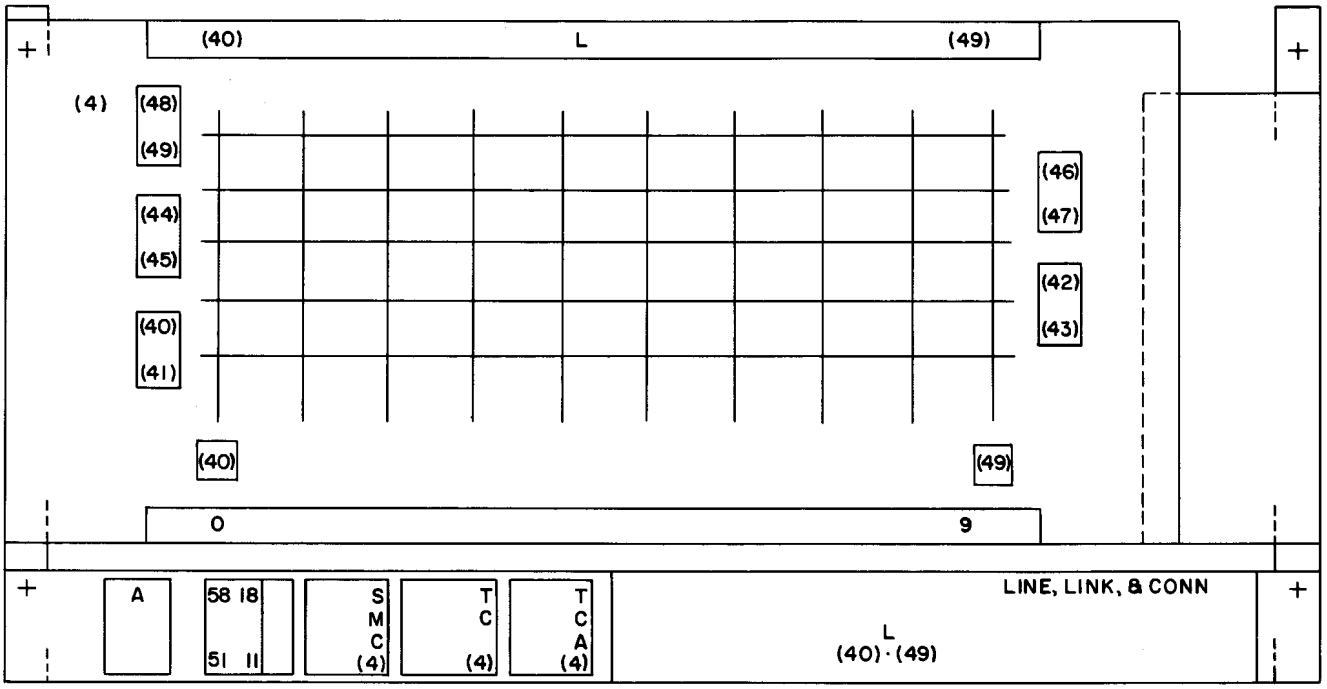


Fig. 4 - Line, Link, and Connector Unit Designation

7.06 A J53035BC, List 2 plug-in diode assembly must be ordered separately for each station line arranged for DSS. Plug assembly into appropriate jack on auxiliary relay unit.

7.07 Stamp number designations on relays K and SC and mounting plate of auxiliary relay units as shown in Fig. 5.

List 2 Cabinet Assembly

7.08 The list 2 cabinet assembly comes equipped and wired with the following:

- J53035CB, List 1 auxiliary register unit mounted in slide No. 2, mounting space 10.
- Two J53035BC, List 1 auxiliary relay units (four circuits per unit) equipped with eight J53035BC, List 2 plug-in diode assemblies mounted in slide No. 1 mounting spaces 15 through 12.
- Connecting blocks in crown for terminating 20 DSS stations.
- Local wiring for three additional auxiliary relay units.

7.09 Mount additional auxiliary relay units in slide No. 1 on mounting spaces 11 through 6 as required.

Note: If station line group 40-49 is provided, the auxiliary relay unit normally mounted on spaces 7 and 6 must be installed in an external cabinet. If

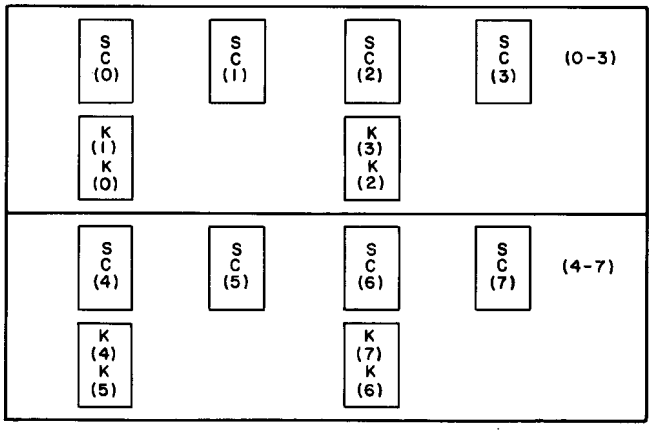


Fig. 5 - Auxiliary Relay Unit Designations

station line group 50-59 is provided, all auxiliary relay units must be externally mounted.

7.10 A J53035BC, List 2 plug-in diode assembly must be ordered separately for each additional station line arranged for DSS. Plug assembly into appropriate jack on auxiliary relay unit.

7.11 Stamp number designations on relays K and SC and right side of mounting plates in numerical order using units (0-3) and (4-7) as a guide.

Add-on Line Units

7.12 Two J53035CF, List 1 add-on line units are furnished and wired with list 1 and list 2 cabinet assemblies. Units are mounted in slide No. 2 on mounting spaces 6 and 5.

7.13 Four additional units may be mounted in slide No. 2 on mounting spaces 4 through 1 as required. Local wiring is provided to extend the necessary leads to the telephone sets via connecting blocks in crown of cabinet.

Note: Mounting spaces 4 through 1 can also be used for strip-mounted key telephone units (see 7.15). When add-on requirements exceed the available space within the cabinet, panel-mounted key telephone units coded 249A and 250A must be ordered and mounted in an external cabinet. Two 249A and one 250A key telephone units are the equivalent of a J53035CF, List 1 add-on line unit.

7.14 Stamp number designation on additional J53035CF, List 1 add-on line units in numerical order using units 0 and 1 as a guide.

Key Telephone Units

7.15 Four strip-mounted J53035CG, List 1 key telephone units (three line circuits per unit) may be mounted in slide No. 2 on mounting spaces 1 through 4. (See Fig. 5.) Local wiring is provided to extend necessary leads to telephone sets via connecting blocks in crown of cabinet.

Note: If mounting spaces 1 through 4 are occupied by add-on line units, standard panel-mounted 1A1 key telephone units must be ordered and installed in an external cabinet.

7.16 Stamp number designations on H relays and designation strips as shown in Fig. 6.

8.00 INSTALLATION OF AUXILIARY EQUIPMENT IN EXTERNAL CABINET

8.01 Due to space limitations within the cabinet provided with switching system No. 400, the following equipment may be mounted externally when necessary:

- Auxiliary relay units for DSS, strip-mounted on 4-inch by 23-inch mounting plates.
- Add-on line units, panel-mounted, 24-volt version of strip-mounted unit supplied with system.
- Key telephone units, standard panel-mounted units.
- Two-way tie trunk units.
- 3A code call.
- Telephone dictation trunk units.

8.02 Equipment cabinets for housing the units are covered in section entitled Equipment Cabinets and Apparatus Mountings, Identification.

9.00 TESTS

Table A lists the tests to be made before system is turned over to customer for use.

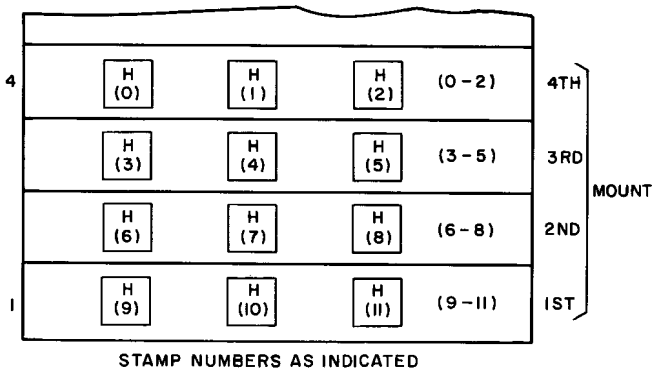


Fig. 6 - Key Telephone Unit Designations

TABLE A

INSTALLATION TESTS

Circuits	Section Number	Required Tests
Alarm	C71.861.10	All
Key Telephone Units and Add-On Units	C71.861.11	All
Line, Link, and Marker	C71.861.12	All
Dial Pulse Register	C71.861.14	C and F
Busy-Tone Trunk	C71.861.15	All

10.00 INSPECTIONS

10.01 The completed installation shall be in accordance with all job information and practices covering equipment installed.

10.02 Spare fuses, tools, lamps, and test leads for maintenance use should be stored in the equipment on the shelf provided in slide 2.

10.03 The SD drawings, CD sheets, and any connecting records prepared should be stored in the crown of the equipment cabinet.