

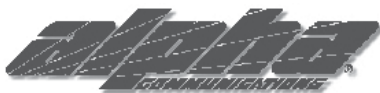


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SECTION D
Rev. 12 - 03/2011

Tek-SAFE™ NC150R Area of Rescue Assistance System

Operation, Installation and Service Manual



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The Tek-Safe™ NC150R Area of Rescue Assistance System provides communication between area of rescue assistance stations (in protected stairwells) and the building lobby. Calls are indicated at the NC150R Master Station by both visual and audible signals. The master station also has sensitive two-way communication to the IR150B, IR150N, IR150SS and IR150SS/S Remote Call Stations. Tek-SAFE™ meets ADA requirements for area of rescue assistance systems (check local codes for additional requirements).

Operation, Installation and Service Manual

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System Operating Instructions

This section provides complete operating instructions for all Tek-SAFE™ functions, as well as reference drawings for use in locating and describing all controls. System operators must read the following operating instructions concerning system equipment and the terms used in conjunction with the equipment.

NC150R Master Station

Refer to *Figure 1* for locations, names and functions of controls and indicators.

Answer a Call:

Normal calls are indicated by simultaneous operation of the following signals: Steady illumination of the associated station selector lamp which is marked to indicate call origin, steady illumination of call lamp, and slowly pulsing audible tone.

To establish conversation with the calling station, press the associated station selector button. The remote station's in use LED will illuminate. To speak to the caller, press the **TALK** button while speaking and release to listen.

When the conversation is complete, press the associated station selector button to release the station. The remote station's in use LED will turn off.

Call a Remote Call Station:

Locate the station selector button associated with the station to be called. Press that selector button to establish a conversation path. The remote call station's in use LED will illuminate. To produce an announcing tone at the remote call station, press the **TALK** and **CALL** buttons simultaneously. Press the **TALK** button while speaking, and release to listen. The remote area may be monitored by selecting the remote station and releasing the **TALK** button.

When conversation or monitoring is complete, press the station selector button to release it. The remote station's in use LED will turn off.

Test Station Selector Lamps:

Press **TEST** button. All station selector lamps should illuminate.

Improper Operation:

If the NC150R Master Station fails to operate as described, contact qualified maintenance personnel. There are no user replaceable parts on the NC150R Master Stations other than the station selector lamps.

IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations

Refer to *Figure 1* for locations, names and functions of controls and indicators.

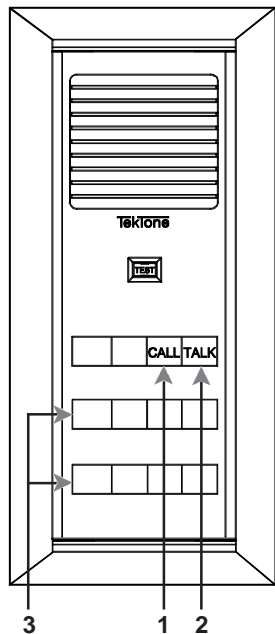
Call the NC150R Master Station: Press the **CALL** button. The call placed lamp will illuminate to indicate call placement. When the call is answered, the call placed lamp will go off and the in use LED will illuminate to indicate a communication path has been established to the master station. Speak in a normal voice.

Cancel a Call: Press the **RESET** or **CANCEL** button. Call placed lamp will go off.

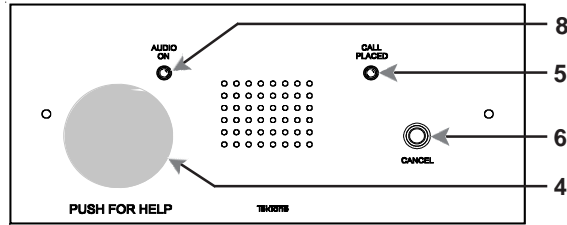
Improper Operation: Contact qualified service personnel if the station does not operate as described. There are no user serviceable parts on the IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations.

Figure 1—Master and Remote Call Station Control Locations

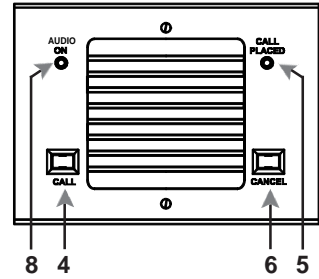
NC150R Master Station



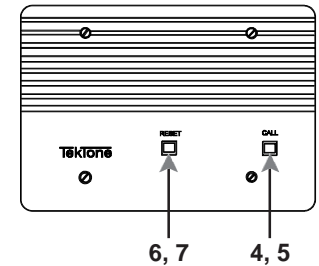
IR150SS, IR150SS/S Remote Call Station



IR150N Remote Call Station

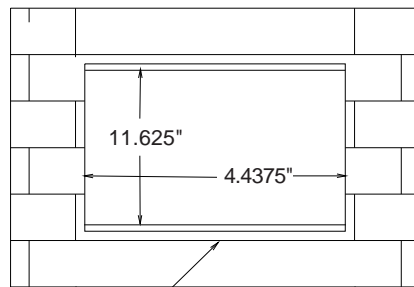
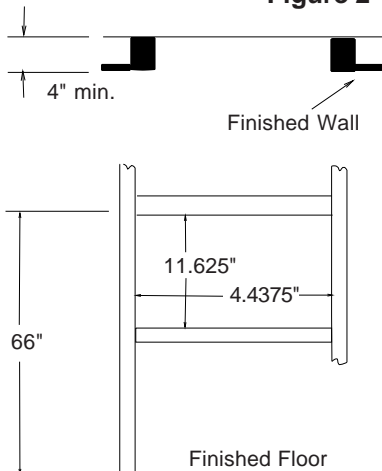


IR150B Remote Call Station

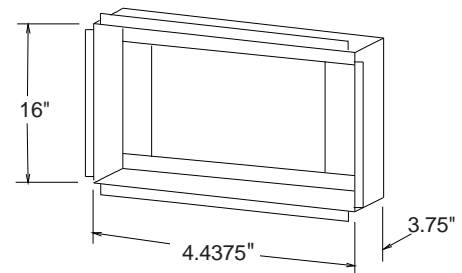


- 1 – **Call Button:** Tone call to selected remote when pressed.
- **Call Lamp:** Indicates incoming call when illuminated.
- 2 – **Talk Button:** Talk when pressed. Listen when released.
- 3 – **Selector Buttons:** Establishes conversation path with associated remote station when depressed.
- **Selector Lamps:** Indicates incoming call from associated remote when illuminated.
- 4 – **Call Button:** Places a call when pressed.
- 5 – **Call Placed Lamp:** Indicates a call is placed when illuminated.
- 6 – **Reset Button:** Cancels the call when pressed.
- 7 – **In Use LED:** Indicates station is in use when illuminated.
- 8 – **Audio On Lamp:** Indicates master station is listening when illuminated.

Figure 2—Master Panel Housing Chart and Wall Cut-Out Details

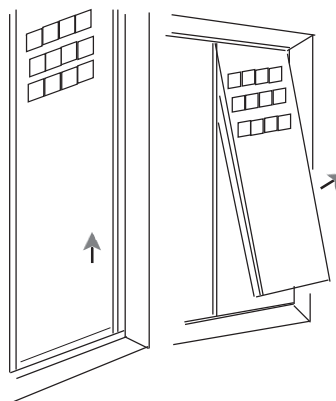


In masonry walls, install 0.5"x4" wood fillers at top and bottom of opening for housing attachment.



| | Wall Opening | |
|----------------------|---------------------|---------------|
| | Width | Height |
| Flush Housing | 4-7/16" | 11-5/8" |
| OH150 | | |

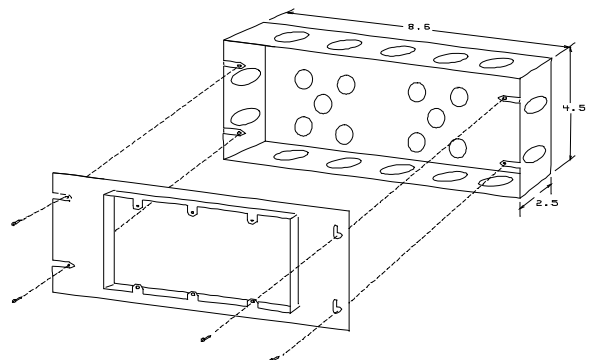
Figure 3—Panel Removal & Replacement



Panel Removal: First remove the self-tapping metal screws located in the top U-channel just above each panel. Then lift up on panel to clear bottom channel. After removal, adequate space is available to grasp and remove the remaining panels.

Panel Replacement: Insert top of panel into top channel, push panel in at bottom, and release. Panel should fall into place in bottom channel. Replace self-tapping metal screws.

Figure 4—Ring & Back Box for IR150B Remote Call Stations



Install ring with panel mounting holes at top and bottom, as shown.

System Installation

Installation Procedure

- Determine equipment locations.
- Install wiring.
- Install housings.
- Check wires.
- Connect equipment.
- Check connections.

Equipment Locations

NC150R Master Station: Locate NC150R Master Station in building lobby within easy reach of operating personnel. Do not exceed operating temperature of 10–30°C.

IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations: Locate IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations in protected area of rescue assistance locations. Up to 8 remote call stations are supported by each NC150R Master Station. Do not exceed operating temperature range of 10–40°C. The IR150SS includes weather stripping and a Mylar® speaker for weather resistance, and may be mounted in areas that are exposed to weather effects (outdoors but under an overhanging roof), but not in areas directly exposed to weather (driving rain with no coverage).

PK151A, PK152 Power & Control Units: Locate the PK151A or PK152 and the SS106 within an IH151N Junction Box in an accessible area. (The junction box, transformer and power & control unit are also available preassembled from the factory as part number IH151NK.) Do not exceed operating temperature range of 10–30°C. Location should provide for convenient cable runs to remote call and master stations. Cable run from the PK151A or PK152 to the NC150R Master Station must not exceed 100'.

Wiring Installation

The necessary wiring information can be found in *Figure 7*. Run wiring conduit from remote call station to remote call station and terminate at the PK151A or PK152 Power & Control Unit. Limit each run to 16 stations and 600 feet of wire.

Housing Installation

NC150R Master Station: To flush wall mount, provide wall cutout as shown in *Figure 2*. Remove panels from frame as shown in *Figure 3*. Fit back box and frame assembly into prepared opening. Fasten assembly into place using screws provided in back box. Housing must be TekTone® OH150. Replace panels using the procedure as shown in *Figure 3*.

IR150B Remote Call Stations: Install the back box (Steel City #H3BD with Steel City #3GC plaster ring or exact equivalent) as shown in *Figure 4* for each station in system. If a smaller back box is desired, use ARCO #2GB with ARCO #3GC ring. Minimum dimensions of the back box must be no less than 8.6"×4.5"×2.5". Minimum clearance from live parts on the station to dead metal parts must be no less than 0.5".

IR150N Remote Call Stations: Install a TekTone® IH106N back box horizontally for each station in system.

IR150SS Remote Call Stations: Install a TekTone® OH600 back box horizontally for each station in system.

IR150SS/S Remote Call Stations: No back box is necessary to surface mount.

PK151A or PK152 Power & Control Unit, SS106 24 VAC 30 VA Transformer, IH151N Junction Box: Fasten IH151N Junction Box to wall using suitable fasteners. Mount PK151A or PK152 inside junction box. Minimum dimensions of junction box must be no less than 12"×12"×4". Minimum clearance from live parts to dead metal parts on housing must be 1". Install SS106 Transformer in junction box as shown in *Figure 5*. Do not connect transformer primary to power source until entire installation is completed and checked for shorts and grounds. Install transformer connection box as shown in *Figure 5*. Minimum dimen-

sions must be no less than 1.75"×3.75"×1.5". The junction box, transformer and power & control unit are also available preassembled from the factory as part number IH151NK.

Wire Checkout

Use an ohmmeter or other continuity checking device to test wires for shorts or grounds. If shorts or grounds are encountered, find and correct the problem before continuing. Make sure minimum number of conductors needed for all of the equipment being used in the system are available.

Wire Connections

Use crimp-style connectors for all wire connections. Do not use wire nuts.

NC150R Master Station: Connect wires as shown in *Figure 7*.

IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations: Connect wires as shown in *Figure 7*.

PK151A or PK152 Power & Control Unit: Connect wires as shown in *Figure 7* Also connect secondary from the SS106 Transformer (24 VAC, 30 VA connections) to the PK151A or PK152 as shown in *Figure 7*. Do not connect transformer primary to power source until entire installation is completed and has been checked for shorts and grounds.

Connections Checkout

Recheck all connections to equipment. If all wires and connections are satisfactory, connect primary coil of SS106 Transformer to source of 117 VAC 60 hZ (40 watts max.) and operation of system can be checked according to **System Test Instructions**.

System Test Instructions

Before proceeding with a system test, set all stations to normal conditions as follows:

NC150R Master Station: All push buttons should be in the out position. A depressed button may be released by pressing the button and then releasing it.

IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations: If the call placed lamp is illuminated, press the **RESET** button to reset it.

Test IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations:

Test remote call stations one at a time. Press the **CALL** button on each remote call station to place a call. Check for operation of the following signals:

Figure 5—SS106 Transformer Installation

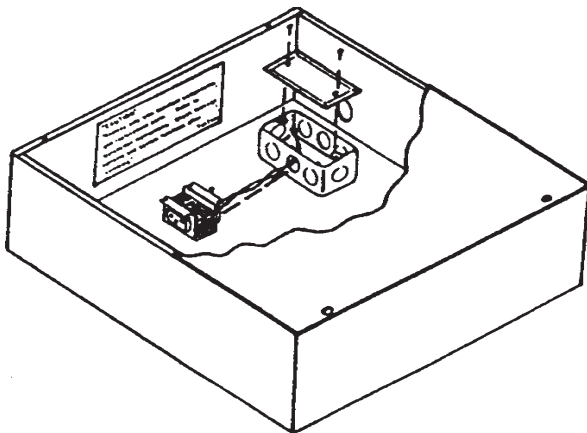
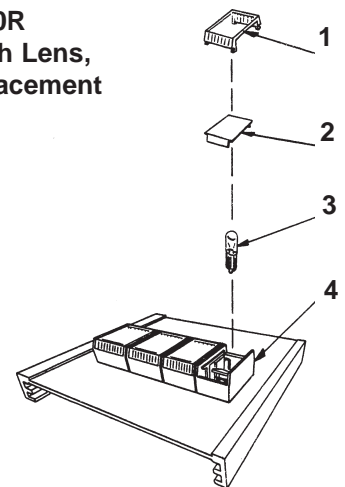


Figure 6—NC150R Selector Lamp/Switch Lens, Filter and Lamp Replacement

- 1 - Lens
- 2 - Filter
- 3 - 24V Lamp
- 4 - Switch Knob



- The call placed lamp on the remote call station should be illuminated.
- On the NC150R Master Station, the **CALL** lamp should be illuminated and the associated station selector lamp (marked to identify the calling station) should be illuminated. A slowly repeating audible call tone should be heard.

Press the **RESET** button on the remote call station to reset the call. All signals should be canceled.

Test the Intercom Function:

Press the **CALL** button on the remote call station to place a call. At the master station, select the calling station by pressing the illuminated station selector button, and check for the following:

- The station selector lamp should be canceled.
- The **CALL** lamp should turn off.
- The audible call tone should be canceled.
- The remote call station's in use LED should be illuminated.

Press the **CALL** button and the **TALK** button on the master station. An electronic call tone should be heard at the master station and at the remote call station.

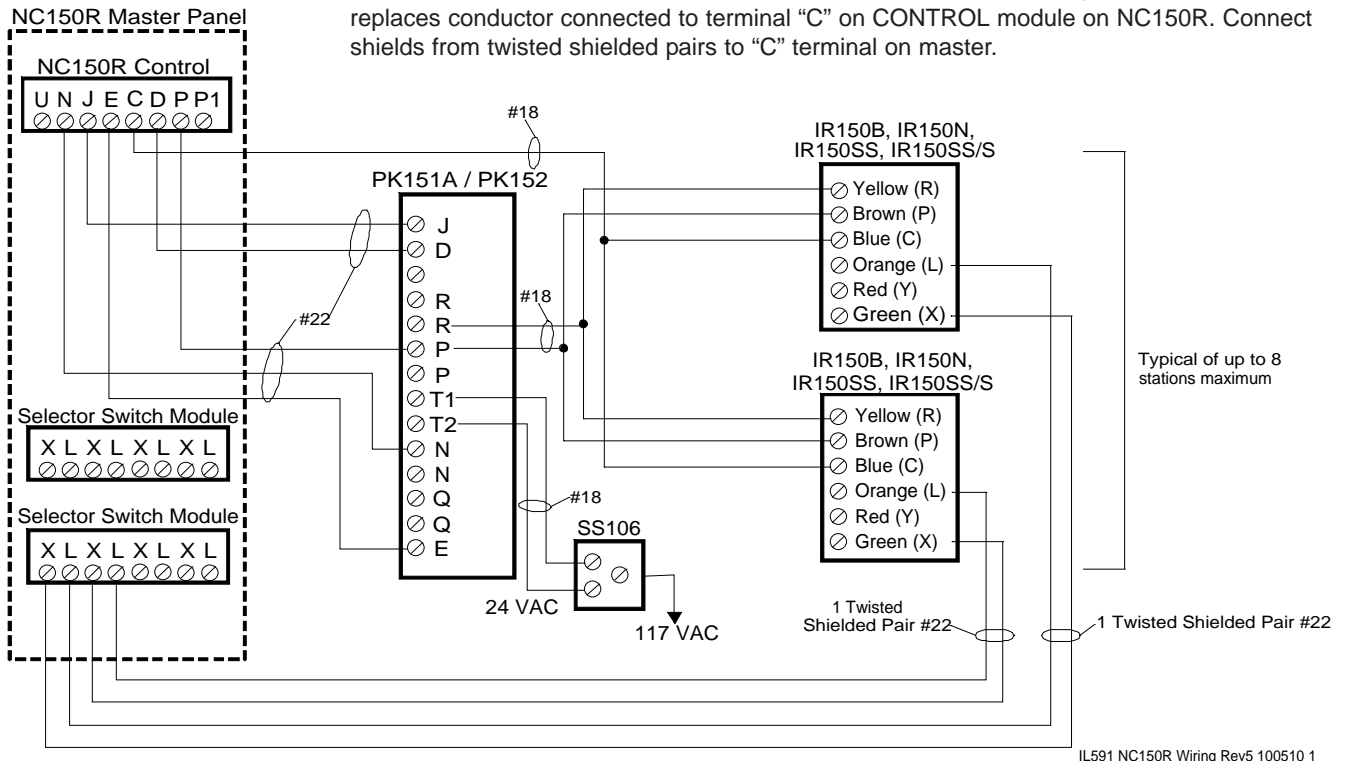
Press the **TALK** button and speak in a normal voice. Release the button to hear the reply. At the remote call station, the call placed lamp should turn off, and the in use LED should be illuminated. When voice communication is heard, reply in a normal voice.

Return all controls to the normal position.

Figure 7—Tek-SAFE™ System Wiring Diagram

Notes:

1. Terminal identifications shown are not in actual order.
2. Main supply circuit: Connect to 117 VAC, 60Hz, 40 Watts maximum. Use #18 gauge wire.
3. Use shielded cable if not in a metal conduit. If shielded cable is used, shield drain wire replaces conductor connected to terminal "C" on CONTROL module on NC150R. Connect shields from twisted shielded pairs to "C" terminal on master.



System Maintenance Instructions

Most of the equipment and parts used in the NC150R Area of Rescue Assistance System are not user serviceable and cannot be replaced or repaired by the end user. Equipment must be repaired by qualified service personnel only. There are no user serviceable parts in the PK151A and PK152 Power & Control Units or the IR150B, IR150N, IR150SS, IR150SS/S Remote Call Stations—notify qualified service personnel for repair or replacement. Parts which are user serviceable are listed in the following section and their replacement explained.

NC150R Master Stations

There are several user serviceable parts in the NC150R Master Stations. Only one of these parts is electrically operated. The user serviceable parts and replacement procedures are explained below.

Refer to *Figure 6* to identify replacement switch parts. A full list of replacement parts and numbers appears in the **Replacement Parts** section.

Selector Lamp/Switch Lens Replacement:

- Remove lens by squeezing top and bottom together and pulling away from panel.
- Replace with same color lens by pushing new lens towards panel. The lens should snap into place on the selector lamp/switch knob with a noticeable click.

Selector Lamp/Switch Filter Identification:

- Remove lens by squeezing top and bottom together and pulling away from panel.
- Remove white filter by lifting it out of selector lamp/switch knob.
- Identify filter by room number or other means using dry transfer lettering, labels, or other similar methods. Be sure identified filter is replaced in knob so that lettering is readable right side up.

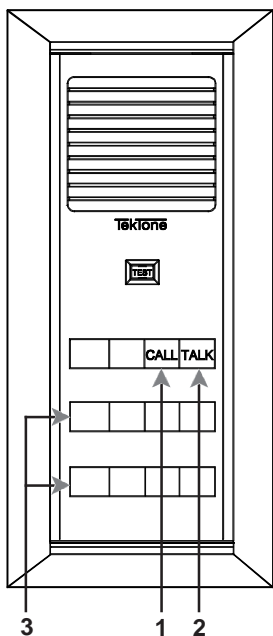
Defective Lamp Replacement:

- Remove lens and filter by method described above.
- Using needle-nosed pliers, tweezers or similar tool, pull lamp out of socket by gripping lamp at sides and moving it from side to side as it is pulled away from the panel.
WARNING: Do not squeeze too tightly, or it will break.
- Replace lamp by holding with tool and pushing into socket. Be sure lamp is turned so that the base is lined up with the slot in the socket. Lamp must be pushed in below the level of the filter.
- Push test button to make sure lamp has been placed in socket properly. If lamp does not light, try pressing more firmly into socket. If lamp still does not light, repeat steps above with new lamp until one works properly.
- Replace lens and filter in lamp/switch knob as previously described.

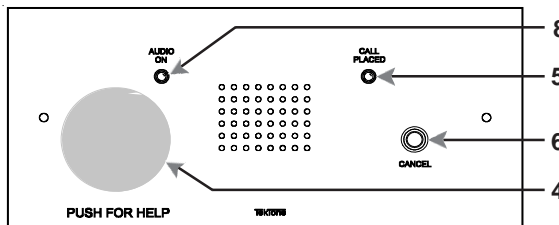
Replacement Parts

| <i>Part No.</i> | <i>Description</i> | <i>Used For</i> |
|-----------------|-----------------------|----------------------------------|
| LI014K | 24V Lamp, 10 each | NC150R Selector Module Lamps |
| RP021K | Blank Filter, 10 each | NC150R Selector Button Label |
| RP022K | Orange Lens, 10 each | NC150R Call and Selector Buttons |
| RP024 | Green Lens, 1 each | NC150R Talk Button |
| RP027K | Clear Lens, 10 each | NC150R Button (not used) |
| RP028 | Yellow Lens, 1 each | NC150R Button (not used) |

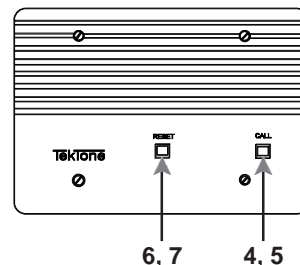
NC150R Master Station



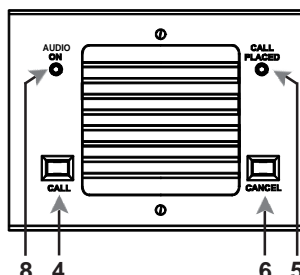
IR150SS, IR150SS/S Remote Call Station



IR150B Remote Call Station



IR150N Remote Call Station



- 1 – **Call Button:** Tone call to selected remote when pressed.
- **Call Lamp:** Indicates incoming call when illuminated.
- 2 – **Talk Button:** Talk when pressed. Listen when released.
- 3 – **Selector Buttons:** Establishes conversation path with associated remote station when depressed.
 - **Selector Lamps:** Indicates incoming call from associated remote when illuminated.
- 4 – **Call Button:** Places a call when pressed.
- 5 – **Call Placed Lamp:** Indicates a call is placed when illuminated.
- 6 – **Reset Button:** Cancels the call when pressed.
- 7 – **In Use LED:** Indicates station is in use when illuminated.
- 8 – **Audio On Lamp:** Indicates master station is listening when illuminated.

NC150R MASTER STATION OPERATION

Answer a Call:

Normal calls are indicated by simultaneous operation of the following signals: Steady illumination of the associated station selector lamp which is marked to indicate call origin, steady illumination of call lamp, and slowly pulsing audible tone.

To establish conversation with the calling station, press the associated station selector button. The remote station's in use LED will illuminate. To speak to the caller, press the **TALK** button while speaking and release to listen.

When the conversation is complete, press the associated station selector button to release the station. The remote station's in use LED will turn off.

Call a Remote Call Station:

Locate the station selector button associated with the remote station to be called. Press that selector button to establish a conversation path. The remote station's in use LED will illuminate. To produce an announcing tone at the remote station, press the **TALK** and **CALL** buttons simultaneously. Press the **TALK** button while speaking, and release button to listen. The remote area may be

monitored by selecting the remote station and releasing the **TALK** button.

When conversation or monitoring is complete, press the station selector button to release it. The remote station's in use LED will turn off.

Test Station Selector Lamps:

Press **TEST** button. All station selector lamps should illuminate.

IR150B, IR150N, IR150SS, IR150SS/S REMOTE STATION OPERATION

Call the NC150R Master Station:

Press the **CALL** button. The call placed lamp will illuminate to indicate call placement. When the call is answered, the call placed lamp will go off and the in use LED will illuminate to indicate a communication path has been established to the master station. Speak in a normal voice.

Cancel a Call:

Press the **RESET** or **CANCEL** button. Call placed lamp will go off.

