WASHINGTON STATE DEPT OF NATURAL RESOURCES

BK RADIO

KNG P150s User's Manual

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BK RADIO KNG

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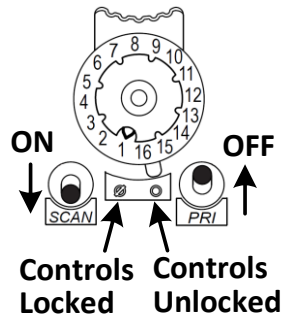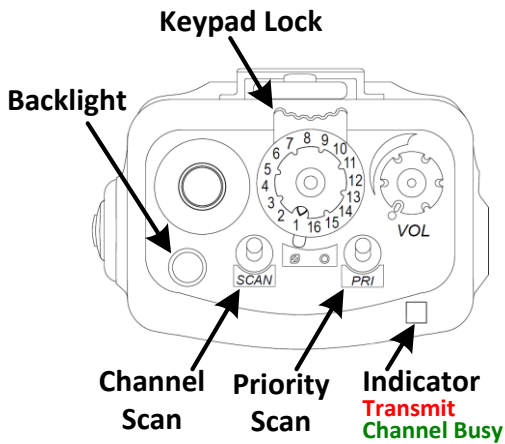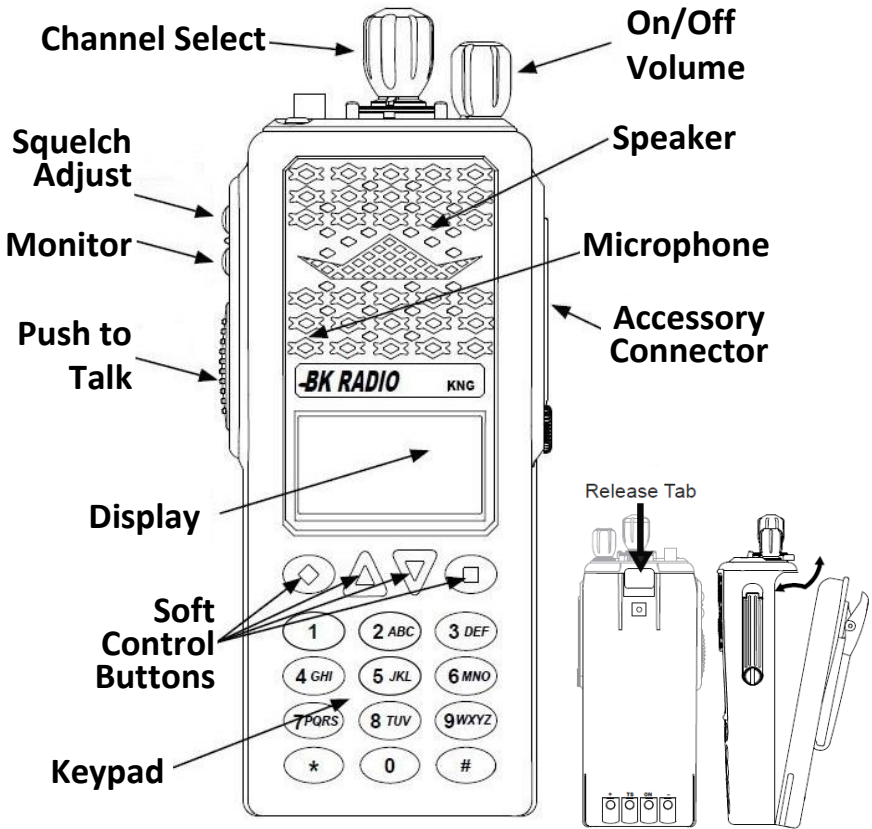
The Relm/BK KNG-P150s is a direct descendant of the GPH that is familiar to most wildland firefighters. Improvements include: increased channel capacity *(32 zones of 16 channels each, up from 15 zones),* decreased size and weight, greater resistance to water and dust damage and increased transmit power.

The P150S controls have been configured to be similar to the GPH for easier adoption. This configuration may not match that used by other agencies.

As with the GPH series, the battery may either be a **rechargeable** (**black**) or a **clamshell** (**orange**). The KNG clamshell holds **8 AA** size alkaline cells.

RADIO CONTROLS

Hard Controls

Hard controls have fixed functions. WA DNR radios have the following Hard Controls:

- – On / Off Volume Knob
- – Push To Talk Button
- – Squelch Adjust Button
- – Channel Scan Toggle Switch
- – Control Lock Collar Switch

- – Channel Selector Knob
- – Monitor Button
- – Priority Scan Toggle Switch
- – Backlight Button (Orange)
- – Numeric Keypad

Soft Controls

Soft controls change function depending on the mode of operation or the menu selected.

The labels above each soft button will change to indicate the function of the button in a given mode.
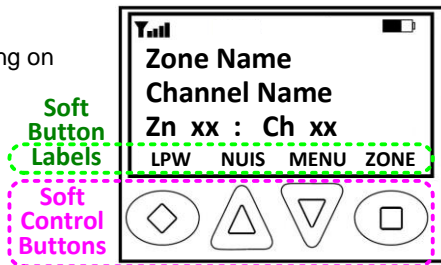
Channel Display Screen

The display screen provides channel information in two forms: the text name of the zone + channel, and the zone + channel number. The zone + channel numbers will aid you in navigating the large number of available channels.

Indicators

Y.ıl	Receive Signal Level (present only while receiving a signal)
⠀⠀⠀	Battery Level (present only with rechargeable battery)
RXA or **RXD**	Receiving Signal — A = analog, D = digital (not used)
TXA or **TXD**	Transmitting — A = analog, D = digital (not used)
LP	Transmitting in Low Power Mode
SCN	Scanning *(blinks when in a scan mode)*

P1   Priority Scan is Enabled

MENU NAVIGATION

Many configuration options are available through a menu system. Soft button labels will change depending on the menu function selected. Shortcut buttons have been configured to provide quick access to common functions.

Note: most keys respond to a momentary press but ignore being held.

LPW or **LPW**	**LPW** = High Power, **LPW** = Low Power (see details below)
NUIS	Nuisance Channel Delete (see details below)
ZONE	Enters Zone Selection Menu (see details below)
MENU	Opens Menu of Configuration Options (see details below)
ESC	Escape returns to Next Higher Menu Level
↑	Navigate UP Through Menu Choices
↓	Navigate DOWN Through Menu Choices
ENT	ENTER – Accepts Currently Selected Option
+/-	Toggles Currently Selected Option
CLR	Clear the Current Entry (see "keypad programming" below)

ON/OFF/VOLUME

1. Rotate the **Volume** knob to turn the radio **on** or **off**.
2. Press the **Monitor** button to open the squelch.
3. Rotate the **Volume** knob to the desired setting.
4. Press the **Monitor** button again to silence the radio.

RADIO STATUS & SW VERSION SCREENS

This option in the main menu may be ignored unless a technician asks you for this information when reporting a radio problem.

DISPLAY CONTRAST ADJUSTMENT

Display screen contrast may be adjusted as follows:

1. Press the **MENU** soft key.
2. Use the ↑ ↓ buttons to navigate to **Contrast Adj.**, then press **ENT**.
3. A slider control will appear on the screen. Use the ↑ ↓ buttons to move the slider left or right. Adjust for desired level.

4. Press **ENT** to save the setting.

5. Press **ESC** to returned to the main menu and to exit.

DISPLAY BACKLIGHT

The Display and main keypad have a backlight which helps the user while using the radio in the dark.

The backlight will come on for a duration of 3 seconds any time the display changes (button press, channel change, etc.).

Pressing the Orange button will activate the backlight. Be sure to press it again and turn off the backlight to extend battery life.

MONITOR BUTTON

Pressing the Monitor button disables the tone-coded squelch and allows background noise to be heard on the radio speaker; this may allow you to receive a very weak signal in some circumstances.

KEYPAD LOCK

Rotating the "Keypad Lock" switch prevents all buttons from being accidentally activated. This does not inhibit the Push-to-Talk, Volume, or Channel controls.

Pressing a locked control will result in a beep and the display will indicate "Keypad Locked."

SQUELCH SETTINGS

Squelch silences the receiver when it is not receiving. The squelch threshold may either be a preset value or user selectable. The preset value should be used unless you find yourself in an area where high radio noise is needlessly opening the squelch.

Squelch may be adjusted as follows:

1. Press the **Squelch Menu Button** to enter the menu.

2. To use the "Preset" level, navigate to **Preset** and press the **ENT** key. That will save the setting and exit to the main menu.

3. To adjust the threshold level, navigate to **User Set** and press the **ENT** key. A slider control should appear on the screen.

4. Use the ⬆ ⬇ buttons to move the slider left or right. Moving the adjustment to the left lowers the squelch threshold, allowing weaker signals to open the squelch. Moving the adjustment to the right raises the squelch threshold, only allowing stronger signals to open the squelch.

5. Press **ENT** to save the setting and exit the menu.

TRANSMIT POWER

Transmit power may be selected. Low Power is 2 Watts; High Power is 6 Watts.

1.   Press **ESC** to return to the Initial Display Screen if not already there.

2.   Press the **LPW** soft key to switch between **LPW** (High) or **LPW** (Low).

Use Low Power whenever possible to extend battery life. Use High Power only when extended range is required.

ZONE SELECTION

Channels are arranged in up to 32 Zones of 16 channels each. Not all zones are in use. Empty zones are those that do not have text labels and may be ignored.

Note: The KNG series radios use the term "Zone" in place of the term "Group" that was used in the GPH series radios.)

1.   Press the **ZONE** soft key; "Select Zone" should appear on the screen.

2.   Enter the desired zone number on the keypad –**OR**– use the ⬆ ⬇ buttons to select the desired zone. Choose the desired zone then hit **ENT**.

3.   Press the **ENT** button to save the selection and exit the menu.

CHANNEL SELECTION

Rotate the **Channel Select** knob to change to the desired channel. Observe the selection on the channel knob or on the display.

The channel switch has 16 positions with stops at position #1 and position #16.

SCAN OPTIONS

Channel Scan

The radio can scan through a "Scan List" of up to 16 channels. Scanned channels must all be in the same zone.

Scan speed slows as more channels are added to the list. A large scan list increased the odds of missing an important message; therefore, a limit of 4 channels in a Scan List is recommended.

NOTE: When radios are reprogrammed the scan list may be cleared and you will have to re-create the list.

NOTE: Regardless of which channel the radio stops on during scan, it will always transmit on the channel currently selected by the Channel Select knob.

Priority Scan

Priority Scan helps avoid missing messages on the primary channel. When enabled, Priority Scan checks the priority channel for messages while receiving on any other channel. The radio will switch to the priority channel even if receiving on another channel. It is normal to hear a slight clicking when receiving on a non-priority channel as the radio is briefly checking the priority channel.

Program the Scan List

1. Select the Zone that contains the desired channels.

2. Press the **MENU** soft key.

3. Select "**Scan List,**" then press **ENT.**

4. Scroll through the channels using the ⬆ ⬇ buttons

5. Press the **+/-** button to select or deselect each channel. Channels marked with the **+** to the left of the channel name are in the scan list.

6. When finished, press the **ESC** to exit.

You may verify that channels are included in the scan list:

1. Turn off scan by moving the **SCAN** toggle switch away from you. The the **SCN** indicator will no longer blink.

2. Rotate the channel selector and observe that the **SCN** indicator is on for channels in the scan list and off for channels not in the scan list.

Program the Priority Channel

1. Press the **MENU** soft key.

2. Scroll down to **Pri. Channels** and press **ENT.**

3. Select which priority channel you would like to program, either **Priority 1** or **Priority 2**.

4. Select either **Use Global** or **Use Per Zone** based on if you would like the priority channel to function across all zones of the radio, or strictly the zone that the radio is currently on.

5. If **Use Global** is selected, select **Pri 1 Zone** and scroll down to choose the zone that the desired channel is in. Then select **Pri 1 Chan** and scroll down to choose the desired channel.

6. If **Use Per Zone** is selected, scroll down to choose the desired channel.

Enabling Channel Scan Mode

1. Slide the **SCAN** toggle switch toward you.

2. The **SCN** symbol will be blinking.

Enabling Priority Scan Mode

1. Slide the **SCAN** toggle switch <u>AND</u> the **PRI** toggle switch toward you.

2. The **P1** symbol will be on and the **SCN** symbol will be blinking.

CAUTION: Although the **SCN** symbol will be flashing when Priority Scan is enabled, the radio will not actually be scanning unless the **SCAN** toggle switch is also turned on.

Nuisance Channel Delete

A channel can be temporarily removed from the scan list. The may be desirable when the channel has excessive or irrelevant traffic. Multiple channels may be removed if desired.

1. Press the **NUIS** soft key while scan has stopped on the channel that you want to remove from scan.

2. The radio will respond with 3 short beeps to indicate temporary removal from the scan list.

To restore the channel(s) to the scan list, toggle the **Scan** switch off then back on. The scan list will also be restored when the radio is turned off and back on.

COPY CHANNEL (CUSTOM ZONE)

Command Zones, are similar to a Favorites Menu on a computer. Any channel in the radio can be copied to a Command Zone or Cloning Zone for convenience. As with any other zone, channels in a Command Zone can be entered into a Scan List.

Adding a Channel to a Command Zone

Make sure the radio is currently on the channel you want to add to the custom zone.

1. Press the **Menu** button

2. Scroll down to **Copy Channel** and press **ENT**

3. Select the Command Zone you would like to copy the channel into by scrolling up or down with the **Arrow** keys

4. Select which channel position with in the Command Zone you would like the copied channel to reside (1-2-3-4 ect) by scrolling up or down with the **Arrow** keys (note if you want to overwrite an existing channel in a Command Zone you *do not* need to remove it first) press **ENT**

5. The radio with ask you to confirm the **Channel** and **Zone** location press **ENT** if correct **OR** press **ESC** if chosen in error.

CLONING

KNG P150S radios allow for three cloning options:

- **Active Zone** - Copies the information in the Source radio's active zone to the Target radio's active zone. ***This is the method to use.***

- **"Zone-to-Zone" & "Entire Radio"** ***These should not be used.***

- **Cloning with the "Clone UCG/PL?" option.** Normally, you should choose **"NO"** when prompted, but if "Pick List" technology is being used (on an incident for example) You may need to choose "YES". See the incident COML / COMT for more information

KNG P150S to KNG P150S Cloning
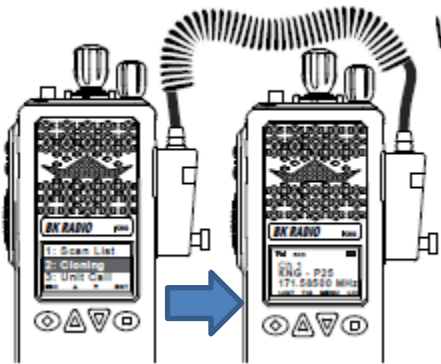
Connect the KAA0701 (or KAA0700) Cloning Cable to the side connector of the Source and Target radios and power up both radios. It doesn't matter which end is which. Use the thumb screws to secure the connectors. Avoid pulling or twisting the cable at the connectors; it will help them last.

On the Destination radio:

1. Switch to the Zone that is to receive the clone.

On the Source radio:

1. Switch to the Zone that is to be sent.

2. Press the **MENU** soft key.

3. Select "**Cloning**" and press **ENT**

4. Select "**Active Zone**" and press **ENT**.

A message "**Active Zone Successfully Cloned**" indicates success.

► The message "**Clone Failed: Target Zone Locked**" indicates that the destination zone is programmed to not accept clones. You must change to a different zone.

► The message "**Clone Failed: "No Device Found**" indicates a cabling problem or a problem with the destination radio.

KNG P150S to Legacy GPH or DPH
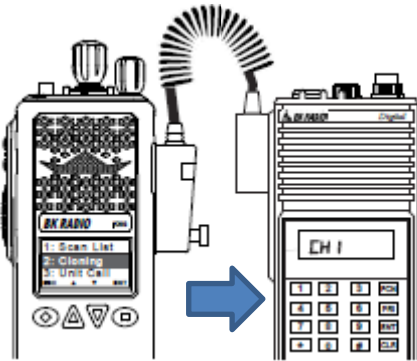
Caution > Pre April 2001 version GPH radios are not compatible as they have a different computer inside. They cannot be cloned <u>from</u> the P150S but can be cloned from other GPH and DPH radios.

To identify these radios, press and hold the "**1**" key. If an 8 character code appears on the display, it is likely compatible.

In addition, the P150S supports a wider range of frequencies than most GPH and DPH radios. Although it may appear that the clone was successful, frequencies below 148 MHz may not actually work.

Connect the KAA0701 Cloning Cable to the side connector of the Source and Target radios and power up both radios. Use the thumb screws to secure the connectors. <u>Avoid over-tightening, pulling, or twisting the cable or connectors; it will help them last.</u>

On the Destination radio:
1. Switch to the Group that is to receive the clone (Key in #xx, where xx = the group number). Typically DNR uses Group 13 for cloning on these radios.

On the Source radio:
2. Switch to the Zone that is to be sent.

3. Momentarily hit the **MENU** soft key.

4. Select "**Cloning**" and hit **ENT**

5. Select "**Active Zone**" and hit **ENT**.

A message "**Active Zone Successfully Cloned**" indicates success.

Error Messages
► The message "**Clone Failed: Target Zone Locked**" indicates that the destination zone is programmed to not accept clones. You must change to a different zone.

► The message "**Clone Failed: No Device Found**" indicates a cabling problem or problem with the destination radio.

► The message "**Clone Failed**" with no reason given, generally means that the destination radio is incompatible.

Legacy GPH or DPH to KNG P150s Instructions
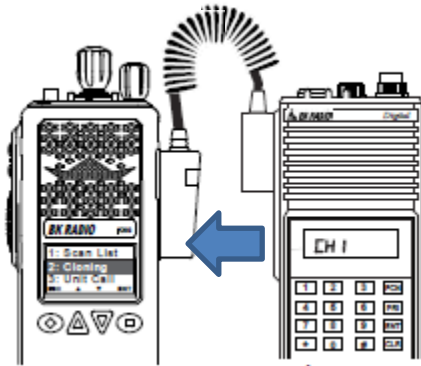
DPH and most GPH radios including Pre April 2001 version GPH radios can clone <u>to</u> the P150S.

Connect the KAA0701 Cloning Cable to the side connector of the Source and Target radios and power up both radios. Use the thumb screws to secure the connectors.

<u>Avoid over-tightening, pulling, or twisting the cable or connectors; it will help them last.</u>

On the Destination radio (P150S):

1. Switch to the Zone that is to receive the clone. Traditionally DNR has used Zone 13 for cloning on these radios but there are several other unassigned Zones between 18 and 32 that will accept a clone.

On the Source radio (DPH / GPH):

2. Switch to the Group that is to be cloned from (Source) (Key in #xx, where xx = the group number).

3. Press and hold the little red button on the GPH / DPH cloning connector then press and hold the **[FCN]** key until the display shows "--- ID"

4. Key in the password "000000" followed by the[**ENT]** key. The display should show "CH 00"

5. Press the [*] key to enter program mode. "PROG" should be flashing on the display.

6. Press the **[FCN]** key to start the clone. The source radio will display "CLONE" while data is being transferred. The destination radio will display "Lgcy Cloning" while data is being transferred.

After a successful clone, the source radio returns to the flashing "**PROG**" and be ready to clone another radio. The destination radio will display the new channel name and be ready to use.

Error Messages

If the source radio begins flashing "**FAIL**" and beeping, the clone did not work.

Press the **[CLR]** button and check connections and that the destination radio is powered up. It is possible that the destination Zone that you selected is configured to reject a clone. Try a different Zone on the destination radio. Return to step #3 to try again.

PROGRAMMING OF RADIOS

FCC rules authorize DNR to only program radio frequencies according to the licenses authorized by the Commission.

> *Except for frequencies used in accordance with §90.417, **no person shall program into a transmitter frequencies for which the licensee using the transmitter is not authorized.*** [§90.427 (b)]

Shared Use of Radio Systems

One exception to this limitation is the sharing of radio systems, as authorized under §90.179. That section requires a written agreement before other agencies may program DNR radio frequencies and before DNR may program frequencies licensed to another agency.

DNR maintains agreements with federal, state, and local agencies that provide for the shared use of radio systems. Information about channels authorized for shared use is included in the annual radio channel information documents, from the local Radio Technicians, and from Region and District managers.

KEYPAD PROGRAMMING (HAND PROGRAMMING)

The user can optionally make changes to certain configuration parameters via the keypad. For example: Removing the requirement for a receive tone on DNR Common or creating a custom zone. It also enables the user to view information such as frequencies or tones.

There are several parameters that if changed will produce undesirable results. It is important that you limit changes to only the parameters described below.

Note that changes will be lost whenever a technician re-programs the radio or the zone is cloned over.

Entering Programming Mode:
1. Press the **MENU** soft key.
2. Select "**Keypad Prog**" and press **ENT.** "Keypad Prog" will be displayed.
3. Press **ENT** again to begin.
4. Enter password: 000000 and press **ENT.**
5. Select **Channels**, **Zone Params**, or **Global Params** followed by **ENT**, and follow the corresponding directions below.

Channel Information:

1. Select the desired Zone and press **ENT**.

2. Select the desired Channel and press **ENT**.

3. Select the desired parameter and press **ENT** to view the present setting. **CLR** will clear the old value and allow you to enter changes. If no changes are desired hit **ESC**.

4. **Chan Label** - Use the phone style keypad to toggle through characters. **"0"** toggles between 0 and a blank space. "*****" or "**#**" toggles through various symbols. Hit **ENT** when done.

5. **RX Freq** - Key in the frequency and hit **ENT**. Prior to that, you can abort changes by hitting **ESC**.

6. **RX Mode** – Normally choose **Analog.**

7. **RX Guard** – Enter a tone as 4 digits. 000.0 means no tone required. Use # followed by 3 digits to enter DCS code. State repeaters use DCS codes. For example D261 is entered as #261.

8. **TX Freq** - Key in the frequency and hit **ENT**.

9. **TX Mode** - Normally choose **Analog.**

10. **Bandwidth** – Normally 12.5 kHz (Narrowband)

11. **TX Guard** - Enter a tone as 4 digits. 000.0 means no tone required. Use # followed by 3 digits to enter DCS code. State repeaters use DCS codes. For example D261 is entered as #261.

Zone Parameters:

1. Select the desired Zone and hit **ENT**.

2. **Zone Label** - Use the phone style keypad to toggle through characters. **"0"** toggles between 0 and a blank space. "*****" or "**#**" toggles through various symbols. Hit **ENT** when done.

Global Parameters:

Caution: These parameters affect all zones and should not be changed.

1. **Bklight Dur** – This controls how long the backlight stays on. Normal is 2 Sec. Do not use "Always On" or battery life will be very poor.

NOTES

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