

**BOOTHS — INDOOR**  
**5, 6, 10, AND 11 TYPES**  
**INSTALLATION OF**  
**LIGHT FIXTURES, VENTILATOR, AND BLOWER**

**1.00 INTRODUCTION**

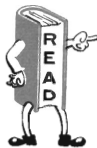
**1.01** This section provides information for installation of electric service wires, light fixtures, ventilator, and blower.

- Power cable or interconnecting cable. (Power cable when provided on booths is equipped with a plug for attachment to the electric outlet.)

- Cutout switches, if desired.

**Note:** Rubber-covered cables other than No. 18 high-temperature blower cable should not be used with the 4-type fixture.

**2.00 INSTALLATION OF ELECTRIC SERVICE WIRES**



*Under no circumstances shall any makeshift or temporary electrical connections be made for booth lighting equipment.*

*Work in connection with the installation of electric service wires, or extension of such wiring, should be provided for by the public telephone agent, and must be in accordance with local regulations and conform to the National Electrical Code.*

**2.01** A ground wire may be run from a suitable building ground when the electric service for booths is supplied by service wires connected to knob and tube wiring. *Do not use telephone signaling ground for this purpose.*

**2.02** Each booth shall be equipped with:

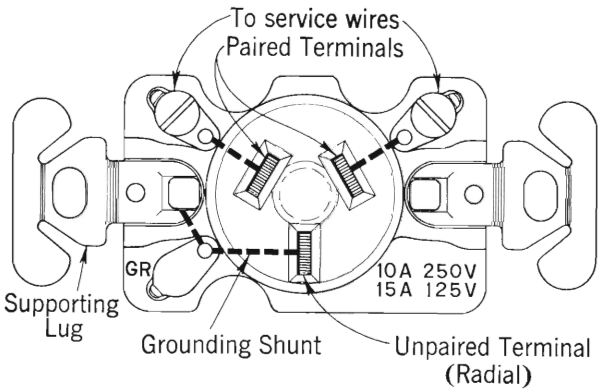
- Light fixture.

**2.03** Before connecting the power cable of telephone booths equipped with a KS-14125 blower to the power supply receptacle:

- Remove the retaining block (if used for shipping purposes) from the upper end of the blower.
- Replace and tighten wing nuts on the blower after removing the retaining block.
- Check blower before power is connected.
- Store blocks as covered in 9.02.

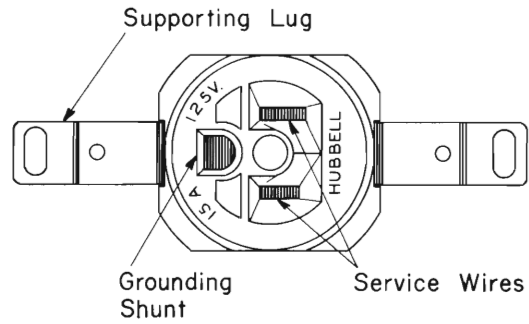
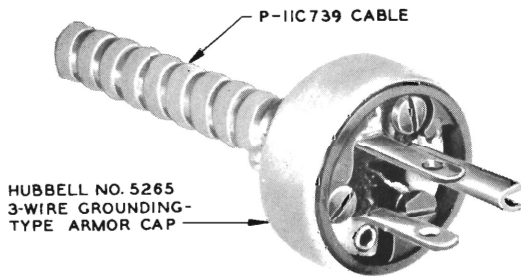
**Power Receptacles**

**2.04** Receptacles shall be located 87 inches above the floor and within a radius of 24 inches from either upper rear corner. In multiple installations, the receptacle shall be installed near the end which is most practicable.



◀ Fig. 1 — 3-wire Flush-type Receptacle with Grounding Shunt

▶ Fig. 2 — 3-wire Grounding-type Convenience Outlet, Hubbell No. 5261



◀ Fig. 3 — 3-wire Grounding-type Armor Cap, Hubbell No. 5265

FOR 4-TYPE FIXTURE USE CABLE P-349649 OR P-IIC739, FOR 1-OR 3-TYPE FIXTURE USE P-370288, P-349649, OR P-IIC739

CAP 5265 OR HUBBELL 73096, OR APPROVED EQUIVALENT, INSERT CAP IN RECEPTACLE

STOW EXCESS CABLE IN CEILING

STATION GROUND CLAMP

END PANEL OR SEPARATOR

CABLE TO NEXT BOOTH OR DIRECTORY LIGHT

FASTENERS

FASTENER

TO BLOWER

KS-14125 BLOWER

ATTACH TERM. UNDER LOCK WASHER & WING NUT

P-12C414 GROUNDING WIRE ASSEMBLY

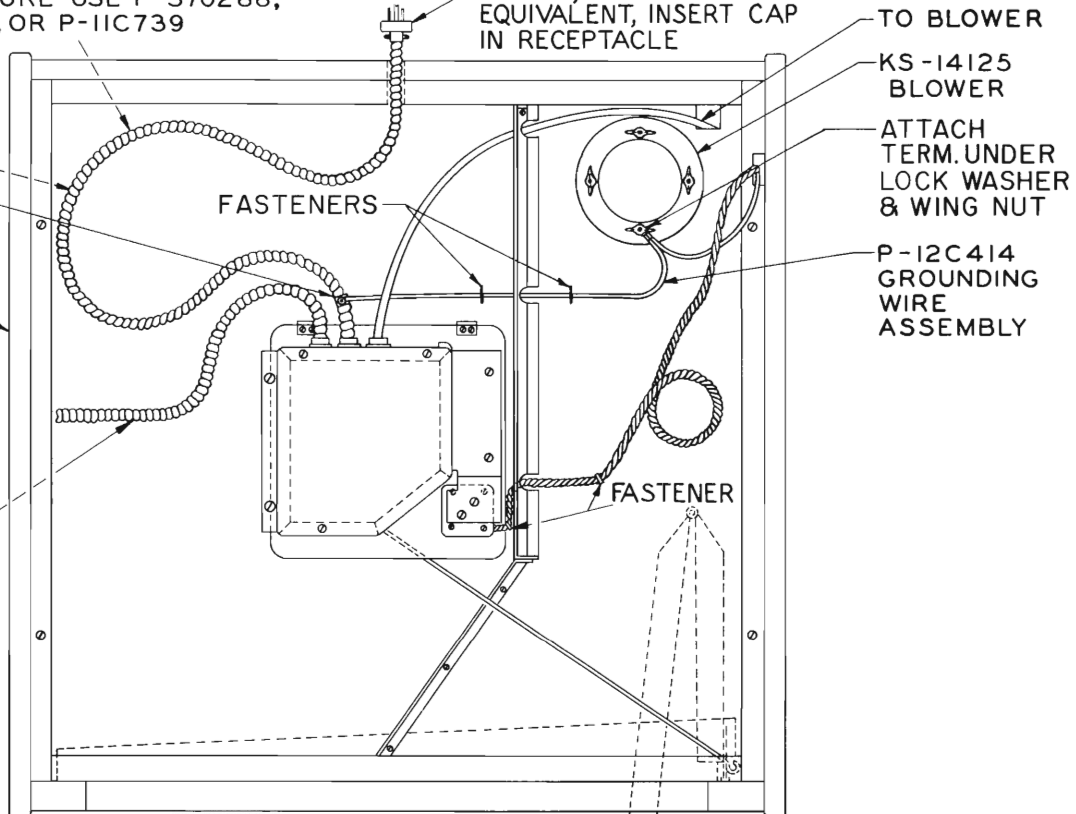


Fig. 4 — Typical Installation for 3-way Receptacle

**3-wire Receptable and Attachment Plug**

**2.05** The Hubbell No. 7189, 3-way flush-type plug receptacle, or its approved equivalent, is grounded by a shunt from the unpaired terminal to the outlet box through the supporting lugs as shown in Fig. 1.

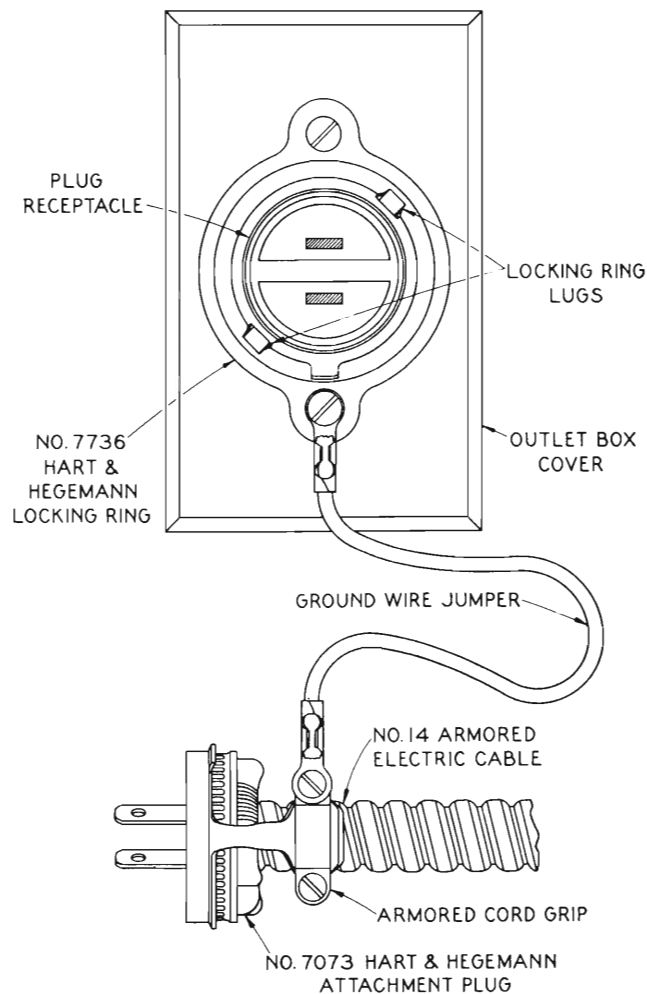
**2.06** With a 3-wire grounding-type convenience outlet such as the Hubbell No. 5261 (see Fig. 2), use a P-11C739 cable which is equipped with a Hubbell No. 5265, 3-wire grounding-type armor cap (see Fig. 3).

**2.07** Use the 2-conductor armored flexible cable, or approved equivalent, to connect the 3-way receptacle and the booth lighting equipment (Fig. 4).

**2-wire Receptacle and Attachment Plug**

**2.08** A parallel blade, single not duplex, flush-type receptacle for 2-wire attachment plugs should be provided. Grounding is accomplished by terminating the ground wire jumper attached to the armor of the cable under one of the attachment screws of the locking ring as shown in Fig. 5.

**2.09** Connection between the 2-wire receptacle and the booth lighting equipment is made with a 2-conductor armored flexible cable, the plug end of which is secured in the receptacle by means of a locking ring and locking-type plug as shown in Fig. 5 and 6.



**Fig. 5 — 2-wire Receptacle and Plug**

**2.10** To install the booth armored cable assembly:

- Remove the screws in the receptacle cover-plate.
- Attach the locking rings to the receptacle with the two longer screws furnished with the ring.
- Remove and substitute the screws, one at a time.
- Terminate the ground wire jumper under one of the screws.

**2.11** Use an interconnecting cable P-349647 to connect lighting equipment in booths at multiple installations. One receptacle may be used to supply not more than ten booths; however, local regulations may require an additional plug receptacle when more than six booths are in an installation.

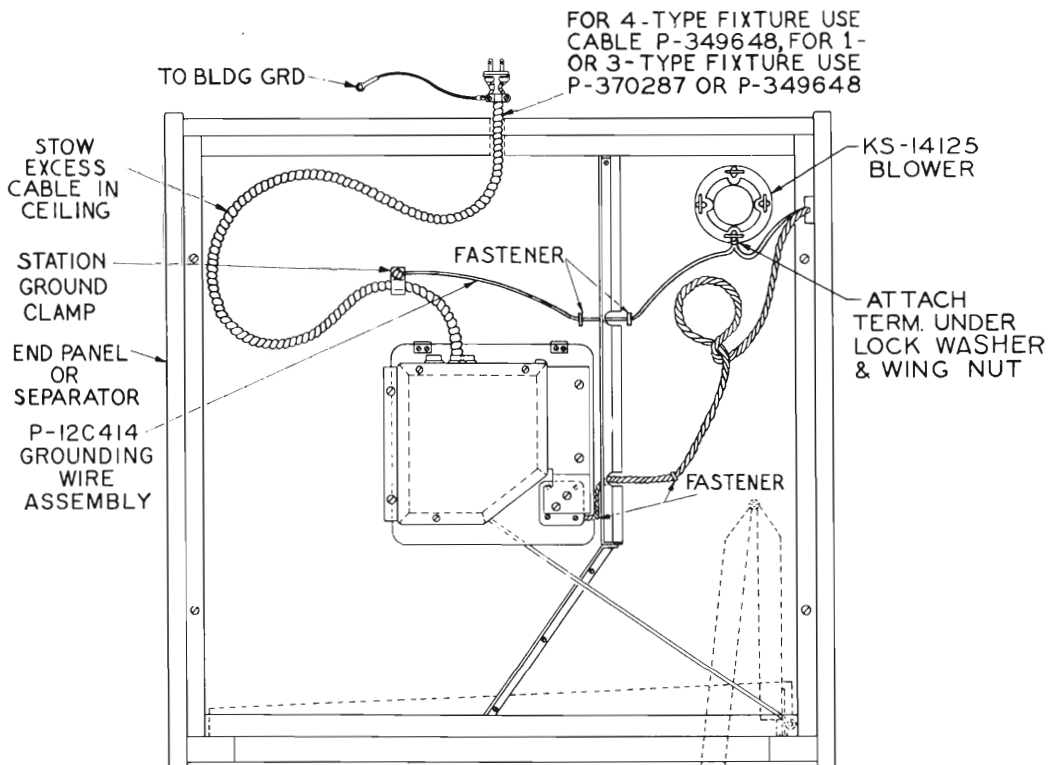
**2.12** After observing instructions in 2.03, insert plug into receptacle. Test for polarity as outlined in 5.00.

**2.13** Plug receptacle arrangements provide a ready means for opening the lighting circuit, which should be done whenever working on booth or directory lighting. A cutout switch shall be considered for built-in booths, or where it is desirable to arrange one or a group of booths under control of a switch which can be operated from inside the booth.

**Booth Cutout Switch**

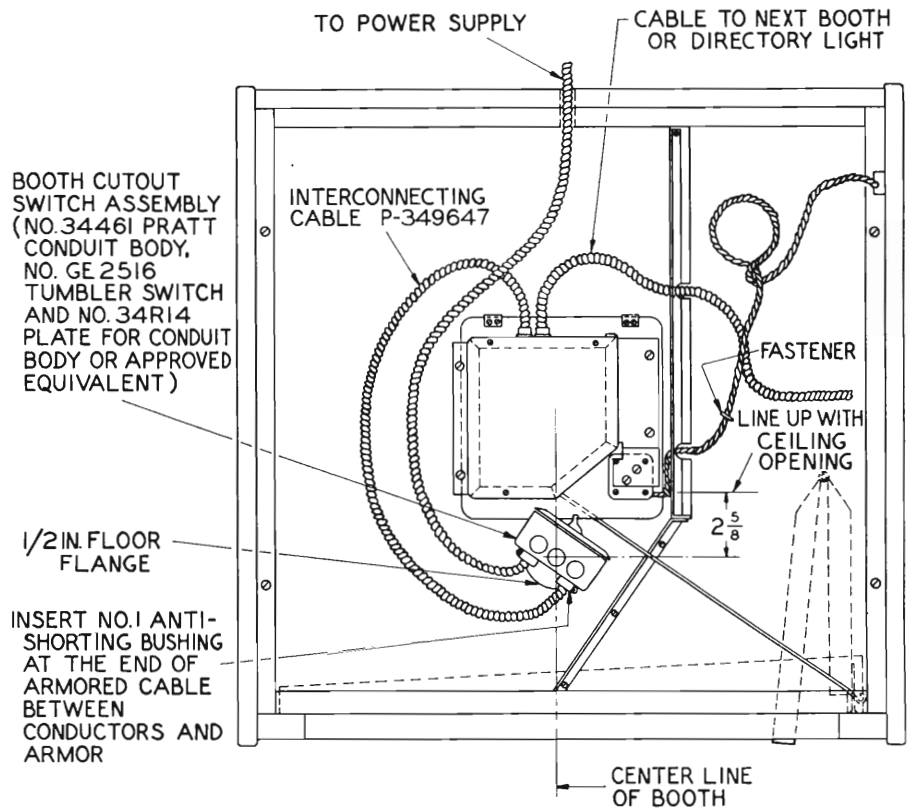
**2.14** To install a booth cutout switch (Fig. 7) :

- Fasten a 1/2-inch floor flange to the top of the ceiling.
- Fasten the switch box to it by means of a chase nipple through the middle knockout hole in the box.
- Mount toggle of switch so that it will be accessible from within booth through opened light fixture.



**Fig. 6 – Typical 2-wire Cable Arrangement**

**2.15** A P-349715, 16-inch, low-temperature booth cable may be used instead of P-349647 cable when a booth is equipped with a 3-type light fixture. Therefore, the switch can be placed immediately to the right of the fixture, instead of to the front, to make the toggle switch accessible from within the booth.

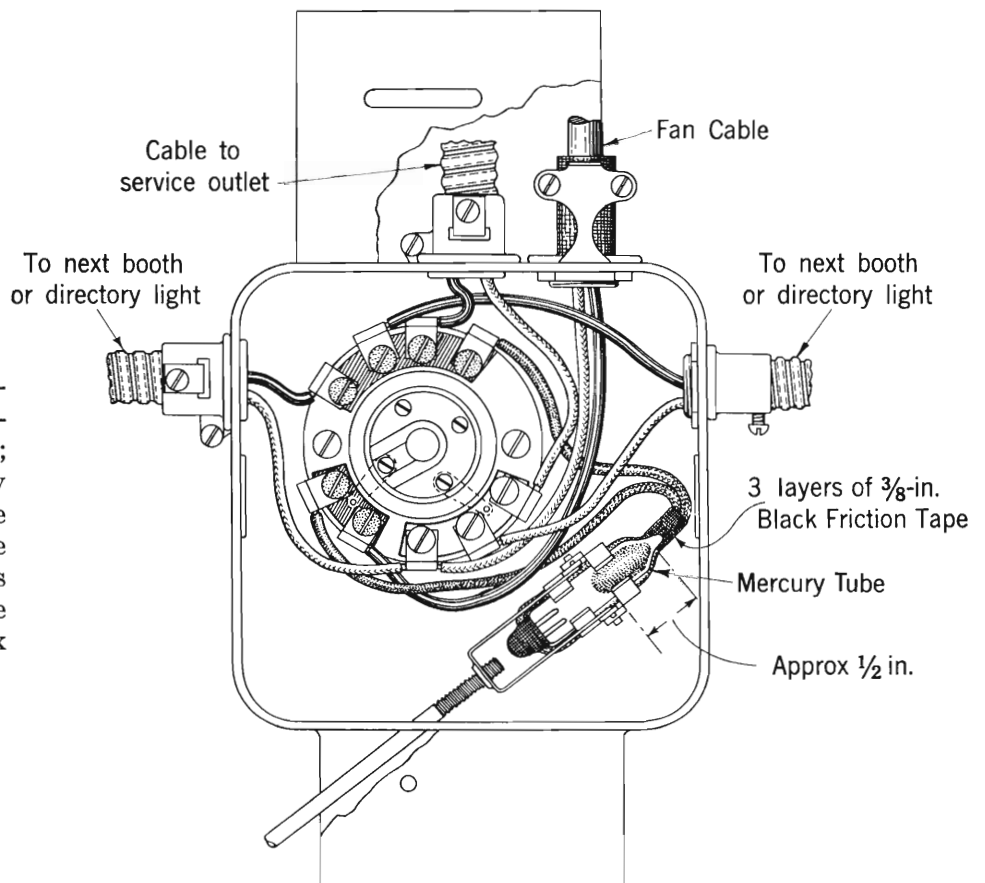


**Fig. 7 — Typical Cutout Switch Installation with 4-type Light Fixture**

**3.00 CABLE CONNECTIONS AT LIGHT FIXTURES**

**3-type Light Fixture**

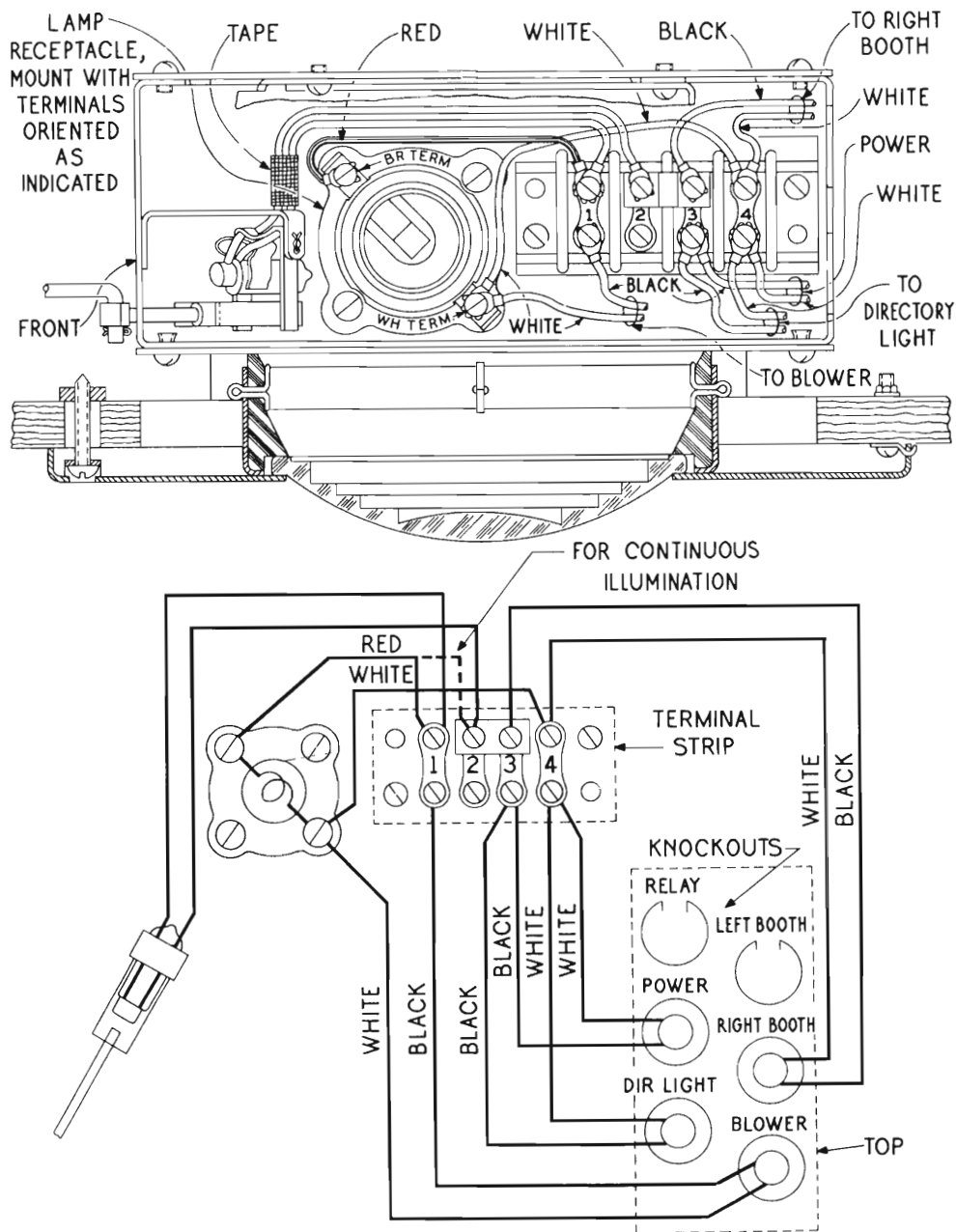
**3.01** At the 3-type light fixture, make cable connections as shown in Fig. 8; connect each cable shown only when required. When 3-wire cable P-370288 is used, the ground conductor (green) is automatically grounded to the fixture through its box connection.



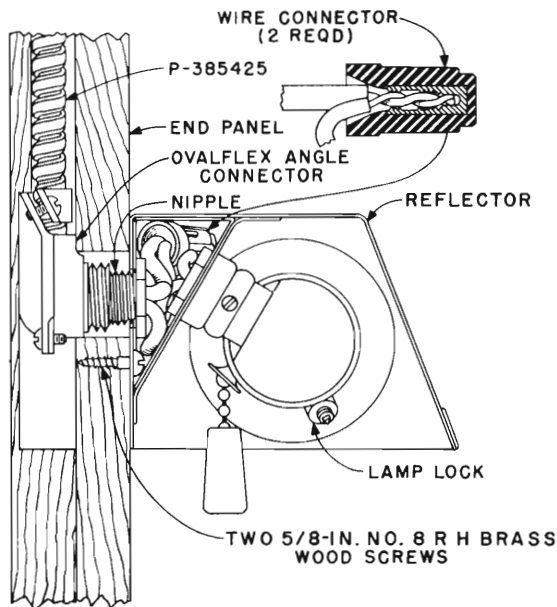
**Fig. 8 — 3A Light Fixture Viewed from Within the Booth**

**4-type Light Fixture**

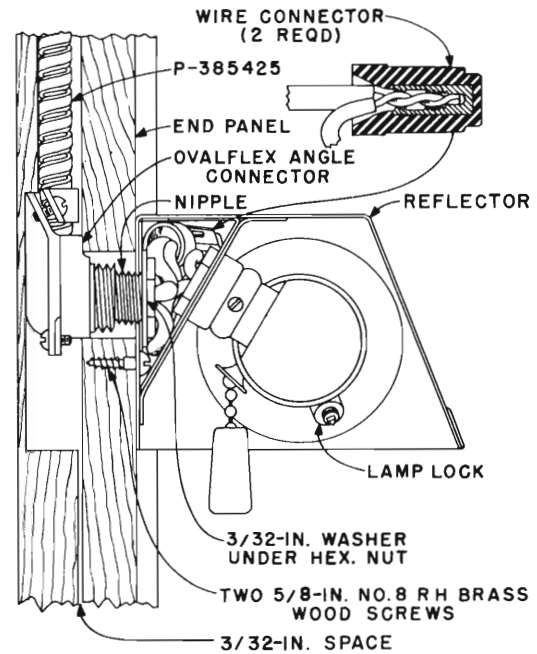
**3.02** At the 4-type light fixture, make connections as shown in Fig. 9. Connect each cable shown only when required. Spade terminals shall be inserted squarely and to their full depth into the slot to provide maximum separation between terminals. The lamp is under control of the booth door. To obtain continuous illumination in the booth, connect red strap lead from lamp socket to terminal 2 instead of terminal 1 on the light fixture terminal strip.



**Fig. 9 - 4A Light Fixture for Four Cables**



On 6-type Panel



On 51-type Panel

Fig. 10 — Installation of 2-type Light Fixture

#### 4.00 INSTALLATION OF 2-TYPE LIGHT FIXTURE

**4.01** When called for on an order, the booth will be delivered wired for a directory light, but the light and shelf are added in the field to avoid damage in transportation. Do not install a directory light without installing a directory shelf under it.



*Before starting to connect any electrical wiring, be sure the power cable is pulled out of the power receptacle or the power shut off by throwing the toggle switch if the booth is so equipped.*

**4.02** To install a 2-type light fixture at existing installations:

- For 2B fixture, drill a 1-inch hole to accommodate ovalflex angle connector as shown in Fig. 10.
- For 2D fixture, follow instructions in Fig. 11.

1. Remove end panel for drilling and cutting.

2. Cut a hole large enough to permit passage of the plug and 90-degree connector attached to the cable.

- Make connections to the booth lamp receptacle as shown in Fig. 8 or 9.

**4.03** The 61-type end panel has an inconspicuous center punch mark approximately 1/16 inch in diameter located on the center line of the panel 60-5/16 inches above the bottom edge to indicate the proper spot for drilling the mounting hole for the directory light fixture.

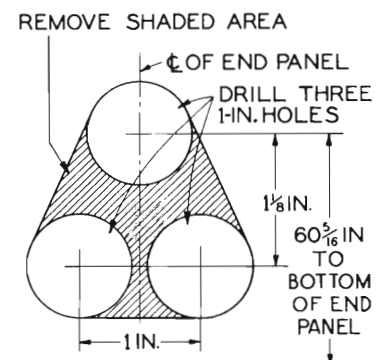


Fig. 11 — Hole for 2D Fixture

## 5.00 TESTING POLARITY OF BOOTH LIGHTING EQUIPMENT

### Testing Polarity

5.01 In testing polarity:

- Use a locally approved neon testing device to satisfactorily determine which is the ungrounded wire.
- Terminate the line side of the circuit (black wire) on the center contact of each lamp socket.
- Terminate the grounded side of the circuit (white wire) on the shell or fixture of each lamp socket. This is very important in the case of directory lights.

5.02 Make polarity tests as follows:

1. Check the lamp socket where the booth wiring is brought in to be sure the line side of the wire is connected to the brass-colored terminal of the receptacle, and the grounded wire is connected to the other terminal.
2. Check all other lamp sockets to ensure that the polarity is continuous throughout the booth wiring and that the ground has been continued to all the cable armor.

### Correcting Polarity

5.03 Polarity of booth lighting shall be corrected at the point of reversal.

5.04 To correct the polarity of a lighting circuit fed from a 2-wire receptacle, reverse the plug in the receptacle.

5.05 Where the polarity is found to be reversed at a 3-wire receptacle, the booth lighting equipment should be left disconnected and arrangements made to have the fault corrected in the building wiring.

## 6.00 BOOTH LIGHTING EQUIPMENT

**THINK** *In all cases when working on the electric wiring, disconnect the booth power cable or open the electric service switch to be positive that the booth lighting circuit is dead.*

If required:

- *Additional lighting fixtures:* When additional lighting fixtures are required at existing locations, the extension of electric service wires shall be arranged for on the same basis as for new installations (see 2.00).
- *Lighting assemblies not of proper type:* When booth lighting assemblies are not of proper type, remove existing assembly and install proper assembly.
- *No booth light provided:* When light fixtures and the associated apparatus are required at an installation where no booth light was provided, install a completely new ceiling assembly with associated switch-operating parts and cables.

## 7.00 GROUNDING WIRE ASSEMBLY

7.01 The P-12C414 grounding wire assembly, Fig. 12, is provided for attachment to KS-8164 ventilator or KS-14125 blower and coin collector.

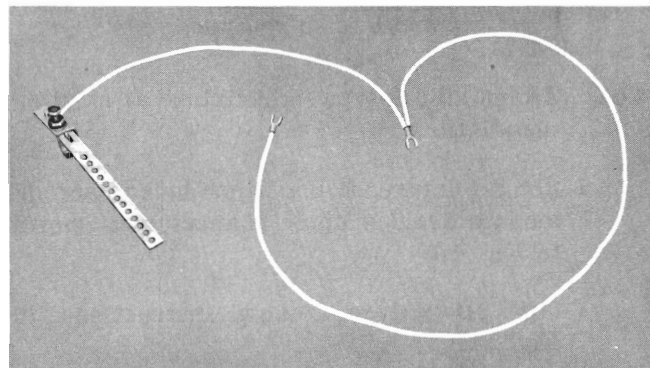


Fig. 12 — Grounding Wire Assembly



**7.02** The purpose of the grounding wire assembly is to prevent exposing customers to electric shock from defective current-carrying ventilator, blower, or coin collector mounted in a booth.

**7.03** Grounding arrangement consists of connecting grounding wire assembly from the outside-grounded BX armored power cable at the top of the booth to ventilator or blower and to housing ground screw on coin collector.

### 8.00 INSTALLATION OF VENTILATOR

**8.01** Install KS-8164 ventilator in 5- and 6-type booths as follows (see Fig. 13):

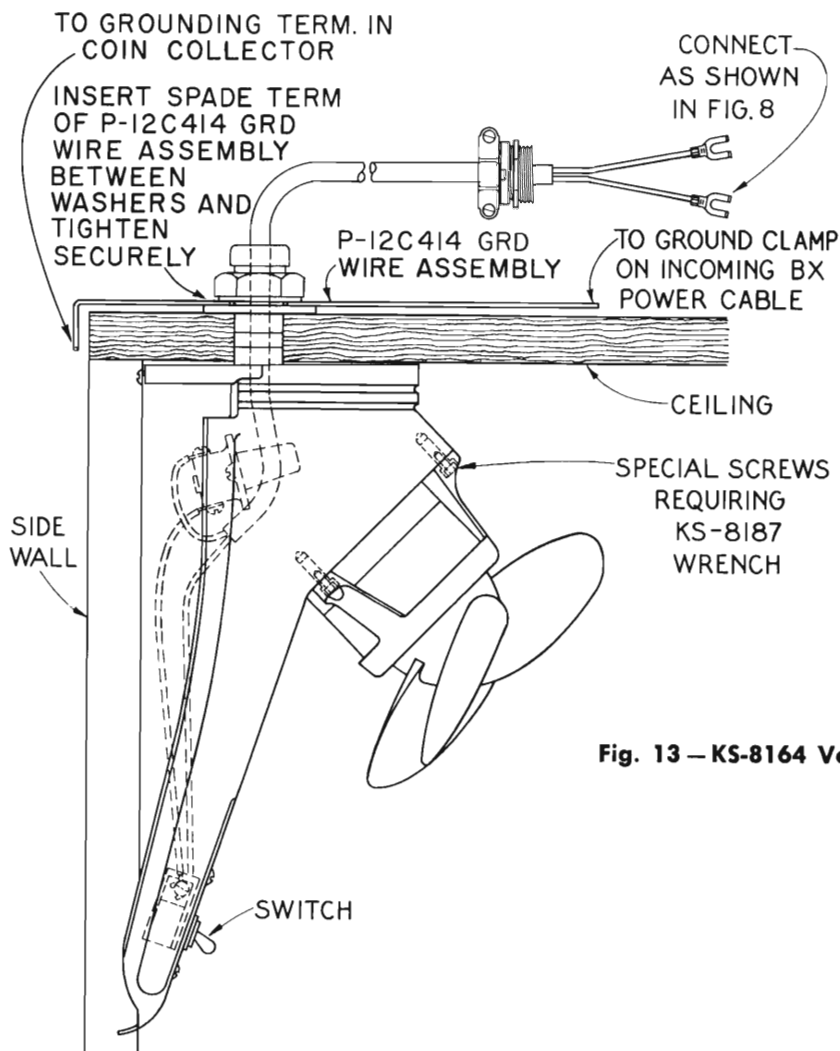
1. If practicable, drill ceiling from inside the booth. Locate 1-inch hole for the KS-8164 ventilator 2-1/16 inches from rear inner

wall and 2-1/16 inches from side inner wall as shown in Fig. 13. If the ceiling is metal-lined, cut through the metal with a 1-inch hole saw; then drill the wood with a 1-inch auger bit.



*Wear eye protection when performing above operation.*

- If holes must be drilled from above, locate holes from inside the booth as in Step 1. Then drill through ceiling with a small drill point (smaller than guide screw on auger bit). Using these guide holes, the ceiling may be drilled from above. Be careful not to use too much pressure on the drill towards the completion of the drilling operation, otherwise the under surface of the ceiling will splinter around the hole.



2. Remove pipe bushing, nut, and washer from pipe stem (KS-8164 ventilator) as these parts cannot be passed through the 1-inch hole.
3. Pass ventilator cable upward through the 1-inch hole in ceiling and replace fittings on cable, being sure to replace first, in proper sequence, the washer, nut, and bushing on the KS-8164 ventilator cable.

**Fig. 13 — KS-8164 Ventilator**

**8.02** A KS-8164 ventilator can be installed readily by passing a strong cord or wire downward through the 1-inch hole, tying it to the end of the fan cable, and then pulling the cord or wire while lifting the ventilator upward into place. Then proceed as follows:

1. Put washer, nut, and bushing on cord or wire in proper sequence and tie to door handle.
2. Replace washer and nut on pipe stem projecting through ceiling, keeping hand tight while checking from within booth that the ventilator is in proper position in relation to both walls of the booth.
3. Tighten nut and bushing.
4. Remove cord or wire, and fasten cable and connector at light fixture as shown in Fig. 8.

2. Remove the intake tube of the blower assembly and lower it through the hole provided in the booth ceiling, resting the flange on the top side of the ceiling.
3. Disconnect the 8-inch assembly cable from the 40-inch extension cable by turning the twist-lock connector counterclockwise to release the locking plug from its socket.
4. Form the blower extension cable in the ceiling of the booth so that it rests in the notch of the metal ceiling partition, and drop the socket end of the twist-lock connector through the small opening in the corner of the booth ceiling. Connect the other end of the cable to the light fixture as shown in Fig. 9.



*Ground ventilator by inserting spade terminal of P-12C414 grounding wire assembly between flat washer and lock washer, as shown in Fig. 13.*

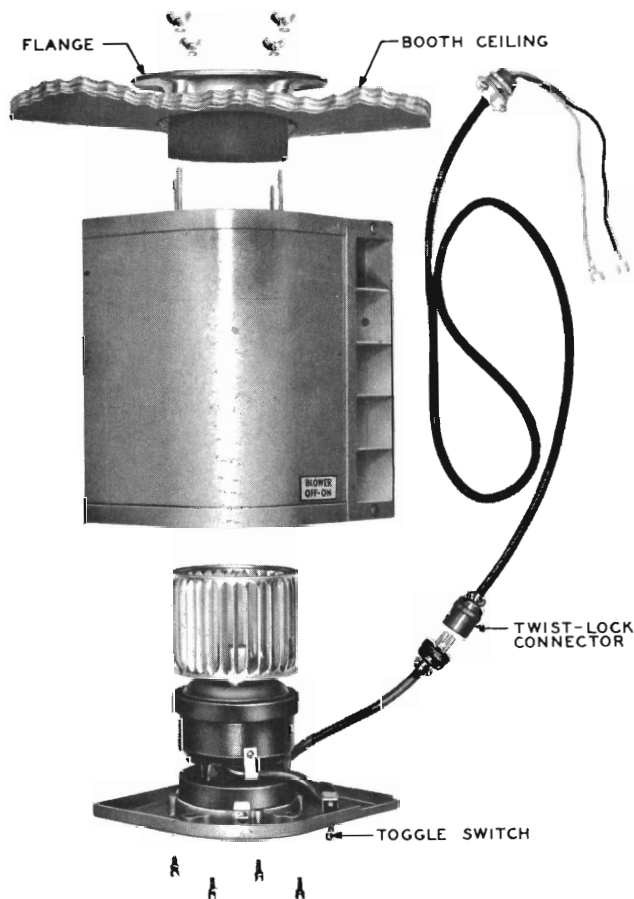
**9.00 INSTALLATION OF BLOWER**

**9.01** The KS-14125 blower is shown in Fig. 14.

**At Locations Where Booth Ceiling is Accessible from Top**

**9.02** With booth roof open, the KS-14125 blower may be installed, where specified, in 10- and 11-type booths as follows:

1. Remove wing nuts from the top of the blower assembly and remove the retaining block. This block will be found in the list 1 and list 2 blowers only. The retaining block shall not be removed from the booth at any time, but shall be stored in the space above the booth ceiling for use when the booth is to be relocated or recovered.



**Fig. 14 — KS-14125 Blower**

5. Remove the four screws which secure the cover at the bottom of the blower with a KS-3187 wrench, and remove the cover and blower motor from the blower housing.
6. Insert the remainder of the assembly into the booth ceiling with the mounting studs extending through the holes provided in the flange and through the top side of the ceiling.
7. Reach one arm through this part of the assembly and secure the lock washers and wing nuts in place.
8. Rest the remainder of the blower assembly on top of the coin collector to bring the plug end of the assembly cable within reach of the twist-lock connector hanging from the ceiling. Insert the plug into the twist-lock connector and lock together by turning clockwise.
9. Work the slack of the blower cable back up into the channel behind the blower housing while raising the assembly into place. Make certain that the excess cable does not interfere with the blower operation by pulling all of the slack into the space between the ceiling and the roof of the booth.
10. Reassemble the motor and cover to the blower framework.

#### At Locations Where Booth Roof Cannot Be Removed

**9.03** Install the KS-14125 blower (where specified) in 10- and 11-type booths as follows:

1. Proceed as covered in 9.02, Step 1.
2. Remove the grill at the top of the front of the booth and pass the intake tube of the blower through the opening and drop into hole in ceiling provided for it.
3. Proceed as covered in 9.02, Step 3.

4. Reach through the ventilator opening and form the blower extension cable in the ceiling of the booth so that it rests in the notch of the metal ceiling partition. Drop the locking plug through the small opening in the corner of the booth ceiling and pass the other end through a knockout in the light fixture box. While holding this cable in place with one hand, with the other hand place the locknut to secure the cable to the box from the underside of the light fixture.
5. Connect the cable from the underside of the light fixture in accordance with Fig. 9.
6. Proceed as covered in 9.02, Steps 5 through 10.



*Ground blower by attaching spade clip of P-12C414 grounding wire assembly under lock washer and wing nut as shown in Fig. 4.*

#### 10.00 FINAL CHECK

Upon completion of every booth installation, a final inspection shall be made as follows:

- Booth must be complete in all parts; clean and free of burrs, sharp edges, projecting nail ends, or screwheads which could present a hazard.
- Ventilator, blower housing, and switch operating rod should be grounded.
- Door must fit properly and operate freely.
- Light and ventilator shall cut out when the door is opened approximately 13 inches. If booth light is controlled by a KS-9786 relay, check operation from attendant's PBX.
- When provided, manual control switches and their associated equipment shall be checked for operation.
- Check blower or ventilator for noise.

